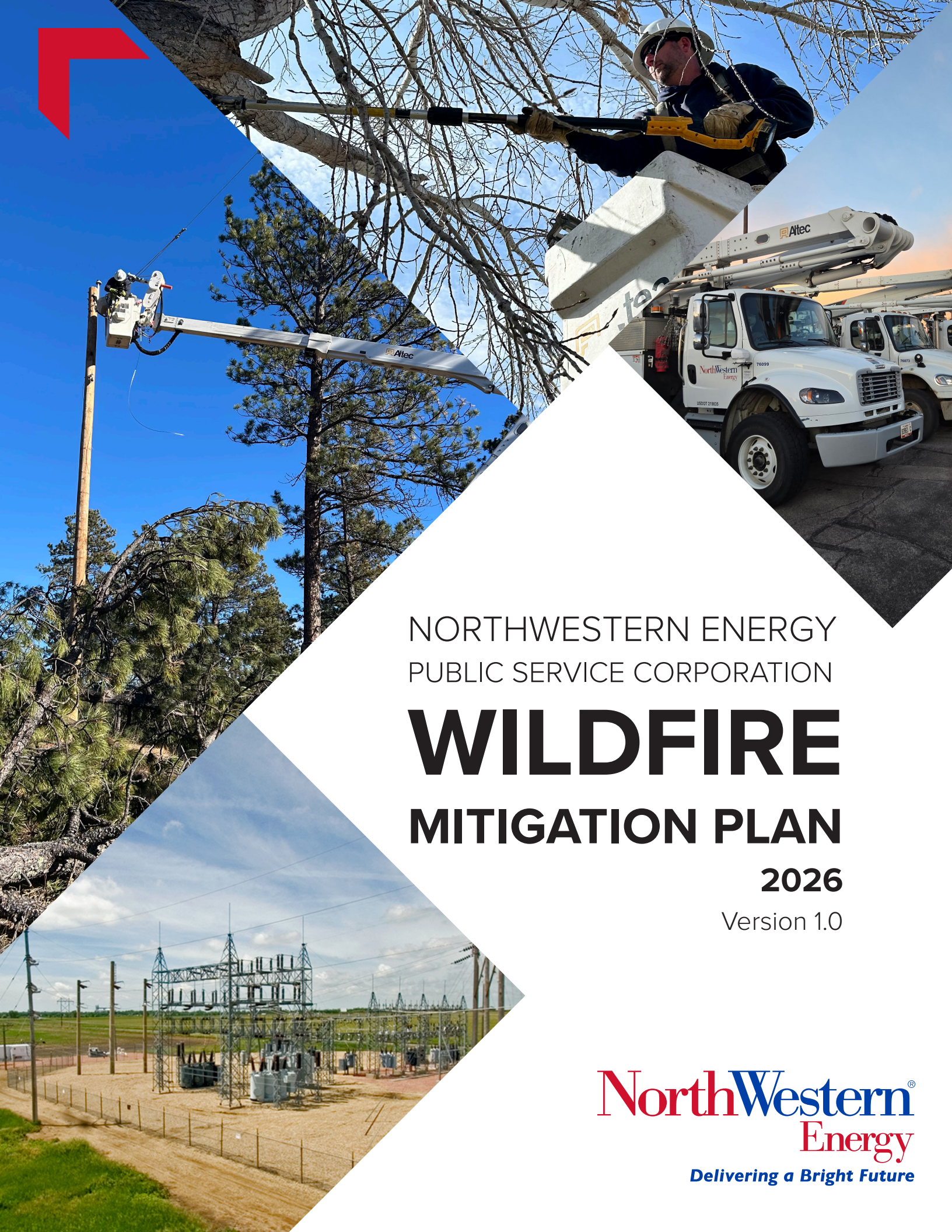




NORTHWESTERN ENERGY
PUBLIC SERVICE CORPORATION

WILDFIRE MITIGATION PLAN

2026

Version 1.0

NorthWestern[®]
Energy

Delivering a Bright Future

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Definitions and Acronyms

Advanced Metering Infrastructure (AMI) – A modern class of utility meters equipped with communication technology which enables real-time, remote sensing and monitoring. These meters allow utilities to adapt to changes in usage patterns over time, quickly identify which services are impacted by outage events, monitor power quality to services, and provide safety alerts. Customers benefit from these meters through swifter response to interruptions and enhanced understanding of energy usage.

Assessment – An engineering process which visually obtains data on the transmission or distribution systems. This data is used to evaluate future repairs or upgrades. Assessment can be performed aerially or by crews on the ground. The cadence with which this process occurs varies by strategy.

Breaker – These devices interrupt short circuits or overload currents that can occur on the system. Also referred to as a circuit breaker or a substation breaker.

Cutout – A device that is attached to a crossarm or pole to hold a fuse. When the fuse opens, the cutout creates an open point that isolates the downstream system and stops the flow of electricity.. Historically, these devices were made of porcelain. Modern cutouts can be polymer-based, providing increased durability in harsh weather conditions.

Cycle trimming – A utility strategy encompassing the trimming and/or removal encroaching vegetation to overhead electrical facilities, performed on an established frequency. The precise duration between cycle trims is dependent upon resource availability and the growth rate of tree species present.

Distribution – Electrical infrastructure with a voltage below that of transmission or sub-transmission. This system carries electricity from a substation to residential and certain commercial customers.

Electrical Section Identifier (ESID) – A section of distribution line between protective devices.

Enhanced Powerline Safety Settings (EPSS) – Special settings on protective devices which increase the sensitivity to faults during periods of elevated ignition risk. EPSS can assist in faster de-energization of equipment when a fault is detected. This strategy can also be utilized to prevent automatic reclosing.

Exception – A term utilized by NorthWestern Energy to describe a deficiency in identified asset or deviation from standard guidelines. Examples of exceptions include cracked insulators, loose guy wires, vegetation encroachment, missing animal protection, and sagging conductors.

Fault – This describes abnormal current on the electrical system. Faults on utility infrastructure are usually the result of vegetation contacts, downed conductors, or damage to assets, which may result in an interruption to customers.

Fuse – An electrical device which protects the system against over-current. Fuses can be used to isolate individual customers or sectionalize larger unprotected sections of line. The most common form of this device converts overcurrent energy into heat energy and produces an expulsive release of energy when it operates.

Galloping – The oscillation of overhead conductors caused by high amplitude, low frequency motion. Under specific wind conditions, this can result in the contact between phases, creating interruptions.

Grid hardening – A process to mitigate assessed risks on electrical facilities. This proactive strategy includes targeted infrastructure maintenance and upgrade programs.

Hot spotting – A targeted tree trimming process that considers specific locations, rather than the circuit wide approach utilized in cycle trimming. At NorthWestern Energy, this is typically driven by a Vegetation Coordinator or other trained arborists to locally identify potentially problematic vegetation.

Institute of Electrical and Electronics Engineers (IEEE) – A global technical society dedicated to advancing technology and innovation for public benefit. IEEE sets metrics upon which utilities can compare their system’s performance and facilitates peer-utility benchmarking.

Incident Command System (ICS) – A nationally-recognized, standard approach to the command, control, and coordination of an emergency response. NorthWestern Energy and other utilities play a specific role in responses to wildfire, flooding, winter storms, or large interruption events. Typically, this entails the communication of estimated restoration times.

Interruption – A loss of power, regardless of duration, to customers. This term can describe momentary operations or sustained outages.

Momentary operations – Interruptions less than 5 minutes in duration caused by a single fault current triggering an operation on a protective device, such as a recloser or breaker. These events are also referred to as ‘momentaries’ or ‘blinks.’ Operations are immediately followed by restoration of power to the system, without a sustained outage. This can be caused by galloping wires becoming too close, encroachment of vegetation, or avian contacts between phases.

National Electric Safety Code (NESC) – The NESC is a United States standard, published by IEEE. NESC provides safety guidelines for the installation, operation, and maintenance of electric power and communication systems, including substations and overhead and underground infrastructure.

Patrol – A visual inspection to evaluate overhead facilities for deficiencies, prioritize repairs, and mitigate issues requiring immediate action. Patrols are typically performed from the ground. The cadence of patrols is determined by program strategies.

Protection strategies – A term describing the engineered approach to minimize potential undesirable flow of electricity within the system or to the surrounding environment. Strategies can be engineered for a variety of reasons including mitigation of ignition potential, reliability to customers, or physical protection of devices to prevent damage.

Protective device – Electrical equipment designed to break load when current draw exceeds an established threshold. This device protects both the system and customers by breaking potentially damaging electrical connection. Fuses, breakers, reclosers, and switchgears are among several examples of these devices.

Public Safety Partner – An entity with whom NorthWestern Energy plans to collaborate in the event of a safety emergency. In context of the ICS, these often represent government or fire agencies.

Public Safety Power Shutoff (PSPS) – The practice of proactively de-energizing electric equipment during periods of extreme elevated wildfire risk. This safety measure reduces the probability of ignition from electric utility infrastructure during extreme conditions.

Rate review – A legal process wherein an Investor-Owned Utility (IOU) presents a proposal to its governing regulatory body, requesting the adjustment of customers rates in response capital expenditure investments over previous years. The Public Utilities Commission (PUC) is the governing regulatory body in South Dakota.

Recloser – A device with variable settings used to balance reliability and system sensitivity. When a fault is identified, a recloser will operate, causing a temporary interruption. Following a set duration, the device can ‘close’ and re-energize the line. The device will operate again if the fault is still present, thereby reducing potential ignition risks or hazards to the system. This process can be repeated depending on system settings. During periods of elevated ignition potential, devices may be blocked from automatically reclosing. Adjustments can be made to the trip speed and number of reclose attempts.

Rejected pole – NorthWestern Energy’s Electric Operation & Maintenance Guidelines define these poles, at the time of inspection, as having lost 33% or more of structural design strength. These assets are prioritized for replacement once identified.

Protective Relay – A device that compares system information, such as voltage or current, against engineered thresholds which establish set points for device operation. These relays work in conjunction with protective devices, typically breakers or reclosers.

Right-Of-Way (ROW) – Designated easements on private property which grant utilities the legal rights to access to their facilities. NorthWestern utilizes these agreements to establish and maintain systems which serve its customers.

Service territory – An area, typically defined by a government regulatory body or bound within state lines, served by NorthWestern Energy’s facilities and infrastructure. NorthWestern Energy’s South Dakota service territory is outlined in this plan.

Supervisory Control and Data Acquisition (SCADA) – A category of software applications for controlling industrial processes. In a utility context, this system usually provides remote visibility and, in some cases, control of devices within an electrical system.

System Average Interruption Duration Index (SAIDI) – An electric reliability metric which equates the impact of an event to all customers on the system. For example, a multi-day outage event impacting one town could also be equivalent to all customers within the service territory being out of power for 100 minutes. This is typically evaluated at the end of each year to determine the average amount of time each customer on the system is without power.

Splices – A method of connecting two ends of conductor; sometimes resembling a sleeve. Splices are used to re-join damaged spans or connect a new conductor reel during construction.

Sustained outage – NorthWestern Energy defines as an interruption to customers greater than 5 minutes. These can be planned for operations like maintenance.

Transmission – Electric lines above a certain voltage class, which deliver power between substations, or from generation, often across long distances. Also known as a “bulk electric system.” Sub-transmission is a term used to define lower voltage classes not used for distribution.

Vegetation fuels – Live or dead natural materials including grasses, shrubs, trees, leaves, certain plants used for landscaping, and agricultural crops.

Section 1 - Introduction

NorthWestern Energy
Wildfire Conditions in South Dakota
Modeling & Risk-Informed Decision Making
Defining Wildfire Risk
NorthWestern's Suite of Tools
Modeling Prioritization & Application
Heightened Risk of Wildfire Proximal to T&D Assets
Wildfire Plan Methodology

Section 1 – Introduction

NorthWestern Energy Group, d/b/a NorthWestern Energy provides electricity and natural gas utility services to approximately 850,300 customers in Montana, South Dakota, Nebraska, and Yellowstone National Park. Operations in Montana and Yellowstone National Park are conducted through the subsidiary NorthWestern Corporation. Operations in South Dakota and Nebraska are conducted through the subsidiary NorthWestern Energy Public Service. This Plan addresses NorthWestern Energy Public Service Corporation d/b/a NorthWestern Energy's (NorthWestern) systems in its service territory in South Dakota. NorthWestern will submit this Plan to the Public Utilities Commission of the State of South Dakota, consistent with South Dakota statutes. NorthWestern is committed to the safe and reliable delivery of energy within its service territories. This document will provide a comprehensive overview of wildfire mitigation strategies necessary to continue achieving this mission.

This Wildfire Mitigation Plan (WMP) establishes the strategies and actions undertaken to reduce the likelihood of utility-related wildfire ignitions. The Plan recognizes that many key wildfire risk factors, including fuel conditions and environmental characteristics, are beyond a utility's control. Mitigation efforts prioritize the reduction of ignition probability associated with the operation of electric system infrastructure, particularly in areas identified as high-consequence and during periods of elevated ignition risk.

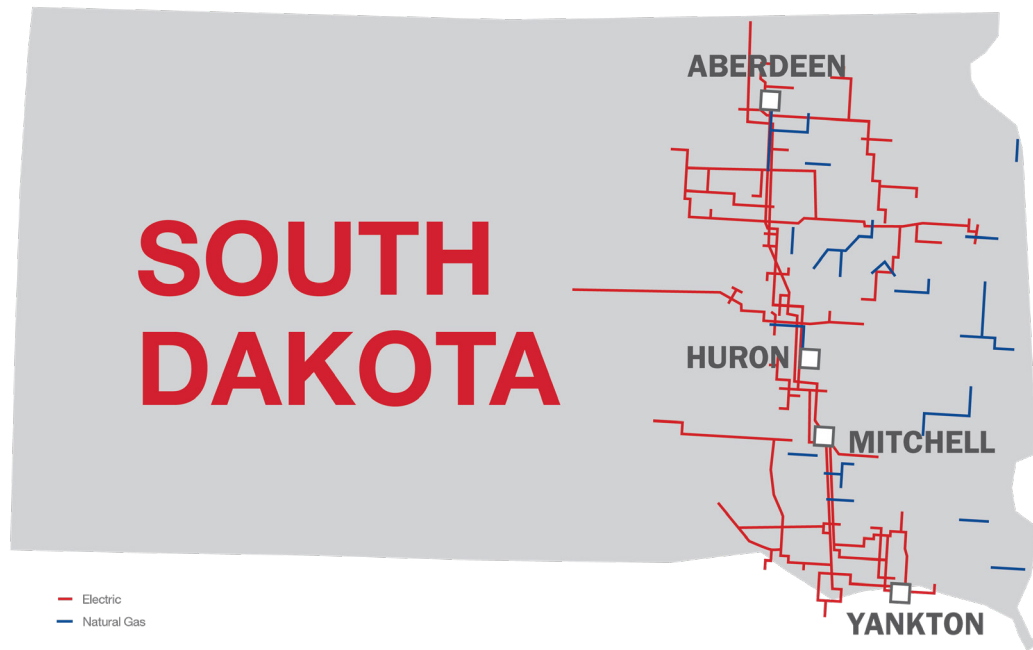


Figure 1: NorthWestern's South Dakota Service Territory

1.1 – NorthWestern

NorthWestern's South Dakota electric utility provides electric service to more than 63,000 metered customers and serves approximately 25 counties. Energy resources are managed through a network of more than 1300 miles of electric transmission and 1700 miles of electric distribution.

The Plan addresses the strategies required to cost-effectively mitigate wildfire risk across NorthWestern's electric transmission and distribution systems within its South Dakota service territory for years 2026-2028.

1.2 – Wildfire Conditions in South Dakota

Owning and operating electrical assets presents inherent challenges. While fire is a natural part of many landscapes, the prevention of consequential wildfires is a top priority for many utilities, including NorthWestern. Understanding fire behavior, system configuration, asset health, and the impact of forecasted conditions are crucial aspects of successful wildfire mitigation strategies.

Fire behavior is the result of the interaction between fuels, weather, and terrain.¹ Fuels encompass flammable material such as grass, shrubs, timber, understory, agricultural crops, etc.² The type(s), density, and moisture content of available fuels impact flame length, intensity, and rate of spread. Fuel conditions change throughout the year in

¹ Scott, J. H. & Burgan, R. E. (June 2005). *Standard Fire Behavior Fuel Model: A Comprehensive Set for Use with Rothermel's Surface Fire Spread Model*. Rocky Mountain Research Station, U.S. Department of Agriculture. https://www.fs.usda.gov/rm/pubs_series

² U.S. Geological Survey (2024). *Annual NLCD Collection 1 Science Products*. U.S. Geological Survey data release. <https://doi.org/10.5066/P94UXNTS>.

South Dakota. In the weeks leading up to harvest, crops undergo moisture removal processes to limit spoilage during transport and storage. Dried fields can result in extreme fire behavior and conflagration. At other points in the year, these same fields could be irrigated, providing a natural fire break. The seasonality in fuel conditions associated with various land types is a critical component in fire mitigation and communication strategies.

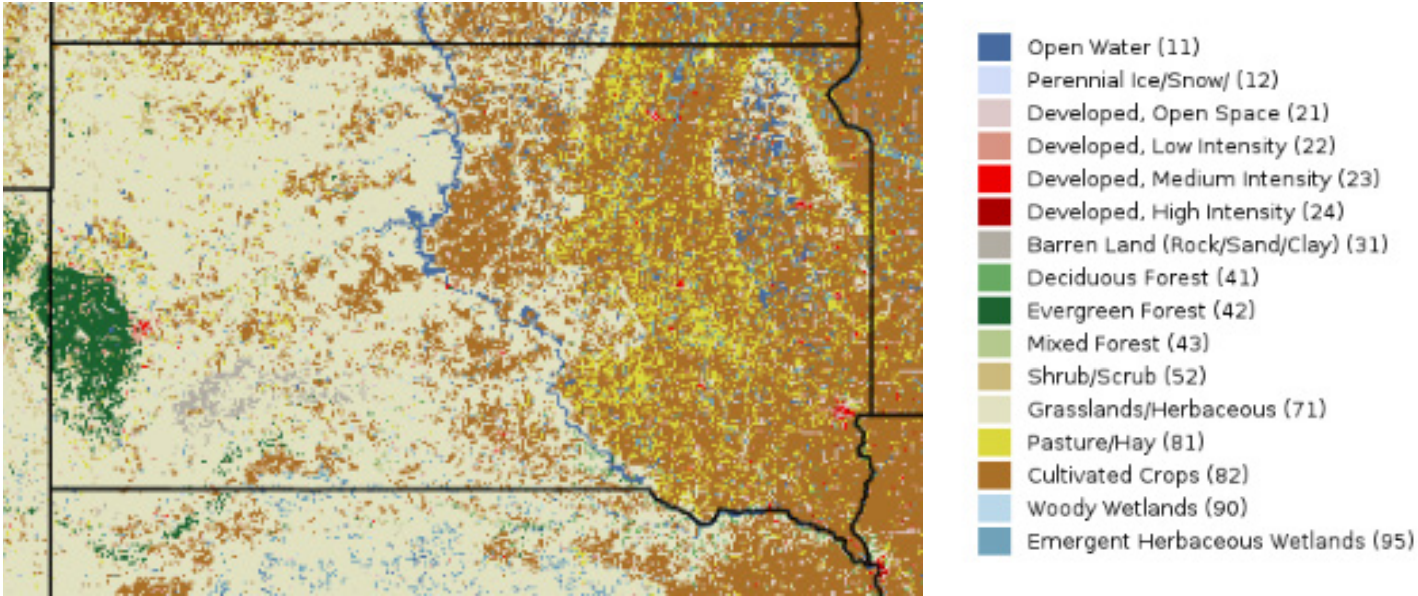


Figure 2: South Dakota NLCD Land Cover Types

The South Dakota service territory presents a unique set of challenges in terms of fuels present (Figure 2). Wildfire Consequence Modeling (WCM) reveals that fire spread is driven primarily by cultivated agricultural fields. These crops may be irrigated and possess high moisture content throughout early summer months. Prior to harvest, crops are cured and prepared for transport and storage. Ignition in a field, coupled with high wind speeds, could result in conflagration to structures. Additionally, high wind speeds can result in fire behavior known as ‘spotting’ in which embers are cast beyond the flaming front of the spread.³ Accurately assessing this risk is paramount in developing effective mitigation strategies.

1.3 – Modeling & Risk-Informed Decision Making

NorthWestern Energy utilizes its Suite of Tools to guide risk mitigation (Appendix B). These resources help identify locations in which electric facilities intersect with high-consequence areas, as established by a third-party fire spread model. The output of these models, in conjunction with input from subject matter experts (SMEs), are used to determine the most effective form of mitigation. The appropriate mitigation type is dependent upon the unique characteristics and risk profile of the line selected.

1.3.1 – Defining Wildfire Risk

NorthWestern defines wildfire risk as the combination of system probability and consequence. System probability is established using available historic data. This data can include outages, number of splices on the line, number of phases, exception history, and maximum span length. These factors approximate the aggregate likelihood of system-caused ignitions based on construction and performance characteristics.

Probability

&

Consequence

=

Risk

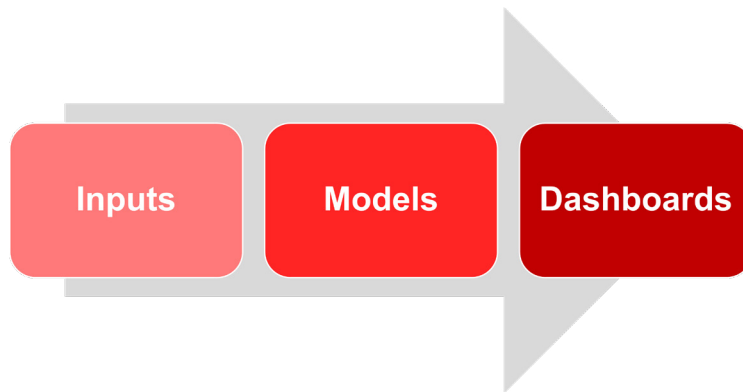
Consequence is produced from a third-party vendor through advanced fire spread simulation. The model simulates millions of ignitions under historical weather conditions, near NorthWestern’s electric facilities. The output of this model quantifies the average spread, number of structures impacted, and area for all fires simulated near each electric section. Model data is relative within the system in which it is simulated. As such, high-consequence areas in NorthWestern’s South Dakota service territory are not equivalent to high-consequence areas in other regions of South Dakota or surrounding states. Treating each service territory independently ensures that nuances within each region are addressed.

³ Scott, J.H. & Burgan, R. E. (June 2005). Standard Fire Behavior Fuel Model: A Comprehensive Set for Use for Rothermel’s Surface Fire Spread Model. U.S. Department of Agriculture Forest Service, Rocky Mountain Research Station.[fs.usda.gov/rm/pubs_series/rmrs/gtr/rmrs_gtr153.pdf](https://www.fs.usda.gov/rm/pubs_series/rmrs/gtr/rmrs_gtr153.pdf)

System probability values are also relative within their own systems. The transmission and distribution systems are distinct in terms of their construction, operations, and maintenance practices. While certain philosophies apply to both systems, differences exist in the data collection and management processes. Therefore, system probability values are based on the best available proxies of asset health for each system. The mathematical relationship between these values and consequence produces relative risk; from which, prioritization of mitigation projects can be established.

1.3.2 – NorthWestern’s Suite of Tools

NorthWestern’s Suite of Tools is a specialized framework consisting of internally developed products, models from third-party vendors, and open-source data (Appendix B). Components include inputs, models, and dashboards, all serving a unique wildfire mitigation purpose. Inputs represent standalone datum such as fuel conditions, forecasted weather conditions, or historical asset performance which quantify metrics for models. Models then synthesize these inputs through mathematical scoring logic processes or qualitative relationship modeling. Dashboards integrate inputs and models in a single user-interface which provides enhanced decision-making capabilities. The Suite of Tools provides a comprehensive, system-wide understanding of risks from which appropriate wildfire mitigation strategies can be implemented.



