



WILDFIRE MITIGATION EFFORTS IN COLORADO

October 2024

AGENDA

1. Introductions & Context
2. Ongoing Wildfire Mitigation Work
3. 2025-2027 Wildfire Mitigation Plan

Wildfire Mitigation: Context

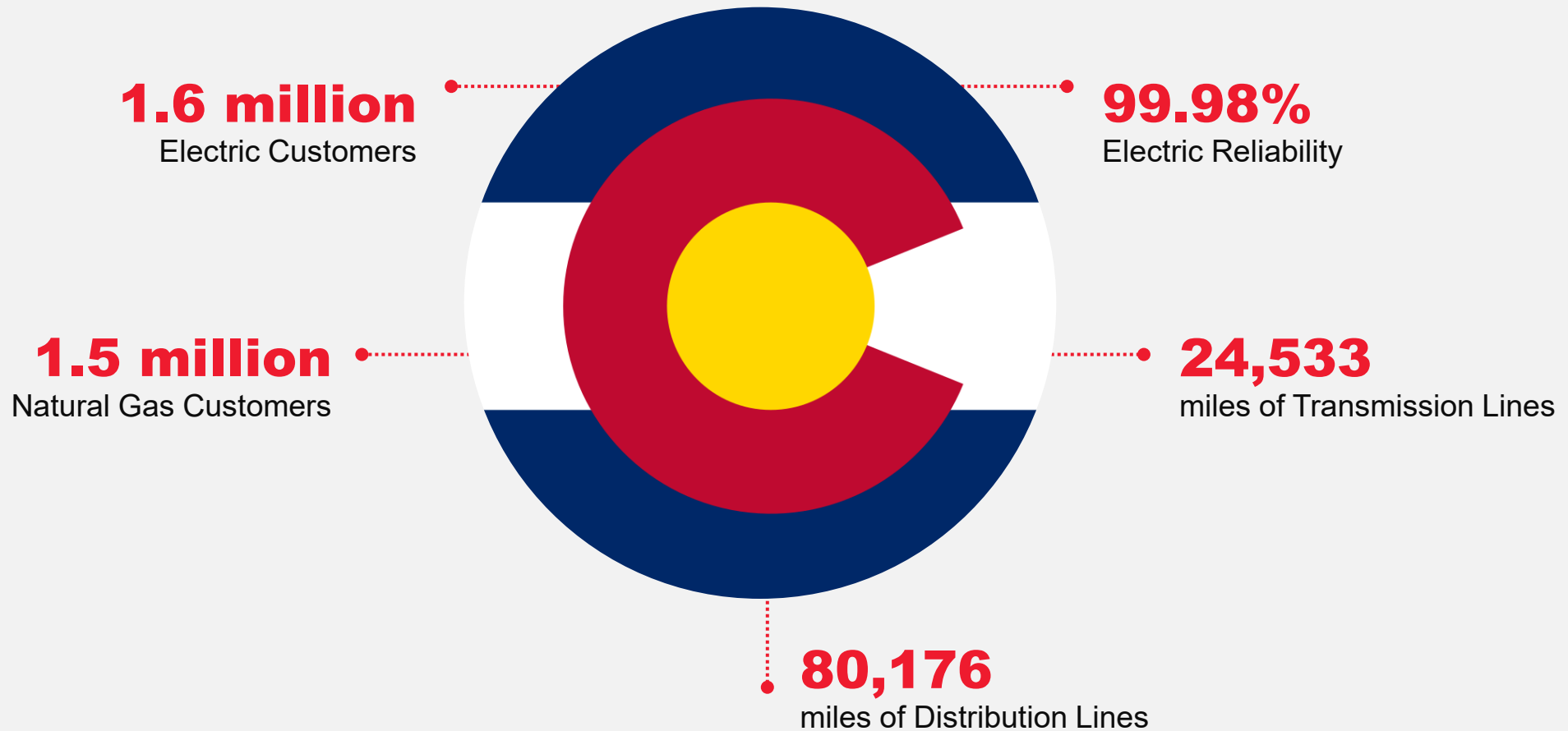
Extreme weather and drier conditions mean that **wildfires are a near year-round growing threat in regions across the country**, even in areas that haven't traditionally been wildfire prone.

Xcel Energy is committed to doing our part and will continue to make strategic investments to help protect our customers, communities, and way of life.

Our goal is to ensure that no catastrophic wildfire is started by Xcel Energy assets—and our wildfire mitigation efforts are intended to support that goal.



