State of California – A Natural Resources Agency
Gavin Newsom, Governor

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Caroline Thomas Jacobs, Director

February 14, 2025

Dear Stakeholders,

Enclosed is the Office of Energy Infrastructure Safety's (Energy Safety's) Annual Report on Compliance regarding Bear Valley Electric Service, Inc.'s execution of its 2022 Wildfire Mitigation Plan.

This Annual Report on Compliance is hereby published as of the date of this letter Bear Valley Electric Service, Inc. may, if it wishes to do so, file a public response to this Annual Report on Compliance within 14 calendar days of the date of publication. Comments must be submitted to Energy Safety's E-Filing system in the 2022 Annual Report on Compliance docket.[1]

Sincerely,

Patrick Doherty
Program Manager | Compliance Assurance Division
Electrical Infrastructure Directorate
Office of Energy Infrastructure Safety

[1] Submit responses to the 2022-ARC docket via the Office of Energy Infrastructure Safety's E-Filing system here: https://efiling.energysafety.ca.gov/EFiling/DocketInformation.aspx?docketnumber=2022-ARC.

OFFICE OF ENERGY INFRASTRUCTURE SAFETY

2022 ANNUAL REPORT ON COMPLIANCE

BEAR VALLEY ELECTRIC SERVICE

February 2025

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Executive Summary

The Office of Energy Infrastructure Safety (Energy Safety) is tasked with evaluating and either approving or denying Wildfire Mitigation Plans (WMP) annually filed by electrical corporations pursuant to Public Utilities Code section 8386 *et seq*. The law also directs Energy Safety to ensure that the electrical corporations have complied with their plans.

Energy Safety's evaluation found that Bear Valley Electric Service (BVES) completed 56 of 61 (or 91%) of its 2022 WMP initiatives, including eight of the 10initiatives with the largest planned expenditure. However, BVES failed to execute five of its WMP initiatives for 2022.

Two of the missed initiatives had a material risk impact. These related to the planned work on the Radford Line to 1) replace 2.7 miles of bare wires with covered conductors, and 2) replace wood poles with fire resistant poles.

For capital expenditures, BVES spent $877,000 (5%) less than its planned amount of $16.1 million on its 2022 WMP initiatives. BVES's operating expenses for WMP initiatives exceeded the expected amount of $4.3 million by approximately $938,000 (22%). Overall, BVES spent slightly more than its budget of $20.4 million by approximately $61,000 (0.3%).

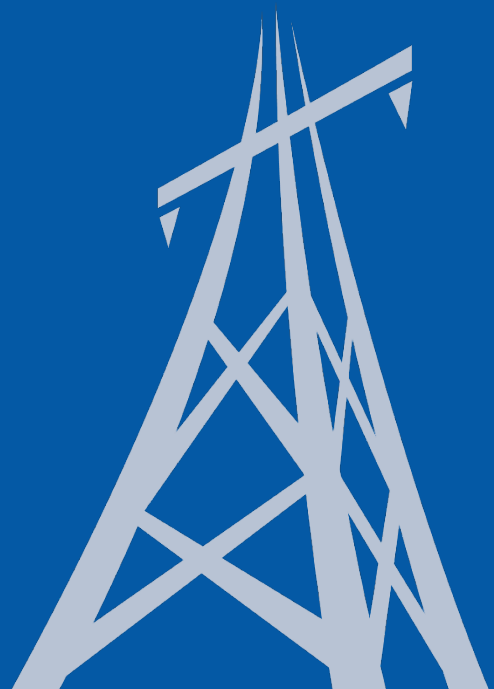
BVES's performance on ignition risk and outcome metrics was generally favorable in that there were no recorded ignitions or Power Safety Power Shutoffs (PSPS) events in 2022, wire-down events declined in 2022, and there we no acres burned, structures destroyed, nor fatalities or injuries in 2022. There was a slight increase in unplanned outage events from 2019 to 2022.