The Suite of Tools encompasses two primary functional modes, static and dynamic. Products are defined by the update frequency of their input data. Dynamic data is updated on a near real-time basis; which could be hourly, daily, weekly, or seasonally. Static data can be updated quarterly, biannually, or annually. Dynamic data is critical to drive operational mitigations during periods of elevated ignition risk. In contrast, long-range strategies like system-hardening require a historical understanding of performance and generalized forecast of future conditions. For these use cases, static models are more applicable because they are not influenced by the ‘noise’ of continual change. The primary models and dashboards outlined in the Plan include:

- **Wildfire Consequence Model (WCM):** a static resource that utilizes fire consequence modeling to quantify impacts to assets at risk within the service territories. This model simulates millions of fires ignited in proximity to overhead lines under historical wind and weather conditions using a fire spread model. This resource can be updated and rerun to align with advancements in fire science or modeling technologies.
- **Infrastructure Resilience Model (IRM):** a static model that integrates system probability and external consequence data to prioritize assets for various hardening and operational strategies. This model breaks the system into small sections on the distribution side, called ESIDs. There are more than 7,000 ESIDs in South Dakota. The transmission system is broken into five-mile sections. Breaking the system up in this manner allows risk to be quantified at every section to target mitigation for specific locations to ensure cost effectiveness. This model is updated on a regular basis, typically annually.
- **Wildfire Risk Index Model (WFRI):** a spatial dynamic risk model which combines fire weather indices, asset health information from the IRM, and consequence data from the WCM to drive NorthWestern’s EPSS Efforts.
- **Fire Weather Dashboard:** a dynamic dashboard which evaluates real-time weather and environmental conditions for associated EPSS and/or PSPS considerations.
- **Work Practice Dashboard:** a dynamic dashboard incorporating forecasted fire weather indices and burn restrictions to indicate which curtailment or adjustment methods may be appropriate based on NorthWestern’s Work Practices Matrix.

While each resource serves a dedicated, generalized purpose, NorthWestern can combine or enhance them beyond their original scope to better serve emerging needs within its service territory. The tools in their current state represent years of inter-departmental collaboration and external vendor expertise. The industry is constantly

innovating with new methods and technologies. Over time, models may change due to evolutions in best practices or validation. NorthWestern will evaluate models and technologies to find the most effective solutions for its service territory.

1.3.3 – Modeling Prioritization & Application

NorthWestern’s models drive dashboards which facilitate actionable mitigation strategies. The IRM is a core component of many strategies outlined within the Plan. The IRM identifies sections of lines whose corresponding system probability and consequence scores are above an established risk threshold. When surfaced by the model, these sections of line undergo assessment and engineering processes which aim to reduce the type of risk present at each unique location.

The IRM uses a simple quadrant system to designate risk profiles for each section of line and determine the most appropriate mitigation(s). Separate models are used for the distribution and transmission systems since the construction types and data collection processes vary between the two major voltage classes.

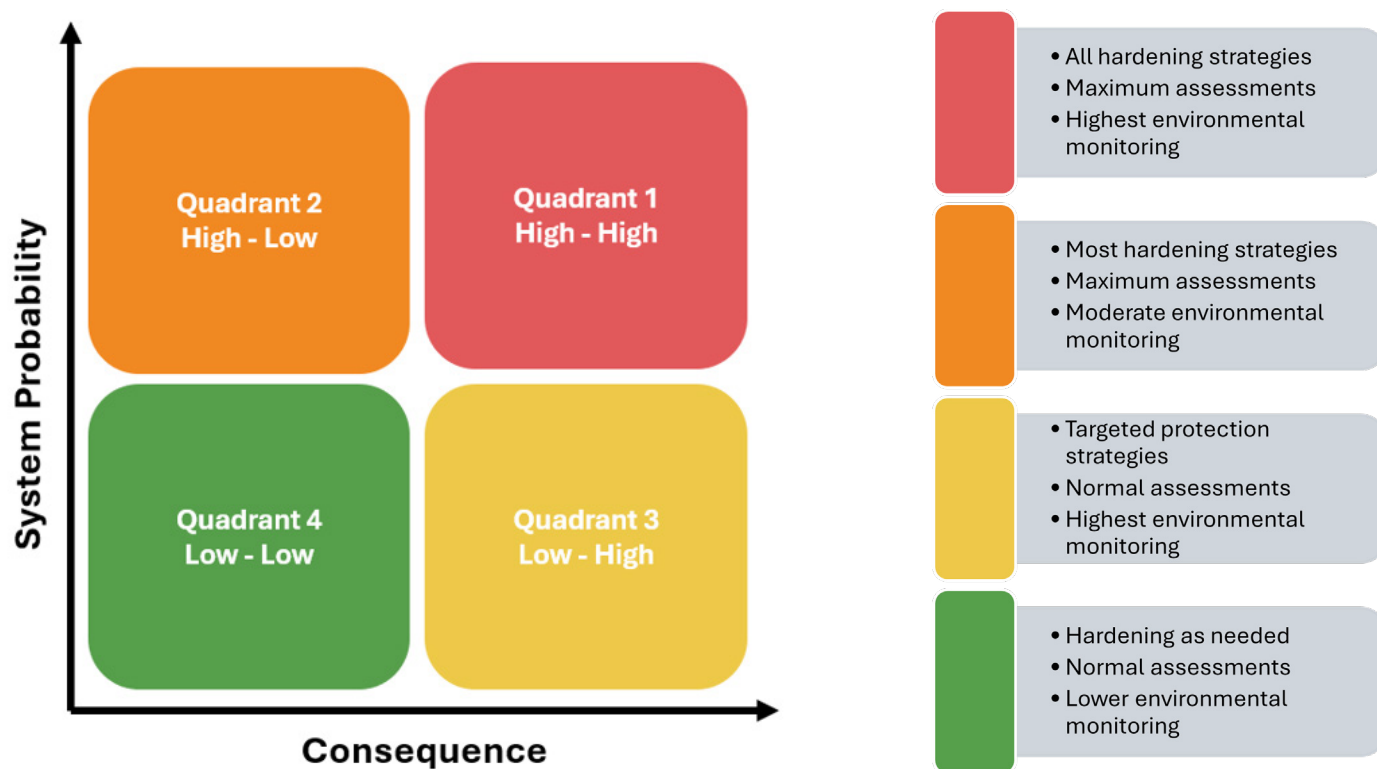


Figure 3: IRM Risk Categorization

Figure 3 illustrates the type of hardening, assessment, and environmental strategies best suited for each quadrant of the IRM. Generally, a higher system probability score indicates an increase in the likelihood of potential ignition-causing conditions. Ground patrol and assessments help identify early signs of failure and premature aging. Sections of line with a lower system probability score most likely have a younger asset life profile or excellent historical performance. These areas are still inspected thoroughly, but may not need additional system hardening compared to those with a higher system probability score.

Likewise, environmental monitoring practices are extended across the entire service territory. The extent to which depends on present risk factors and long-range ignition consequence as determined by the WCM. A section of line in an urban area might score as lower consequence due to the decreased likelihood of ignition propagation. However, residential landscaping can go dormant and lose moisture content much like natural fuels. Should these conditions occur simultaneously with extreme winds and low humidity, areas like these will receive additional monitoring scrutiny. Modified work practices, EPSS, or PSPS strategies can be applied as necessary.

Mitigation strategies are not uniformly cost-effective. Consider a newly constructed section of line that runs through a shelter belt of trees. This section of line may have an extensive outage history due to vegetation contacts. While resources could be spent to rebuild this line or underground it, the more affordable and effective strategy would be to increase vegetation management activities. The IRM provides a high-level overview of which mitigation strategies may be the most effective.

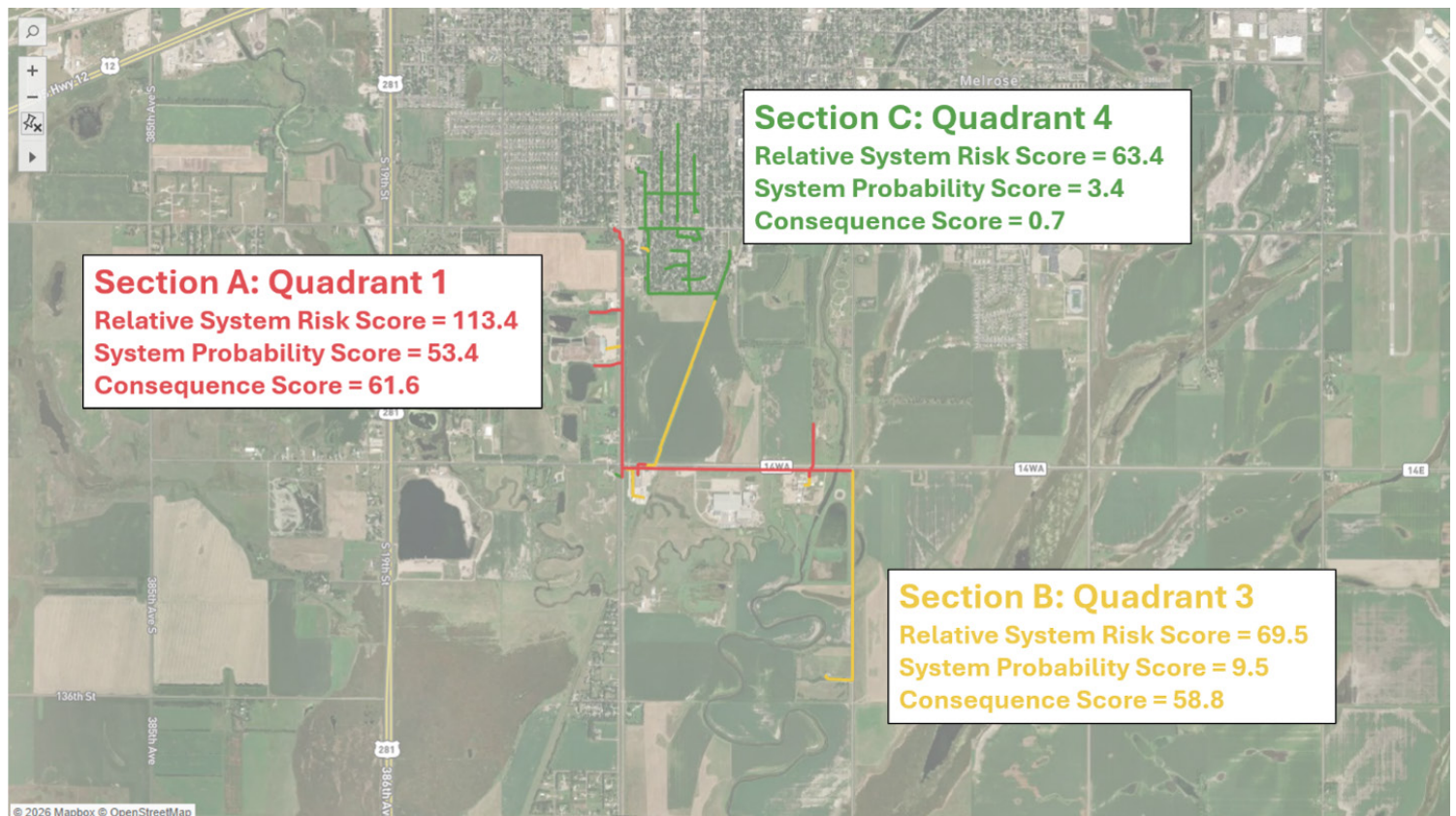


Figure 4: IRM Example Sections

Figure 4 illustrates 3 ESIDs found in the 2026 South Dakota Distribution IRM. Section A represents the highest level of risk. This ESID is a Quadrant 1 with a system probability score of 53.4 and consequence score of 61.6, both on a scale of 0-100. This ESID would receive maximum monitoring and assessments and also become a potential candidate for system hardening measures. Section B represents an ESID with excellent asset health, indicated by its low system probability score. The consequence score is above the threshold. Therefore, this ESID would be evaluated for targeted protection strategies and receive maximum monitoring. Ignition likelihood from the system is low. Should an ignition propagate, however, the potential impact of the fire would be consequential. Section C represents an ESID with excellent asset health and low risk of ignition resulting in a fire. Mitigation-wise, investments would be better spent to reduce higher risk sections elsewhere.

1.3.4 – Heightened Risk of Wildfire Proximal to T & D Assets

Several wildfire risk assessment maps are available for the state of South Dakota. These resources often model wildfire risk indiscriminate against cause. Fires can propagate for a variety of reason including lightning strikes, mechanical equipment, improperly extinguished controlled burns or campfires, and other anthropogenic causes.

NorthWestern has developed an internal wildfire risk model designed to address the relative likelihood of ignition propagation from its system. The IRM leverages a relative risk approach. It integrates available historical data, SME input, and statistical banding methods to compare the wildfire risk of individual sections relative to the rest of the system.

Two distinct models have been developed for South Dakota:

- Distribution (including 34.5kV)
- Transmission

Each model operates independently. As such, risk scores and quadrant designations within one model are not comparable to the other model. The results presented herein were produced in July 2026 using available consequence and asset health data. All models are subject to change over time as refinement and updates become available. The IRM is generally updated on an annual basis to reflect changes in outage data and inspection records.

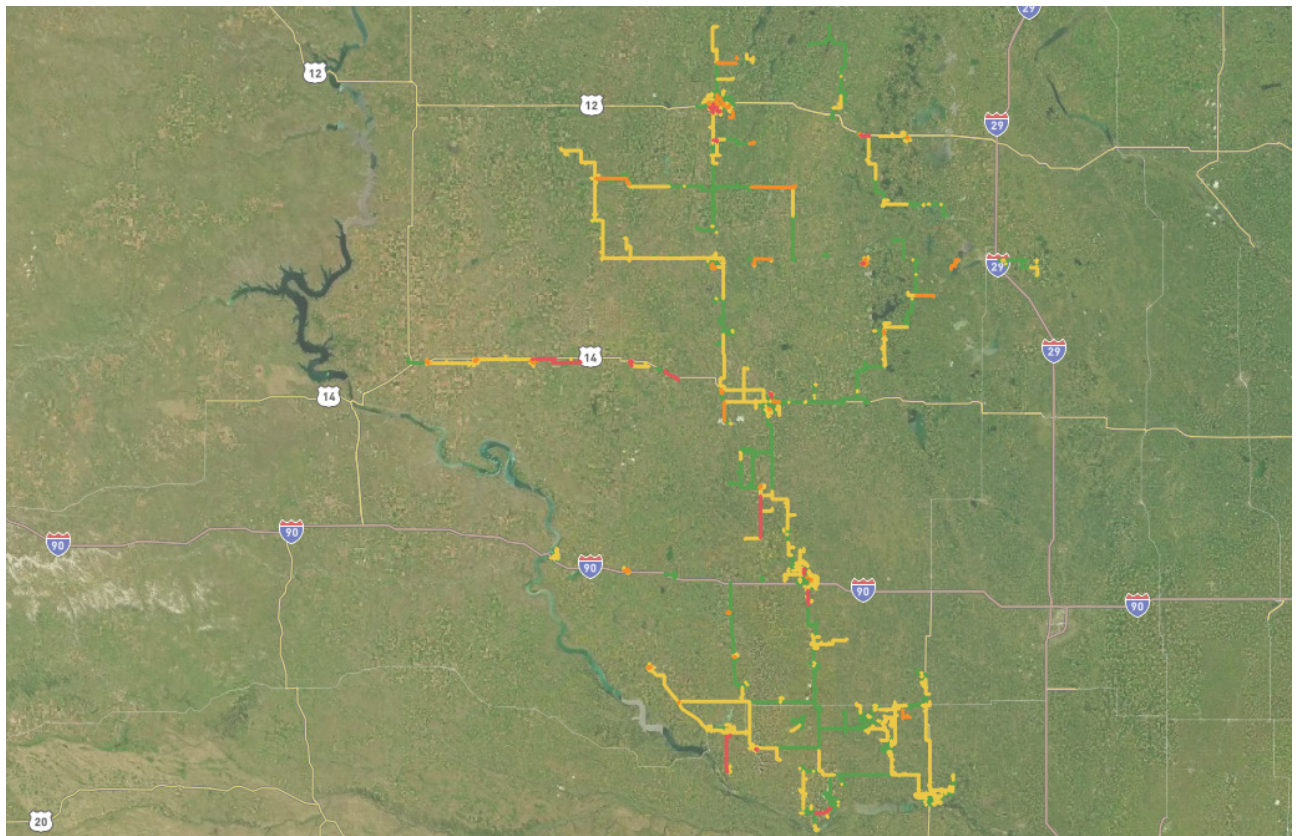


Figure 5: 2026 South Dakota Distribution IRM Map

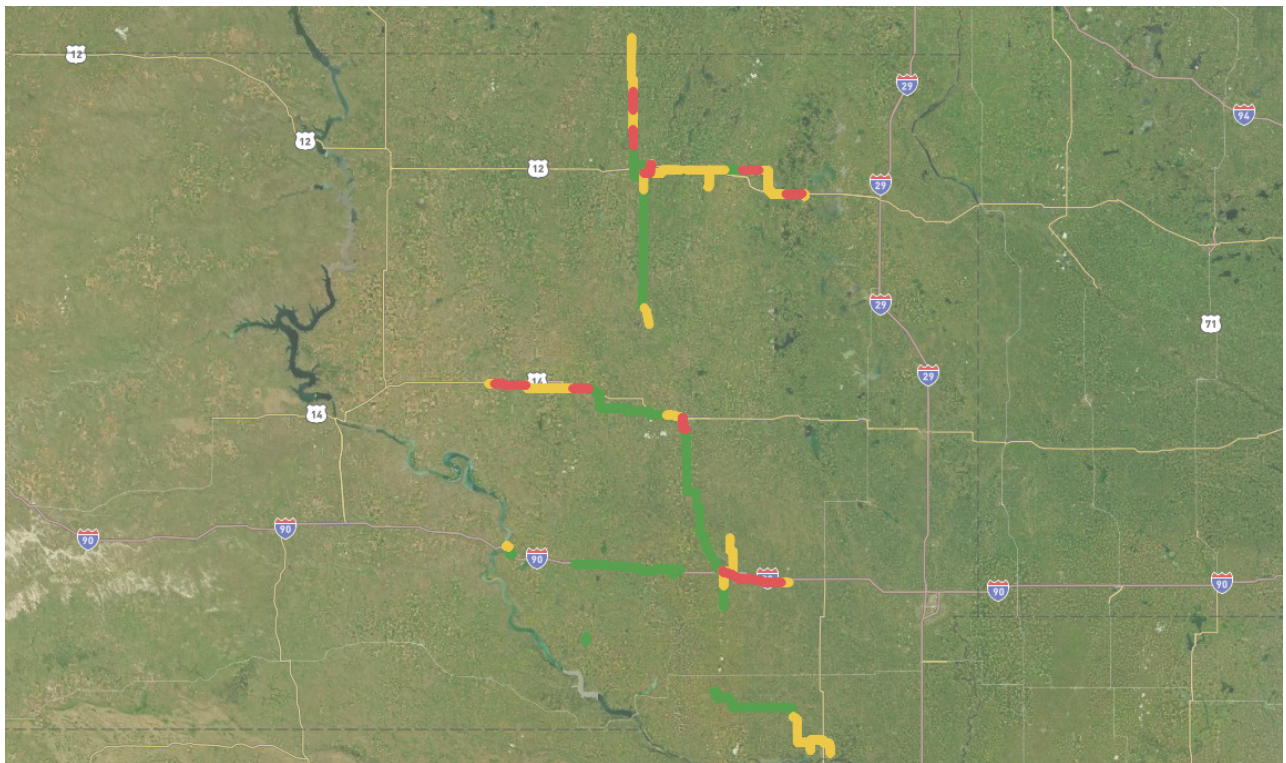


Figure 6: 2026 South Dakota Transmission IRM Map

The sections of line shown in red are categorized as Quadrant 1. Areas surrounding these assets are considered to be at a heightened risk of wildfire from electrical infrastructure as compared to other areas within the service territory. Figures 5 and 6 show the sections of the line on the transmission and distribution systems which may be subject to a heightened risk of utility-caused wildfire.

1.4 – Wildfire Mitigation Plan Methodology

Successful wildfire mitigation requires multilayered strategies to comprehensively reduce the risk of high consequence fires from electrical facilities and related operations. NorthWestern has established decades of experience in proactively operating and maintaining electrical facilities to maintain reliable service. NorthWestern has established the objectives of this Plan through this extensive history and a clear understanding of areas of increased wildfire risk within its service territories (Figure 7).

WILDFIRE MITIGATION PLAN OBJECTIVES

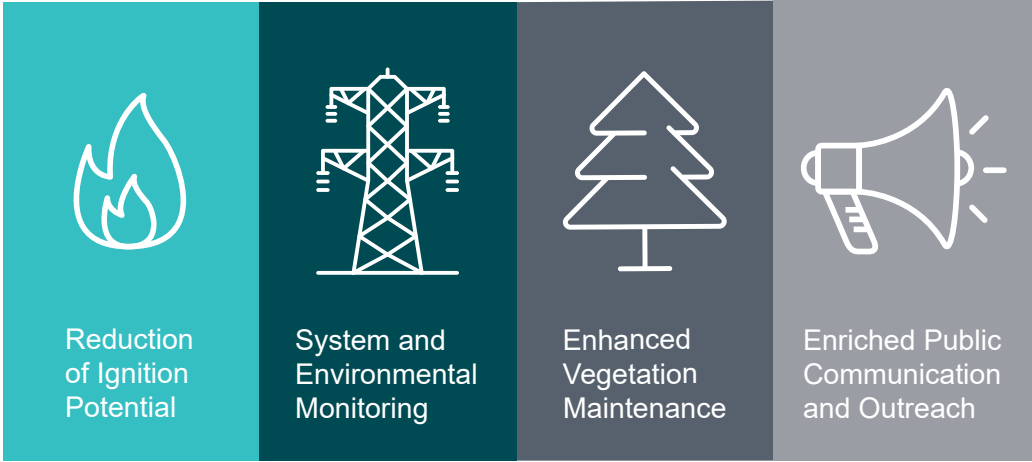


Figure 7: Four Objectives of the Plan

The four objectives provide a foundation upon which specific strategies can be targeted and deployed. No single strategy, in isolation, is effective in eliminating all risks. The five categories of the Plan were formed to integrate the four objectives into a holistic mitigation philosophy. Each category provides coverage within more than one of the objectives identified (Table 1). This ensures that mitigation efforts are disseminated prudently across all areas of risk within the service territory.

Plan Category	Ignition Potential	System & Environmental Monitoring	Vegetation Management	Communication & Outreach
Situational Awareness				
Operational Practices				
System Preparedness				
Vegetation Management				
Communication & Outreach				

Table 1

Section 2 - Category Summary and Activities

Wildfire Mitigation Plan Summary
WMP Categories and Goals

Section 2 – Category Summaries & Activities

2.1 – Wildfire Mitigation Plan Summary

NorthWestern has a long-standing history of diligent asset maintenance. While many reliability and compliance-based strategies have also been effective at reducing the risk of ignition, it has become evident that targeted wildfire mitigation activities are necessary. The Plan consists of five key categories with investments budgeted and forecasted for years 2026-2028 (Appendix C). The forecasted investments are based on operational and engineering knowledge honed through decades of established practices. Overtime, strategies may need to adapt to reflect changes in industry best practices or lessons-learned from evolving WMP maturity. NorthWestern is committed to continuous improvement of its system as a means to continue serving customers safely and reliably.

2.2 – WMP Categories and Goals

Situational Awareness

Situational Awareness describes continual analysis and monitoring of changing conditions within the service territory, which ensures NorthWestern can respond accordingly with its Operational Practices.

- Established Wildfire Operations department with responsibility to monitor the South Dakota service territory
- Real-time assessments from the Situational Awareness team with resources including meteorological, GIS analysis, and fire behavior expertise
- Cutting edge technology
 - ↳ WCM to simulate projected fire spread throughout the service territory
 - ↳ WFRI dashboard to identify operational zones which may require EPSS
 - ↳ Smoke detection cameras and weather stations which provide early warning and detection of potential events
 - ↳ Forecasted weather outlooks developed with open source and private models

Operational Practices

Operational Practices are preventative strategies which can be applied system-wide to modify functions commensurate with the level of risk present.