Delivering safe, reliable, affordable, and clean energy to Coloradoans



Our Electric System in Colorado



Generation

36,670,587 MWh
of power generated
across renewable and
non-renewable sources



Transmission

24,533 conductor miles
of transmission lines
across Colorado



Distribution

80,176 conductor miles
of distribution lines
across Colorado

Why Do Outages Occur?

1

**Severe
Weather**

2

**Vegetation /
Trees**

3

**Vehicle
Accidents**

4

**Equipment-Related
Upgrade or Failure**

5

**Wildlife /
Other Objects**

6

**Undergrounding /
Hit Lines**

Outage Classifications

Xcel Energy classifies outages according to the industry definitions defined in the Institute of Electrical and Electronic (IEEE) standards.

Momentary Outage

- Outage that is 5 minutes or less in duration.

Sustained Outage

- Outage that is greater than 5 minutes in duration.

Planned Outage

- Outages that are customer or public official-requested or the company has provided advance notice to the customer.

Major Event

- A set of outages which occurred during a specific time and location which combined, exceeds historically expected outage duration for at least on day.

Preparing for Outages

Building a Home Emergency Kit

- Acquire a first aid kit of sufficient size for the household and keep it stocked.
- Stock up on batteries and consider purchasing portable chargers and communications devices that do not require electricity, such as a battery-powered radio or a phone not reliant on electricity.
- Write down emergency numbers and critical contact information.

Medical and Food Considerations

- Keep an emergency supply of prescription and non-prescription medications on hand, and plan for medications, like insulin, that require refrigeration.
- Fully charge personal medical devices and ensure a backup power source is available for electrically powered medical equipment.
- Purchase non-perishable food (and a manual can opener if needed) and bottled water.

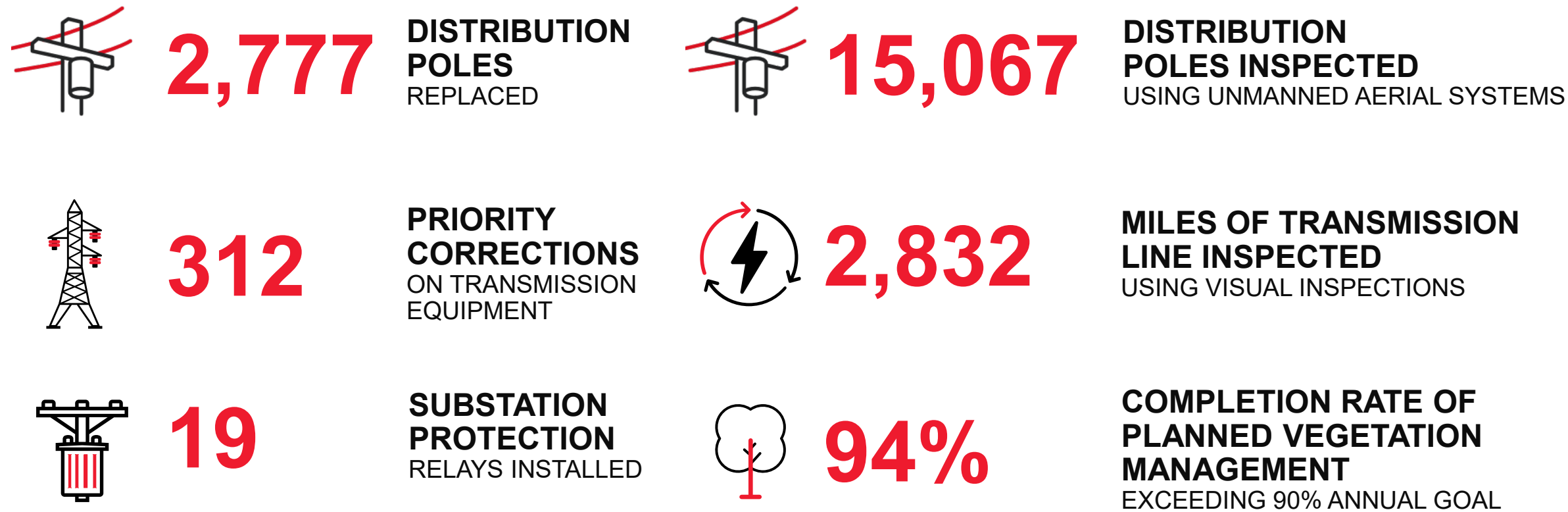
If outages occur, it's important to have access to the most recent updates about power restoration.