In 2022, BVES undertook efforts to reduce its wildfire risk, and in many instances achieved its WMP initiative activity targets. However, the failure to execute planned work on the Radford Line represented a notable missed opportunity to reduce wildfire risk in BVES's service territory. However, on balance, BVES was successful in executing its plan for wildfire risk mitigation.

Pursuant to Government Code section 15475.1, Energy Safety's primary objective is to ensure that electrical corporations reduce wildfire risk and comply with energy infrastructure safety measures. Energy Safety's annual compliance evaluation of BVES's execution of its 2022 WMP is a comprehensive look at whether BVES's execution of its 2022 WMP reduced the risk of BVES equipment igniting a catastrophic wildfire.

Energy Safety conducted its compliance review process through a variety of means including audits, field inspections, and analysis of data submitted by BVES to Energy Safety. Energy Safety also evaluated several performance metrics, including metrics that reveal the risk on BVES's system. Energy Safety additionally reviewed BVES's self-assessment in its Electrical Corporation Annual Report on Compliance (EC ARC) and the findings of its independent evaluator (IE).

While BVES achieved its overarching objectives, it must continue to improve and learn. For example, Energy Safety found that BVES's reporting contained inconsistencies, impairing Energy Safety's ability to clearly understand if WMP initiative activities had been completed. Energy Safety will continue to monitor BVES's implementation of its ongoing wildfire mitigation activities and compel BVES to improve its ability to eliminate utility-caused catastrophic wildfires in California.



1. Introduction

This Annual Report on Compliance presents the Office of Energy Infrastructure Safety's (Energy Safety's) statutorily mandated assessment of Bear Valley Electric Service, Inc.'s (BVES) compliance with its 2022 Wildfire Mitigation Plan (WMP). (Pub. Util. Code § 8386.3(c)(4).)

In the sections that follow, Energy Safety describes the statutory and regulatory basis for its reporting, the information supplied by the electrical corporation, and the independent analysis conducted by Energy Safety to examine BVES's execution of its 2022 WMP and how its infrastructure performed in 2022 relative to wildfire risk. Finally, Energy Safety provides its conclusions, observations, and recommendations for further actions by BVES.

1.1 Compliance Process

The statutory objective of electrical corporation wildfire mitigation planning efforts is to ensure that electrical corporations are constructing, maintaining, and operating their infrastructure in a manner that will minimize the risk of catastrophic wildfire. (Pub. Util. Code § 8386.3(a).) The objective of a WMP, and consequently the focus of Energy Safety's assessment of compliance, is wildfire risk reduction. An electrical corporation's obligations extend beyond meeting WMP targets.

Energy Safety's 2022 Compliance Process establishes the parameters for this Annual Report on Compliance. Consistent with the 2022 Compliance Process, this report considers the totality of all compliance assessments completed with respect to BVES's 2022 WMP. This includes all inspection, audit, investigation, and data analysis work performed by Energy Safety, as well as separate electrical corporation and independent third-party evaluations of compliance. (Compliance Process, p. 6.)

Energy Safety evaluated whether the electrical corporation implemented the initiatives in its 2022 WMP, looking specifically at whether the electrical corporation funded and performed the work stated for each initiative. (Compliance Process, p. 7.)

Energy Safety also considered the electrical corporation's stated goals and objectives of its plan, its performance of initiatives essential to reducing wildfire risk and achieving its objectives, and the ultimate performance of its infrastructure relative to its wildfire risk, as measured by changes in the occurrence of events that correlate to wildfire risk. (Compliance Process, p. 7.)

2. Bear Valley Electric Service 2022 Wildfire Mitigation Plan

BVES submitted a comprehensive WMP in 2020 covering a three-year term from 2020 through the end of 2022. BVES submitted annual updates to the original 2020 WMP, including a 2022 Update on August 29, 2022, that is the subject of this Annual Report on Compliance.