- System Performance team with responsibility to monitor the South Dakota service territory
 - ↳ Formalization of Momentary Interruption Review Program
 - ↳ Field follow-up of momentaries to be completed by local personnel
- EPSS guided by the WFRI dashboard; developed by the Situational Awareness team
- Formalization of PSPS strategy, tailored to the service territory
- Adherence to Work Practices guidelines, as determined by the Work Practices Matrix
 - ↳ Routine training of personnel prior to fire season to enhance awareness of proactive and reactive measures to mitigate the risk of ignition.

System Preparedness

System Preparedness describes the targeted hardening measures taken proactively to mitigate potential ignition-causing conditions present in electrical infrastructure.

- Construction hardening projects guided by IRM results
- Development of Cutout Refurbishment and Inventory programs
- Routine asset inspections
 - ↳ 100% of Distribution inspected annually
 - ↳ 100% of Transmission inspected annually
 - ↳ P1 exceptions to be repaired within 12 months from the date of collection where feasible
- Installing and replacing line devices in key high-risk areas



Vegetation Management

Vegetation Management addresses the hazard of vegetation contacting energized electrical facilities. This simultaneously improves customer reliability while decreasing the risk of ignition potential.

- 100% of distribution line miles assessed on a 24-month cycle
- Formalization of transmission assessment data collection process
- Continuation of proactive cycle trimming activities
 - ↳ Additional proactive trims of feeders identified as high-risk
- Collaboration with landowners and agencies

Communication & Outreach

Communication & Outreach encompasses proactive public education and collaboration with partner agencies; in addition to the real-time distribution of key information during potential safety events.

- Broad reach advertisement campaigns prior to fire season
- Development of relationships with key stakeholders
 - ↳ Local Emergency Planning Committees (LEPCs)
 - ↳ Local, state, and federal agencies
 - ↳ Public safety providers
- Formalization of the PSPS communication channels and public dissemination of relevant information

Section 3 – Situational Awareness

- Overview
- Situational Awareness Team
- Modeling and Analysis
- Realtime Monitoring



Section 3 – Situational Awareness

3.1 – Overview

Situational Awareness describes the year-round monitoring and analysis of the service territory and operating environment. Long-range risk models, like the IRM, are beneficial in quantifying generalized risk across the system. Whereas understanding real-time factors, such as fuel conditions, helps identify areas of heightened risk within the service territory. Situational Awareness activities help identify the forecast or presence of certain conditions which may reflect elevated wildfire risk. Weather conditions, such as high winds and low relative humidity, in conjunction with dried fuels, may necessitate the modification to system operating conditions or work practices. Situational Awareness activities aim to enhance system visibility, facilitate early detection, and monitor forecasted conditions.

Key Activities:

- Observation and analysis from the Situational Awareness team, whose resources include:
 - ↳ A Meteorologist, GIS analyst, and Wildfire Specialist
- WCM produced by an external vendor, specializing in fire science
 - ↳ Weather monitoring zones in identified Tier 3 areas
- Dynamic forecasting tools which assess conditions and guide Operational Practices
- Installation of wildfire detection cameras and weather stations

3.2 – Task Activities

3.2.1 – Situational Awareness Team

NorthWestern employs Situational Awareness personnel to monitor changing conditions. These personnel provide vital expertise including skills in meteorology, geospatial data analytics, and fire behavior. NorthWestern regularly evaluates staffing needs to ensure the team is equipped to handle the unique issues present within the service territories.

The Situational Awareness personnel evaluate environmental trends, weather conditions, and comprehensive wildfire risk. The team will collaborate with local operations leaders and ensure appropriate measures are taken to avoid unnecessary risks.

Decisions are supported by a variety of tools including fire spread simulations and real-time weather data. The installation of weather stations will provide additional accuracy to an existing network of open-source stations. Fire detection cameras will enhance system visibility and provide early ignition detection. The combination of fire spread modeling, real-time condition data, and SME knowledge will help define weather monitoring zones and areas which may be subject to modified Operational Practices in the event of high-fire risk conditions.

3.2.2 – Modeling and Analysis

NorthWestern's Suite of Tools contains a variety of products which are adept at analyzing weather conditions and potential hazards. Advanced fire simulations provide an understanding of which areas within the service territory may elicit more intense fire behavior compared to simulated ignitions from other areas of the system. The WCM is produced by a vendor specializing in fire spread simulations. This model simulates ignitions originating near NorthWestern's electrical facilities, and quantifies the spread, impact, and intensity under different weather scenarios. Portions of the system identified as Tier 3 represent the highest consequence derived from the model. Tier 2 tranches represent moderate risk. Tier 1 represents areas of lower risk, relative to the rest of the South Dakota system.

The WCM is beneficial for estimating consequence across the service territory given historical prevailing weather patterns. Real-time tools are necessary to understand present conditions which may differ from simulations based on windspeeds, fuel types, and system configuration. Installation of weather stations in key areas will provide the Situational Awareness team with enhanced clarity of current and forecasted weather conditions. These additional weather stations will complement existing open-source data by refining spatial and temporal resolutions.

3.2.3 – Realtime Monitoring

The various types of models and analysis can help drive Operational Practices. Sections of line identified as Tier 3 by the WCM receive additional focus during periods of elevated ignition risk. Fire metrics such as the USFS Severe Fire Danger Index (SFDI), Burning Index (BI), Energy Release Component (ERC), or internally computed Fire Potential Indices (FPIs) help identify areas of risk.⁴⁵ Analysis of these metrics and other qualitative factors by the Situational Awareness team can guide recloser settings or recommend work curtailment. Weather conditions may vary significantly throughout the service territory. Visibility into conditions at precise locations ensures that appropriate actions are taken to mitigate wildfire risk.

The installation of wildfire detection cameras will allow NorthWestern and its public safety partners to respond more rapidly to ignition events. These cameras can help detect fires regardless of cause.

⁴ Jolly, M. W., PhD, et al. (2019). *Severe Fire Danger Index: A forecastable metric to inform firefighter and community wildfire risk management*. U.S. Department of Agriculture Forest Service, Rocky Mountain Research Station. <https://doi.org/10.3390/fire2030047>

⁵ Jolly, M. W., PhD, et al. (2024). *Modernizing the US National Fire Danger Rating System (version 4): Simplified fuel models and improved live and dead fuel moisture calculations*. U.S. Department of Agriculture Forest Service, Rocky Mountain Research Station. <https://doi.org/10.1016/j.envsoft.2024.106181>

Section 4 – Operational Practices

Overview

System Performance

Operational Defense Strategies

Enhance Powerline Safety Settings (EPSS)

Public Safety Power Shutoffs (PSPS)

Work Practices & Internal Training

Section 4 – Operational Practices

4.1 – Overview

Operational Practices include adjustments to the system and curtailment of work in the field in response to Situational Awareness recommendations. Advanced technologies and observations from personnel in local areas can help determine which precautions should be taken. Response to atypical conditions allows NorthWestern to balance reliability and the paramount concern of fire avoidance. During periods of elevated ignition risk, it may become necessary to postpone work on the system or select settings which may result in temporary impacts on customer reliability.

Key Activities:

- Development of Momentary Interruption Review Program
 - ↳ Investigation of momentaries to mitigate potential ignition-causing conditions
- EPSS guidelines to prioritize safe reclosing during adverse conditions
- Formalizing of PSPS strategy as a measure of last resort during high-risk events
- Regular updates to Work Practices matrix to inform safe decisions in the field
- Enhanced employee training regarding proactive ignition prevention and reactive responses to public safety events
- Development of a mobile generator deployment strategy to mitigate the impacts of impaired reliability resulting from ignition-avoidance measures

4.2 – Task Activities

4.2.1 – System Performance

Momentary interruptions are fault events on the system that do not result in a sustained outage. Consider a hypothetical scenario in which a tree branch falls into a line. This phase-to-phase or phase-to-ground contact would result in a fault, recognized by an upstream protective device, such as a recloser. If the branch falls out of the line before the recloser's final attempt to re-energize, then a sustained outage, requiring manual restoration would not occur. Instead, customers on the line would see a temporary 'blink' in their power, lasting less than five minutes. This event, however, could still cause an ignition. Therefore, it is necessary to track and monitor these events.

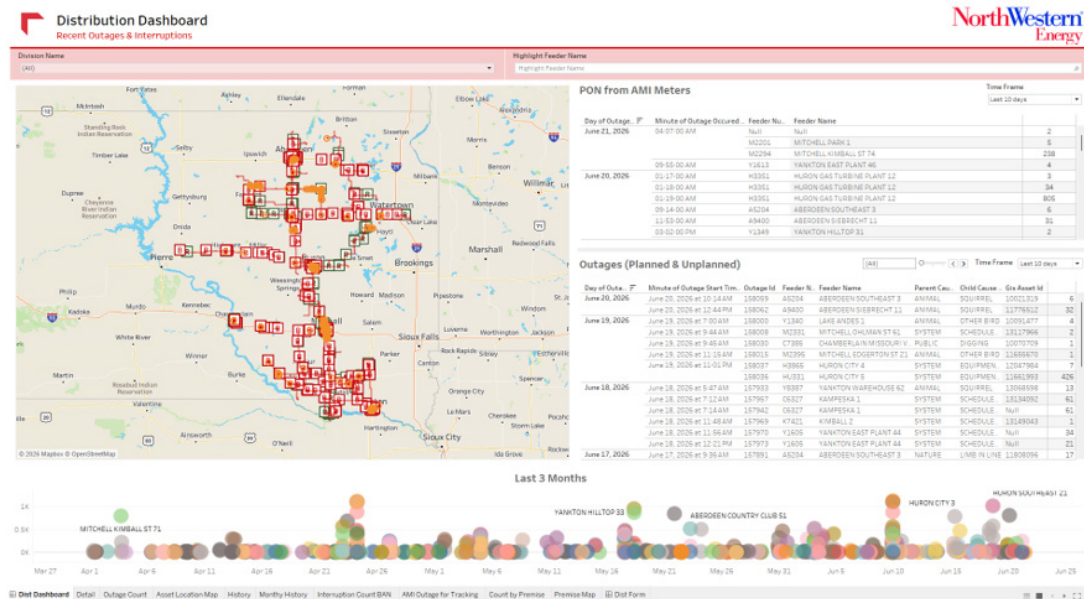


Figure 8: Example of Momentary Interruption Investigation Dashboard

The System Performance team will investigate momentaries to identify areas of concern and mitigate potential ignitions before they occur. Investigation of momentaries benefits both customer reliability and wildfire risk. During this Plan cycle, the System Performance team will formalize data flows and processes for effective follow-ups. Engineers will work in conjunction with field personnel to identify issues and develop remediation strategies unique to the conditions of the assets present.

Public Safety Power Shutoff (PSPS)

PSPS involves proactively de-energizing electrical infrastructure as a means of avoiding potential ignition events. This strategy is a measure of last resort for many utilities. NorthWestern prides itself on reliable service to its customers. However, there may be situations in which the operational risk is unacceptably high and de-energization becomes the necessary action to prioritize safety over reliability.

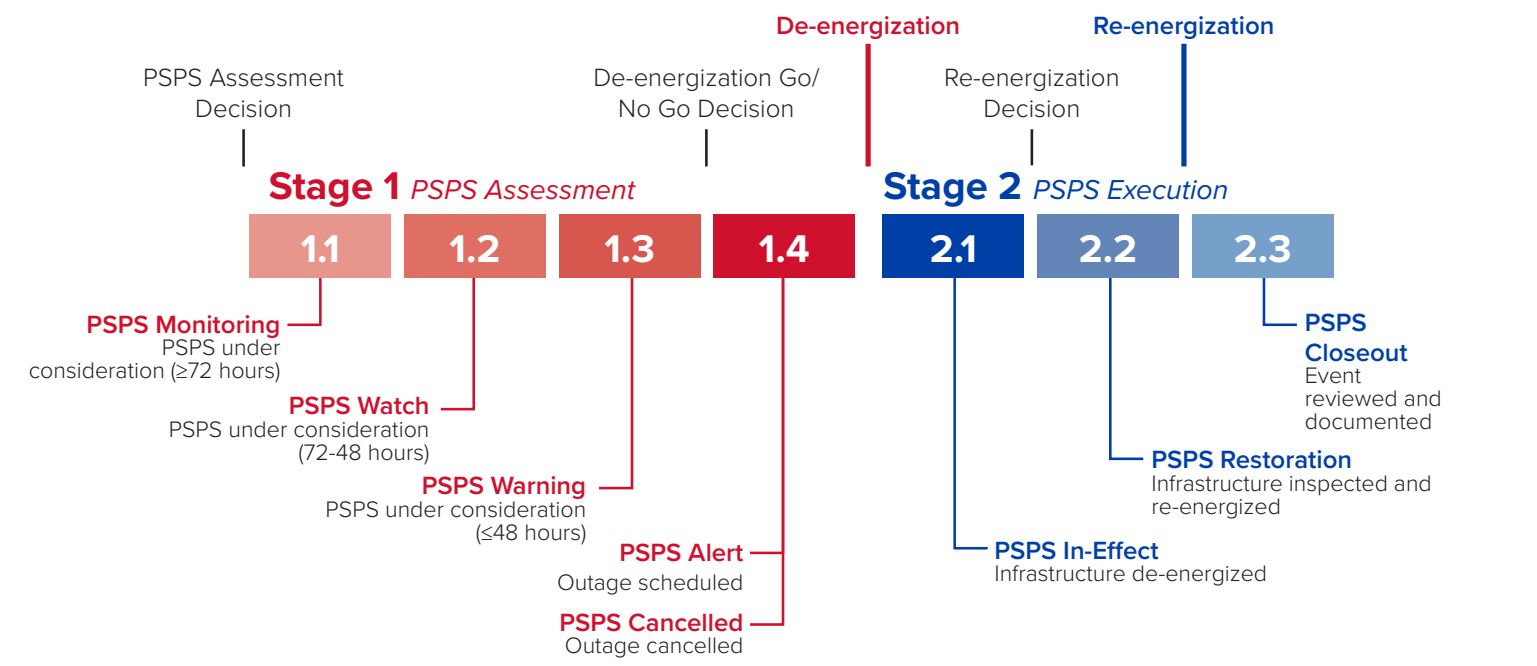


Figure 10: NorthWestern Energy PSPS Timeline

The PSPS strategy is a sequential process consisting of 2 key stages. Situational Awareness functions are performed across the entire system, year round. NorthWestern evaluates appropriate precautions as forecasts begin to reveal conditions which may result in increased wildfire risk. Proactive measures, such as EPSS or work curtailment, may be sufficient to mitigate risk. PSPS Stage 1 begins when the Situational Awareness team determines risk conditions are unacceptably high. This decision is informed by relevant models and SME input. This Stage would most likely occur 72 hours before the potential de-energization and progress through 4 distinct phases within Stage 1. PSPS Stage 2 begins when proactive de-energization occurs. The duration and geographical scope of Stage 2 is dependent upon the unique factors of the present conditions. Ideally, the stepwise process of PSPS occurs with ample warning between each step. Expedited timelines may be necessary in the presence of extreme conditions.

Asset failures can still occur with de-energized equipment. High winds can snap poles and result in downed conductors and vegetation can fall through lines. Restoring power in these instances could result in accidental ignitions when facilities are brought back into service. Therefore, NorthWestern plans to manually patrol de-energized segments to verify functionality prior to safely restoring power to its customers. Crews will visually inspect equipment and rights-of-way to ensure normal operating conditions and rectify any failures identified. The restoration timeline could be significant depending on the damage that occurred. NorthWestern may deploy emergency resources, such as mobile generating units, to restore service to critical infrastructure in the event of catastrophic, prolonged interruptions.

Work Practices & Internal Training

Construction and maintenance on the system is a key pillar to NorthWestern’s successful reliability metrics. Throughout the year, crews respond to unplanned outages and work proactively to upgrade infrastructure. Like other Operational Practices, the presence of heightened wildfire risk on the system can necessitate adjustments or curtailment of work.

NorthWestern Energy Risk and Work Practices Matrix:	
SEVERE	No Non-Emergency Work All Emergency Work Needs Approval Follow Wildland Fire Restrictions Including Exemptions Utilization of Prevention Field Practice Required
VERY HIGH	Non-Emergency Work Approval Required Follow Wildland Fire Restrictions Including Exemptions Utilization of Prevention Field Practice Required
HIGH	Proceed with Work Follow Wildland Fire Restrictions Including Exemptions Utilization of Prevention Field Practice Required
LOW/ MODERATE	Proceed with Work Follow Wildland Fire Restrictions Including Exemptions
Risk and Work Practices Matrix Legend:	
Proceed with Work	Normal operating procedures including tailboard documentation
Wildland Fire Restrictions	See Fire Restrictions for your work area, and check with supervisor for possible exemption to restrictions: Montana Fire Restrictions Dashboard . South Dakota check with you local counties.
Utilization of Prevention Field Practices	Review and must use Prevention Field Practices See below:
Non-Emergency Work	Work that is not deemed emergency work as determined by *Division Operations Supervision
Emergency Work	Work that is deemed emergency work as determined by *Division Operations Supervision
Work Approval required*	Work to be done must be approved by *Division Operations Supervision (Division Manager, Electric Supervisor, Gas Supervisor, Ops Planning Supervisor)
<u>NO</u> Non-Emergency Work	No work unless determined emergency and approved by Division Operations Supervision

Figure 11: NorthWestern Energy Risk and Work Practices Matrix

Wildfire metrics such as the Severe Fire Danger Index produced by the United States Forest Service can indicate when it may become appropriate to make modifications. Figure 11 represents example risk levels and corresponding work adjustments. Features of urban areas including infrastructure like roads or concrete sidewalks can decrease the likelihood of ignition propagation. Urban Exclusion Areas provide safer work environments and can therefore support work under more extreme conditions than areas outside of the built environment.

The Work Practices matrix is complemented by the Work Practices Dashboard, a helpful resource which is updated daily using the best-available fuels and weather conditions. These tools and other relevant resources are available to crews in the field via company issued mobile devices. Personnel are encouraged to use discretion when approaching an area for work. Crews can follow the Stop Work Authority at any time when conditions are deemed to be unsafe. Ignitions can still occur from non-electrical work functions including driving through dry grass to access easements. These guidelines apply to all activities, including gas and related utility functions.

NorthWestern employees are required to complete regular trainings on wildfire risk and associated proactive and reactive measures. This training covers basic fire terminology, identification of fire behavior risk, use of standard tools, and methods of extinguishing potential fires ignited from work related activities. Service trucks are equipped with fire extinguishers. During periods of elevated ignition risk, crews may bring along water tanks or additional mitigation resources. NorthWestern's Suite of Tools includes a variety of relevant apps which field crews can utilize to inform themselves of current conditions and modification guidelines. These trainings equip employees to respond to risks they may encounter in the field and prepare them to answer customer questions regarding NorthWestern's wildfire mitigation activities.

- Overview
- Assessment & Repair
 - Ground Patrol & Assessment
 - Exception Repairs
 - Rejected Component Repairs
- Inventory
- Construction
- Line Device Upgrades
- Remote Fault Sensing Technology
- Section Hardening
- Cutout Refurbishment



Section 5 – System Preparedness

5.1 - Overview

Hardening the system to withstand extreme conditions is the first line of defense for many utility wildfire mitigation programs. NorthWestern has an extensive history of system hardening programs designed to improve reliability metrics and proactively address compliance issues. As a result, NorthWestern's South Dakota operations consistently rank within the top quartile for customer reliability (Appendix A). Prevention of ignition-causing conditions proved to be an auxiliary benefit.

NorthWestern recognizes the importance of supplementing historical reliability programs with additional ignition mitigation strategies. Effective mitigation examples include strategic deployment of advanced technologies on the transmission and distribution system, replacement of aging infrastructure, routine inspections of the system, and reframing to prevent conductor clash and avian contacts. The best hardening strategies are unique to each group of assets identified.

Key Activities:

- System-hardening initiatives targeted at addressing ignition-causing conditions
 - ↳ Cutout Refurbishment and Section Hardening Programs
- Bolstered ground assessment and repairs, going beyond the scope and cadence of historical programs.
- Development of an Inventory Program to identify specific components which may present an increased risk of ignition
- Advanced line technologies
 - ↳ Installation of electronic reclosers in strategic replacement and sectionalizing locations
 - ↳ Installation of remote fault sensors to enhance troubleshooting and root cause analysis

5.2 – Task Activities

5.2.1 – Assessment & Repair

NorthWestern has a long-standing history of routine asset inspection on its transmission and distribution systems. Routinely assessing infrastructure for deficiencies helps proactively mitigate reliability and compliance issues. Resources were allocated as necessary to resolve system issues.

Ground Patrol & Assessments

System Preparedness assessments go above and beyond these established practices. Ground patrols and assessments will be performed at an increased cadence to better track aging infrastructure on the system. Qualified resources will inspect 100% of distribution and transmission systems annually; denoting corrective actions for repair on the system.

The transmission system has historically been inspected on a regular basis, with exceptions being resolved as needed. System Preparedness efforts will be focused on formalizing the data collection and documentation processes.

Exception Repairs

The Plan calls for addressing applicable corrective actions within 12 months from the date of collection were feasible.

Rejected Component Repairs

Transmission structure components that are identified during these inspections will be prioritized for repairs. In the event components are rejected, but the pole remains in good condition, the identified assets will be replaced in conjunction with other construction activities in that location. This process will be formalized to enable proactive replacement into the future.

Inventory

NorthWestern is developing a process to identify and catalogue specific components in the field which may present an increased risk of system-caused ignitions. Tailored strategies will be developed for the transmission system starting in 2027, and the distribution system starting in 2028. Identification of these components will enhance engineering efforts under the construction section described below.

5.2.2 – Construction

Hardening the system with advanced technologies or more robust construction can be one of the most cost-effective long-term investments in wildfire mitigation. Construction activities enhance the system's ability to withstand adverse conditions.

Line Device Upgrades

Strategies like EPSS exist to reduce the likelihood of ignition in the event of a failure by operating devices in a sensitive detection mode. Installing reclosers in strategic locations can complement hardening efforts by providing flexibility of system performance. The installation of line devices, like reclosers, is a part of System Preparedness activities.

Line Devices will be installed in strategic replacement or sectionalizing locations in high-consequence areas. Existing line devices like hydraulic reclosers provide sectionalizing and protective functions, which include the ability to disable automatic reclosing. Modern, electronic reclosers have additional features like fault data retention, increased flexibility to enable sensitive protection settings, improved visibility into the system, and the ability to operate remotely.

Remote Fault Sensing Technology

Existing protective devices like fuses, reclosers, and substation equipment can help identify an approximate location of a disturbance on a line. Modern advances in fault sensing technology enhance troubleshooting capabilities. Fault sensors and other remote technologies can help reduce the time to restore an outage and help identify causes of momentary interruptions. Installation of these devices will be prioritized in high-risk zones.

Section Hardening

Hardening programs will address deficiencies in the system through rebuilding targeted portions of the system. This will be done at the ESID for distribution, and five-mile segment level for transmission. The IRM will surface candidate sections for initial engineering reviews. Engineers will analyze conditions which may be prone to failure and develop an applicable scope of work for a hardening project. Each project will be unique to the portions of the system identified. Common solutions include installing a pole midspan to eliminate risks associated with long spans, replacing existing poles to current construction standards, upgrading conductor, replacing porcelain cutouts, and in some cases, undergrounding.

Cutout Refurbishment

All cutouts are susceptible to damage, such as cracking, which can result in the mechanical failure of the asset to properly insulate the system. The utility industry has observed porcelain cutouts to experience cracking at an unacceptably high rate. This initiative will proactively replace identified porcelain cutouts with a polymer alternative. These assets are being identified in conjunction with the inventory program to appropriately allocate resources.

Section 6 – Vegetation Management

Overview

Proactive Wildfire Cycle Trimming

Distribution O1 Hotspots

Section 6 – Vegetation Management

6.1 – Overview

NorthWestern has a long-standing vegetation management program across all service territories. Vegetation management strategies are adapted to fit regional needs. The South Dakota electric systems are inspected on approximately a 24-month cycle, ensuring top tier reliability and compliance. The land cover in eastern South Dakota is primarily comprised of Cultivated Crops, Pasture/Hay, and Grasslands. Small pockets of riparian wetlands are among the only naturally occurring forests within the service territory. Therefore, vegetation management targets urban forests, proximal to electric facilities, such as shelter belts, windbreaks, and ornamental trees used for landscaping.

