



PUBLIC SERVICE COMPANY OF COLORADO

**WILDFIRE MITIGATION PLAN
2022 ANNUAL REPORT**

Proceeding No. 20A-0300E
May 31, 2023

CONTENTS

I. EXECUTIVE SUMMARY 4

II. BACKGROUND AND PURPOSE OF REPORT 8

III. KEY PERFORMANCE INDICATORS..... 13

IV. METRICS REPORTING 19

V. 2023 FORECAST 31

Attachment	Description
Attachment A	
	2022 Additional Wires Down & Ignitions Data
Attachment B	
	List of Communities Affected by Red Flag Warnings and the Dates They Occurred (2022)
Attachment C	
	Total Number of Wildfires (2022)
Attachment D	
	2022 Spend by County
Attachment E	
	2022 Investment by County
Attachment F	
	2022 Distribution Plant Addition and O&M Monthly Detail
Attachment G	
	2022 Deferred Balances Monthly Detail
Attachment H	
	Red Flag Warning Criteria & Fire Weather Watch
Attachment I	
	2022 Work Completion Ratios

GLOSSARY OF ACRONYMS AND DEFINED TERMS

<u>Acronym/Defined Term</u>	<u>Meaning</u>
AI	Artificial Intelligence
Commission	Colorado Public Utilities Commission
DMAs	Distribution Maintenance Areas
DSAP	Defensible Space Around Poles
EEI	Edison Electric Institute
EPRI	Electric Power Research Institute
FWW	Fire Weather Watches
IRWIN	Integrated Reporting of Wildland Fire Information
KPIs	Key Performance Indicators
LiDAR	Light Detection and Ranging
LOR	Lockout Relays
MHT	Mountain Hazard Tree
O&M	Operations and Maintenance
OMS	Outage Management System
PSPS	Public Safety Power Shutoffs
Public Service or the Company	Public Service Company of Colorado
RFW	Red Flag Warnings
ROW	Right-of-Way
UAS	Unmanned Aerial Systems
WCR	Work Completion Ratio
WMP or the Plan	Wildfire Mitigation Plan
WMP Decision	Recommended Decision No. R21-0109 in Proceeding No. 20A-0300E (“Decision”)
WMP Report or Report	Wildfire Mitigation Plan Report
WRZ	Wildfire Risk Zone

I. EXECUTIVE SUMMARY

The Company is pleased to submit to the Commission this annual Wildfire Mitigation Plan Report for Plan Year 2022.¹ For the third year in a row, Public Service Company of Colorado has exceeded its KPI for the percentage of work completed compared to forecast and its WCR for repair and replacement work. In accordance with the WMP Decision, this Report updates the Commission and stakeholders on the activities completed and costs expended by the Company in calendar year 2022 and provides metrics related to the progress and efficacy of the Plan's overall implementation.

Since approval of the initial WMP through the end of 2022, the Company has completed work above and beyond its targets. We have exceeded almost all of our KPIs during this time. The Company is ahead of schedule in its inspection work and has elevated its record-keeping to better document its processes and procedures.

Some highlights for 2022 are:

- Inspected 26,000 poles;
- Incorporated enhanced risk modeling;
- Exceeded targets for work completion;
- Exceeded pole repair and replacement targets for small conductors; and
- Exceeded transmission high priority defects corrections target

The primary objective of the Company's approved WMP is to promote public safety through programs that construct, maintain, and operate the electric system in a manner that minimizes the risk of a utility asset being the ignition source of a wildfire. In implementing the Plan, the Company identified three main categories of action that promote public safety and systematically mitigate wildfire risk. Those categories include:

Engagement: Engaged with local, county, and state entities to facilitate more coordinated planning and mitigation efforts and ensure Public Service customers, communities, and emergency response responders are aware and informed of the Company's operations, existing procedures, and the work being conducted pursuant to this WMP.

¹ Proceeding No. 20A-0300E, Decision No. R21-0109 (mailed Feb. 26, 2021) (affirmed with modification by Decision No. C21-0237 (mailed Apr. 16, 2021)). Pursuant to Paragraph 96 of the WMP Decision, Public Service files this WMP Report annually in May.

Technology: Implemented advanced, cloud-based wildfire spread modeling risk software to more completely and dynamically estimate wildfire risk as a result of changing climate conditions. The Company upgraded equipment and increased use of technology, including extreme wind loading analyses and the collection of LiDAR data. This enables the Company to more surgically mitigate the risk of electrical infrastructure starting a wildfire while simultaneously decreasing costs.



Pano AI camera

In addition, the Company used UAS to provide detailed pole top inspections. This resulted in further granularity in risk identification and mitigation. The Company also partnered with Boulder County for a pilot program using Pano AI cameras. For this pilot, the Company established three locations to install the cameras and evaluated their performance of the AI and triangulation capabilities. The performance of the cameras in quickly detecting wildfires and providing alerts to the Company and emergency responders via email and text message creates a significant improvement in situational awareness by allowing users to quickly get “eyes” on an incident through the high-definition camera. Public Service is currently evaluating the expansion of this pilot and creating a network of wildfire detection cameras along the front range portion of the service territory in collaboration with neighboring utilities.

Acceleration: Accelerated the cadence of certain utility practices that mitigate wildfire risk, such as routine pole inspections and replacements in areas designated as Public Service’s WRZ based on data from the Colorado State Forest Service. This helps promote public safety and environmental stewardship in light of the increasing intensity and frequency of wildfires in Colorado and an expanding wildland-urban interface.

Major Actions Performed:

The major actions performed in calendar year 2022 include:

- Accelerated and enhanced equipment and vegetation inspections and replacements, system protection and wind strength modeling programs, and asset data gathering;
- Enhanced system protection;
- Expanded incremental vegetation management actions;

- Identified equipment needing repair or replacement through overhead sight (drone) inspections, annual visual inspections, system protection analysis, and pole loading and clearance inspections;
- Implemented new technologies;
- Continued community and stakeholder outreach; and
- Assessed new and innovative activities for future consideration.

The Company continues to maintain and update its Wildfire Mitigation Program website (www.xcelenergywildfiremitigation.com) and is exploring other ways to provide information about the Company's wildfire mitigation efforts, including through social media and ongoing community outreach. Since 2020, the website's audience has grown significantly – in 2022 alone, there were 1,820 visitors to the Program's website, a 445 percent increase from 2021.

The Company engages with industry partners, including EPRI and EEI. The Company is active in EEI's Wildfire Working Group, which consists of other utilities, both investor-owned and co-ops, where information sharing leads to valuable insights. Through its collaborations and partnerships, Public Service continues to learn and lead in its understanding of industry best practices, benchmarking, and emerging wildfire technologies and solutions.