Energy Safety approved BVES's 2022 Update to its 2020 WMP (hereinafter 2022 WMP Update) on December 6, 2022. (2022 WMP Decision.) BVES stated that its 2022 WMP Update represented a "comprehensive, technically feasible, effective, efficient, and forward-looking plan to address the critical goal of reducing wildfire risk to BVES, its customers, and the community." (2022 WMP Update, p. 1.)

BVES sought to direct its resources to the most cost-effective projects to reduce wildfire risk while maintaining affordability and reliability. BVES's plan aimed to 1) improve its understanding of the wildfire risk posed by and to its systems, 2) focus on reducing the highest risks aggressively and efficiently, and 3) maximize scarce financial and human resources in its efforts to mitigate wildfire risks. BVES set a number of general goals and objectives, including continued collaboration with public safety partners and state and federal agencies, and greater use of objective content and data to promote longer-term systematic thinking to reduce wildfire risk. (2022 WMP Update, p. 331.)

To achieve these overarching goals, BVES set out a number of objectives over the course of 2022:

- Continue to reduce wildfire risks through the execution of grid hardening initiatives, risk assessment and prioritization, and leveraging situational awareness and weather monitoring on a more regular basis. (2022 WMP Update, pp. 136-213.)
- Replace bare wire with covered wire in the highest risk areas and harden all main evacuation routes. (2022 WMP Update, pp. 164, 165, 167, 168.)
- Improve situational awareness through a contracted meteorologist, implementing Technosylva's (a wildfire risk analysis platform) fire risk assessment applications, improving communication with stakeholders, forecasting with fire predictive live models, and continuing aggressive vegetation management. (2022 WMP Update, pp. 147-160.)
- Enhance data collection and handling. (2022 WMP Update, pp. 147-148, 246-247.)
- Improve workforce readiness through recruitment, training, and strategic use of consultants to supplement BVES staff. (2022 WMP Update, pp. 88-89.)

Descriptions of the programs and initiatives contained in BVES's 2022 WMP Update are listed in Table 1 in Section 5.1, below.

3. Bear Valley Electric Service Annual Report on Compliance

Public Utilities Code section 8386.3(c)(1) directs electrical corporations to file a report addressing the electrical corporation's compliance with their WMP during a compliance year. This document is known as the Electrical Corporation Annual Report on Compliance (EC ARC).

Energy Safety's 2022 Compliance Process outlines the requirements for an EC ARC. The EC ARC must detail the electrical corporation's self-assessment of its compliance with the 2022 WMP Update during the 2022 compliance period. Energy Safety's 2021 Compliance Operational Protocols also apply to EC ARCs for the 2022 compliance period. These Protocols outline the requirements for EC ARCs, including an assessment by the electrical corporation of whether it met its intended risk reduction by implementing all of its approved WMP initiatives (i.e., the degree to which initiative activities have reduced ignition probabilities), descriptions of all planned WMP initiative spending versus actual WMP initiative spending, and an explanation of any differentials between the planned and actual spending. (Compliance Operational Protocols, p. 10.)

BVES submitted its EC ARC to Energy Safety on March 31, 2023. (EC ARC.)

In its EC ARC, BVES asserted that it substantially complied with its 2022 WMP Update and met its intended risk reduction through its WMP initiatives. BVES characterized its achievements with respect to the 2020-2022 WMP cycle generally but provided limited information about the work and achievements relating to the 2022 period.

According to BVES, use of its risk assessment toolkit was a critical aspect of its success in risk reduction. BVES identified "high risk" circuits through its Fire Safety Circuit Matrix (Matrix) and prioritized risk reduction activities on these circuits to lower the average risk score for all circuits each year. (2022 WMP Update, p. 45.) Since beginning its use of this methodology in 2019, BVES has reported a reduction in its risk score every year and stated the Matrix was a critical aspect in understanding whether it is meeting risk reduction intent. (EC ARC, pp. 2-4.)