Species of ash trees which are commonly utilized in urban landscaping applications are at risk of infestation from the Emerald Ash Borer. This invasive beetle species has a range which extends into southeastern South Dakota. Stressed trees are especially susceptible to larval infestation, however, healthy trees can also become affected in concentrated ash stands. Landscaping trees can have low genetic diversity which impacts resiliency and can result in dead branches or whole tree failure. Addressing diseased ash trees within striking distance of electrical facilities can help reduce the risk of ignition, while simultaneously mitigating threats to reliability. Vegetation funding outlined in the Plan will be incremental to existing practices. Activities will go beyond established work to address areas wherein tree growth, proximal to electric facilities, intersects with high consequence zones.

Key Activities:

- Additional proactive cycle trimming targeted at high-consequence distribution circuits and transmission segments
- Remediation of vegetation exceptions discovered during Ground Patrol & Assessments
 - ↳ 100% of O1 hotspots addressed within 12 months where feasible

6.2 – Task Activities

6.2.1 – Proactive Wildfire Cycle Trimming

Proactive cycle trimming occurs on a scheduled basis, approximately every five years. This can be modified depending on resource availability and the regrowth timeline of tree species. Vegetation contact with electrical facilities is commonly driven by whole-tree or whole-limb failure. Trees beyond the right-of-way, or limbs with adequate clearance, may still pose a risk under adverse conditions like high winds. Proactive cycle trimming helps address vegetation before it impacts reliability or ignition probability.

The Vegetation Coordinator and associated resources work closely with private landowners to ensure trees within the right-of-way or potentially at risk of a fall-in, are addressed before issues occur. This could include more aggressive trimming or tree removal. The incremental costing outlined in the Plan will allow for select distribution circuits and transmission segments to be trimmed at an increased frequency. This funding will help proactively maintain clearances on the transmission and distribution systems.

Consequence in the South Dakota service territory is influenced by the proximity of cultivated fields to structures. Generally, these fields do not have trees near electric facilities. Vegetation proximal to rights-of-way tends to exist surrounding urban areas with lower consequence values. The Suite of Tools will be leveraged to identify distribution circuits and transmission segments which present high-consequence values and have trimmable vegetation.

6.2.2 – Distribution O1 Hotspots

Qualified vegetation resources inspect the electric system approximately every 24 months. Frequent observation of the system enables small vegetation issues to be resolved as they are found. Ground Patrol & Assessments, outlined in the System Preparedness section, provide additional review of the system. Vegetation exceptions are noted during this process. Vegetation exceptions, such as encroachment into clearance zones, are addressed within 12 months where feasible. Ground Patrols & Assessments will cover 100% of the distribution and transmission systems annually, as outlined in the System Preparedness section of the Plan. The existing vegetation assessments allow internal crews to address vegetation issues as they are identified.

Historical proactive maintenance activities have been effective in achieving top tier reliability. Additional proactive maintenance programs are necessary to further reduce ignition potential in high-consequence areas.

Section 7 – Communication & Outreach

Overview

Customer Engagement

Print & Media Communication

PSPS Readiness

Partnerships & Additional Outreach

Public Safety Partners & Wildfire Summit

Peer-Utility Collaboration

Section 7 – Communication & Outreach

7.1 – Overview

Communication & Outreach activities enable NorthWestern to interface with customers, members of the public, and public safety partners. The Plan will dedicate funding to develop and distribute educational resources that promote awareness of wildfire preparedness actions, increase understanding of the PSPS strategy, and support the facilitation of stakeholder collaboration events.

Existing resources like the Outage Map and Voice Response Unit serve as vital channels of communication during all stages of a potential event. Customers can access the outage map during an interruption to learn about the location of an outage and estimated restoration time. NorthWestern provides a variety of additional resources on its website including emergency contact resources, natural disaster preparedness tips, utility safety educational resources, and instructions on updating contact information through Preference Center.

The Plan will allocate funding to help further educate customers about wildfire mitigation efforts and facilitate collaboration with public safety partners. Wildfire communication efforts are built on three pillars: communicating NorthWestern Energy’s mitigation efforts, building awareness of tools to prevent wildfires, including PSPS, and encouraging outage and wildfire preparedness. These pillars guide how NorthWestern Energy communicates operational strategies to reduce ignition potential, increases understanding of Public Safety Power Shutoffs (PSPS), and promotes proactive customer actions before wildfire related events.

Key Activities:

- Paid advertising campaigns prior to and during fire season
 - ↳ Cable, radio, digital, social media, emails, etc.
- Specialized materials to customers in near high-consequence zones
 - ↳ Printed fact sheets, direct mailers, and bill inserts
- Collaboration with public safety partners
 - ↳ Local Emergency Planning Committees (LEPCs)
 - ↳ Fire agencies
- Development of PSPS strategy and tabletop exercises

7.2 – Task Activities

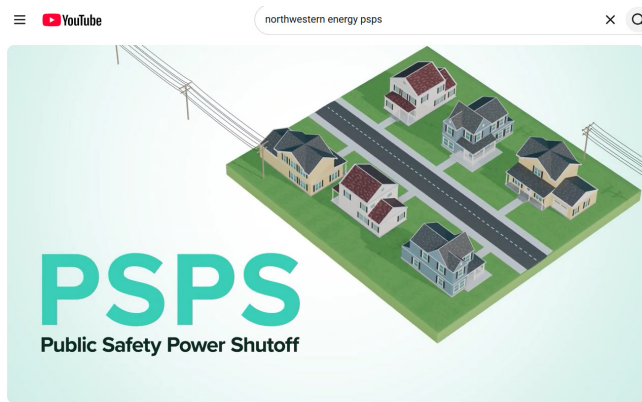
7.2.1 – Customer Engagement

Print & Media Communication

Wildfire communication towards customers and stakeholders occur year-round through education and preparedness messaging. Activity increases during the peak of wildfire season. A multi-channel approach maximizes reach across all customer groups. Outreach channels will include cable television spots, radio advertisements, digital advertisements, social media outreach, fact sheets, news articles, and community presentations. Customers may experience impacted reliability as a result of wildfire mitigation efforts like EPSS. Educating the public on why these strategies are important for ensuring safety will prepare them for any impacts to their reliability.

Targeted communication will be directed towards customers living near high-consequence areas. Mailers and emails will be sent out prior to fire season to help educate these customers on the mitigation strategies NorthWestern is utilizing to help ensure their safety and readiness.

Category	Channels	Purpose
Mass Media (Awareness)	Broadcast TV, Streaming (YouTube, Hulu, Netflix), Radio, Social Media (Meta)	Broad wildfire awareness, PSPS and outage preparedness messaging
Community & Physical Outreach	Public meetings, community events, stakeholder presentations (LEPCs, fire agencies, AFN partners)	Localized awareness and community engagement
Direct Customer Communications	Emails, Direct Mailers, Website	Targeted alerts, education, and PSPS/ outage information
Earned Media / Public Information	Press releases, Radio interviews, Media coverage	Public information coordination and message amplification

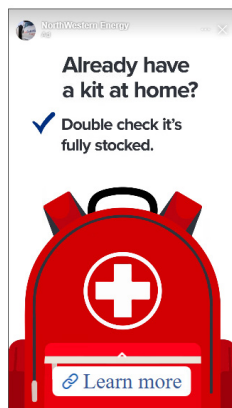
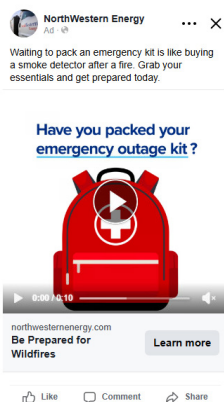


What Is a PSPS? | Public Safety Power Shutoff Explained

NorthWestern Energy 615 subscribers

Analytics Edit video

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Public Safety Power Shutoff (PSPS)

If extreme weather conditions increase wildfire risk and threaten our ability to safely operate the electrical grid, we will temporarily turn off power in high-risk areas to help prevent wildfires and keep our communities safe.

What a PSPS Is:

A Last Resort: A PSPS is a last resort safety measure used only during extreme weather conditions when it's dangerous to operate the electrical grid.

A Safety Action: We proactively shut down power in specific areas to prevent electrical equipment from igniting wildfires.

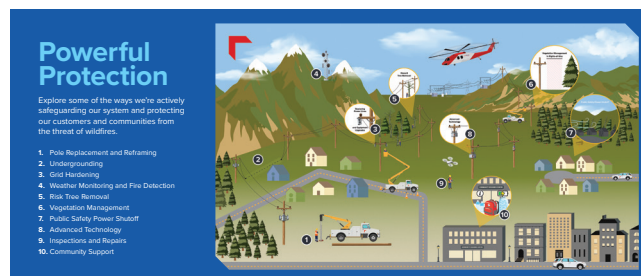
Weather-Driven: A PSPS is triggered when extreme environmental conditions such as strong winds, hot temperatures, dry vegetation and low humidity create high wildfire risk.

What a PSPS Is Not:

A Normal Outage: Unlike an unexpected outage from a broken wire, a PSPS is a planned, proactive action to reduce the risk of electrical equipment igniting wildfires.

Permanent: Power is restored after extreme conditions pass and inspections and repairs are complete to confirm the equipment is safe to be reenergized.

Compensated: Lost income or spoiled food is not reimbursed during these safety-related outages.



Enhanced Powerline Safety Settings (EPSS)

We use EPSS to make the electrical system more sensitive to potential hazards. If a fault occurs, such as a tree branch contacting a powerline, these settings immediately cut electricity — often within 170 of a second — to reduce the chances of starting a wildfire. These settings are enabled on high-risk days within high-fire-risk communities.

What a EPSS Is:

Height-Adjusted Protection: The primary goal is to shut off power faster when an issue is identified, for the portion of powerline a tree branch could reach as a fire ignition.

High-Sensitivity Detection: The system sets the circuit breaker reacting instantly to faults caused by high winds or trees and animal handling powerlines.

A "Manual Resetter" Protocol: After equipment settings shut off power, crews must patrol the entire line before safely restoring power, which can take several hours.

What a EPSS Is Not:

A Scheduled Outage or a PSPS: EPSS is a selective, unannounced outage to stop the flow of electricity by immediately going along a fault line (like a branch touching the line).

Guaranteed or Discretionary Outages: Because of the neighborhood sensitivity, powerlines may turn off more frequently and without notice.

A Proactive Solution: It requires active maintenance and manual inspection of the lines to restore power, unlike traditional systems that automatically re-energize.



PSPS Readiness

NorthWestern's PSPS Plan is a measure of last resort in the event wildfire risk becomes unacceptably high and hazardous weather conditions are forecasted. The PSPS Plan is a detailed document which outlines the general process of a potential event. Assessment exercises like tabletops will be evaluated during this Plan cycle. A dedicated PSPS webpage is available to customers and would display relevant information in the event of a potential PSPS. Customers would receive as much communication as feasible in the steps leading up to each stage. The PSPS webpage will help display the impacted area and any restoration estimates. Additional resources and preparedness assessments will be explored to establish the best methods for developing customer PSPS readiness.

7.2.2 – Partnerships & Additional Outreach

Public Safety Partners & Wildfire Summit

NorthWestern already collaborates with local agencies during emergencies to help identify utility asset locations and de-energize or shut off gas to ensure the safety of first responders. As part of the Plan, NorthWestern will build relationships with federal, state, and county agencies to share information, gather feedback on mitigation strategies, and identify mutually beneficial activities that reduce cross boundary wildfire risk.

NorthWestern will also engage with emergency management officials, Local Emergency Planning Committees (LEPCs), public safety partners, critical facilities, local elected leaders, health and human service agencies, and other key stakeholders to raise awareness and better understand localized mitigation needs. Collaboration with community organizations that provide services and support to vulnerable populations, including customers with access and functional needs (AFN), will further strengthen community resilience during events like outages. This form of outreach aligns wildfire mitigation and response efforts, promoting the transfer of information in the event of a public safety incident. Funding has been allocated to host a wildfire summit and facilitate partnerships.

Peer-Utility Collaboration

Additionally, NorthWestern participates in conferences, working groups, and peer-utility discussions to advance industry-wide mitigation strategies. These dynamic relationships allow for a sharing of best-practices and experiences with new technologies. Utilities can learn from the experience of others to develop the most cost-effective mitigation strategies for their respective service territories.

Our Public Safety Power Shutoff Plan
NorthWestern Energy's complete PSPS Implementation Plan can be found at NorthWesternEnergy.com/PSPS.



Section 8 – Conclusion

NorthWestern Energy recognizes the inherent risks associated with owning and operating electric facilities. Utilities nationwide face this same risk. Wildfires devastate communities and require modifications to existing practices. WMPs have become an industry-standard practice which outlines the steps utilities take to reduce the risk of utility-caused ignitions within their service territories. NorthWestern’s South Dakota Plan focuses on utility-specific mitigation efforts.

The South Dakota Plan encompasses four objectives (1) Reduction of Ignition Potential, (2) System and Environmental Monitoring, (3) Vegetation Management, and (4) Public Communication and Outreach. These objectives build upon decades of established practices, which can be modified to target wildfire risk. NorthWestern can achieve these objectives cost-effectively through strategic deployment and progress tracking.

NorthWestern estimates investing approximately \$12.5 million incrementally within the South Dakota service territory between 2026-2028 (Appendix C). These prudent investments will support NorthWestern’s ongoing commitment to the safe, affordable, and reliable delivery of energy.

Appendix A – Outage Reporting & Reliability

NorthWestern Energy delivers consistent reliability year-over-year to its customers. Benchmarking with peer utilities provides a basis of comparison for metrics like SAIDI, which normalize annual customer interruptions across the system. IEEE facilitates a benchmarking process which compares SAIDI with and without Major Event Days (MEDs) as defined by IEEE std 1366-2022. Catastrophic Event Days (CEDs) are excluded from all metrics and analyzed separately. MEDs define a day in which the system experiences strain beyond that which it is designed to withstand. This can be the result of extreme weather conditions, or failure of critical components on the bulk electric system. These events are statistically uncommon.

Since 2020, the South Dakota service territory has consistently ranked in the 1st quartile compared to NorthWestern’s peers, both including and excluding MEDs. MEDs in South Dakota are typically the result of ice storms or extreme winds. These reliability metrics illustrate that NorthWestern responds swiftly and efficiently to restore service following major disruptions to the system. The figures below represent NorthWestern’s South Dakota service territory SAIDI metrics, including and excluding MEDs, for the years 2020-2025. Please note that quartile results were not available during the time of this publication.

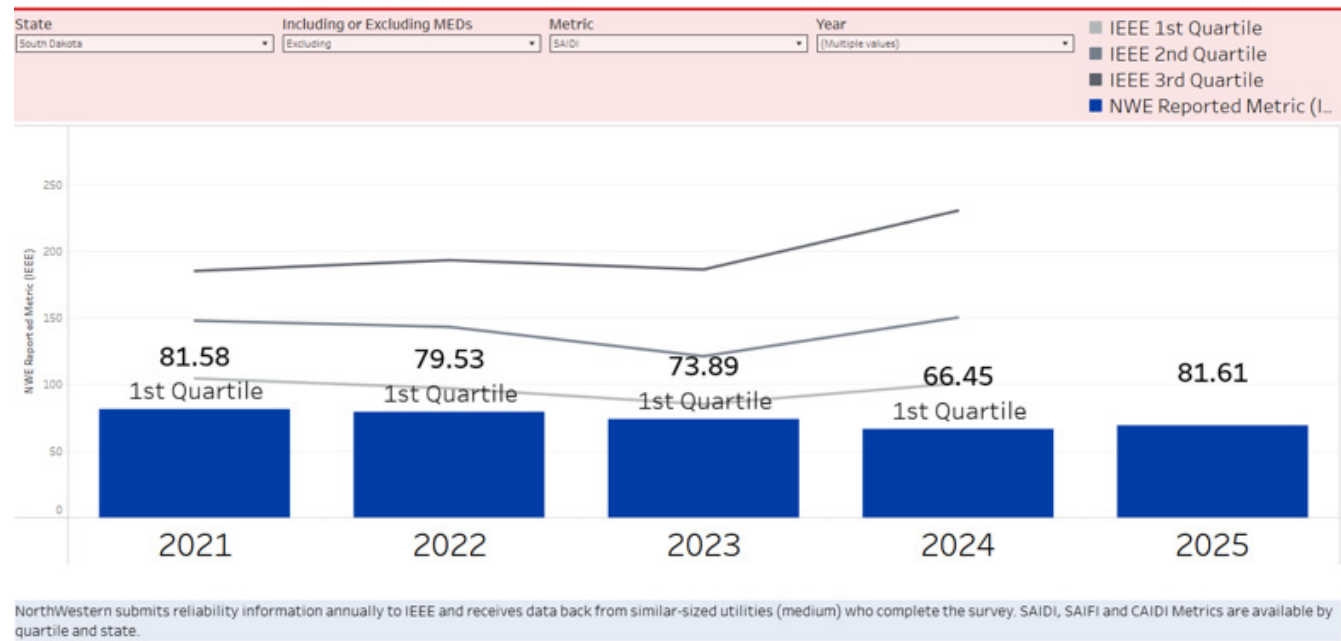


Figure South Dakota SAIDI Benchmarking Excluding MEDs

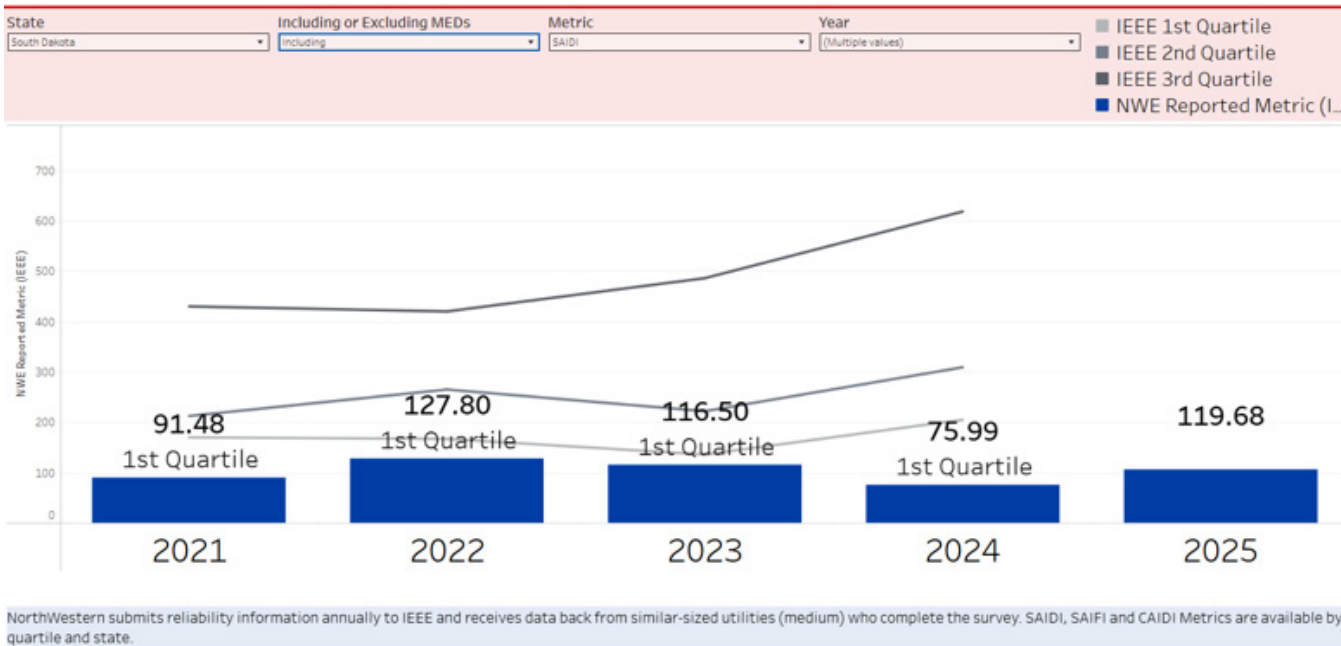


Figure South Dakota SAIDI Benchmarking Including MEDs

Appendix B – NorthWestern’s Suite of Tools

NorthWestern’s Suite of Tools is a specialized framework for decision making. The Suite of Tools encompasses inputs, models, and dashboards sourced from internal proprietary information, external vendors, and open-source data.

These resources can be static or dynamic in nature depending upon the update frequency of the data. Tool types within this framework include:

Inputs – standalone data which quantify specific metrics like wind speed, fuel conditions, or system health.

Models – a mathematic synthesis, scoring logic process, or simulation which produces a composite output.

Dashboards – a user-friendly display of one or more tools to facilitate actionable decision making.

The table below outlines the mode, title, general inputs, and purpose of each tool. Initial iterations of the Plan discussed two primary models: the “static model” and the “dynamic model.” Enhancements to these models and the development of new resources warranted an expansion of the framework. Key tools were chosen to display the broad scope of work addressed. NorthWestern may modify the scope of each tool to fit the regional needs within the service territories. New resources will be evaluated for integration as technology becomes available and validated for an appropriate use case.

Mode	Tool	Input(s)	Purpose
Static	Wildfire Consequence Model (WCM)	Historical fire behavior	Simulates the path, spread, and intensity of fires potentially ignited from electrical infrastructure. The output quantifies consequence throughout the Montana and South Dakota service territories.
		Available fuels	
		Structure locations	
		Forecasted conditions	
	Infrastructure Resilience Model (IRM)	System probability	Determines relative risk across the system and guides prioritization of long-range program planning.
		Consequence	
Dynamic	Wildfire Risk Index Model (WFRI)	System probability	Combines risk data with current conditions to evaluate appropriate defensive strategies like EPSS and modified line patrols.
		Fire weather indices	
		Consequence	
	Fire Weather Dashboard	Current conditions	Assesses real-time weather forecasts and fuel data to initiate PSPS procedures based on established thresholds.
		Relevant forecasts	
		Consequence	
	Work Practice Dashboard	Fire weather indices	Assesses real-time indices and fire agency advisories to select Work Practice Matrix level to be observed by field personnel.
		Burn restrictions	

Appendix C – Incremental WMP Costing Details

The costing details outlined in this Plan represent incremental investments made to the system. Existing practices may provide auxiliary wildfire mitigation benefits, but are excluded from the following table as their primary purpose is not affiliated with the Plan. Costing details reflect budgeted expenditures for 2026 in addition to forecasted estimates for 2027 and 2028.

All costing details are subject to change. Forecasts and budgets represented herein reflect a best estimate of the required costs necessary to complete prudent mitigation efforts. Estimates will be updated annually during an internal process to reflect any changes that may occur during the work planning process. Costs are represented under their respective Plan category.

Proposed Enhanced Incremental Costs*	2026 B	2027 F	2028 F
Situational Awareness	\$594,532	\$839,481	\$765,801
Operational Practices	\$60,000	\$755,500	\$775,500
System Preparedness	\$1,832,052	\$2,457,601	\$3,132,713
Vegetation Management	\$85,000	\$435,000	\$435,000
Communication & Outreach	\$80,000	\$110,000	\$110,000
Total :	\$2,651,584	\$4,597,582	\$5,219,014

**Costing is subject to change and updated on an annual basis.*

B - Budgeted

F - Forecasted

Appendix D – Revision Log

Review Date	Revision	Revisions
August 2026	1.0	The Wildfire Mitigation Plan was filed with the South Dakota Public Utilities Commission and posted to the NorthWestern Energy website.

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA**

ATTESTATION OF COMPLIANCE
WILDFIRE MITIGATION PLAN REQUIREMENTS

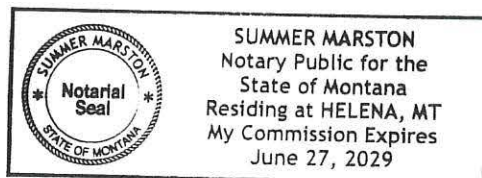
The undersigned authorized officer of NorthWestern Energy Public Service Commission ("NorthWestern") hereby states as follows:

1. NorthWestern has prepared a Wildfire Mitigation Plan and submits the same herewith to the South Dakota Public Utilities Commission for publication.
2. I am an officer of NorthWestern with responsibility for operations including wildfire planning. NorthWestern's Wildfire Mitigation Plan was prepared at my direction, and I am familiar with the facts and circumstances and the conclusions.
3. I am able and do affirm that the Wildfire Mitigation Plan as submitted is valid and current and the procedures and standards comply with the 2023 National Electrical Safety Code.
4. I certify that the Wildfire Mitigation Plan contains all provisions required by South Dakota Codified Laws Section 49-49-4.