Customers should make sure their account information and communications preferences are up to date through the **My Xcel Energy mobile app** or visiting the **Xcel Energy website**.

ONGOING WILDFIRE MITIGATION WORK

Ongoing Wildfire Mitigation Work

Since 2020, we have invested over \$500 million in wildfire mitigation activities in Colorado. In 2023 alone, these measures included:



REDUCING WILDFIRE RISK IN OUR COMMUNITIES



ENTERPRISE COMMAND CENTER

Monitors wildfire conditions and supports event response

SITUATIONAL AWARENESS:

Risk modeling software evaluates current and forecasted weather conditions, wind speed, moisture and ground fuel conditions to predict potential wildfire spread



SAFETY AND PREPAREDNESS

We provide safety tips to help you prepare for potential wildfires and power outages

UNDERGROUNDING

Burying power lines, where possible, helps reduce wildfire ignition risk

LiDAR

LiDAR equipped helicopter inspections create 3D maps of our equipment to perform wind strength analysis

WILDFIRE DETECTION CAMERAS

AI-enhanced cameras speed the process of wildfire detection and response

WEATHER DATA

Local weather conditions are used to inform Enhanced Powerline Safety Settings and when we can perform work safely

DRONE INSPECTIONS

Inspecting the electric system to identify equipment needing repair

COMMUNITY OUTREACH

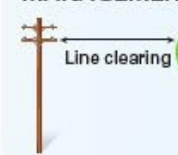
Connecting with local stakeholders to understand the unique needs of each community

SUBSTATION

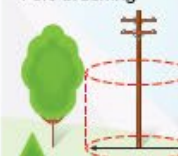
ENHANCED POWERLINE SAFETY SETTINGS

We operate our system more conservatively when wildfire conditions are elevated—if an object strikes the line or a fault occurs, protective devices shut off the power until it can be safely restored

VEGETATION MANAGEMENT*



Pole brushing



*In Wildfire Risk Zones on our previously approved maintenance schedule

SYSTEM HARDENING

System rebuild projects to upgrade electric lines within wildfire zones to wildfire rated equipment