In 2022, the Company continued to refine and execute its comprehensive WMP, building on the accomplishments and learnings from prior years. That said, the Company did face significant challenges in 2022, including supply chain issues (both costs and delays), material shortages, scarcity, inflation, and the tight labor market. These issues were discussed in the Company's 2021 Annual Wildfire Mitigation Plan Report, and we expect these challenges to impact our 2023 work. The Company continues to control costs and create program efficiencies to obtain additional cost savings wherever possible.



Linemen working on transmission line

One primary learning from 2022 is that things are very different from when the Company brought forward the inaugural Plan in July of 2020. Climate change continues to impact drought ridden forests, making them more prone to wildfires. Climate change has also contributed to expansion of which areas should be included in the WRZ. In addition, the wildland urban interface continues to expand and fluctuate. Despite effective fire suppression agencies and increased suppression budgets, wildfires have grown in number, size, and intensity.² Increased human development in the wildland-urban interface, the area where people are intermixed with, or located near, substantial wildland vegetation, has increased the probability and exacerbated the costs of wildfire damage in both harm to people and property. While a wildfire in an undeveloped area can have ecological consequences, large numbers of people typically are not directly affected. Conversely, a wildfire engulfing a developed area, as we have seen firsthand in Colorado, can have catastrophic effects on people and property.

Subsequent to our initial WMP filing, Colorado endured one of its largest wildfires ever with the Cameron Peak fire burning over 200,000 acres. Between the filing of the initial WMP then and the end of 2020, Colorado experienced its three largest wildfires in history including the Mullen and East Troublesome fires. Then, on December 30, 2021, the Marshall Fire occurred, erasing the notion that there is just one wildfire “season.” While the Plan has been effective to date, the ongoing effects of climate change, expansion of the WRZ and increased urban-woodland interface necessitate certain changes and enhancements. Informed by the work done to date, learnings from other utilities and with the input of subject matter experts, the Company intends to bring forward an updated Wildfire Mitigation Plan proposal in the first quarter of 2024.

² <https://www.noaa.gov/noaa-wildfire/wildfire-climate-connection> and <https://csfs.colostate.edu/colorados-forests-changing-climate/>.

II. BACKGROUND AND PURPOSE OF REPORT

The WMP protects public safety by mitigating the risk of the Company's equipment being a potential ignition source of a wildfire. The WMP is designed to accomplish this through accelerated and enhanced inspections, incremental vegetation management programs, infrastructure and/or system hardening, situational awareness, training, stakeholder engagement, implementation of new technologies, and operational practices. These initiatives also are designed to maximize system reliability and resiliency through reducing the likelihood of outages. The WMP also includes proactive exploration of existing and emerging wildfire mitigation tools through the implementation of programs and pilots in targeted parts of Public Service's system. Using our own data and data available through the Colorado Wildfire Risk Assessment Portal developed by the Colorado State Forest Service, we developed the WRZ, which is a targeted area where the Company focuses its efforts. In total, the WRZ includes approximately 2,100 miles of overhead distribution feeder (out of 9,500 miles total on the system, more than 25 percent) and over 2,800 miles of transmission lines (of nearly 5,000 total on Public Service's system, more than 50 percent). For the first two years of the Plan, the Company achieved over 90 percent of its vegetation management and work completion KPIs and above a 0.9 WCR. As of the conclusion of 2022, the Company has achieved a three-year average of 99 percent for work completion percentage, 0.83 for the protection WCR, and 0.97 for the replacement WCR.³ See Section III, KPIs for a full discussion of the Work Completion Ratio and other KPIs.

The core components of the WMP are:

- **Repair and Replacement Programs.** These encompass the following subcategories of work: bare secondary conductor replacement, covered conductor installation, accelerated distribution pole repair/replacements, equipment upgrades (fuses, cutouts, arresters, etc.), overhead rebuilds of small conductor, accelerated high priority defect corrections, and accelerated major line rebuilds.
- **Inspection, Modeling, and Asset Data Gathering.** This includes the following subcategories of work: enhanced overhead inspections via unmanned aircraft systems, overhead



Helicopter flying in replacement poles

³ The Company does not budget or plan work by county. However, the Company has made its best efforts to estimate a budget breakdown and a work breakdown.

secondary open wire quantification, accelerated distributed pole inspections, risk modeling development, situational awareness tools, structure wind strength reviews, and annual visual inspections.

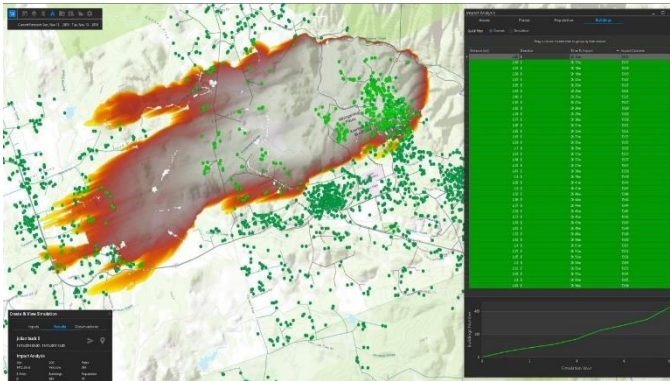
- **Protection Programs.** These include the following subcategories of work: Advanced Distribution Management System enhanced control, protection studies for feeders, recloser communications network, substation relay communications upgrades, substation relay upgrades for Wildfire Safety Settings, and design and install revised protection schemes.
- **Expanded Vegetation Management.** This includes creating a DSAP or pole brushing on equipment poles, secondary voltage line clearance, and ROW vegetation type conversion.
- **Metrics, Tracking, and Reporting.** To measure performance over time, the Company actively tracks and measures a series of Commission-approved metrics. These include Plan and cost performance metrics in addition to a set of metrics designed to measure Plan efficacy, or wildfire risk reduction, over time as programs are implemented. The WMP Decision directs the Company to track and annually report on a series of KPIs, during the three-year term of the deferred accounting mechanism authorized for WMP costs, as well as report on a series of metrics throughout the duration of the WMP.⁴
- **Assessment for Future Consideration.** In addition to the core components of the Plan described above, the Company continues to study new, emerging, and evolving technologies and practices that it will consider for future implementation. While the Company currently does not utilize PSPS, it is working to evaluate the cost and how a such a plan might be implemented in the future for our Colorado system. The Company also is studying potential applications for technologies such as expanded use of covered conductor, microgrids, storage, and additional use of drones for asset inspection and patrol throughout the WRZ. The Company also is considering how targeted undergrounding of overhead lines might be an effective mitigation strategy in some instances to nearly eliminate ignition risk due to extreme wind and fire weather conditions. The Company is working to develop and define the criteria for when to consider undergrounding of transmission and distribution lines.
- **Usage of New Technology:** The Company recently implemented wildfire risk spread modeling software and is using it to further refine and identify the key areas to focus wildfire mitigation efforts. The implementation of Technosylva's industry leading wildfire spread modeling software (Wildfire Analyst Enterprise) enabled the Company to generate millions



⁴ Decision No. R21-0109 ¶¶ 94-96.

of simulations to estimate potential wildfire spread scenarios under varying fire weather conditions. These simulations then estimate the potential consequences of an ignition at the feeder, and sub feeder, level of detail. This risk modeling software also improves situational awareness through the integration of various sources of wildfire notifications from IRWIN and FireGuard. FireGuard utilizes advanced satellite technology to detect and then send alerts of probable fire activity based on sensing areas of increased heat.