Jason C. Merkel
Vice-President, Operations.

Subscribed and sworn to before me this 3rd day of August 2026.

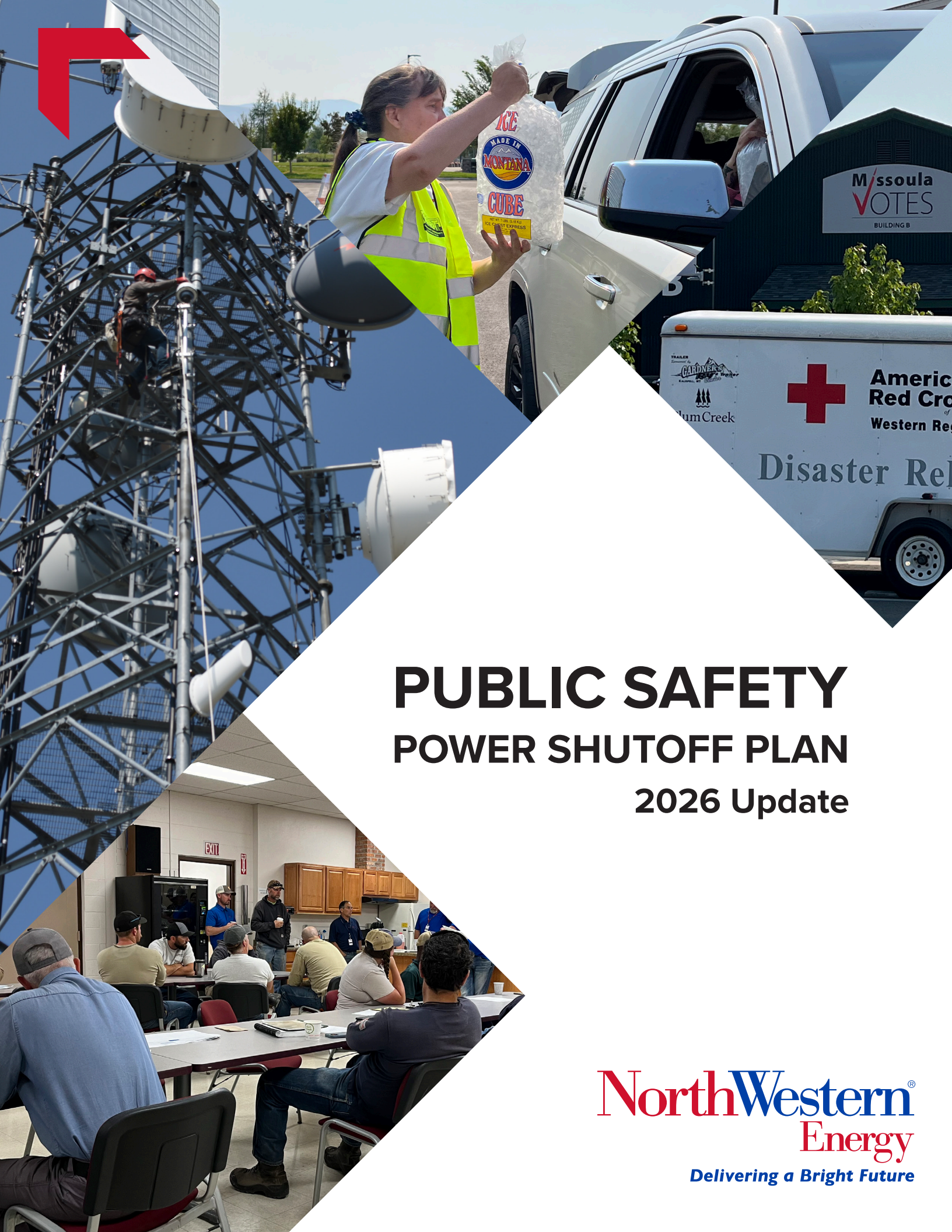




NOTARY PUBLIC

Notary print name: Summer Marston

My commission expires: 6/27/2029



PUBLIC SAFETY POWER SHUTOFF PLAN 2026 Update

NorthWestern[®]
Energy
Delivering a Bright Future

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1 Revision History

Review Date	Revision	Revisions
February 2025	2.0	• Included Section 3.5 • Generally revised document for external audiences (removed detailed internal processes and nomenclature) • Generally revised document to remain inclusive of full service territory • Updated the communication strategy to include email and text notifications
July 2026	3.0	• Removed Stage 0 to reflect actions taken during PSPS events • Revised Communication Strategy to include direct communications during Phase 1.3 “PSPS Warning” • Revised roles and responsibilities of PSPS Awareness Team and Incident Command Team

2 Acronyms

- AAR** — After Action Review
- ADMS** — Advanced Distribution Management System
- AM** — Asset Management
- CC** — Customer Care
- CRC** — Community Resource Center
- CSR** — Customer Service Representative
- CRI** — Composite Risk Index
- DOC** — Distribution Operations Control
- ETR** — Estimated Time of Restoration
- NCC** — NorthWestern Control Center (Grid Operations)
- IC** — Incident Command
- IVR** — Interactive Voice Response
- MPSC** — Montana Public Service Commission
- NOAA** — National Oceanic and Atmospheric Administration
- NWE** — NorthWestern Energy
- NWS** — National Weather Service
- PSPS** — Public Safety Power Shutoff
- SA** — Situational Awareness
- SME** — Subject Matter Expert
- SFDI** — Severe Fire Danger Index
- WFRI** — Wildfire Risk Index
- WMP** — Wildfire Mitigation Plan

3 Public Safety Power Shutoff Introduction

3.1 Overview

As part of its continued commitment to delivering safe and reliable energy to meet the needs of customers and communities, NorthWestern Energy (NorthWestern) has developed a Wildfire Mitigation Plan (WMP). The fundamental goal of the WMP is to reduce overall wildfire risk associated with the company’s electric transmission and distribution systems through targeted programs that increase system resiliency. Due to the operation of electrical infrastructure, amid increasingly difficult environmental circumstances and a growing population living in wildfire-prone areas, many utilities, including NorthWestern, are seeking new tools and techniques that go beyond historical best practices and traditional protective devices to help manage this risk. One increasingly common method for mitigating these risks is to implement proactive power outages known as Public Safety Power Shutoffs (PSPS). This strategy involves de-energizing electrical infrastructure in specific areas, during periods of time when the risks of continuing to operate electrical infrastructure are unacceptably high, based on the utility’s judgment and relevant environmental and operational data.

The feasibility of this approach has increased in recent years due to improvements in the accuracy and granularity of environmental models and data as well as the flexibility of modern electrical infrastructure. Recognizing the value of this strategy and the increasingly challenging environmental conditions within its service territory, NorthWestern Energy elected to develop its own procedures for implementing a PSPS as a tool for addressing environmental conditions that threaten the health and safety of communities, customers, and natural resources. This document, the Public Safety Power Shutoff Plan (Plan), provides the basis for NorthWestern Energy’s strategy for conducting a Public Safety Power Shutoff.

3.2 Background

In the development of its PSPS implementation strategy, NorthWestern conducted a review of strategies employed by other utilities who face similarly challenging environmental conditions and structures present in the Wildland-Urban Interface. This review provided a detailed understanding of industry practices, while also highlighting the significant value provided by NorthWestern Energy’s long-standing commitment to safe and reliable service. For example, NorthWestern Energy’s system infrastructure and wildfire risk programs (which formally began in 2011), continue to support investments in equipment and vegetation management practices – drastically increasing the reliability, resiliency, and flexibility of NorthWestern Energy’s electrical systems. These deliberate investments have provided NorthWestern Energy with a strategic head start in addressing the present-day wildfire risks facing many utilities. Furthermore, the review of utility industry practices also clearly demonstrated the unique nature of NorthWestern Energy’s operating area, stakeholders, and customer base. In comparison to many of its peer utilities, NorthWestern Energy serves a relatively small number of customers across a geographically-diverse and large service territory – presenting NorthWestern with many challenges not faced to the same degree by its peer utilities. Examples of such challenges include: the need to monitor and maintain an expansive electrical system, the corresponding diversity of environmental conditions facing the system, and customer dependency on private water systems and wells. However, NorthWestern Energy’s unique operating environment has also provided the utility with opportunities including the ability to cultivate meaningful connections within the communities it serves and operates. These connections allow NorthWestern to more effectively consider and address the needs of its customers and stakeholders – a particularly useful asset during critical periods such as the implementation of PSPS events. In short, this review of peer utility PSPS strategies (and the resulting observations) ultimately reinforced NorthWestern’s decision to develop its own approach and highlighted many opportunities to tailor the PSPS strategy to its distinct operating area, stakeholders, and customer base.

During its review of existing strategies and approaches, NorthWestern also recognized that robust PSPS implementation strategies include a comprehensive approach for monitoring and responding to environmental conditions. As such, in the development of its WMP, NorthWestern established a Situational Awareness Team tasked with quantifying environmental risks. The insights and techniques developed by this team provide NorthWestern with the opportunity to develop and refine its approach for measuring and reacting to environmental risks – a key component of a PSPS strategy.

In addition to supporting PSPS decision-making, the Situational Awareness Team continuously monitors wildfire risk conditions and employs a variety of operational mitigation measures intended to reduce wildfire risk before a PSPS event becomes necessary. These measures include enhanced situational awareness practices, operational controls, and protective technologies such as Enhanced Powerline Safety Settings (EPSS), which are designed to reduce the likelihood that electrical infrastructure could contribute to wildfire ignition during elevated risk conditions.

NorthWestern’s approach to wildfire mitigation is therefore based on a layered risk-reduction strategy in which PSPS serves as one potential tool available during periods of extreme wildfire risk. For a more comprehensive description about NorthWestern’s wildfire mitigation strategies, please refer to NorthWestern Energy’s [Wildfire Mitigation Plan](#).

Alongside the development of its Situational Awareness strategy, NorthWestern also conducted an internal review of its existing plans, policies, procedures, and strategies meant for managing emergent events similar to PSPS events.

Through this review it became clear that, although many of these existing procedures provided a useful basis for the operational strategy necessary to carry out a PSPS de-energization and re-energization, the procedures did not comprehensively address the proactive external communication obligations that are present throughout the entirety of PSPS events. In general, many of NorthWestern Energy’s existing emergency response procedures were developed to help NorthWestern Energy respond reactively to a generalized variety of one-of, urgent, and often unpredictable events focused on making prompt and prudent operational decisions. In contrast, PSPS events tend to be forecasted, follow a slightly longer and more consistent progression, and require much more extensive external communications before, during, and after operational decision making.

NorthWestern also reviewed its planned outage processes and communication strategies for conducting system maintenance and repairs. NorthWestern found that, although many aspects of these procedures formed the basis of a PSPS communication strategy, they did not fully address the enhanced communication obligations of PSPS events.

For example, one major distinction between PSPS events and planned outages is that, in most cases, communications for planned outages need to only reach the customers who will be directly impacted by the outage whereas the communications for PSPS events typically must reach a much broader audience that includes stakeholders beyond impacted customers (e.g., government agencies, cellular providers, emergency services, etc.). Similarly, while the progression and timeline of planned outages tend to be in the control of the utility (and thus more predictable), PSPS events are primarily driven by dynamic environmental factors with weather-based forecasted durations. This makes it challenging to rely solely on traditional planned outage communication approaches as they can often be too slow to react to the fast-paced and variable nature of PSPS events. Overall, this review of NorthWestern’s planned outage procedures suggested that its existing planned outage strategies could be further enhanced to better accommodate the dynamic nature of PSPS events.

After considering its reviews of utility industry best practices, existing emergency and incident response plans, and planned outage processes, as well as establishing a Situational Awareness Team, NorthWestern Energy recognized a clear need to develop this comprehensive PSPS Plan that fts the needs of its customers, communities, and stakeholders across its expansive service territory.

3.3 Guiding Principles

To maintain alignment with its core business values and to provide direction in developing the PSPS Plan, NorthWestern Energy established the following guiding principles:

- Uphold NorthWestern Energy’s commitment to sustainable, affordable, and reliable service.
- Recognize the opportunity to utilize PSPS events as one of many tools for ensuring the safety of employees, customers, the public, communities, stakeholders and the environment.
- Maintain a robust situational awareness strategy for monitoring and quantifying environmental conditions and risks.
- Conduct regular training to ensure personnel can safely and effectively execute PSPS events.
- Follow a disciplined operational strategy for executing PSPS events when it is necessary to do so.
- Adhere to a consistent communications strategy to ensure that internal and external communications about PSPS events are clear, timely, and accurate.

3.3.1 Care for Customers

One common theme found throughout NorthWestern Energy’s core business values, PSPS guiding principles, and its PSPS Plan, is its customer- and community-centric philosophy. In particular, NorthWestern Energy has built, maintained, and strengthened a long-standing company culture committed to providing sustainable, affordable, and reliable service to its customers and the hundreds of large and small, rural and urban, communities it serves across its service territory. To uphold this commitment within its PSPS strategy, it is imperative to acknowledge NorthWestern Energy’s unique operating environment. As discussed above, NorthWestern Energy operates an expansive electrical system which serves a comparatively small customer base. This dynamic provides NorthWestern with an opportunity to

understand the concerns and situations of its customers on a much more personal level than many of its utility peers. However, this dynamic also poses challenges specific to the utilization of PSPS events.

NorthWestern Energy’s service territory is distinct from many other western investor-owned utilities due in large part to its rural landscape in which it operates. Despite this challenge, one way NorthWestern has been able to deliver on its commitment to safely and reliably serving these customers is through its employees who live within, and serve, these communities. NorthWestern Energy’s employees not only operate the system providing essential electric service, but they are engaged and invested in their communities, fulfilling roles that make communities thrive. NorthWestern is proud of its employees who provide additional service to its communities by coaching basketball, refereeing football games, teaching hunter’s education, or serving as mayor, to name just a few. Through this engagement, NorthWestern not just supplies a commodity to these communities but also serves and contributes to the community themselves. As members of these communities, NorthWestern’s employees know and understand its customer base on a personal level as, together, they navigate the sometimes-harsh conditions of rural life. For these reasons, NorthWestern is uniquely positioned to apply a balanced approach to the consideration and implementation of PSPS events – one that considers the potential impacts posed by environmental conditions alongside the impacts to customers and communities.

3.4 Scope

NorthWestern Energy’s PSPS Plan can be thought of in terms of three distinct strategies that support the overall strategy (Figure 1). Accordingly, the scope of this Plan, and thus the remainder of this document, is organized similarly.

- Situational Awareness Strategy [\(Section 5\)](#)
 - ↳ How NorthWestern Energy will monitor environmental conditions that may necessitate a PSPS event, and how it will make decisions to escalate and deescalate PSPS events.
- Operational Strategy [\(Section 6\)](#)
 - ↳ How NorthWestern Energy will prepare for and perform a system de-energization and re-energization during a PSPS event.
- Communication Strategy [\(Section 7\)](#)
 - ↳ How NorthWestern Energy will communicate internally and externally throughout a PSPS event.

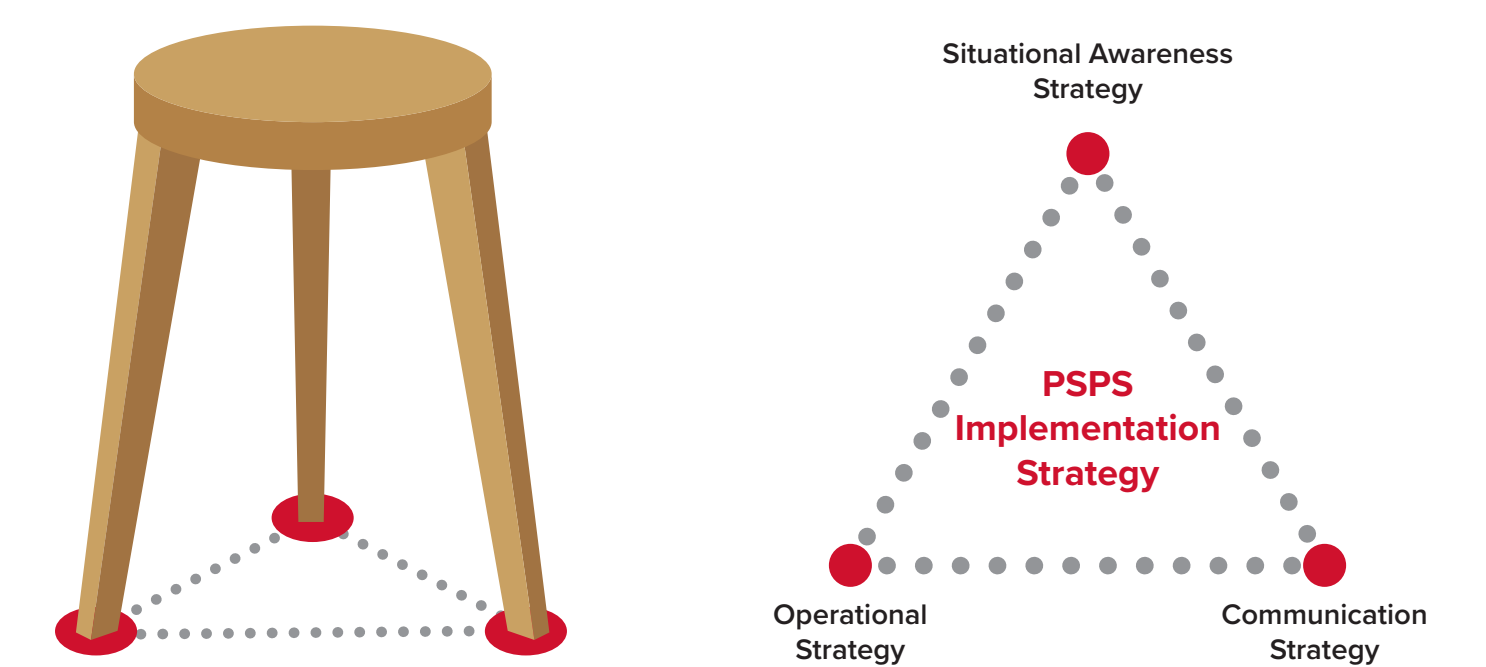


Figure 1 - NorthWestern Energy’s PSPS Plan is comprised of three distinct strategies: the situational awareness strategy, the operational strategy, and the communication strategy.



3.5 Limitations

Although NorthWestern Energy’s PSPS Plan enhances its portfolio of wildfire mitigation tools and strategies, and NorthWestern intends to follow this Plan as described below, it is important to note that the dynamic environmental factors that may prompt the consideration of a PSPS event may also cause or require departures from the Plan. For example, although the accuracy of weather data, models, and forecasts are improving, they maintain a degree of uncertainty and variability. As such, when monitoring and responding to environmental conditions, NorthWestern may, at times, accelerate, decelerate, or cancel the execution of a PSPS event. In these cases, efforts will be made to maintain proactive, accurate, and timely external messaging, but communications may still depart from the messaging outlined in the Plan.

Similarly, it is also possible that customers may experience unplanned outages both before and after PSPS outages – potentially leading to confusion regarding the cause of their outage. Again, NorthWestern will strive to communicate clearly in these situations, which may require departures from the Plan. Regardless of these challenges and uncertainties, NorthWestern prioritizes, and remains committed to, the health and safety of its customers, employees, and communities through the responsible consideration and execution of PSPS events and operation of its system. Furthermore, NorthWestern also commits to the continued refinement of this Plan along with its other wildfire mitigation tools and strategies.

Additionally, as this Plan outlines, PSPS events are a risk mitigation technique used to reduce the likelihood of a utility ignited wildfire during periods of extreme fire weather conditions – specifically extreme winds, high temperatures, low humidity, and dry vegetation. However, the presence of an existing or encroaching wildfire near NorthWestern Energy’s electric utility lines does not alone constitute or meet the requirements for a PSPS. While an approaching wildfire presents operational challenges, a full-scale de-energization event could unintentionally hinder emergency response efforts and create additional public safety concerns. As such, in the event of an encroaching wildfire, NorthWestern Energy’s response is to coordinate with emergency management and fire suppression agencies and review the operational measures available. Depending on the circumstances, this response may include proactive de-energization measures, such as those necessary to support firefighter safety. This approach enables NorthWestern Energy and emergency management to consider the contextual conditions of each fire rather than de-energizing equipment in every case of an approaching wildfire.

4 PSPS Approach

This section provides a general overview of NorthWestern Energy’s PSPS Plan including the timeline it uses for conducting PSPS events ([Section 4.1](#)), the organizational structure used to manage the events ([Section 4.2](#)), and the roles and responsibilities of the involved parties ([Section 4.3](#)). More details regarding the specific situational awareness, operational, and communication tasks that will be performed during a PSPS event will be provided in Sections 5, 6, and 7, respectively.

4.1 PSPS Staged Progression

A critical component of any PSPS strategy is a clearly defined phased approach that details how and when a PSPS event may be declared, escalated, de-escalated, and ultimately closed. Not only is this crucial for effective communication and understanding among internal and external stakeholders, it also ensures that all components of the strategy (e.g., situational awareness, operational, and communication strategies) are based upon a consistent and compatible timeline. For these reasons, many utilities have adopted a staged approach. NorthWestern Energy elected to utilize a 2-stage approach to PSPS events ([Figure 2](#)) which includes:

- Stage 1: PSPS Assessment.
- Stage 2: PSPS Execution

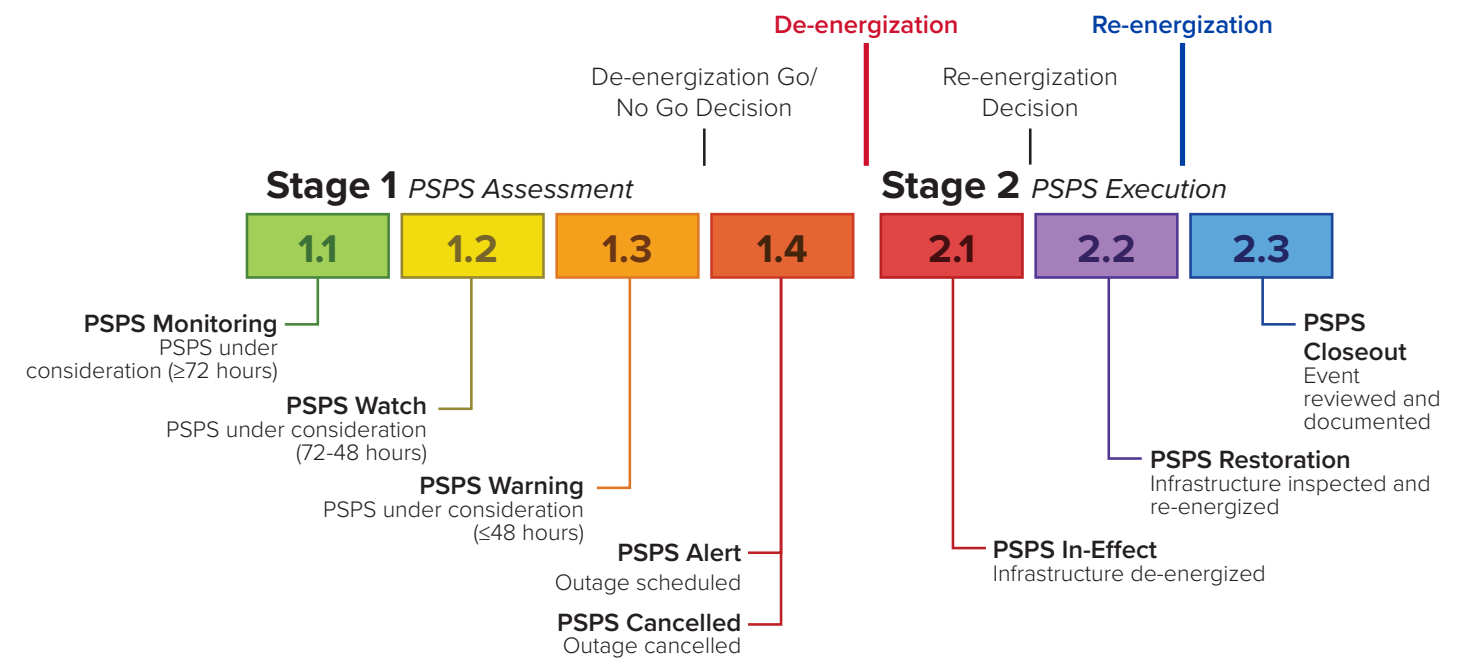


Figure 2 – An illustration of the phased timeline NorthWestern Energy employs for PSPS events.