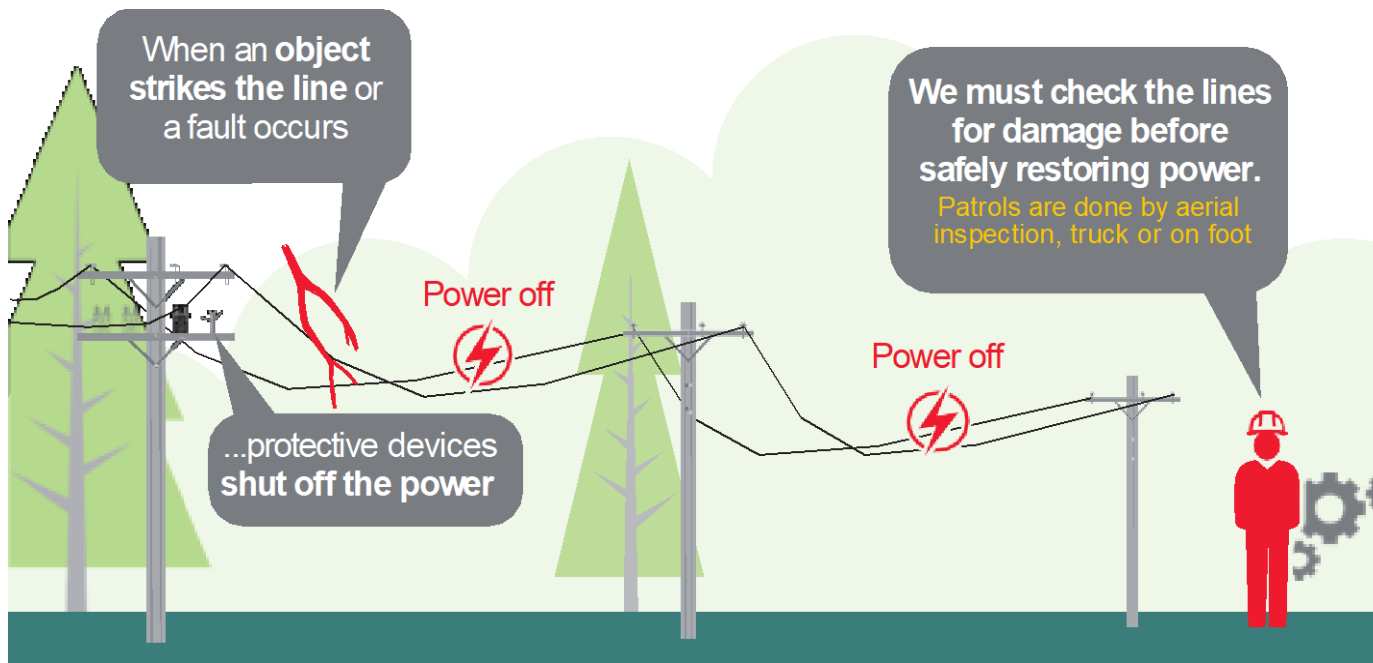
LEARN MORE AT

XcelEnergyWildfireMitigation.com

Spotlight: Enhanced Powerline Safety Settings (EPSS)

EPSS is a proven wildfire mitigation tool.

It allows for power lines to remain in-service during periods of elevated wildfire risk, with protection settings enabled.



When EPSS is activated, power lines are more sensitive and can quickly stop the flow of energy if an issue is detected, like a tree branch or other object touching the line. When that occurs, the power will remain off until our crews can inspect the line to make sure it's safe to turn it back on.

It is intended to enhance public safety during heightened risk conditions, but it means power outages are likely to occur more frequently, and if they do, are likely to last longer because crews need to patrol the line before restoring power.

EPSS is used in risk zones identified by the CO State Forest Service and risk probability models considering facts like weather, housing density, terrain, miles of overhead lines.

Spotlight: Public Safety Power Shutoff (PSPS)

Xcel Energy decides whether, when, and where to implement a PSPS event using customized industry-leading modeling software (Technosylva).

Company assets including	Detailed fuel information including	Weather Data	External Data
Transmission and Distribution • Overhead conductor • Poles and structures • Fuses, switches, transformers, etc.	• Up to date fuel data consistent with the Colorado Wildfire Risk Assessment and US Forest Service • High detailed satellite resolution data • Woody and Herbaceous Life Fuel Moisture (LFM) and Dead Fuel Moisture (DFM) field observations	• Hourly weather predictions input by DTN, world leader in meteorological science • 2 km weather radius predictions • Historical weather observations input by hundreds of local stations • Weather analysis comparisons (predicted-observed)	• Integrated with the National Fire Danger Rating System and Landsat Normalized Difference Vegetation Index 6-day forecast. • AI-powered wildfire detection cameras and other statewide cameras for live field visualization • Integrated with IRWIN incident reporting system • Integrated with FireGuard (FG) satellite observations • Identification of hot spots • Includes buildings-structures footprint data

System performs millions of daily overnight simulations based on asset-weather-fuel-population data assuming each asset data-point as a potential source of ignition to predict impact following 8 hours of initial ignition

Spotlight: Technosylva



Technosylva is a wildfire technology leader that specializes in operationalizing fire science. The company works closely with electric utilities and fire agencies to help assess, analyze, and mitigate risk.



The company's industry-leading fire modeling software uses advanced weather forecasts overlayed with standard or custom fire behavior fuel models to produce industry leading simulation outputs.



This sophisticated modeling capability includes fire rate of spread, fire potential, fire growth, probability of ignition, flame lengths, damage assessments, and difficulty to control, along with several fire behavior indicators for additional refinement.

Technosylva's industry-leading software enables Xcel Energy to make data-driven decisions, contributing to:

50%

decrease in downed wires within wildfire risk zones from 2021 to 2022*

50%

reduction in the number of ignitions within wildfire risk zones from 2021 to 2022*

Future PSPS Communication

The Company is **working toward** earlier and more frequent PSPS communications whenever possible

48-72 Hours in Advance of PSPS

- Notification to OEMs, local and state officials, the Commission, Critical Customers, and Qualifying Medical Customers of Potential PSPS

24-48 Hours in Advance of PSPS

- Notification to OEMs, local and state officials, the Commission, and potentially affected customers (including Critical Customers and Qualifying Medical Customers) of PSPS

1-4 Hours in Advance of PSPS

- Notification to OEMs, local and state officials, the Commission, and potentially affected customers (including Critical Customers and Qualifying Medical Customers) of Imminent PSPS

Every 24 Hours during PSPS

- Restoration Updates to OEMs, local and state officials, the Commission, and affected customers (including Critical Customers and Qualifying Medical Customers)

Restoration Notification

- Confirmation of Restoration to OEMs, local and state officials, the Commission, and affected customers (including Critical Customers and Qualifying Medical Customers)

Comparing EPSS to PSPS

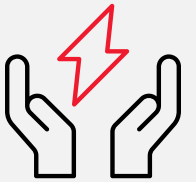
Both EPSS and PSPS are only used when the temperature, wind speed, relative humidity, and available fuel sources indicate a high risk for wildfires.