Another innovative technology that is showing great promise for improving situational awareness is the use of wildfire detection cameras with AI technology for early detection and alerting. Through a partnership with Boulder County, three wildfire detection cameras were installed in late 2022 and are actively being tested. These advanced wildfire detection cameras utilize AI technology to identify the



Fire simulation modeling photo

early signs of smoke and then rapidly triangulate the location of that smoke and simultaneously sends electronic alerts to members of Boulder County Office of Emergency Management and Public Service. This technology is greatly increasing situational awareness and allows for emergency response agencies to quickly assess a potential fire, know the location, and evaluate the types of suppression resources to send to an incident. One example of this is the Sunshine Canyon wildland fire that occurred on December 19, 2022. The fire began as a structure fire and evolved into a wildfire. The camera AI quickly picked up the early indications of smoke from the structure fire and then triangulated the location to within 250-500 feet of the structure and sent alerts on this fire. In addition, live feeds from the cameras could be used by the Boulder Office of Emergency Management and others to monitor the fire as suppression efforts are applied.

In 2022, Public Service began evaluating high-resolution satellite imagery to improve and enhance its vegetation management efforts. AiDash offers a software and satellite imagery solution that evaluates the clearances of vegetation along overhead lines. This technology can quickly identify the horizontal and vertical distances between power lines and trees and can estimate the growth rates of vegetation along those lines. This analysis is performed annually and allows for risk-based prioritization of projects based on the vegetation clearances. Public Service intends to explore additional capabilities of the technologies in the future, including tree health analysis, which would allow for identification of trees with declining health and improved prioritization of projects in these areas, as the

technology would provide greater efficiency than performing this analysis using foot patrols during traditional tree trimming cycles.

The Company continued its use of LiDAR technology in 2022, inspecting distribution lines and creating images that feed into a three-dimensional model that allows us to re-create the system in the WRZ and precisely identify where work needs to be performed, saving time and money.

- Community and Development.** The Company continues to utilize the website, www.xcelenergywildfiremitigation.com as a means of providing the most current WMP information to our customers, including our annual report. The Company frequently meets with communities to share information about the steps it’s taking in implementing its wildfire mitigation plans and will continue to expand its engagement throughout 2023. The Company hosts community events, and it has received grant support from multiple communities. See the following tables for additional details.

TABLE WMP-1: 2022 Community and Development Events

Meetings Held

Alma	Boulder County	Boulder County (unincorporated)	Colorado River Wildfire Collaborative
Douglas County Board of County Commissioners	Douglas County Office of Emergency Preparedness	Evergreen Fire and Rescue	Evergreen Rotary Club (attendees included residents from Evergreen, Genessee and Lookout Mountain)
Fairplay	Indian Hills	La Plata County Office of Emergency Management	Middle Colorado Wildfire Ready Collaborative
San Luis Valley Emergency Managers	Summit County	Two Rivers Wildfire Coalition	

Written Support Provided for 2023 Federal Grant Application for Additional Wildfire Equipment (U.S. Department of Energy’s Grid Resilience and Innovation Partnerships Program)

Alma	Blue River	Breckenridge	Eagle County
Fairplay	Frisco	Hayden	Lake County
Leadville	Meeker	Minturn	Park County
Red Cliff	Silverthorne	Summit County	

- **External Collaboration and Coordination:** In 2022, Company executives went on site visits to Southern California Edison and Pacific Gas & Electric and met with their wildfire mitigation teams, gaining valuable insight and education. The Company visited control centers, observed use of cameras and weather stations for situational awareness, learned about their processes for PSPS, and received guidance regarding internal governance with respect to wildfire.

III. KEY PERFORMANCE INDICATORS

The Company tracks and reports annually on a series of KPIs and in 2022, Public Service exceeded two-thirds of its KPIs. The KPIs were requested by the parties to the Stipulation, and the metrics reported in Section IV were identified in the Plan as filed by the Company.

The KPIs, along with Public Service’s 2022 performance, are as follows:⁵



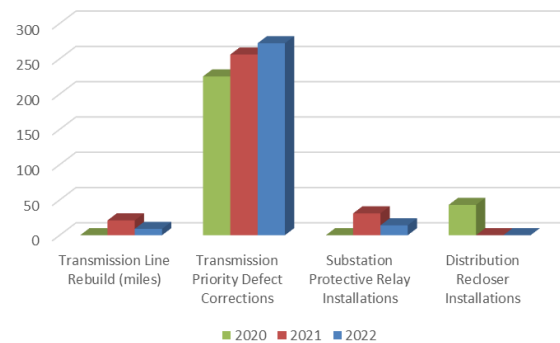
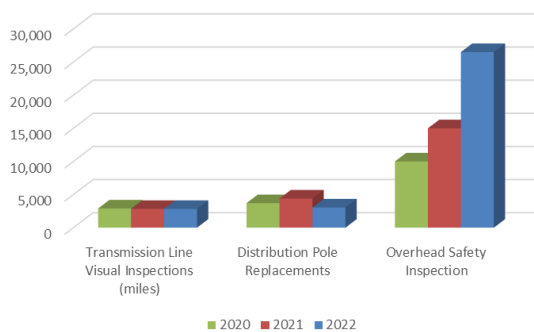
Example of Company right-of-way

- **Vegetation Management Maintenance Cycle:** In 2022, the Company maintained a 94 percent on-cycle completion of its forecast vegetation management maintenance, once again exceeding the 90 percent KPI target.
- **Work Completion:** In 2022, the Company completed 3,051 Distribution pole replacements, more than double the 1,200 target; 272 Transmission priority defect corrections compared to a target of 250 defect corrections; nearly 26,500 UAS Distribution pole inspections compared to a target of 17,400 inspections; over 2,800 miles of Transmission visual inspections; and installed 14 substation protection relays within the WRZ. In 2022, the Company completed 102 percent of its scheduled work, once again exceeding the KPI of 90 percent. This work was completed despite significant challenges faced by the Company as described below.