NorthWestern Energy’s Situational Awareness Team ([Section 4.2.1](#)) continuously monitors environmental conditions, weather forecasts, system conditions, and other risk factors (as described in [Section 5](#)) as part of normal operational practices. When conditions indicate elevated wildfire risk with the potential to necessitate a PSPS event, the Situational Awareness Team may formally initiate Stage 1 (PSPS Assessment) of the PSPS process. The initiation of Stage 1 activates several components of NorthWestern Energy’s PSPS strategy, such as the Operational and Communication Strategies ([Section 6](#) & [Section 7](#)), which describe how NorthWestern prepares for, carries out, and communicates with internal and external stakeholders about a potential de-energization of electric infrastructure. This initiation also prompts the formation of NorthWestern’s PSPS Awareness Team ([Section 4.2.2](#)), which is comprised of decision makers, operational, and communications staff, amongst others, to support enhanced monitoring and coordination during the early stages of a potential PSPS event.



Stage 1 of NorthWestern Energy’s PSPS Implementation Strategy is known as “PSPS Assessment.” During this stage, the newly assembled PSPS Awareness Team (and eventually the Incident Command Team), meet regularly to assess the situation, evaluate the merits of de-energization, and operationally prepare for, and potentially carry out, a de-energization. During this stage these groups are also responsible for providing updates to internal and external stakeholders as described in [Section 7](#). Stage 1 is subdivided into four distinct phases based on the anticipated timing of the de-energization:

Phase 1.1, or “PSPS Monitoring,” refers to the period during which de-energization of a particular area is being considered, but the anticipated timing is more than 72 hours away. The primary purpose of this phase is to initiate the PSPS Awareness Team to achieve a heightened level of monitoring by assembling a broader group of subject matter experts and decision makers. This phase also serves to begin operational and communications planning in accordance with the Operational and Communication Strategies. Initial notifications to governmental agencies, public safety partners, and other critical facilities are made during this phase based on NorthWestern’s assessment of risk and stakeholder communication needs.

Phase 1.2, or “PSPS Watch,” refers to the period during which de-energization of a particular area continues to be considered, but the anticipated timing is between 72 and 48 hours away. This phase serves to elevate communications by initiating direct (website updates, calls/texts/emails) and indirect (social media, press releases) customer notifications, and operational planning in accordance with the overall Communication and Operational Strategies. Communication and coordination with external public safety partners and critical facilities would continue in this phase.

Phase 1.3, referred to as a “PSPS Warning,” is initiated when the anticipated de-energization is expected to occur within 48 hours. The purpose of this phase is to mark the formal transition from the PSPS Awareness Team to NorthWestern Energy’s Incident Command Team, which then becomes responsible for managing the PSPS event through de-energization, re-energization, and closeout. It should be noted that, in many cases, the PSPS Awareness Team and the Incident Command Team may share many of the same members and have very similar organizational structure. A key component of this transition is a discussion of who from the PSPS Awareness Team should be included in the Incident Command Team. This transition allows NorthWestern Energy to utilize a formal command system available 24/7 for navigating the time-sensitive de-energization and re-energization of equipment. Communications with customers and stakeholders also continue in this phase in accordance with the Communication Strategy.

Phase 1.4, known as “PSPS Alert”, begins if, and when, the Incident Command Team makes the decision to de-energize (i.e., the “go/no-go decision”). Assuming the decision is made to de-energize, a “PSPS Alert” is declared and the de-energization is scheduled. This declaration serves as the trigger point for several key operational and communication obligations (see [Section 6](#) & [Section 7](#) for more detail) such as mobilizing personnel to de-energize equipment as well as informing stakeholders of the scheduled de-energization. Alternatively, if the Incident Command Team chooses not to proceed with a de-energization, the PSPS event will then either:

- Remain as a PSPS Warning (i.e., Phase 1.3) if a de-energization is still possible within 48 hours, or
- Be downgraded to a PSPS Watch or PSPS Monitoring (i.e., Phase 1.2 or 1.1) if de-energization of the area is still being considered, but the timing has been delayed beyond 48 hours, or
- Be canceled altogether (resulting in a “PSPS Cancelled”) followed by a return to monitoring of environmental and system conditions.

The next stage of NorthWestern Energy’s PSPS Implementation Strategy, Stage 2 or “PSPS Execution,” begins if, and when electrical equipment is de-energized. During this stage, the Incident Command Team continues to meet regularly to plan for, and ultimately carry out, the re-energization of electrical infrastructure. Much like Stage 1, the group continues to evaluate environmental conditions and risk factors, however, the goal of this group shifts to restoring electrical service as quickly and as safely as allowed for by the situation. Stage 2 is divided into three phases based on the status of the re-energization efforts:

Phase 2.1, or “PSPS In-Effect,” is the period during which electrical equipment remains de-energized and personnel are evaluating whether environmental conditions have improved enough to begin the restoration process. During this time, NorthWestern continues to assess the situation, while developing a plan for re-energization and continuing to update customers and stakeholders.

Phase 2.2, “PSPS Restoration,” begins when NorthWestern personnel make the decision to re-energize equipment and ends when the equipment is re-energized. NorthWestern Energy’s responsibilities during this period include inspecting the de-energized equipment to ensure it can be safely re-energized, performing repairs as required, communicating with stakeholders (including impacted customers) about the re-energization efforts, and ultimately re-energizing the equipment into service.

Phase 2.3, “PSPS Closeout,” is the final phase of NorthWestern Energy’s PSPS Strategy. Phase 2.3 begins as soon as equipment is re-energized and ends when customer and stakeholder communications are finalized and NorthWestern personnel have conducted an after-action review (AAR). One purpose of this phase is to ensure that all areas have been fully re-energized and allow NorthWestern personnel time to review and document the event before the response team is disbanded.

It is important to note that the phases described above may, in some cases, occur non-sequentially, be skipped entirely, or progress on accelerated or delayed timelines due to rapidly changing environmental conditions. For example, NorthWestern Energy may issue a PSPS Warning or Alert without first issuing a Watch when conditions warrant immediate action, or a PSPS event may escalate from a Watch to a Warning or Alert more quickly than anticipated. Conversely, a PSPS event may be de-escalated from a Warning to a Watch if conditions continue to indicate the potential need for de-energization but the anticipated timing has shifted. Furthermore, NorthWestern Energy’s approach to PSPS events is generally location specific. In other words, in situations where multiple PSPS de-energizations are being considered in different sections of the electric system, each event may be evaluated and carried out independently by NorthWestern Energy’s personnel.

4.2 PSPS Organizational Structure

NorthWestern Energy’s approach to PSPS events is centered around two primary teams responsible for managing the event: the PSPS Awareness Team ([Section 4.2.2](#)) and the Incident Command Team ([Section 4.2.3](#)). Supporting both teams is the Situational Awareness Team ([Section 4.2.1](#)), which continuously monitors wildfire and weather conditions, identifies conditions that could lead to PSPS events, and remains actively involved throughout the event by providing situational intelligence and decision support. Collectively, these teams manage PSPS events in a manner consistent with the approaches described in the Situational Awareness Strategy ([Section 5](#)), Operational Strategy ([Section 6](#)), and Communication Strategy ([Section 7](#)). Each team’s unique structure makes it well-suited to oversee the responsibilities and respond to the evolving conditions associated with different phases of a PSPS event. Figure 3 illustrates the division of responsibility between the PSPS Awareness Team and the Incident Command Team during PSPS events. Due to the critical role the Situational Awareness Team plays in assessing fire weather and operational conditions, it remains integrated into both the PSPS Awareness Team and the Incident Command Team throughout the duration of PSPS events.

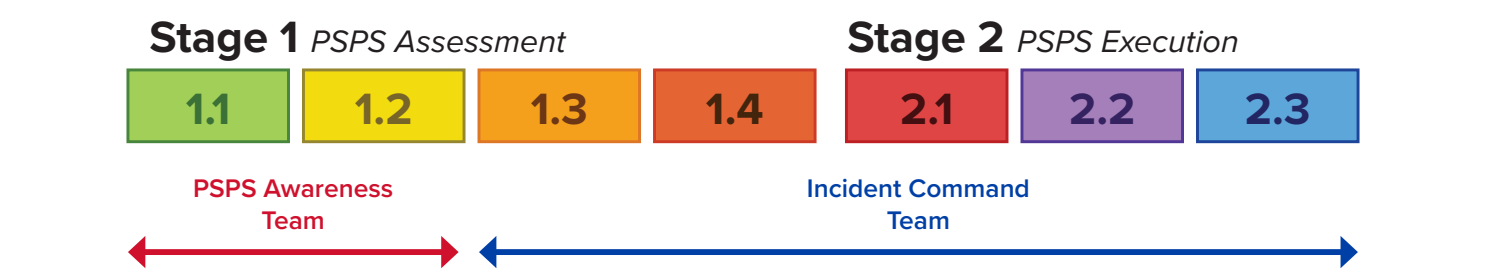


Figure 3 – Timeline representation of the division of responsibilities between NorthWestern Energy’s Situational Awareness Team, PSPS Awareness Team, and Incident Command Team.

This progression of responsibilities reflects an escalation in operational response. Prior to the initiation of a PSPS event, the Situational Awareness Team is responsible for continuously monitoring environmental conditions and wildfire risk factors. When conditions evolve such that a PSPS may become necessary, the Situational Awareness Team formally initiates Phase 1.1 (or a higher phase, if warranted by forecasted conditions). During Phases 1.1 and 1.2, certainty remains high, but interdepartmental coordination becomes increasingly important as the potential for de-energization increases, resulting in expanded operational and communication responsibilities. NorthWestern recognizes the need to incorporate representation from the Situational Awareness Team into a broader team structure, the PSPS Awareness Team, which includes representation from other business groups as well – allowing it to more comprehensively manage the PSPS event. By Phase 1.3 the increasing certainty of forecasted conditions and likelihood of a PSPS de-energization requires frequent decision-making and significant interdepartmental planning and coordination. Accordingly, NorthWestern recognized the value in utilizing its proven and robust organizational structure, the Incident Command Team, which provides an action- and reaction-oriented team structure equipped to navigate the event on a 24-hour basis. This team includes much of the same representation as the PSPS Awareness Team but formalizes a team focused solely on managing this PSPS event under the authority of the Incident Commander. This allows the Incident Command Team the ability to quickly react to the situation and manage the PSPS event through its conclusion.

4.2.1 Situational Awareness Team

The Situational Awareness Team continuously monitors, assesses, and evaluates environmental conditions as it relates to wildfire risk within NorthWestern Energy’s service territory. This encompasses, but is not restricted to, PSPS events. To accomplish this goal, this team includes a variety of subject matter experts including a full-time meteorologist. Further details regarding the team’s function, duties, and overall PSPS event strategy is available in [Section 4.3.1](#).

4.2.2 PSPS Awareness Team

The PSPS Awareness Team consists of a wide variety of internal stakeholders and subject matter experts (SMEs) and is primarily intended to support situational monitoring, operational planning, internal and external communications, and facilitate decision-making in the early phases of a PSPS event before a formal Incident Command Team has been established. In these early phases of a PSPS event, the variability and uncertainty of environmental conditions remains high – making it difficult to accurately predict the likelihood and precise timing of a potential PSPS de-energization. As such, NorthWestern recognized the value of establishing a team structure better suited to managing uncertainty and evolving conditions than a traditional incident command structure, which is typically designed for situations requiring rapid action and response rather than prolonged monitoring, assessment, and planning. In this way, the PSPS Awareness Team effectively acts as a bridge between the Situational Awareness Team and the Incident Command Team in Phase 1.3 – helping to ensure a higher degree of continuity in managing the event and consistency of communications with stakeholders throughout the PSPS event. While the specific personnel on the PSPS Awareness Team may vary, the roles remain the same across all PSPS events. The composition of the PSPS Awareness Team should include, but is not limited to, the following roles or their equivalent:

- Director of Wildfire Operations – responsible for facilitating the PSPS Awareness Team meetings to ensure operational readiness
- Director of Customer Experience
- Director of Montana/South Dakota Operations
- Director of Asset Management
- Manager of Distribution Operations Control
- Vice President – Transmission
- Director of Central Construction
- Manager of Wildfire Situational Awareness
- Director of Community Connections
- Director of Risk Management
- Vice President – General Counsel and Federal Government Affairs
- Director of Relay and Substation Operations
- Vice President – Asset Management and Business Development

- Vice President – Distribution
- Director of Brand, Advertising and Customer Communications
- Director of Grid Realtime and SCADA Operations
- Director of Customer Care
- Director of Central Operations
- Director of Safety
- Wildfire Public Information Manager
- Lead Technology Delivery Manager

4.2.3 Incident Command Team

NorthWestern Energy’s Incident Command Team is an organizational structure that has been used by the company for many years to respond to a wide variety of emergent events and ensure business continuity. This team is responsible for making strategic decisions, allocating resources, and coordinating response efforts throughout the PSPS event from Phase 1.3 onwards. The composition of the Incident Command Team should include, but is not limited to, the following roles:

- Incident Commander: responsible for overall management, directing and coordinating all aspects of response.
- Public Information Officer: coordinates external communications with customers and public safety partners, ensures consistency in all communications for PSPS event.
- Communications Officer: produces external communications (websites, social media, press releases, etc.) that are distributed timely and accurately. In accordance with the Communication Strategy (Section 7).
- Liaison Officer: communicates with critical infrastructure, key accounts, elected officials and other external representatives and stakeholders.
- Safety/Permitting/Environmental Officer: ensures safety and environmental practices are followed.
- Senior Leadership: responsible for key operational decisions based on the situation.
- Operations Lead: manages PSPS operations throughout service territory and supervises overall operations workforce.
- Distribution and/or Transmission Control Lead: responsible for operational coordination, system monitoring, and execution support throughout PSPS event.
- Customer Care Lead: execute direct customer communications throughout PSPS and ensure customer facing employees are provided current information.
- Logistics Lead: responsible for resource acquisition and coordination throughout PSPS event.
- Business Technology Lead: ensures functionality of technology systems including websites, maps and internal technology
- Situational Awareness Lead: provides insights on environmental and wildfire risk conditions to support PSPS decision making.
- Asset Management Lead: provides asset data and risk insights to support PSPS decision making.
- Grid Operations Lead: manages, analyzes and performs switch plans.
- Network Operations Lead: operate, monitor, and control communication systems, including SCADA systems.
- Substation Lead: coordinates substation operations.

4.3 NorthWestern Energy Business Group Representation, Roles, and Responsibilities

NorthWestern Energy Business Group Representation, Roles, and Responsibilities

The management of a PSPS event requires coordination between many different functional groups within a utility, touching nearly every functional area to some extent. As such, NorthWestern Energy’s PSPS strategy either includes direct business group representation or indirect representation through the PSPS Awareness Team and Incident Command Team. This ensures NorthWestern is well-equipped to navigate a wide variety of situations, make informed and timely decisions, and gather input from a variety of internal and external stakeholders and SMEs. While the specific individuals involved in each PSPS event may vary, the representation of NorthWestern business groups remains the same. NorthWestern Energy’s PSPS strategy includes representation from a wide variety of NorthWestern business groups who play important roles in PSPS decision making, execution, and communication. Although the specific duties of these groups may vary, it is still valuable to understand the general roles that each of these groups have in the successful consideration, planning, and execution of a PSPS event. The following sections provide an overview of the responsibilities that are unique to each of the functional groups represented in NorthWestern Energy’s PSPS strategy.

4.3.1 Situational Awareness

- Monitor current and forecasted weather conditions (near and long term), environmental conditions and ongoing wildfire risk factors that can initiate a PSPS.
- Communicate internally when PSPS conditions are present or circumstances may be necessary.
- Run fire simulation models as appropriate to understand area and potential impacts.
- Assist in PSPS information-gathering, evaluation, and decision making during a PSPS event.
- Participate in AARs and ensure modifications to PSPS protocol are implemented as necessary.

4.3.2 Wildfire Operations

- Assume Incident Commander (IC) responsibility for the PSPS event and provide overall leadership, coordination, and strategic direction for incident response activities.
- Establish and maintain the Incident Command Team structure, including identifying and assigning appropriate personnel and SMEs necessary to support operational, situational awareness, and communication functions.
- Oversee and coordinate the operational execution of the PSPS event, including preparedness activities, de-energization, re-energization, and event closeout in accordance with this Plan.
- Direct post-event review activities, including facilitating the AAR, documenting lessons learned and identifying opportunities for improvement.

4.3.3 Distribution Operations

- Formulate and execute safe and reliable PSPS protocols and procedures.
- Coordinate with Situational Awareness to continue evaluating enhancements to PSPS event.
- Ensure training exercises, operations planning and PSPS related activities occur annually.
- Ensure personnel involved are appropriately trained to perform all relevant responsibilities under this PSPS Plan.
- Assist with PSPS evaluation and decision making with consideration for customer and stakeholder impacts, system performance, and environmental conditions.
- Support DOC and Customer Care in developing de-energization and re-energization plans for notification of PSPS events.
- Review the impacted area of the established PSPS to create premise lists and switching plans to be distributed to appropriate departments for customer notifications and execution of the Plan.
- Establish and schedule staffing resources at appropriate levels for conducting PSPS events.
- Confirm availability of crews and equipment to aid and support PSPS events.
- Perform observations, patrols, and other PSPS tasks as necessary before, during, and after the event.
- Perform necessary repairs to safely restore power to the system following established practices.
- Communicate and report ETRs to DOC and appropriate departments.

- Request additional resources as needed including air patrol for line inspection as required following a PSPS event.
- Assist appropriate departments with engaging public safety partners and critical facilities, before during, and after a PSPS event.
- Substation Operations will monitor substations and take necessary steps to support PSPS as required.
- Participate in AAR and Lessons Learned after PSPS event and ensure modifications to PSPS protocol are implemented as necessary.

4.3.4 Distribution Operations Control

- Assist Distribution Operations in developing de-energization and re-energization plans for a PSPS event.
- Support communication efforts by identifying impacted customers.
- Review, simulate, and execute switching plans using ADMS at each planning milestone.
- Update planning information in iCommunicate to support customer outage mapping and communications.
- Ensure department employees are trained to manage PSPS events.
- Engage with Operations in the de-energization and re-energization per the approved plan for the PSPS event.
- Monitor the network model during the PSPS event and crews in the field for safety.
- Manage ERTs and coordinate step restoration activities.
- Confirm system is back to normal, crews are accounted for and final communications are complete after system is restored to normal operating conditions.
- Participate in AAR and Lessons Learned after PSPS event.

4.3.5 Grid Operations

- Grid Operations is responsible for maintaining transmission system reliability and managing load/generation balance.
- Evaluate transmission system reliability due to PSPS outage and develop mitigation plans to prevent adverse impacts to system reliability.
- Perform PSPS outage notifications to responsible Reliability Coordinator (RC), impacted utilities and internal parties.
- Determine transmission scheduling impacts of PSPS outage and update OASIS and market transmission availability.
- Review PSPS switching plans for equipment and coordinate switching assignments with responsible Division.
- Coordinate with field personnel in the de-energization and re-energization of PSPS equipment per the PSPS plan.
- Issue and track all transmission PSPS switching orders and clearances to ensure field crew safety.
- Perform real-time operations and monitoring of NorthWestern Energy Transmission Operator and Balancing Authority areas and take necessary actions to maintain system reliability at all times.
- Ensure all field personnel are accounted for and in the clear prior to re-energization of PSPS equipment.
- Verify PSPS equipment has been returned to normal operations and perform notification to impacted parties of termination of PSPS event.
- Participate in AAR and Lessons Learned after PSPS event.

4.3.6 Risk Management

- Ensure that a single source of notes and records is being kept throughout a PSPS event.
- Maintaining an independent record of PSPS events including the customer and stakeholder, environmental, and system performance considerations.
- Lead a review and maintain notes of recent decisions during every PSPS team meeting.
- Notify and engage insurance companies as appropriate.
- Notify Legal as needed for additional resources.

4.3.7 Customer Care

- Respond to customer inquiries about a PSPS event with information provided by Corporate Communications, Community Connections, or other business groups.
- Assist in customer and stakeholder impact assessments.
- Ensure customer service representatives and customer associates are appropriately trained to manage customer interactions during a PSPS event.
- Work with other groups to ensure that the PSPS Communication Strategy is being executed during all stages of a PSPS event.
- Ensure direct customer notifications (calls/texts/emails) are delivered timely and accurately to impacted customers.
- Flag any additional or new customer concerns not being addressed through current communication materials.
- Participate in AARs and Lessons Learned after PSPS event.

4.3.8 Asset Management

- Evaluate and communicate asset system health in PSPS scoping areas.
- Provide/analyze system performance data for PSPS decision criteria.
- Review and provide input for any fire simulations activities related to a PSPS zone.
- Support repairs of damaged infrastructure as needed.
- Support communication responsibilities with the Public Service Commission as needed.
- Participate in AARs and Lessons Learned after PSPS event.

4.3.9 Senior Leadership

- Senior leadership will be established by NorthWestern Executives for the Incident Command Team. Only one Senior Leader will be established for purposes of the role within the PSPS event planning and execution. Assignment of a Senior Leader is determined as follows:
- Senior Leadership will be the executive most closely aligned with the systems or outcomes during a PSPS event. Specifically, the following should be used for designation of Senior Leadership:
 - ↳ Vice-President Distribution
 - ↳ Vice-President Transmission
 - ↳ Vice-President Asset Management
 - ↳ Vice-President General Counsel
- Evaluate inputs from multiple functional departments evaluating risks associated with execution of a PSPS event including, but not limited to, customer and stakeholder impacts, environmental conditions, and system performance.
- Serve as final decision-making authority including authorizing the Incident Command Team to execute a PSPS de-energization should conditions warrant it necessary.
- Participate in AARs and Lessons Learned after PSPS event.

4.3.10 Safety

- Ensure personnel are appropriately trained to perform all relevant responsibilities as needed under the PSPS Plan.
- Ensure adherence to safety manual are followed throughout PSPS events.
- Provide training on PSPS Plan requirements for personnel as needed.
- Exercise emergency authority to stop and prevent unsafe acts.
- Monitor incident operations and advise on matters relating to the health and safety of incident resources.
- Work with Corporate Communications to provide timely reviews of any gathered creative assets (photos, videos, etc.)
- Participate in AARs and Lessons Learned after PSPS event and modify PSPS plan as needed.

4.3.11 Corporate Communications

- Corporate Communications develops and executes PSPS communications to customers and employees and supports other business units in their communication efforts with regulators, critical facility operators, public safety partners, key accounts, investor relations, and other stakeholders.
- Work with all other groups to ensure that the PSPS Communication Strategy is being executed during all stages of a PSPS event.
- Ensure consistent and accurate information is disseminated.
- Monitor conversations and engage on social media channels as appropriate.
- Provide on-call media response.
- Produce and/or gather creative assets (photos, videos, etc.) to accompany communication materials.
- In coordination with Operations, Community Connections, and Regulatory Affairs, work with public safety partners, critical facilities, regulators, and other stakeholders to execute a comprehensive, coordinated, and cohesive customer notification framework.
- To the extent possible and in coordination with Customer Care, Operations, BT, and other groups, notify stakeholders before, during, and after a PSPS event with the following information:
 - ↳ Expected timing and duration of the PSPS event.
 - ↳ Contact information and communication resources.
 - ↳ Provide up-to-date information on NorthWestern Energy website as single point source of the most accurate and current information available to all audiences.
- Distribute information via appropriate communication channels for specific audiences as needed.
- Provide scripts for recording and distribution through Distribution Operations Control.
- Participate in AARs and Lessons Learned after PSPS event and modify communication practices as needed.