BVES discussed the importance of its Grid Design and System Hardening work in reducing risk. BVES highlighted the following Grid Design and System Hardening achievements for the 2020-2022 WMP period (EC ARC, pp. 7-8):

- Replaced 30.2 bare wire miles with covered conductors,
- Replaced all expulsion fuses with 2,578 current limiting fuses and 536 electronic fuses,
- Hardened all three primary evacuation routes to the Big Bear Lake and Big Bear City areas by installing a wire mesh wrap on 997 wood poles,
- Assessed a total of 3,641 poles,

- Replaced or remediated a total of 1,340 poles,
- Removed 644 tree attachments, and
- Installed a fault localization isolation and service restoration (FLISR) system on its sub-transmission system.

3.1 EC ARC Information on Initiative Completion

BVES did not specify which aspects of this work were completed in 2022, and largely omitted discussion on whether the projects it implemented in 2022 met or exceeded planned initiative targets for the year. For some initiatives, Energy Safety was able to determine that work was completed in 2022, including:

- Contracted with Technosylva to advance BVES's risk mapping program and enhance situational awareness (EC ARC, p. 5.),
- Installed 99 fault indicators within BVES's system (EC ARC, p. 7.),
- Progressed significantly in centralizing geographic data into a centralized repository (EC ARC, p. 11.),
- Implemented a program to work with local stakeholders through the iRestore application, which enables first responders to report directly to BVES's dispatch (EC ARC, p. 14.), and
- Achieved a 20.7% reduction in vegetation density within a 24-foot corridor along all overhead lines compared to 2020. (EC ARC, p. 10.)

BVES reported its self-assessment of compliance with its 2022 WMP Update initiatives within the EC ARC. The main location for this information is in the EC ARC narrative and Attachment A to the EC ARC. Attachment A contains information on expenditures toward certain WMP initiative activities. A summary table of BVES's self-reported compliance with both types of WMP initiatives is in Appendix B to this document. While a narrative summary of BVES's self-reported compliance appears below, refer to Appendix B for more information.

BVES's EC ARC did not separately identify each of the WMP initiative targets it tracked in 2022 but did include a total of 98 initiatives in its EC ARC expenditure table in Attachment A.[1] BVES also did not self-identify any explicit instances of non-attainment for 2022 initiatives, though it provided some context in its discussion of planned versus actual expenditure for some (but not all) initiatives. The most significant initiatives that BVES appears to self-identify as not completed were those relating to BVES's plan to replace the Radford Line with high-performance covered conductor and fire-resistant poles, a set of activities that have been on hold since the 2021 WMP period due to permitting delays. While the delays impacted at least

[1] Several of these listed initiatives do not have any associated spend or a planned 2022 activity. Several initiatives also have sub initiatives which are aggregated or disaggregated depending on the initiative.

two initiatives within the 2022 WMP Update, BVES stated in its WMP that these initiatives' targets were contingent on the permitting.

One other apparent missed target pertained to the Online Diagnostic System to use continuous monitor sensors on one of BVES's circuits, for which BVES did not provide an explanation. For more information on BVES initiative non-attainment, see Section 5.4.

3.2 EC ARC Information on Initiative Funding

Information supplied by BVES on its initiative funding appears in Appendix C. While a narrative description appears below, refer to Appendix C for more detail.

On operational expenditures, BVES spent more than the planned amount from its 2022 WMP Update initiatives by $938,530. BVES stated that labor, material, and unexpected changes in scopes of work as the main reasons for the cost variance. The changes in the scope of work resulted from the implementation of a more comprehensive inspection process, which increased the hours required per circuit mile for initiatives 7.3.41, 7.3.4.11, and 7.3.5.2. (EC ARC, pp. 34-37.)

On capital expenditures, BVES spent less than the planned amount for its 2022 WMP Update initiatives by $877,130 due to major initiatives not being performed. Specifically, initiatives 7.3.3.3.3 and 7.3.3.6.2, which had a planned expenditure of $5.1 million, were not completed. (EC ARC, p. 46.)