⁵ Decision No. R21-0109, ¶ 94.

TABLE WMP-2: Repair and Replacement Programs

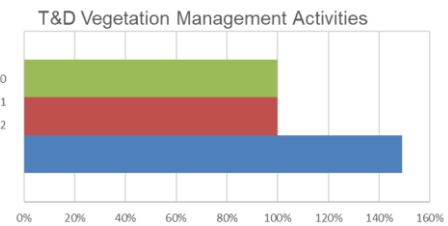
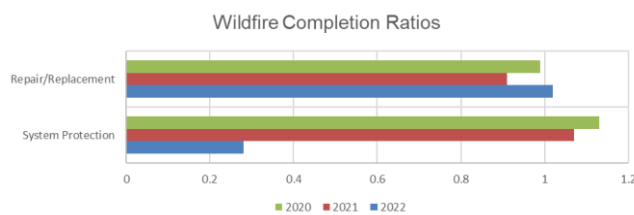
	<u>2020</u>	<u>2021</u>	<u>2022</u>
Transmission Line Rebuild (miles)	0	21	9
Transmission Priority Defect Corrections	225	256	272
Transmission Line Visual Inspections (miles)	2,900	2,832	2,832
Substation Protective Relay Installations	0	31	14
Distribution Pole Replacements	3,700	4,400	3,051
Overhead Safety Inspection	10,000	15,000	26,500
Distribution Recloser Installations	43	0	0



- Work Completion Ratio:** In 2022, the Company reached a WCR of 1.02 for its Repair/Replacement program which exceeds the 0.90 KPI and a WCR of 0.28 for the System Protection program, which does not meet the 0.90 KPI. See Table-WMP-3.

TABLE WMP-3: Work Completion Ratios⁶

	<u>2020</u>	<u>2021</u>	<u>2022</u>	Three Year <u>Average</u>	<u>KPI</u> <u>Threshold</u>
Wildfire Completion Ratios					
System Protection	1.13	1.07	0.28	0.83	0.90
Repair/Replacement	0.99	0.91	1.02	0.97	0.90
T&D Vegetation Management Activities	100%	100%	149%	116%	90%
Work Completion	104%	99%	93%	99%	



The Company’s calculations for the 2022 WCR are set forth in Attachment I. The WCR is calculated by dividing the percentage of annual work completed as compared to scheduled work and by the percentage of annual actual capital spend as compared to budget by program.

The 2021 Annual Report indicated the Company could face challenges in achieving its 2022 WCR KPI ratio for the Protection program due to several factors outside of the Company’s control. Unfortunately, that came to pass. The primary causes were



Linemen repairing a distribution pole

⁶ See Attachment I for the detailed calculations.

increased labor costs, material and construction delays, as well as an unanticipated increase in the complexity of substation relay projects compared to previous years.



Transformers

Materials and Supply Chain Issues: In 2022, the Company experienced material delays and supply chain issues for common utility construction materials such as arrestors and substation relays. The material and supply chain issues were primarily driven by increased national demand for utility materials, significant storms, *i.e.*, Hurricane Ian, and increased global demand for raw materials. Paired with global events, such as the war in Ukraine, there are significant material delays and increased cost for necessary parts to complete work. By the time the materials were received, it was often too late in the year to complete that aspect of the project due to tight construction timelines based on geography, inclement weather, or environmental restrictions.

There is significant competition for materials and labor across the United States as the clean energy transition continues. Other utilities also are engaging in system hardening and extreme weather events (like hurricanes) that require materials to perform rebuilds place additional pressures (both in terms of availability and cost) on key materials. For example, there currently are significant delays for delivery of specific protective relays and communication equipment, along with a shortage of lockout relays, which are essential materials to complete this work.

Material and supply chain issues continue to be an issue for the Company and are expected to persist through at least 2023 and likely longer as lead times for equipment continue to increase as of the filing of this report. This includes conductor, wood poles, transformers, insulators, mounting brackets, relays and panel parts. These issues will affect the Company's ability to reach its KPIs for 2023. The shortages have also impacted our approach to certain work: as the wood pole and transformer markets have tightened, we have pivoted from replace to repair, refurbish, and rebuild. The end result is increased capital and O&M costs.

Inflationary Pressures: Inflationary pressures have also dramatically increased costs, which further impacted the Company's ability to meet the protection work WCR KPI. For example, poles have increased in price by approximately 29 percent since 2020 and cross arms prices have increased approximately 35 percent since 2020. These cost pressures are expected to last into 2023 and beyond.



Linemen being lowered into a transmission pole

Labor Constraints: Colorado increasingly faces a shortage of electric line construction crews to timely perform the scope of work included in the Plan. Public Service must continue to retain resources from out of state, which were more expensive than the labor cost forecast in the initial WMP filing. Requiring out of state labor also negatively impacted the Company's planned schedule due to mobilization and ramp-up times.

Labor markets have seen inflationary growth of five percent since at least 2021. This inflationary growth is anticipated to continue at this rate over the next several years, which will have a negative impact on the Company's contracted labor services

costs. Labor saw an eight percent increase from 2021 to 2022. A three-year contract for labor was recently executed and began on February 1, 2023. However, due to the vegetation management companies' struggles to retain and recruit employees, the contract requires annual adjustment of labor pricing to address market wage increases. For this particular contract, the impact is anticipated to be a 15 percent year over year increase in 2023.

Furthermore, Public Service anticipates labor constraints are likely to persist as national wildfire conditions and events worsen and demand for linemen grows. Anecdotally, the majority of states in the Western United States have engaged in wildfire mitigation efforts, with utilities, governments and emergency responders working together, and these efforts seek employees and contractors with similar skillsets to what the Company needs to perform its wildfire mitigation work.

Impact for 2023: These challenges have yielded opportunities to create better practices and procedures around wildfire repair and replacement work. Lessons learned from the challenges encountered in 2022 are being utilized in 2023. Specifically, the Company has aligned the Bare Secondary Conductor Replacement work with the Small Conductor Replacement work. The Company has implemented work process efficiencies to complete Bare Secondary requirement and Small Conductor requirement work on the same work order leading to cost savings from gained efficiencies as well as a decrease in the impact to customers. Similarly, the Company aligned Pole Replacement work with Bare Secondary Conductor and Small Conductor Replacement work to gain further efficiencies and minimize customer impact. Last, the Company has begun to secure

production slots and pre-order materials with known long lead times to soften the impacts of the growing material and supply chain issues.