4.3.12 Community Connections (Community Relations & Key Accounts)

- Key Account/Community Relation Managers will identify and notify key account/sensitive customers that are affected by the PSPS event.
- Work with all other groups to ensure that the PSPS Communication Strategy is being executed during all stages of a PSPS event.
- Collaborate with Corporate Communications and other internal teams to provide regular updates to public safety partners and key stakeholders before, during, and after PSPS events.
- Coordinate with other internal groups, public safety partners and community organizations on opening of charging/cooling centers or other Community Resource Centers (CRC).
- Respond to customer inquiries about PSPS events.
- Ensure managers are appropriately trained to perform customer interactions during a PSPS event.
- Assist in possible media response.
- Participate in AARs and Lessons Learned after PSPS event.

4.3.13 Business Technology

- During a PSPS event, Business Technology is responsible for ensuring the functionality and stability of technology systems.
- Ensures functionality of websites, maps, internal tech.
- Provide updates to issues with internal technology (iConnect, PSPS Incident Management Hub, etc.)
- Provides permissions to access internal communication tools.
- Ensure functionality of external public facing website and maps.
- Supports customer notification systems.
- Monitors for cyber security threats.
- Supports remote work capabilities.
- Participates in IC calls and AAR.

5 Situational Awareness Strategy

5.1 Introduction and Purpose

The Situational Awareness Strategy describes NorthWestern Energy’s process for monitoring weather and environmental conditions that may result in the consideration of a PSPS event or the progression of an event. By monitoring the dynamic conditions involved in these situations, NorthWestern aims to optimize the decision-making process, allocate resources efficiently, and minimize the impact on communities and critical infrastructure. Using a multifactor decision-making process and proactive monitoring of conditions, this strategy seeks to empower stakeholders at all levels to take timely and appropriate actions to mitigate risks and enhance public safety during PSPS events.

5.2 Overview

Situational awareness is paramount for efficiently managing risk and ensuring the safety of communities, natural resources, and critical infrastructure. PSPS events serve to reduce the risk of wildfires or other hazards caused by extreme weather conditions but can introduce dynamic and complex operational environments. Maintaining situational awareness involves continuously monitoring and comprehensively understanding evolving conditions that influence the decision-making process throughout the duration of a PSPS event. This includes factors such as wildfire risk, weather, and vegetation fuel moisture to name a few. The following sections provide more detail on the factors and approaches utilized by NorthWestern Energy to assess environmental risks and the corresponding efficacy of a PSPS.

5.3 Weather Monitoring Strategy

Easy access to meteorological, fuel conditions, and wildfire risk data is a crucial aspect of NorthWestern Energy’s strategy for preventing wildfires, as well as for considering a PSPS event. Given the significant diversity in these conditions across its service territory, NorthWestern Energy relies on publicly available models and data, as well as internally developed risk models (Figure 4). Utilizing multiple weather models allows NorthWestern Energy to understand a possible range of outcomes and provides a more comprehensive understanding of the forecasted conditions that are on the horizon.

Publicly available information from the National Weather Service (NWS) and the USFS Severe Fire Danger Index (SFDI) are currently included as part of the models utilized by NorthWestern Energy. These resources are supplemented by NorthWestern Energy’s internally developed and maintained risk models and informed by technical consultation with experienced wildfire risk professionals to support assessments of current and forecasted wildfire risk across the company’s service territory. NorthWestern Energy’s internal models currently consist of the Wildfire Risk index (WFRI) and the Composite Risk Index (CRI). These metrics are then used as inputs to the operational decision-making process. Further explanation of these models can be found in their respective sections below (Section 5.3.3 and 5.3.4).



5.3.1 National Weather Service

The NWS is the operational weather services component of the National Oceanic and Atmospheric Administration (NOAA), an agency of the United States Department of Commerce. This public platform provides daily meteorological conditions. It considers factors like temperature, humidity, wind speed, and fuel moisture content, all of which help assess the likelihood and severity of wildfires. By providing timely updates and alerts, the NWS helps communities take proactive measures to mitigate the risk of wildfires and protect lives and property.

The NWS issues advisories, watches, and warnings to alert the public about hazardous weather conditions. Advisories or notifications are issued for weather conditions that are not as severe as those warranting a warning but could still be hazardous or impactful. A watch is issued when hazardous weather conditions are possible within a specific area and time frame but are not yet occurring or imminent. A warning is issued when hazardous weather conditions are imminent or occurring within a specific area and time frame.

A Red Flag Warning is one example of a forecast issued by the NWS to alert the public, firefighters, and land management agencies about weather conditions conducive to extreme fire behavior. These conditions typically include a combination of low relative humidity, strong winds, dry vegetation, and high temperatures. A Red Flag Warning indicates that critical fire weather conditions are either occurring or are expected to occur shortly. When a Red Flag Warning is issued, it is essential for individuals and communities to take extra precautions to prevent fires and be prepared to respond quickly to any wildfires that may occur.

5.3.2 Severe Fire Danger Index (SFDI)

The SFDI is an index created by Forest Service and used by fire agencies to assess the level of fire danger in a particular area. It considers various factors such as temperature, humidity, wind speed, and fuel moisture content to determine the likelihood and severity of wildfires. The index typically ranges from low to severe, with severe indicating conditions highly conducive to rapid fire spread and difficulty in suppression efforts. It serves as a warning system to alert authorities and the public about the potential for dangerous fire behavior.

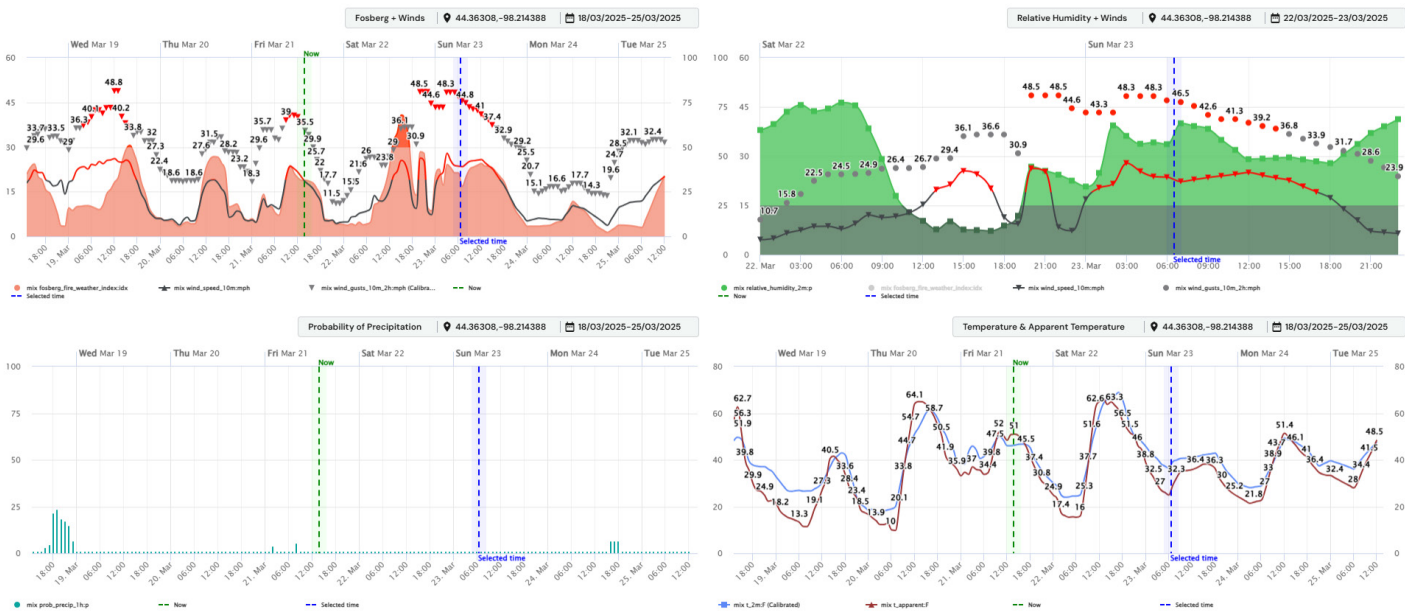


Figure 4 – General wildfire weather forecast for NorthWestern Energy’s service territory

5.3.3 Wildfire Risk Index (WFRI)

NorthWestern Energy’s WFRI serves as a valuable tool for assessing, quantifying, and communicating the risk of wildfires, enabling informed decision making and proactive measures to protect lives, property, and natural resources.

The WFRI converts environmental, statistical and scientific data into an easily understood “short-term” forecast for NorthWestern’s service territory. Variables considered within the dynamic model include but are not limited to: The USFS Severe Fire Danger Index, NorthWestern Energy asset health, and consequence modeling (risk tiers).

From these inputs, the WFRI provides a seven-day forecast, updated daily, displayed at the sub-circuit level of the associated wildfire risk (Figure 5). It is used both as an operational parameter (i.e., when devices are set into different operational protection strategy) as well to give early indication of PSPS probable scenarios on the horizon.

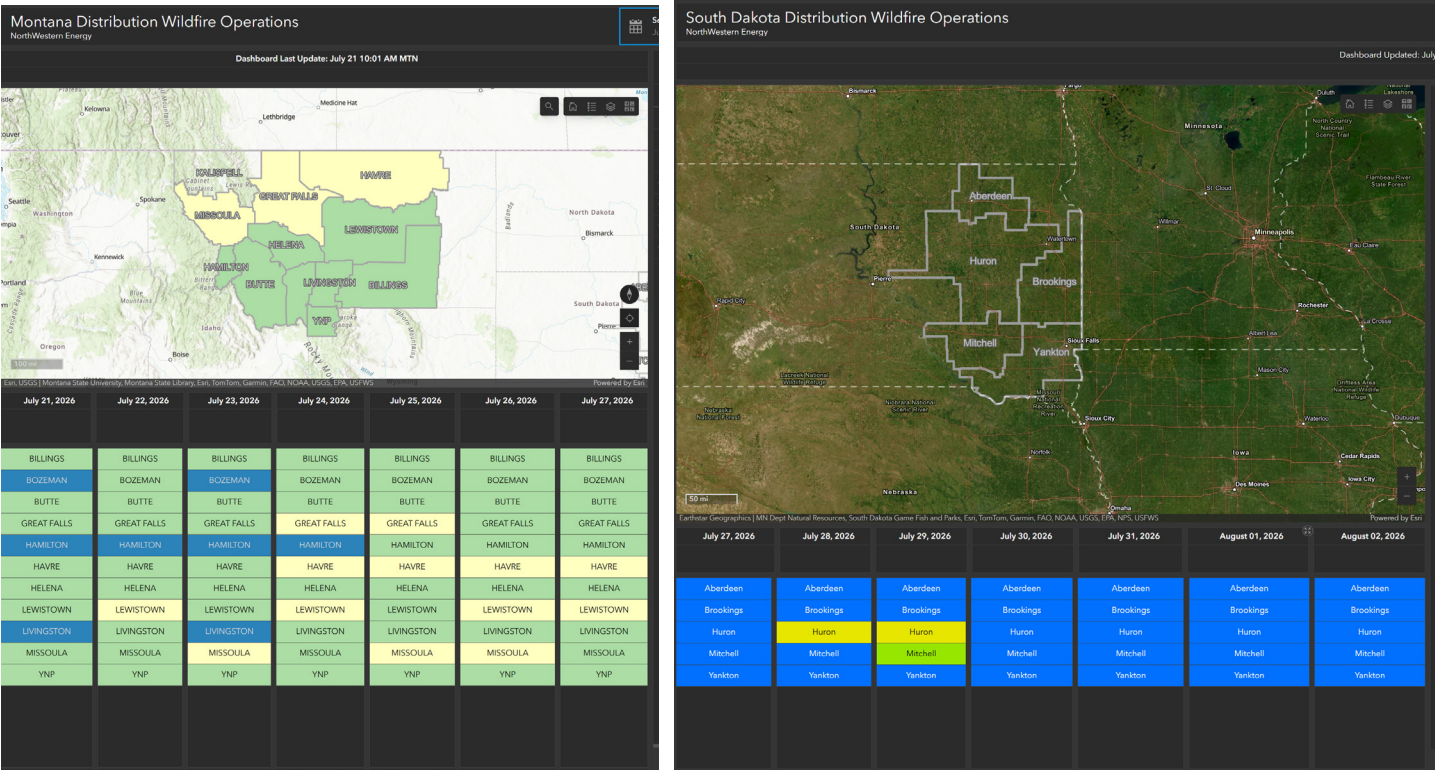


Figure 5 – Examples of NorthWestern Energy’s WFRI Dashboard

5.3.4 Composite Risk Index (CRI)

The CRI is a decision-support tool used by NorthWestern Energy to evaluate forecasted wildfire risk across its service territory. Developed in consultation with experienced wildfire risk professionals, the CRI integrates forecast weather conditions and wildfire behavior characteristics within established Weather Monitoring Zones (WMZs) to provide geographically specific assessment of relative wildfire risk.



5.4 PSPS Threshold Guidance

By nature of NorthWestern Energy’s diverse and expansive service territory, it would be impractical and ineffective to identify a single weather or environmental criteria under which the decision to employ a PSPS could be based. For instance, the criteria that may warrant a PSPS event in one area may not warrant it in another due to differences in a wide variety of factors.

In recognition of this reality, NorthWestern’s approach to the consideration of PSPS events as a mitigative tool is not based on a single environmental factor. Instead, NorthWestern has developed models that blend both internal and external data to provide consistent evaluations of wildfire risk. Importantly, however, these models and indices are treated as just a few of the many important data points to consider. In other words, this approach treats these models as valuable guidance rather than strict thresholds and enables NorthWestern (through its teams of SMEs) to then also consider several situation-specific factors and thus cannot be defined explicitly by a formula or definitive triggers. These factors includes: assessing grid resiliency (such as the condition or health of the electrical infrastructure, redundancy options, and the likelihood of equipment failure under forecasted conditions), emergency response capabilities (local fire suppression resources, mutual-aid availability, and coordination with public-safety agencies), fire spread modeling (fuel moisture, rate of spread, slope, etc.) and understanding customer impacts of potential de-energization. Thus, there is no one factor, such as Red Flag Warnings, used as the ultimate determining factor for de-energization, but rather a comprehensive assessment of all aspects that drive final PSPS decision making.

NorthWestern Energy prioritizes a risk-informed approach to de-energization that balances wildfire prevention with the need to maintain electric service for safety, emergency communications, and essential services. Due to the inherent risks and consequences with proactive de-energizations, it is NorthWestern Energy’s approach to implement PSPS de-energizations as a tool of last resort.

5.5 Situational Awareness Strategy Summary

NorthWestern Energy’s Situational Awareness Strategy involves continuous monitoring of factors such as wildfire risk, weather, and vegetation fuel moisture. This is accomplished through utilizing both publicly available models (e.g., NWS, SFDI) and internal models (e.g., WFRI, CRI). PSPS environmental thresholds are not established to be the sole driver of a PSPS event but are used to empower and educate the operational, communications, and decision-making personnel to make data informed decisions in a near real-time format. Decision making during PSPS events also includes a variety of other factors and considerations beyond environmental conditions, such as customer and stakeholder impacts as well as system health and performance among others. Ultimately, the goal of NorthWestern Energy’s Situational Awareness Strategy is to provide its operational decision makers with the best possible information regarding environmental and system conditions empowering them to make informed situation-specific decisions regarding the efficacy and impacts of executing a PSPS event.

6 Operational Strategy

6.1 Introduction and Purpose

Whereas the Situational Awareness Strategy described how NorthWestern Energy remains apprised of the many factors that may warrant a PSPS event, the Operational Strategy instead describes how NorthWestern intends to progress through the various stages and phases of a PSPS event when one is being considered or conducted. Fundamental to its PSPS Operational Strategy is NorthWestern’s commitment to safely and reliably serving its customers and communities. As such, NorthWestern’s PSPS operating procedures and work practices define how NorthWestern will prepare its personnel and equipment to proactively de-energize electrical facilities to reduce the risk of a utility-ignited wildfire, how it will carry out this de-energization should it be needed, and how it will safely restore its system. This strategy, in conjunction with the Situational Awareness and Communication Strategies, balances the need to reliably serve the customers of NorthWestern while also recognizing NorthWestern Energy’s role in maintaining a safe environment when faced with extreme fire weather.

6.2 Overview

To understand how NorthWestern operationally manages PSPS events, it is necessary to first review NorthWestern’s general wildfire operational practices. NorthWestern deploys several operational defense strategies as the wildfire risk index increases (Figure 6). Each increase in wildfire risk is matched with a strategy to mitigate that risk while providing safe and reliable service for NorthWestern Energy’s customers and communities. However, under certain extreme fire weather conditions, NorthWestern may eventually reach a point at which it is unable to deploy additional or more sensitive protective strategies to its operating electrical equipment, such as Enhanced Powerline Safety Settings. At this point, the only method remaining to further reduce wildfire risk may be de-energizing the electrical equipment in the area of concern. However, in this scenario the extreme wildfire risk must be considered alongside the impacts and risks posed by power-off scenarios for NorthWestern Energy’s customers and communities. The following sections serve to provide an overview of how NorthWestern will operationally progress through a PSPS event in those situations where the wildfire risk of continuing to operate electrical equipment is unacceptably high.

	Wildfire Risk	Risk Description	Operational Defense Strategy
Safety Risk Based Operation ↕ Reliability Performance Based Operation	Extreme	Fire Start Imminent <i>Uncontrollable</i>	PSPS Evaluation + Fire Season Operating Mode 2
	Very High	Fire Start Easily <i>Control Limited</i>	Fire Season Operating Mode 2
	High	Fire Start Caution <i>Control Challenging</i>	Fire Season Operating Mode 1
	Moderate	Fire Start Challenging <i>Control Achievable</i>	Normal Operations
	Low	Fire Start Difficult <i>Control Easily</i>	Normal Operations

Figure 6 – Operational Defense Strategy Matrix

6.3 Stage 1 Operations

Once the available non-de-energization mitigation measures have been exhausted and the PSPS Awareness Team has been established, Stage 1 operations formally begin. Throughout Stage 1, these actions generally involve the continued monitoring of current and forecasted conditions as well as extensive preparation for (and communication about) a potential de-energization. However, it is worth noting that the significance and frequency of the actions taken in Stage 1 are intended to correspond to the severity and likelihood of the forecasted wildfire conditions. As such, Stage 1 of NorthWestern Energy’s PSPS Plan has also been sub-divided into 4 distinct phases. Importantly, because the conditions may unexpectedly improve or worsen quicker or slower than forecasted, there is no pre-determined time within each phase of Stage 1. Instead, each phase is defined based on the anticipated timing of the potential de-energization which may change in accordance with changes in forecasted conditions. In practice, this means that the four phases

of Stage 1 of NorthWestern’s PSPS Plan may not always progress linearly and consistently. In these scenarios, NorthWestern will make efforts to ensure operational consistency and communication clarity.

Generalized details regarding the operational actions being taken in each of the four phases of Stage 1 are presented below:

Phase 1.1 – Monitoring:

- Functional areas begin pre-planning for possible PSPS de-energization event, including subsequent meetings with key supervision for planning purposes.
- Initial scoping of impact area and customer impacts is performed.
- Analysis of staffing available during entire period of expected PSPS event is performed.
- Continued and heightened monitoring of conditions. The point at which the anticipated de-energization is believed to be less than 72 hours away, the transition to Phase 1.2 begins.
- Initial communication is provided to public safety partners, governmental agencies and potentially impacted critical facilities to begin early preparation for the potential PSPS event, based on NorthWestern’s assessment of conditions, risk, and stakeholder communication needs.

Phase 1.2 – Watch:

- Impact area and customer impact analysis is refined.
- Initial external customer communications are provided in accordance with the Communication Strategy (Section 7).
- Maintain communication and coordination with external stakeholders for duration of the PSPS event.
- Staffing is reviewed across key departments for duration of PSPS event.
- Communication provided to uninvolved employees.
- Incident Command Team is established upon transition from Phase 1.2 to 1.3 (i.e., when the anticipated de-energization is less than 48 hours away).

Phase 1.3 – Warning:

- Further detailed analysis of system performance and predicted fire weather is performed.
- Ground patrol of anticipated impact area is conducted to update asset health and right-of-way conditions with real-time observations.
- Consultation with, and communication to, outside agencies as needed.
- Continued and revised communications provided to external stakeholders and customers in accordance with the Communication Strategy (Section 7).
- If de-energization is determined to be imminent to combat wildfire conditions, Senior Leadership(s), grants authority to the Incident Commander to perform the as needed switching to safely execute the PSPS.
- Incident Commander works to schedule the de-energization prompting the transition to Phase 1.4.

Phase 1.4 – Alert:

- Electronic switching instructions finalized.
- Field crews are mobilized to perform de-energization switching.
- PSPS map is populated with anticipated event details.
- Imminent PSPS de-energization communications are provided to impacted stakeholders, including emergency services, customers, community leaders, and fire agencies in accordance with the Communication Strategy (Section 7).
- Switching for de-energization is performed resulting in a transition to Stage 2 operations.

6.4 Stage 2 Operations

Stage 2 of NorthWestern Energy PSPS Plan begins when field crews have completed their switching efforts resulting in the target area being de-energized. Similarly, this stage ends when all customers are fully restored to utility service and the PSPS event has been closed out and documented. Stage 2, much like Stage 1, focuses on the continued monitoring of current and forecasted conditions as well as extensive preparation and communication. However, unlike Stage 1, the focus now shifts to monitoring and preparing for conditions to improve to a point where it becomes safe to re-energize electrical equipment. This period requires both the weather conditions to retreat acceptably below fire risk thresholds for the area as well as the electrical system undergoing a series of inspections and repairs, if needed, prior to re-energization. Due to the inherent variability of these conditions, Stage 2 is sub-divided into 3 distinct phases – corresponding to the natural progression of re-energization efforts. Generalized details regarding the operational actions being taken in each of the three phases of Stage 2 are presented below.

The following sub-phases describe, in general, the operational responsibilities for this phase of the PSPS event:

Phase 2.1 – PSPS In-Effect:

- Weather conditions, fire activity, and other factors are continuously monitored and reviewed by the Incident Command Team to assess when it will be safe to restore power.
- Initial and ongoing communication with stakeholders on system status and predicted time to restoration are provided in accordance with the Communication Strategy (Section 7).
- Business orders are proactively created to address any known or expected repairs.
- Evaluation of crew resources, materials, engineer resources, etc. is performed.
- Upon the identification of improved conditions (e.g., wildfire risk has decreased below an acceptable risk threshold for the particular PSPS area), the Incident Commander (based on inputs from the IC team), may commence restoration efforts resulting in a transition to Phase 2.2.

Phase 2.2 – Restoration:

- A detailed ground and/or aerial assessment of the entire system in the area of de-energization is performed.
- Repairs are conducted as expeditiously as possible.
- As repairs are made and/or the system is found to be safe, re-energization begins (typically in a stepped approach).
- Customer and stakeholder notifications continue as necessary and in accordance with the Communication Strategy (Section 7).
- Records of repairs are collected for future analysis.
- Service restoration is completed and verified resulting in a transition to Phase 2.3.

Phase 2.3 – Closeout:

- Event documentation and outage reporting is finalized.
- Feedback sessions are conducted to identify areas for improvement in future events.
- Fire simulations at failed component locations are conducted to understand risk avoided.
- Incident Command Team is disbanded.
- Risk management department compiles all PSPS documentation.
- Business processing orders are closed out.

6.5 Operational Strategy Summary

Wildfire risk and the decision to de-energize the system is a complex and dynamic process, and PSPS events are cross-functional activities that require involvement from a variety of stakeholders to conduct. While it is impractical to completely and prescriptively define the operational tasks to be completed during a PSPS event, the operational strategy described above provides an overview of the approach NorthWestern Energy employs to manage this dynamic risk. Fundamentally, NorthWestern’s approach is founded on data-informed decision making to maintain the safety of customers, communities, and stakeholders. This is made possible by balancing the threats posed by operating electric systems during periods of elevated fire weather conditions with the impacts of service interruptions.