Overall, BVES exceeded its budget for the 2022 WMP Update initiatives by a marginal amount of $61,390.[2]

4. Independent Evalutor ARC for Bear Valley Electric Service

Energy Safety, in consultation with the Office of the State Fire Marshal, annually publishes a list of entities qualified to serve as independent evaluators (IEs) of WMP compliance. (Pub. Util. Code § 8386.3(c)(2)(A).) Each electrical corporation is then required to hire an IE from the list to perform an independent WMP compliance assessment. (Pub. Util. Code § 8386.3(c)(2)(B)(i).)

The IE reviews and assesses the EC's compliance with its approved WMP. As part of its evaluation, the independent auditor must determine whether the EC failed to fund any activities included in its plan.

[2] BVES's planned expenditure between its 2022 WMP Update, 2022 Q1 QDR, and 2022 EC ARC do not align. The information presented here is from its EC ARC reporting.

On July 1 of each year, the IE issues its Independent Evaluator Annual Report on Compliance (IE ARC) for a given electrical corporation. (Pub. Util. Code § 8386.3(c)(2)(B)(i).)

The 2022 IE ARC for BVES was prepared by Sargent & Lundy Engineers, Ltd. (IE ARC.) The IE ARC reviewed the wildfire mitigation initiatives and activities implemented by BVES in 2022 and accounted for whether BVES met its performance objective targets, has failed to fund any of those initiatives, and followed its quality assurance and quality control (QA/QC) processes.

The IE determined that BVES made efforts to comply with each of its WMP initiative goals and made considerable progress in the four initiatives for which it failed to meet its targets. (IE ARC, pp. 88-90.) The IE also determined that, while BVES did not fully fund several initiatives, this was largely due to a difference in assumptions for the initiative budget compared to the actual amount required to perform the activities. Finally, the IE concluded that BVES completed QA/QC activities effectively but lacked formal written QA/QC procedures that limits BVES's success in this area. (IE ARC, pp. 80-81.)

The IE conducted a field inspection of BVES's field verifiable WMP initiatives to analyze BVES's progress toward meeting its WMP commitments. To test BVES's assertion that it met its 2022 WMP Update initiative target of completing 412 pole remediations and replacements in 2022, the IE sampled 204 of the 597 poles reported to be hardened. Through review of photos provided by the field verification team on this initiative, the IE observed one inconsistency in the amount of overlap between the wire-mesh wrap that exposed timber. After further data requests regarding the proper procedures for installing the wire-mesh, the IE found that additional structural support had been attached to the pole but was not necessary for other poles and ultimately found BVES compliant. (IE ARC, pp. 22-23.)

As a result of the work conducted, the IE made some observations and recommendations, including:

- The IE noted the online diagnostic system pilot was delayed and not met due to procurement and subcontractor delays.
- With respect to the two initiatives for Radford covered conductor installation, the IE found that both did not meet their goals due to delays in securing permits.
- The IE found a lack of evidence for quality assurance (QA) activities. While BVES provided verbal support during subject matter expert (SME) interviews of its review of third-party inspection results, the IE noted a lack of objective evidence for these QA activities. This is opposed to quality control (QC) activities where BVES was able to provide substantial support for its work.
- In regard to general QA/QC procedures, the IE found that BVES lacks formal written processes and programs. The IE noted that while the informal system in place for BVES is effective in governing the majority of WMP compliance activities, detailed and written programs would enhance quality controls.
- The IE noted a general lack of granular documentation and detailed plans, processes, and procedures for many WMP initiatives. However, the IE also noted substantial

improvement in this area compared to previous years. Implementation of new database software and geographic information system (GIS) updates have and will continue to evolve BVES's competence in this area.

- The IE found assessment of initiatives challenging at times due to a lack of distinct goals or targets for some initiatives in the WMP. As a result, the IE in many cases had to rely on BVES SME interviews, clarifications, and verbal explanations.