Throughout the course of this initial WMP, the Company has learned that certain metrics are more reliable than others with respect to tracking progress for the Plan. For example, the vegetation management cycle and the work completion percentages measure the Company's progress toward targets and the actual work being accomplished. With respect to the WCR, work often begins in one calendar year but is not completed until the next, so the spend is incurred over two calendar years but is only counted for reporting purposes in the year the work is complete. Because the WCR only measures work that is completed in a calendar year, and not partial completions, the ratio appears lower than the work that was performed. Therefore, the WCR metric does not show the whole body of work that the Company engaged in during the calendar year. Further, the WCR is based on a budget that was created in late 2019 to early 2020, for the July 2020 filing. A multitude of impacting factors have changed in the interim, making a comparison to that budget a less insightful metric.

IV. METRICS REPORTING

The Company is required to report on a series of metrics through the duration of the WMP as set forth in the approved WMP.⁷

- A. Number of ignitions associated with electric overhead power lines within the WRZ;
- B. Number of downed transmission and distribution wires within the WRZ;
- C. Number of Red Flag Warning Days in Colorado;
- D. Communities or areas which experienced Red Flag Warnings and the dates they occurred;
- E. Total number of wildfires in the Company's service territory;
- F. Annual WCR for 2022, as set forth in paragraph 94 of the WMP Decision;⁸
- G. Annual budgeted and planned distribution and transmission spend by WMP program for each county in the WRZ;
- H. Total actual annual distribution and transmission investment by WMP program for each county in the WRZ;
- I. Balances and monthly detail of the deferred accounts authorized in the WMP Decision;
- J. Company's progress on executing equipment upgrades, major line rebuilds, small conductor replacement, covered conductor, and overhead rebuilds with a summary of work completed and remaining work to be completed; and,
- K. Percentage on-cycle vegetation management activities for transmission and distribution assets in WRZ.

Public Service addresses each of these metrics below.

A. & B. IGNITIONS & DOWNED TRANSMISSION AND DISTRIBUTION WIRES WITHIN THE WRZ

Although the word “ignition” is used throughout the Company’s underlying WMP, Public Service notes that the use of the term has resulted in confusion and misunderstanding, as some interpret “ignition” as synonymous with “fire.” To clarify, the term does not, and was never intended to, refer to a fire where the ignition source was

⁷ Decision No. R21-0109, ¶¶ 94-96.

Company equipment. Instead, the term broadly covers any situation where there is some evidence of a potential incident, or “risk event,” that may or may not have resulted in an actual fire because a fire requires an ignition **plus** fuel, **plus** oxygen. For the Company’s tracking purposes, it records any evidence of a potential ignition incident, based on an analysis of the outage record details from the OMS. This analysis identifies if there were any notations in an outage record related to fire, sparking, arcing, burning, charring, or other indications of overheating or symptoms that could have resulted in a potential ignition. The vast majority of these potential ignition incidents do not result in a fire. However, it is important to capture evidence of these events, to best assess risk and inform future mitigation efforts.

The OMS is a common method for utilities to track electric outage data. Public Service continues to refine its methodology for reviewing the thousands of entries in its OMS to identify actual and potential risk events. Public Service field personnel that respond to reports of equipment issues and outages are able to document any other observed incidents of abnormal wire conditions and potential ignition events. These responders, typically linemen and troublemen, complete the appropriate repairs, and if necessary, they complete a form. The information collected includes any evidence of downed or displaced conductors, or any sign of a potential ignition.

The Company also uses the term “Wires-Down” for a broad scope of events; not just when a wire is physically touching the ground. The events captured also include instances where a wire is displaced from its normal location, whether or not the wire contacts the ground. For example, if a tree contacts a conductor and knocks it out of its connection point, that qualifies as a Wires Down event.

It is important to capture any downed or displaced events that could result in potential risk events. Notably, potential risk events are not always associated with downed wires and vice versa.

The Company continuously improves its wildfire data collection and analytics. Tables WMP-4 and WMP-5 summarize the 2022 data and compare it with the 2021 statistics.

TABLE WMP-4: 2021 and 2022 Estimated Ignitions (Risk Events)

2021 and 2022 Estimated Ignitions Events						
	2021 Ignitions			2022 Ignitions		
	Non-WRZ	WRZ	Total	Non-WRZ	WRZ	Total
Distribution	560	220	780	659	128	787
Transmission	6	0	6	2	0	2
Total	566	220	786	661	128	789

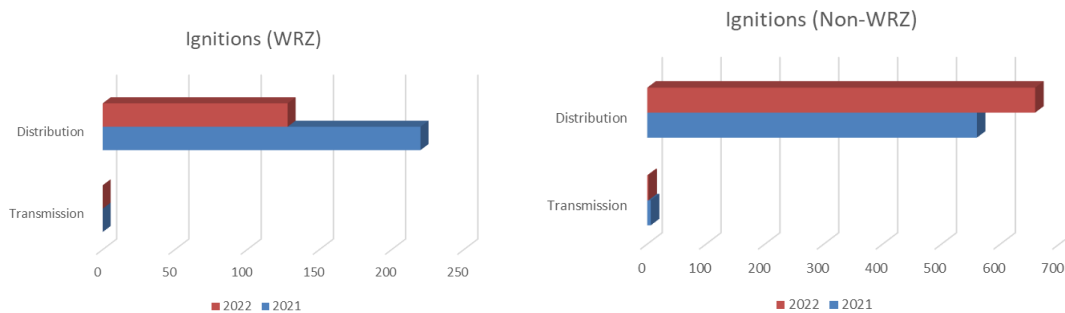
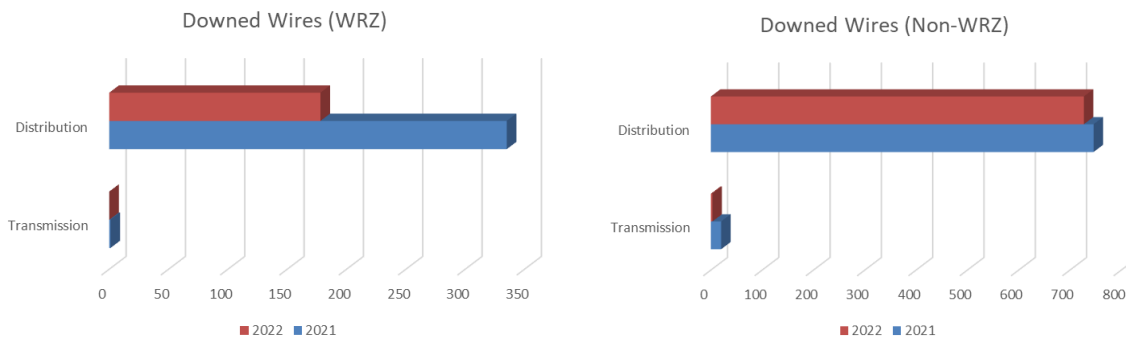