Enhanced Powerline Safety Settings (EPSS)



- EPSS allows for power lines to remain in-service during periods of elevated wildfire risk, with protection settings enabled.

Public Safety Power Shutoff (PSPS)



- In a PSPS event, power is proactively shut off for safety. This is not a step we take lightly.
- PSPS is a mitigation tool used when risk cannot be adequately reduced by EPSS and other methods.

Xcel Energy is continually investing in and building out our systems to limit the size, scale, and duration of potential power disruptions.

2025 – 2027 WILDFIRE MITIGATION PLAN



The next evolution of risk assessment and mitigation work

Our plan details
**proposed
investments and
improvements**
to existing
wildfire safety
measures



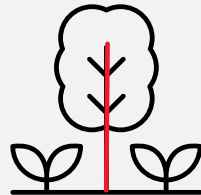
Situational
Awareness



Technology-Enabled
Infrastructure Inspections



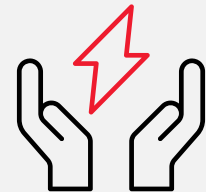
Infrastructure
Improvements



Vegetation
Management

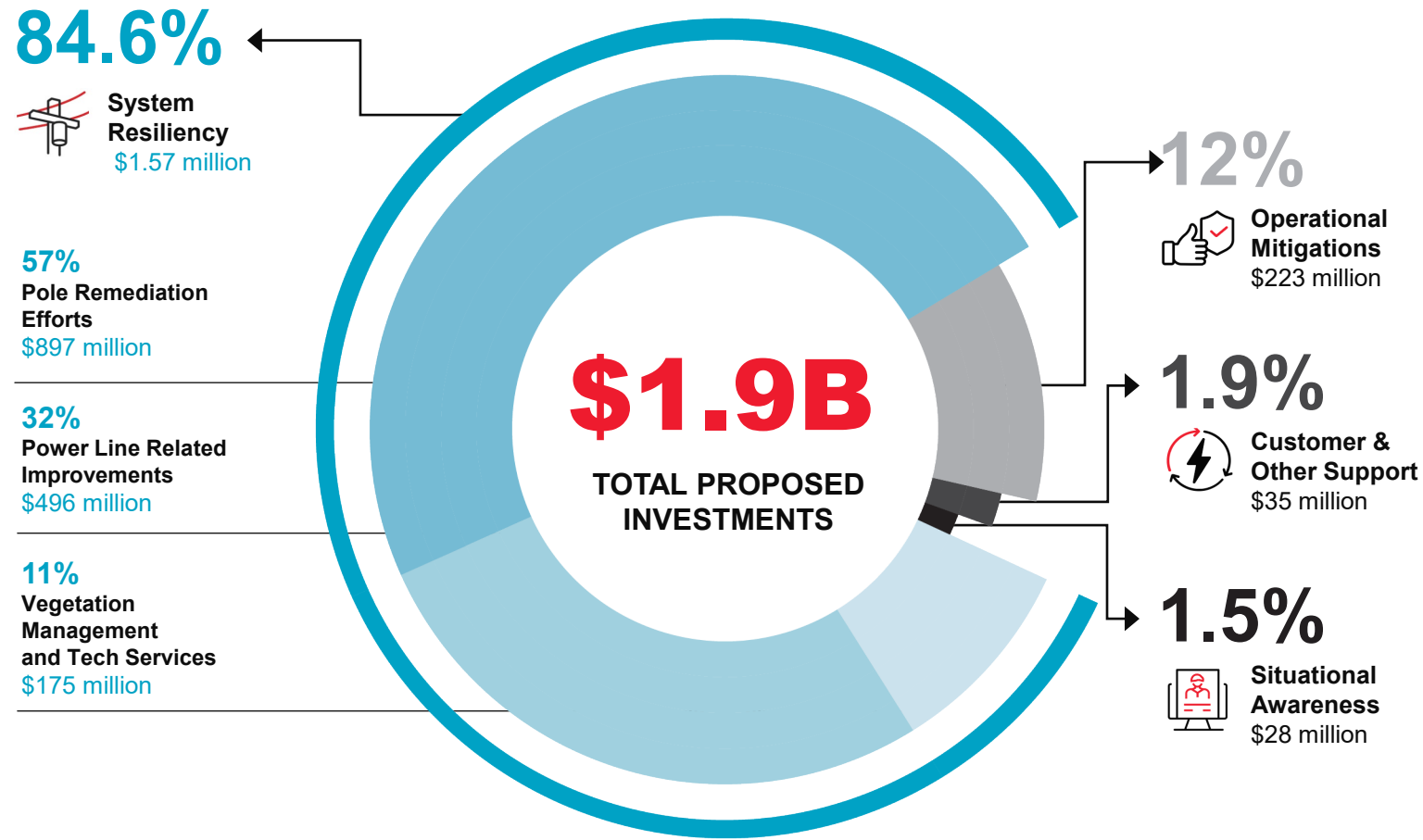


Enhanced Powerline Safety
Settings Program



Public Safety Power
Shutoff Program

Proposed investments and improvements



System Resiliency

50
miles of underground power lines

10,000
pole replacements, with a focus on higher risk areas



Operational Mitigations

100%
feeders enabled with Enhanced Powerline Safety Settings (EPSS) capability for higher risk areas



Situational Awareness

3x
the number of AI-enabled wildfire monitoring cameras

29,000
non-traditional fault detection sensors deployed

Continuing to engage the communities we serve