The IE found that 80 of BVES's 84[3] WMP activities reviewed were adequately met. (IE ARC, p. IV.) The IE found that BVES did not fully fund two of the four initiatives with missed targets, but noted this arose from delays in permitting rather than inadequate funding. BVES indirectly self-identified three[4] of the four missed targets. BVES disagreed with one initiative finding regarding its QA/QC procedures, stating it performed the necessary QA/QC procedures to ensure quality work. (2022 IE ARC Response, pp. 1-2.)

5. Energy Safety Evaluation of WMP Initiative Completion

Energy Safety's evaluation of BVES's performance in completing its initiative activities in 2022 indicates that BVES completed 56 of its 61 initiative activity targets. The subsections below describe Energy Safey's evaluation of BVES's execution of its WMP in 2022.

5.1 Bear Valley Electric Service 2022 WMP Update Initiative Activities Assessed by Energy Safety

Energy Safety evaluated the totality of the compliance data available including BVES's 2022 WMP Update, the EC ARC, the IE ARC, and BVES quarterly data reports (QDRs). (2022 WMP Update, EC ARC, IE ARC, 2022 Q4 QDR.) The 61 initiative activities that Energy Safety assesses in this ARC are itemized in Table 1. [5]

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[3] Though there were 101 total activities listed, the IE noted that 17 of those initiatives were not applicable to BVES.

[4] Initiatives 7.3.2.2.2, 7.3.3.3.3, and 7.3.3.6.2.

[5] Initiatives reported within the EC ARC and IE ARC, such as the 81 initiative activities evaluated by the IE ARC, encompassed initiative activities before and after 2022 that are not included in Energy Safety's 2022 assessment. Therefore, Energy Safety considers 61 initiative activity targets for the 2022 compliance year.

Table 1: BVES WMP Initiative Activities

2022 WMP Update Initiative (2022 WMP Update, pp. 129 –238)	2022 Initiative Activity
Risk Assessment & Mapping - A Summarized Risk Map That Shows the Overall Ignition Probability and Estimated Wildfire Consequence Along the Electric Lines and Equipment / Ignition Probability & Wildfire Consequence Mapping (Primary) (7.3.1.1)	Develop a fire model resulting in several high-resolution risk maps based on several characteristics of the service area and climate history/forecast.
Online Diagnostic System Pilot / Continuous Monitoring Sensors (7.3.2.2.2)	Install continuous monitor sensors to provide usable grid insight information that is measured, reported, and documented.
Situational Awareness & Forecasting - Situational Awareness Hardware Program / Fault Indicators for Detecting Faults on Electric Lines and Equipment (7.3.2.3)	Install 50 fault indicators.
Weather Consultant / Forecast of a Fire Risk Index, Fire Potential Index, or Similar (7.3.2.4 and 7.2.3.6)	Utilize a combination of weather parameters (such as wind speed, humidity, and temperature), vegetation and fuel conditions, and other factors to determine current fire risk and to create a forecast potential indicative of a fire risk.
Grid Operations & Protocol / Personnel Monitoring Areas of Electric Lines and Equipment in Elevated Fire Risk Conditions (7.3.2.5)	Address personnel needs during high-risk conditions.
Capacitor Maintenance and Replacement Program (7.3.3.1)	Maintain existing equipment, reduce the risk of ignitions due to equipment faults and failures, and deploy new equipment to reduce risk ignition drivers.