TABLE WMP-5: 2021 and 2022 Estimated Downed Wire Events

2021 and 2022 Estimated Downed Wires Events						
	2021 Downed Wires			2022 Downed Wires		
	Non-WRZ	WRZ	Total	Non-WRZ	WRZ	Total
Distribution	746	335	1,081	727	178	905
Transmission	20	1	21	3	0	3
Total	766	336	1,102	730	178	908



As is evidenced in the table above, the number of downed wires within the WRZ decreased by approximately 50 percent from 2021 to 2022. Further, the number of ignitions within the WRZ also decreased by approximately 50 percent during this same time period.

The Company tracks the downed wires/ignition data by cause categories and has more than 30 cause categories that are associated with ignition events. The three primary cause categories are Object Contact, Equipment/Facility Failure, and Other Issues. A full breakdown of events by cause is set forth in Attachment A.

C. NUMBER OF RED FLAG WARNING DAYS IN COLORADO

There were 90 days in 2022 where a Red Flag Warning was issued in one of the 51 fire weather zones in the State of Colorado. In 2021, there were a total of 55 RFW days. Please see Attachment B for details.

D. COMMUNITIES AFFECTED BY RED FLAG WARNINGS

The Company retains data on which specific communities are under a RFW and the dates they occurred. The National Weather Service establishes fire weather zones. There are fifty-one fire weather zones in Colorado. Twenty-seven of those are within the Company's WRZ. The Company tracks which zones are impacted by RFW days and compiled a list of the communities within those zones. Attachment B provides the dates of Colorado RFWs and the communities under the RFW.

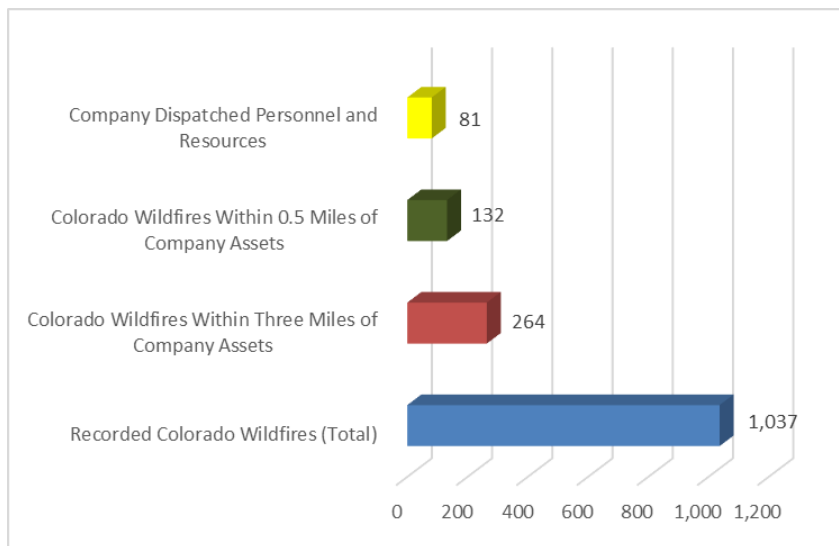
E. TOTAL NUMBER OF REPORTED WILDFIRES IN THE COMPANY'S SERVICE TERRITORY

The Company actively monitors wildfires throughout the State of Colorado. In 2022, actual fire information was collected from a variety of sources, including:

- IndjiWatch – displays all Xcel Energy asset layers (<https://www.indji.net/client/>);
- Dataminr – Social media monitoring tool (<https://corp.dataminr.com/login>);
- WildCAD – Public sector fire dispatch logs (<http://www.wildcad.net/WildCADWeb.asp>);
- Intterra – National Interagency Fire (<https://maps.nwcg.gov/sa/#/%3F%3F/38.2598/-105.2423/7>);
- InciWeb (<https://inciweb.nwcg.gov/>);
- Colorado Division of Homeland Security and Emergency Management (<http://www.coemergency.com/2012/06/map-of-current-colorado-fires.html>);
- Colorado Forest Atlas Informational Portal ([Colorado Forest Atlas - Portal](#));

- Google Earth Pro – Secondary tool to used display Xcel Energy assets and various KML/KMZ files;
- NC4 Email Notifications – Incident notifications from outside vendor and with information from local media and government sources;
- FS360 Camera network – Look out towers located strategically throughout Colorado; primary ownership is through the Forest Service;
- Xcel Energy Security Cameras – located on Xcel Energy buildings in substations;
- Xcel Energy Personnel; and,
- News Outlets/Media.

Public Service uses those sources to determine if any wildfires have the potential to impact its assets. The Company has guidelines for wildfire monitoring, initial decision making, initial notification, classification, and communication. We use these sources to identify wildfires and use the information provided to investigate and determine the potential impact to Company assets. Once that assessment is complete, the response process begins, and plans are made to respond efficiently to the specific incident. After an initial notification is received, and only once a wildfire is within 10 miles of a Company asset or has the potential to encroach a Company asset within 96 hours, the Company



actively monitors the event. In 2022, throughout the entire State of Colorado, the Company recorded 1,037 fires based on information obtained from the sources identified above. Of the 1,037 fires investigated, 264 came within three miles of Company assets. Of those 264, there were 132 wildfires within 0.5 miles of Company assets that required immediate notification and action from

the Company. In this situation, the Enterprise Command Center calls the control centers that are responsible for those Company assets immediately and an e-mail correspondence requesting additional information is sent to the appropriate recipient on the Operations team. The Company dispatched personnel and resources to 81 wildfire events. The dispatch to an active fire is done when Operations determines that they need

field personnel dispatched to confirm the impact of the fire and assess what, if any, response measures the Company needs to take.

Attachment C to this Report provides a list of the actual fires tracked in 2022, as derived from the sources listed above.

F. ANNUAL WCR FOR 2022

For discussion of the annual WCR, please see the discussion under Section III.

G. & H. ANNUAL BUDGETED/PLANNED AND ACTUAL DISTRIBUTION & TRANSMISSION SPEND



Pole top repair (before and after)

The following tables provide information on the Company's budgeted/planned and actual WMP spending for calendar year 2022, with the county level budgeted values derived from the estimates the Company provided to the Commission. Actual spend by county was executed to maximize efficiencies and progress toward year end targets. The Company historically has not done workplans or budgets by County. A breakout of the Company's 2022 O&M by county and 2022 capital by county are in Attachments D and E respectively.