We have proposed several partnership opportunities in the updated WMP focused on improving support for customers during outages or PSPS events.

- Building community partnership agreements with leading community groups like Red Cross and the Food Bank of the Rockies.
- Expanding our existing partnership with Mile High United Way, which operates the 211-service line.
- Partnering with local agencies to grow our network of community resources centers.

We continue looking for ways to partner with local organizations and leverage their expertise to support our customers.

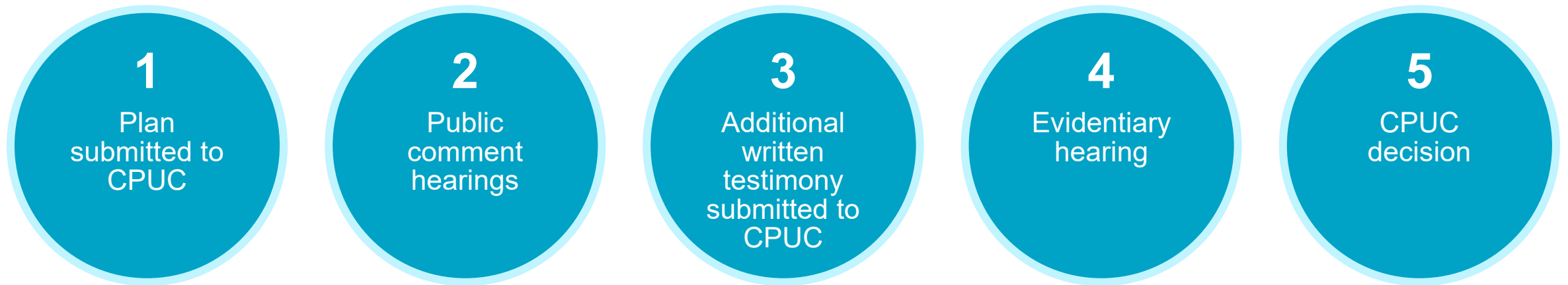
- Partnering with key research stakeholders like Colorado State University to advance our wildfire mitigation expertise.
- Information sharing with peer utilities through the Colorado Utility Wildfire Consortium.
- Continuing to support income qualified customers and disproportionately impacted communities through the RED Truck Initiative.

We always welcome feedback from our community.

**Please do not hesitate to reach out to (Nick Cole – Boulder Area Manager)
Nicholas.j.cole@xcelenergy.com to share your view. Additional information can be found on Xcel's
Wildfire Mitigation Webpage**

Next steps

The 2025-2027 Wildfire Mitigation Plan is subject to regulatory review and approval.



The regulatory process will allow for public participation and in-depth evaluation and analysis by state regulators and other parties to ensure the investments are prudent, necessary, and in our customers' best interest.

We expect the regulatory process to take several months or longer. We will share updates with stakeholders as we have more information.