7 Communication Strategy

7.1 Introduction and Purpose

Another key component to NorthWestern Energy’s PSPS Plan is its Communication Strategy. The primary purpose of a Communication Strategy is to define what types of information will be provided to internal and external stakeholders and what channels (i.e., means of communication) will be used to provide that information to ensure it reaches the intended audience. Other purposes include how, and how often, the information will be provided and who is responsible for creating and distributing the information. A Communication Strategy is a valuable tool in many situations a utility may encounter, but there are several factors that make it essential for managing PSPS events in particular. For example:

- PSPS events can be more consequential than typical outages and can directly and indirectly impact a variety and number of internal and external stakeholders (e.g., residential customers, business owners, cellular network operators, fire departments, governmental agencies, etc.).
- The variety and number of external stakeholders also generally exceed the relevant external stakeholders for planned and unplanned outages – making it necessary to utilize centralized and public channels (e.g., public website outage map) rather than the purely targeted and private communications used for planned and unplanned outages (e.g., individual text/email alerts).
- Different stakeholder groups require different levels, frequencies, and types of information as well as different channels for accessing/receiving information (e.g., outage map, social media, automated calls, CSRs, key account managers, TV/radio announcements, etc.).
- Not all channels are desirable or practical as a method for keeping stakeholders apprised of a PSPS event. It is impractical to accurately utilize and maintain all possible communication channels, and some channels may work better for certain types of information and/or stakeholders.
- Without a Communication Strategy, stakeholders may not understand where to go for information, may not receive important information (or may receive conflicting/inaccurate/outdated information), and may attempt to use unsupported or undesirable channels (e.g., large call center volumes, unmonitored social media posts, etc.)
- PSPS events are relatively new practices to utilities and external stakeholders and are often much more dynamic, unpredictable, and time-sensitive than typical planned and unplanned outages – making it difficult to rely solely on traditional communication practices and channels.

7.2 Overview

NorthWestern Energy’s PSPS Communication Strategy is comprised of both an internal communication strategy and an external Communication Strategy. Although external communications are often the primary focus when it comes to managing a PSPS event, the foundation for effective external communications is a comprehensive internal strategy. A thorough internal communication strategy ensures that internal parties are providing and receiving accurate and consistent information in a timely manner and will define:

- How, when, and where information is transferred internally (i.e., channels/methods).
- Which employees, or groups of employees, must be kept informed. Similarly, an external Communication Strategy is responsible for defining how relevant information is then distributed to external stakeholders. In general, external Communication Strategy describes:
 - ↳ What general types of information will be provided to external stakeholders.
 - ↳ When/how/how often that information will be provided to external partie (i.e., channels, timelines, etc.)
 - ↳ What external stakeholders need to be kept informed and to what extent.
 - ↳ What personnel are responsible for creating and distributing the information and what those responsibilities are.

NorthWestern Energy’s internal and external PSPS communication strategies provide draft content for communications during a PSPS event. This gives NorthWestern Energy a clear outline for communications during a PSPS event, but also allows the specifics of the communications to be defined by the PSPS Awareness Team and Incident Command Team on a case-by-case basis to accommodate the variable and dynamic nature of PSPS events. It is impractical to be completely prescriptive about the exact messaging and information that will go out for any generalized PSPS event.

However, NorthWestern Energy’s internal and external communication plans provide a good starting point for effective communications while still allowing those communications to be tailored for specific events.

7.3 Internal Strategy

Depending on the situation, NorthWestern Energy utilizes many different channels (e.g., email, text, phone calls, file sharing, etc.) for relaying information internally across a widely dispersed employee population. While these can be effective channels in some cases (and will be used, in part, during PSPS events), they can also be inefficient for navigating the dynamic, fast-paced, multi-faceted, and multi-participant discussions necessary during PSPS events. Therefore, the foundational principle for NorthWestern Energy’s internal Communication Strategy is that, during PSPS events, both the PSPS Awareness and Incident Command Teams will be part of regular meetings. After each of these meetings (and any ad-hoc meetings that may be called to order), communications-focused employees would then be responsible for delivering the agreed-upon messaging via the channels and timeframes defined by the external communication channel strategy (Section 7.4). Depending on the severity and scale of the ongoing PSPS events, as well as the agreed-upon messaging, the involved internal stakeholders with external communication responsibilities may vary.

7.4 External Strategy

NorthWestern Energy’s external Communication Strategy describes what channels are used during different phases of PSPS events to relay information to external stakeholders. A central principle of this Communication Strategy was the designation of a default or primary communication channel that would be available to all stakeholders. Since PSPS events are highly dynamic and involve a wide variety of external parties, NorthWestern Energy recognized the need to select a flexible and high-speed communication channel that can provide consistent and up-to-date baseline information accessible to all external parties. Another important element of NorthWestern Energy’s strategy is based on the recognition that certain key stakeholders (such as customers directly impacted by PSPS outages, key account holders, large businesses, and governmental bodies) will likely require different, and perhaps more detailed, information than provided in the baseline channel. As such, NorthWestern has identified several other supplemental channels of communication designed to augment the baseline channel and meet the specific needs of these key stakeholders.

To provide baseline PSPS information to all external parties, NorthWestern Energy designated its existing public webpage as its default channel. Not only is it the current default source for providing outage information to external parties (making it familiar to existing stakeholders), it is also a flexible platform that can be updated quickly and regularly. Additionally, it allows users to subscribe to SMS and email notifications for ongoing outages (i.e., Phases

2.1 through 2.2) – allowing interested parties to stay informed about an ongoing PSPS outage without having to refer back to the outage map. NorthWestern will leverage this webpage to provide general information about a PSPS event (beginning in Phase 1.2) such as a map with the anticipated impact areas of PSPS events along with regular updates based on the decisions made during the daily, and ad hoc, PSPS team meetings. Our PSPS webpage can be found at NorthWesternEnergy.com/PSPS and a mockup of what this page would look like during a hypothetical PSPS event is shown below (Figure 7).

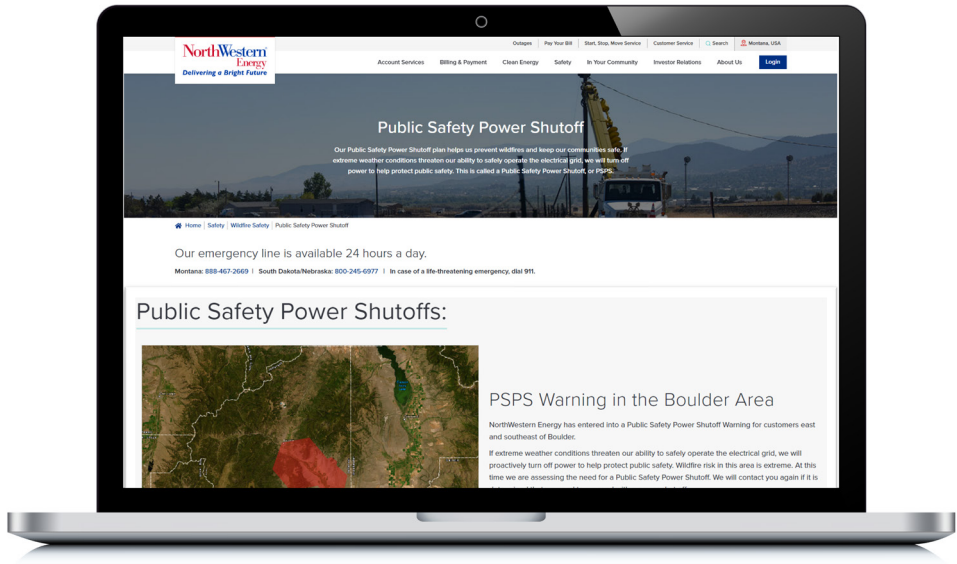


Figure 7 – Example mockup of NorthWestern Energy’s webpage displaying a hypothetical PSPS event.

Recognizing that this webpage would not address all the needs of external stakeholders, NorthWestern Energy also identified several supplemental communication channels designed to provide additional information or context to specific external stakeholders. Each channel is intended to be applied at different phases of a PSPS event and is targeted toward specific external parties. These channels, each of which will be described in more detail below, include:

- Automated outbound calls, texts, and/or emails sent to impacted customers.
- Interactive Voice Response (IVR) for incoming calls
- NorthWestern Energy Corporate Communications
 - ↳ NorthWestern Energy Website
 - Public Safety Power Shutoff webpage
 - FAQ page
 - Website banner
- NorthWestern Energy Customer Care
 - ↳ Customer Service Representatives
 - ↳ Customer Associates
- NorthWestern Energy Community Connections
 - ↳ Key Account Managers
 - ↳ Community Relations Managers

Other channels, which may not always be utilized during PSPS events, but will be utilized when broader awareness is necessary include:

- NorthWestern Energy Corporate Communications:
 - ↳ Social media (e.g., Facebook, Instagram, X)
 - ↳ Earned media (press releases distributed to news outlets and posted to website)
 - ↳ Paid media (radio, digital, broadcast ads and PSAs)



- NorthWestern Energy Outage Management System (OMS) :
 - ↳ iTOA
 - ↳ webOMS
 - ↳ OASIS

In addition to identifying communication channels as part of its strategy, NorthWestern Energy also identified and categorized stakeholders to ensure that its Communication Strategy and channel selection would reach all external stakeholders with a direct or indirect interest in PSPS events (Figure 8). The three generalized stakeholder groups identified in the channel strategy are:

- All Stakeholders - Any party seeking PSPS event info (including those listed below).
- Impacted Customers - Specific electric customers whose service is, or is expected to be, interrupted during a PSPS event.
- Target/Key Stakeholders - Any specific stakeholder or stakeholder group with a special interest in PSPS events. Examples include:
 - ↳ Large Customers (e.g., large businesses, commercial & industrial customers, etc.)
 - ↳ Critical Customers (e.g., hospitals, nursing homes, long-term care facilities, universities, etc.)
 - ↳ Public Safety Partners (e.g., fire departments, law enforcement, hospitals, churches, community centers, shelters, nonprofit emergency service providers, etc.)
 - ↳ Service Providers (e.g., co-ops, cellular providers, assistance agencies, water and sewer, transportation such as railroads, EV supply equipment, bus services, etc.)
 - ↳ Government (e.g., local, state, federal, tribal)
 - ↳ Transmission and Supply Organizations (e.g., WECC, NERC, reliability coordinators, adjacent interconnecting entities, ISOs, RTOs, etc.)
 - ↳ Regulators

Some challenges often faced when managing external communications for highly dynamic PSPS events include ensuring that the list of impacted customers is complete, accurate, consistent with the current scope of the event, and can be adjusted quickly if, and when, the scope of the event changes. To support this process, NorthWestern developed its “Premise Tracking Guide” (Figure 8), which helps identify impacted customers as a PSPS event evolves. This tool allows NorthWestern to quickly generate impacted-customer lists based on service connectivity and the anticipated de-energization area, improving the accuracy and efficiency of communications with affected customers.

Another function of the Premise Tracking Guide is to identify key accounts (large load customers) and critical facilities, such as hospitals, gas stations, etc. Identifying these customers from the customer list enables NorthWestern Energy staff, such as Community Connections, to provide advanced communications, when possible, to these customers to support outage preparation efforts.

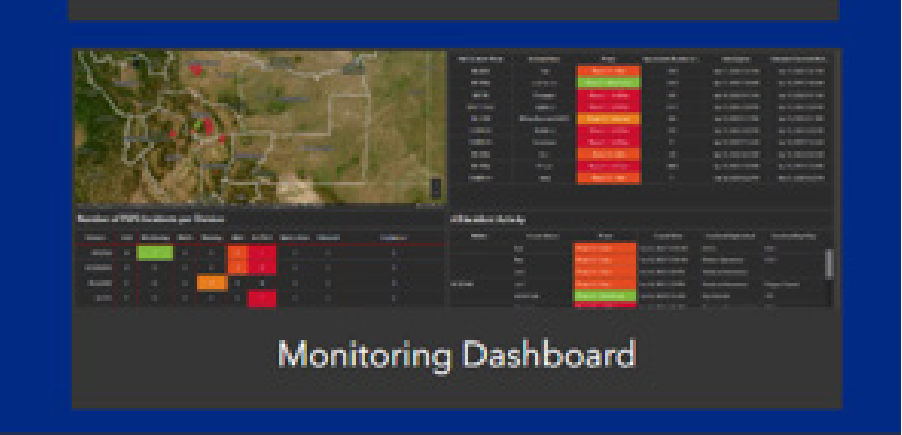


Figure 8 – Example mockup of NorthWestern Energy’s internal PSPS Tracking Tool.

7.4.1 Automated Calls, Texts, and/or Emails

Automated calls, texts, and/or emails are key channels for targeted customer communications. They are intended to be initiated in Phase 1.2 (PSPS Watch) and used throughout all subsequent PSPS phases, including if the PSPS event is cancelled. This approach ensures continuous customer notification during both escalations and de-escalations and supports situations where a PSPS event may progress directly into a Warning, Alert or In-Effect phase without previous notification. The primary purpose of these messages is to inform recipients of updates to wildfire conditions and/or changes to the status of an ongoing PSPS event. In most cases these messages will convey this information by directing recipients to NorthWestern Energy’s external webpage and associated PSPS map as a source for more real-time updates.

Automated call, text, and/or emails are not used for direct customer notifications during Phase 1.1 (PSPS Monitoring). At this stage, forecasted fire weather conditions are generally greater than 72 hours in advance and, therefore, remain subject to significant change as additional meteorological data becomes available. Providing customer notifications beginning in Phase 1.2 (PSPS Watch) helps ensure communications are based on a higher degree of forecast confidence and more clearly defined potential impact areas, thereby reducing the likelihood of unnecessary customer concern or confusion from preliminary or rapidly changing conditions.

Situations may arise in which customers remain within the same PSPS phase for more than 24 hours. In these circumstances, NorthWestern Energy will attempt to provide impacted customers with status update notifications if there has been no progression to a higher phase or regression to a lower phase within the previous 24-hour period.

7.4.2 Public Website

NorthWestern Energy’s public website, in addition to hosting the primary communication channel (the PSPS webpage), also supports other crucial communication channels. First, NorthWestern Energy’s website will always include a PSPS education page designed to educate customers about PSPS events, communication channels (including directing stakeholders to the PSPS webpage as the primary source for real time info), recommended preparations, and other general PSPS information. The second key function of the PSPS webpage is to host an interactive map displaying polygons of anticipated PSPS events, beginning in Phase 1.1 (PSPS Monitoring). The PSPS map is utilized to visually inform customers and stakeholders of the potential PSPS impact areas by displaying polygons of where the potential and current PSPS impact areas are located. Customers and stakeholders can search addresses and view geographic landmarks, such as county borders and other layers, within the map to identify if they are within or near a PSPS impact area. Additionally, external stakeholders, such as emergency managers, can download data layers of PSPS boundaries to use other forms of emergency notifications (e.g. Reverse 911) to alert county residents of PSPS status. When the PSPS reaches Phase 2.1 (PSPS In-Effect), the PSPS map will display the In-Effect boundaries along with NorthWestern Energy’s outage map. Within the outage map, ETRs will be displayed. PSPS webpage intends to communicate potential timing of shutoffs as well.

While the PSPS map would be populated in Phase 1.1, more specific PSPS event information would not be displayed on the website until Phase 1.2 (PSPS Watch). More detailed PSPS event information would then be provided on the PSPS webpage through all subsequent phases. The final way the public website is utilized is to display an informational banner at the top of every page. This banner is intended to be used at the beginning of Phase 1.2, until the power is restored or the PSPS event is cancelled. The banner would reference any ongoing PSPS events and provide a link to the PSPS webpage. It is intended to be a highly visible method for catching the attention of website visitors who may be looking for information about a PSPS event and may be unaware that the PSPS webpage is the primary channel for information.

7.4.3 Interactive Voice Response (IVR)

NorthWestern Energy also selected its Interactive Voice Response (IVR) as another channel focused on directing traffic to its outage map. Much like the website banner, the IVR is intended to be used during all phases of a PSPS event, beginning with Phase 1.2, until the power is restored or the PSPS event is cancelled. During these times the IVR would include a pre-recorded message informing callers, who may be calling to request information about a PSPS event, that the PSPS webpage is the primary source of information about ongoing PSPS events. Not only does this direct and educate external parties, it also helps to reduce NorthWestern Energy call volumes – freeing up internal resources to manage other issues and reduce call wait times.

7.4.4 Social Media

NorthWestern Energy will also utilize its social media platforms for real-time updates during PSPS events to customers and the broader public. Depending on the scale of the PSPS event, a combination of geotargeted and non-geotargeted posts will be used. Communications will primarily consist of geotargeted posts to provide information to specific zip codes, regions or populations experiencing a PSPS event. Non-geotargeted posts would only be used in larger or more complex PSPS events. In these cases, broader posts will serve as an additional tool to direct social media traffic to NorthWestern’s website and PSPS map for more information.

7.4.5 Earned and Paid Media

To further amplify messaging to customers and the public, NorthWestern Energy will utilize a combination of press releases and radio public service announcements (PSAs). NorthWestern maintains established relationships with media partners to help disseminate critical information, including both planned and unplanned outages. These channels will continue to be used to broadly disseminate information to customers, visitors and the general public to increase awareness of PSPS events. Radio serves as an important mechanism to reach audiences who may have limited access to, or familiarity with, digital communications channels such as text, email, websites and social media. Public service announcements distributed via radio represent a form of paid media while press releases and resulting television, print and radio coverage constitute earned media.

PSPS STAKEHOLDER COMMUNICATION CHANNEL STRATEGY

			Stage 1 PSPS Assessment				Stage 2 PSPS Execution		
			1.1	1.2	1.3	1.4	2.1	2.2	2.3
Communication Channel		Purpose of Communication	PSPS Monitoring	PSPS Watch	PSPS Warning	PSPS Alert	PSPS In-Effect	PSPS Restoration	PSPS Closeout
External website	PSPS Page	General PSPS readiness info and updates during events, including PSPS map							
	Outage map								
Customer Care (CSRs, CAs)		Customer-facing employees are provided with latest info that can be relayed to customers							
Community Connections (KAMs, CRMs, etc.)		Key Account & Community Relations Managers provided with info for key stakeholders							
iAlert, iConnect, FYIs and other employee comms		Keep employees informed during an event							
Social media		Reach a broad swath of customers and stakeholders							
IVR		Inbound callers will be directed to get more information about the PSPS on our website in an effort to decrease call volumes							
Call/text/email		Reach out directly to impacted customers							
Earned media		Engage with the media to help spread awareness							
Grid operations (OASIS, webOMS, iTOA, etc.)		Grid Operations may use additional channels for transmission-level PSPS events							
Government affairs and regulatory affairs		Communicate to governor, PSC and others							

**ALL STAKEHOLDERS**
Any party seeking general information about a PSPS event.

**IMPACTED CUSTOMERS**
Customers whose electric service is, or is expected to be, impacted by a PSPS outage.

**TARGET/KEY STAKEHOLDERS**
Government agencies, large customers, critical customers, service providers, public safety partners, etc.

**EMPLOYEES**
Active NorthWestern Energy employees.

Figure 9 – NorthWestern Energy’s PSPS external communication channel strategy showing what communication channels are intended to be used at each stage and phase of a PSPS event, and which stakeholder groups are targeted.

7.4.6 Customer Care

NorthWestern Energy also identified the value in supporting several manual/human-based communication channels during PSPS events. For instance, NorthWestern Energy’s Customer Care group, which includes customer service representatives and customer associates, will be a critical communication channel for many customers and other external parties alike. As such, NorthWestern Energy’s PSPS Communication Strategy requires that one or more Customer Care leaders (e.g., managers, directors, etc.) be included in all PSPS Awareness Team and Incident Command Team meetings. The role of these leaders is to then ensure that all customer-facing Customer Care employees are provided with, and understand, the most up-to-date PSPS information. The general goal of the customer care communication channel is to ensure that Customer Care employees are properly equipped to navigate, escalate, or redirect as needed, any conversations with, or questions from, external parties. However, in addition to fielding incoming inquiries about PSPS events, Customer Care leaders may, in some cases, identify the need to proactively or reactively reach out to specific customers (e.g., energy-dependent customers, hard-to-reach customers, etc.) to provide them with PSPS information.

7.4.7 Community Connections

Another human-based channel identified in NorthWestern Energy’s PSPS Communication Strategy involves its Community Connections group which includes key account managers and community relations managers. This group, much like Customer Care, is likely to receive incoming PSPS inquiries from a variety of external parties such as local governments, critical/energy-dependent customers, and large businesses among others. This group is also generally responsible for proactively and reactively keeping these external stakeholders apprised of situations that may directly or indirectly impact them – who in many cases may require more detailed or timely information than can be provided via other channels. As such, NorthWestern Energy recognizes the value in leveraging the existing communication processes of the Community Connections group to support the broader PSPS Communication Strategy. In short, the approach to the Community Connections channel requires that one or more Community Connections leaders (e.g., managers, directors, local community relations managers, etc.) be included in all PSPS Awareness Team and Incident Command Team meetings. Much like the strategy for Customer Care, the Community Connections leaders are then responsible for disseminating the most up-to-date PSPS information to the appropriate Community Connections employees to enable them to properly navigate, escalate, or redirect any conversations with, or questions from, external parties. Similarly, and perhaps to a greater degree than Customer Care, Community Connections leaders may also identify the need to reach out directly to specific stakeholders to provide them with critical PSPS information.

7.4.8 Corporate Communications

The third human-based channel included in NorthWestern Energy’s PSPS Communication Strategy involves its Corporate Communications group. This group is responsible for any corporate-level communications (website, social media, paid media, press releases, etc.). Due to the inherent potential that PSPS communication needs may escalate beyond the designated strategies listed above and the fact that the external communication responsibilities of Corporate Communications, Customer Care, and Community Connections groups can often overlap, NorthWestern recognized the clear need to include Corporate Communications personnel in its PSPS Communication Strategy. As with Customer Care and Community Connections, the expectation is that one or more Corporate Communications leaders or designee(s) be included in all PSPS Awareness Team and Incident Command Team meetings. These Corporate Communications leaders would then be responsible for keeping their employees up to date with PSPS information. Additionally, it is expected that Corporate Communications personnel will support Customer Care and Community Connections in order to carry out the general PSPS Communication Strategy (website updates, IVR messaging, etc.). For example, Corporate Communications will be responsible for ultimately establishing the language and information provided by the abovementioned channels (e.g., defining the language to be contained on the PSPS webpage, website banner, call campaign scripts, text and email notifications, IVR, and website info page). This ensures that PSPS information is consistent across all channels. Additionally, if the need is identified, the Corporate Communications group may be requested on a case-by-case basis to provide supplemental PSPS communications through channels such as social media, television, newspapers, and/or radio.

7.4.9 Grid Operations Outage Coordination

The final human-based channel included in NorthWestern Energy’s PSPS Communication Strategy is managed by the Grid Operations Outage Coordination group. This group is responsible for all transmission system reliability-based communications with the regional Reliability Coordinator (RC) and external utilities. PSPS events on the NorthWestern Energy transmission system can impact grid reliability throughout the western interconnection and this group is expected to coordinate with external entities to prevent the PSPS event from causing undue risk to the interconnection. Beginning as early as Phase 1.1, and continuing throughout the PSPS event, the Grid Operations Outage Coordination group will use its iTOA and webOMS outage systems to notify the RC and external utilities of the status of the PSPS event including the equipment to be removed from service, the expected start and end times of the PSPS, system impacts, and any actions that are requested from that entity. This allows external entities to assess reliability impacts within their areas of responsibility and to adjust their operational process to support the PSPS event.

Grid Operations Outage Coordination will also use the OASIS system to adjust available transmission capacity on the NorthWestern Energy and ensure external utilities can re-allocate energy schedules during the PSPS event. All outage notifications and OASIS postings will be updated as necessary to ensure all information is current. As such, it is essential that Grid Operations be included in all PSPS Awareness Team meetings and may be included in all Incident Command Team meetings if the event is expected to rise to the level of impacting transmission system elements, generation assets, electric co-operatives or large customer groups.

7.5 PSPS Communication Strategy Summary

The goal of NorthWestern Energy’s PSPS Communication Strategy is to ensure that critical information about PSPS events is delivered, or made available, to all necessary external stakeholders via designated channels and that all necessary internal parties have a clear understanding of their external communication responsibilities and are able to access the most up-to-date information. This is essential for ensuring clear, timely, and accurate communication which, itself, is crucial for the safe and efficient execution of a PSPS event. The above strategy details how NorthWestern Energy intends to achieve that goal and ensure that all stakeholders are properly informed of ongoing PSPS events.