Table WMP-6 and Table WMP-7, below, provide the actual spend versus budgeted cost. Table WMP -6 provides a breakdown between Transmission and Distribution, while Table WMP-7 provides the breakdown by Program Area.

The drivers of these variances are explained in Section III. As shown in Table WMP-7, the largest capital variance is within the Repair and Preplace activity. That variance is the result of: (1) different scope in original budgets; and (2) inflationary pressures. As explained, the original proposed budgetary estimates are outdated. They were based off of only replacing conductor and not completely rebuilding the line. The Company had to shift its strategy from only replacing conductor to doing full rebuilds to maintain our safety standards. Also, inflationary costs,

including supply chain issues, have caused our rebuilds to be more expensive than originally anticipated, as the budget was prepared in late 2019/early 2020. Since that

time we have experienced many unprecedented factors that put upward pressure on costs, including a global pandemic.

TABLE WMP-6: 2022 Actual and Budgeted Costs

2022 Actual Costs Compared to Budget (\$ million)						
Business Unit	O&M			Capital Expenditures		
	Actual	Budget	Variance	Actual	Budget	Variance
Distribution	\$2.7	\$5.1	(\$2.4)	\$108.0	\$42.0	\$66.0
Transmission	\$0.6	\$0.9	(\$0.3)	\$34.1	\$40.2	(\$6.1)
Vegetation Management	\$3.5	\$1.9	\$1.6	----	----	----
Total	\$6.8	\$7.9	(\$1.1)	\$142.1	\$82.2	\$59.9

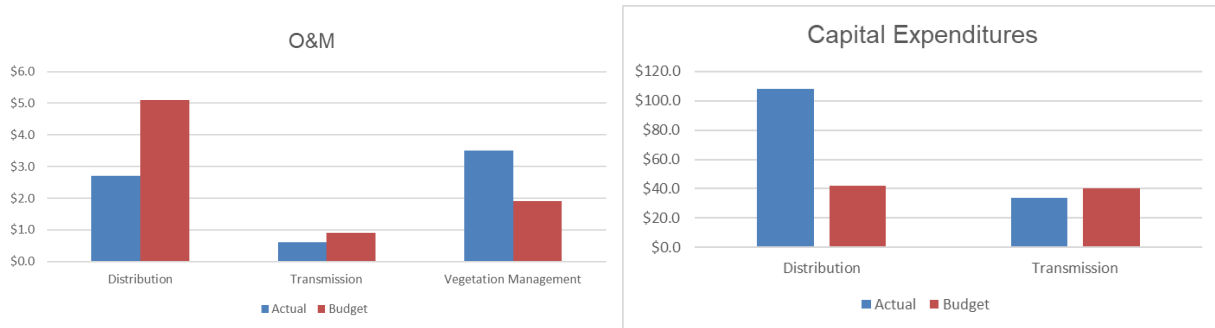
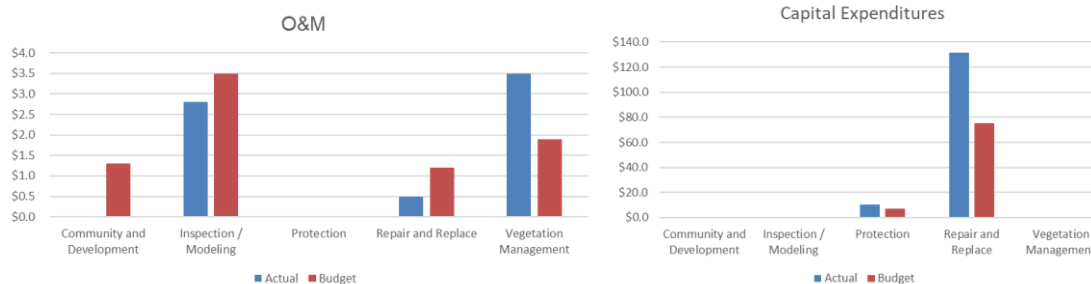


TABLE WMP-7: 2022 Actual and Budgeted Costs by Program Area

2022 Actual Costs Compared to Budget by Program (\$ million)						
Activity	O&M			Capital Expenditures		
	Actual	Budget	Variance	Actual	Budget	Variance
Community and Development	\$0.0	\$1.3	(\$1.3)	\$0.0	\$0.1	(\$0.1)
Inspection / Modeling	\$2.8	\$3.5	(\$0.7)	\$0.0	\$0.1	(\$0.1)
Protection	\$0.0	\$0.0	\$0.0	\$10.5	\$7.0	\$3.5
Repair and Replace	\$0.5	\$1.2	(\$0.7)	\$131.7	\$75.1	\$56.6
Vegetation Management	\$3.5	\$1.9	\$1.6	\$0.0	\$0.0	\$0.0
Total	\$6.8	\$7.9	(\$1.1)	\$142.1	\$82.2	\$59.9



I. BALANCES AND MONTHLY DETAIL OF THE DEFERRED ACCOUNTS

In 2022, the Company in-serviced \$97.5 million of Distribution WMP plant additions. These costs are primarily for reconductoring, pole replacements, and substation relay work. In 2022, Public Service incurred \$4.7 million in Distribution WMP O&M. Please see Attachment F for the monthly Distribution plant addition and O&M detail. The Company is currently recovering \$6.9 million of Distribution WMP O&M and \$3.2 million of depreciation and return related to Distribution WMP capital in base rates. The monthly detail of the 2022 Distribution deferred balances awaiting recovery are included as Attachment G.

J. COMPANY'S PROGRESS

Public Service exceeded many of its targets in 2022, including inspection of twenty-six thousand poles, equipment upgrades well above the targets, pole repair and replace, exceeded targets for small conductor replacement, high priority defect corrections for transmission also exceeded the 2022 target. We incorporated enhanced risk modeling into the work as discussed in the original WMP. Table WMP-8 outlines the Company's progress on executing equipment upgrades, major line rebuilds, small conductor

replacement, covered conductor installation, and overhead rebuilds, with a summary of work completed and work to be completed in 2023.

PROGRESS ON EQUIPMENT UPGRADES

TABLE WMP-8: Equipment Upgrades Progress

Progress on System Protection and Replacement Projects							
Project	2019 Completed	2020 Completed	2021 Completed	2022 Target	2022 Completed	Total	2023 Target
High Priority Defect Correction	72	225	256	250	272	825	259
Major Line Rebuilds	NA	E&P for 2 circuits	22	18	9.3	33.3	9.5
Pole Replacement	2,305	3,697	4,302	1,220	3,051	13,355	2,750
Recloser Installation ¹	NA	43	13	NA	N/A	56	10
Relay Upgrade	Engineering	7	18	36	14	39	20
Bare Secondary Conductor Replacement	NA	NA	6	34	18	24	10
Small Conductor Replacement	NA	NA	21	60	72	93	60
Covered Conductor	NA	NA	4	12	13	17	4
Equipment Upgrades ²	NA ¹	NA	2,400	3,500	11,202	13,602	9,000

1. Equipment Upgrades in 2019, 2020, and 2021 occurred with new pole replacements and conductor replacement efforts. Specific cases were not tracked separately as individual pieces of equipment.

2: The Company does not have a formal recloser installation plan for 2023 but has identified an ongoing need for the replacement legacy reclosers or the addition of new reclosers based on enhanced protection studies.

As shown in Table WMP-8, only 18 miles of Bare Secondary Conductor Replacement was completed compared to the annual target of 34 miles. As noted in Section III, this is by design and is a result of the Company realigning its Bare Secondary Conductor Replacement goals to be in alignment with its Small Wire Replacement goals. In 2022, the Company deferred the remaining Secondary Reconductor Replacement work because the Company would be visiting the same area for Small Wire Reconductor work within the following 24 months. This realignment allows for more efficient utilization of valuable and scarce construction resources while minimizing impacts to customers.

Given the challenges set forth above, the Company anticipates achieving a total of relay upgrades on 59 feeders by the end of 2023, and this work will need to continue in the future.

PROGRESS ON VEGETATION MANAGEMENT ACTIVITIES

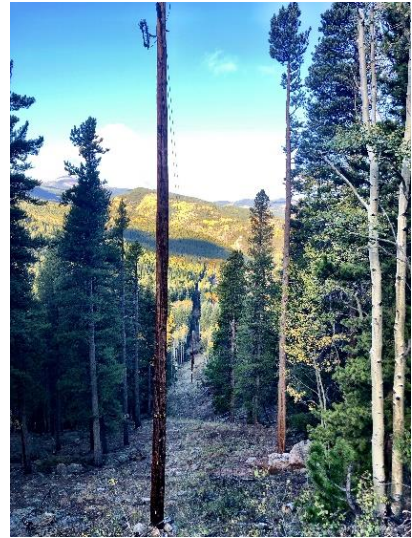
In 2022, during the execution of the DSAP program, we implemented an adjustment to the targeted pole locations to align with cycle maintenance program areas. This achieved an efficiency gain of less cost per pole location but resulted in fewer pole sites cleared.

Secondary voltage clearance program was aligned with cycle maintenance and achieved 100 percent completion.

MHT mileage percentages are less than planned due to a higher than anticipated number of trees requiring mitigation in 2022 compared to 2021. For example, in distribution, the team addressed almost 24 trees per mile in 2022 versus six trees per mile in 2021. This required spending almost 400 percent more time per mile in 2022 than the Company expended in 2021.

Since the transmission ROW Conversion program areas are aligned with cycle maintenance, we exceeded original targets due to locating favorable locations. This additional work included proactively removing smaller trees and other types of vegetation from the ROW. By not allowing the smaller vegetation to grow, the program reduces the potential fuel levels in the ROW, and therefore, reduces ignition risk. The program provides fire breaks and additional access for maintenance, inspections, and emergency situations. It also improves operational safety and reliability.

Table WMP-9 provides the Company's progress on vegetation management. The table below identifies the percentage of work completed relative to the work planned for vegetation management activities for transmission and distribution assets in the WRZ.



**Company right-of-way
with requisite clearances**

TABLE WMP-9: Percentage of On-Cycle Vegetation Management Activities

Program	2022 YE Goal	2022 YE Actual	Status
DSAP	4,000 poles	3,452 poles	86% of pole target
Dist Secondary Clearance	18 Distribution Maintenance Areas ("DMAs") (~Circuits) on 2022 work plan in WRZ	Completed secondary voltage clearing on all 18 DMA projects	100% of applicable projects
Dist MHT / Enhanced MHT ("EMHT")	MHT: 600 miles	MHT: 352 miles	59%
	EMHT: in MHT total	EMHT: in MHT total	
Trans / MHT EMHT	MHT: 650 miles	MHT: 589 miles	91%
	EMHT: in MHT total	EMHT: in MHT total	
Trans ROW Conversion	15 acres	75 acres	100%

V. 2023 FORECAST

In 2023, we are implementing several strategic lessons we learned from 2022. For example, we have secured additional production slots and pre-ordered long lead time materials to mitigate material delays to the best of our abilities. We also have refined our budgets by performing thorough assessments of project scopes and have incorporated recent historical costs. Similarly, the Distribution team moved away from reconductoring estimates to full rebuild estimates to be more in line with the Company's current wildfire mitigation practices. As mentioned above, the Company will continue to further align wildfire work streams to be more efficient to promote the maximizing of resource utilization and the minimizing of customer impact. Overall, the Company anticipates meeting or exceeding its work completion KPI. The Company is also optimistic that its WCR will be improved year over year, and the 0.90 threshold will be achieved.

Some Distribution changes will occur in 2023. The Distribution team has refined their protection studies and practices to be more comprehensive and to combine efforts and find efficiencies. The Company has expanded its system protection evaluations to include full circuits to align multiple parallel workstreams including circuit relays, reclosers, and fusing. The updated system protection studies have identified the need to upgrade additional legacy reclosers and add new reclosers to the system, within the WRZ, to ensure complete protection coordination from the start of the circuit, at the breaker, to the end of the line. Upgrading reclosers will allow the Company to further enable alternate setting functionality during high-risk fire days as well as allow for better overall coordination of protection devices, which also improves reliability. Similarly, new recloser installations will also better align with the Company's updated wildfire protection philosophy.

Annually, the Transmission High Priority Defects Correction program's scope is developed based on the previous year's inspection results. Approximately 2,800 miles of transmission line are inspected every year to identify defects and other areas of concern. This past year 2022 represented the Company's third year performing these detailed visual inspections of the transmission line assets in the WRZ, and the Company anticipated there would be a decrease in the number of new defects that would be identified in 2022. That has not materialized, in part due to delays on major line rebuilds. The Company found 259 new priority defects in the WRZ that will need to be addressed in 2023.

In early 2023, the vegetation management team hired a program manager dedicated solely to activities in the WRZ, which should assist in continuing to achieve the work completion percentages that team has reached historically.

The Company is thankful for the opportunity to share this information and provide more context behind some of the metrics reported herein.