2022 WMP Update Initiative (2022 WMP Update, pp. 129 –238)	2022 Initiative Activity
Circuit Breaker Maintenance and Installation to Deenergize Lines Upon Detecting a Fault (7.3.3.2)	Remediate, adjust, or install new equipment to improve or replace existing fast switching circuit breaker equipment to improve the ability to protect electrical circuits from damage caused by overload of electricity or short circuit.
Covered Conductor Installation - Covered Wire Program - 4kv Systems (7.3.3.3.1 And 7.3.3.3.2)	Install 12.9 miles of overhead sub-transmission (34.5-kV) and distribution (4-kV) bare wire with covered wire.
Covered Conductor Replacement Program – Radford (7.3.3.3.3)	Replace of 2.7 miles of bare wire with covered conductor.
Covered Conductor Maintenance (7.3.3.4)	Maintain the installed covered conductor in accordance with prescribed maintenance standards and industry best practices.
Crossarm Maintenance, Repair, and Replacement (7.3.3.5)	Remediate, adjust, or install new equipment related to crossarms in accordance with general order (GO) 95.
Grid Design & System Hardening - Pole Loading & Replacement Program / Distribution Pole Replacement and Reinforcement, Including Composite Poles (7.3.3.6.1)	Assess and remediate noncompliant distribution poles in compliance with GO 95 and 165.
Covered Conductor Project – Radford Line (7.3.3.6.2)	Replace wood poles with fire resistant poles.
Grid Automation Program [Primary] / Installation of System Automation Equipment (7.3.3.9.1)	Implement supervisory control and data acquisition (SCADA) network at two substations as part of the Grid Automation Program.

2022 WMP Update Initiative (2022 WMP Update, pp. 129 –238)	2022 Initiative Activity
Grid Design & System Hardening - Grid Automation Program // FLISR / Installation of System Automation Equipment (7.3.3.9.2)	Install nine smart high voltage switches and integrate three existing auto-reclosers and one auto transfer switch on the 34.5 kV system
Grid Design & System Hardening - Maintenance, Repair, and Replacement of Connectors, Including Hotline Clamps (7.3.3.10)	Remediate, adjust, or install new equipment to improve or replace existing connectors, including hotline clamps.
Grid Design & System Hardening – Bear Valley Power Plant (BVPP) Phase 4 Upgrade Project / Mitigation of Impact on Customers and Other Residents Affected During Public Safety Power Shutoff (PSPS) Event (7.3.3.11.2)	Implement Phase Three upgrades, which will include installing new catalyst housing directly above the engine. New placement will reduce heat loss and improve emissions bandwidths. The housing will include the double stacked element system to provide additional assistance in meeting emissions requirements. It also relocates oil and water piping, battery boxes, and controller stands while increasing accessibility and safety. The project will also address several age-related issues and aligns each generator to limit vibrations and abnormal wear on the engine.
Safety & Technical Upgrades of Substations / Other Corrective Action (7.3.3.12.1)	Repair, maintain, and perform replacement work associated with substations to function safely, reliably, and properly to reduce increased ignition risk.
Tree Attachment Removal Program (7.3.3.12.2)	Remove legacy service attachments and wires that are affixed to 80 trees, replacing with structures and poles that are more fire resistant.

2022 WMP Update Initiative (2022 WMP Update, pp. 129 –238)	2022 Initiative Activity
Pole Loading & Replacement Program [Primary] (7.3.3.13)	Assess and remediate 165 noncompliant distribution poles that pose a fire risk.
Transformers Maintenance and Replacement (7.3.3.14)	Repair, maintain, and perform replacement work associated with transformers to enable safe operational function and to reduce increased ignition risk.
Undergrounding of Electric Lines and Equipment (7.3.3.16)	Underground (UG) electrical lines and equipment in accordance with GO 128.
Asset Management & Inspections – Detailed Inspections of Distribution Electric Lines and Equipment / Detailed Inspection Program [Primary] (7.3.4.1)	Execute careful, visual inspections of 29 miles of overhead electric distribution lines and equipment.
Asset Management & Inspections - Improvement of Inspections (7.3.4.3)	Identify actionable outcomes of deficiencies and inspection protocols executed in the field. This will support improvement of training and applying lessons learned from third party evaluations and inspections.
Asset Management & Inspections - Infrared Inspections of Distribution Electric Lines and Equipment / Unmanned Aerial Vehicle (UAV) Thermography Program UAV Thermography Program (7.3.4.4)	Utilize infrared technology to perform inspections on 211 miles of overhead electric distribution lines, equipment, and right of ways (ROWs). This technology includes heat-sensing cameras that can identify risk drivers such as increased “hot” areas or conditions that may indicate deterioration, which can lead to potential failures and ignitions.

2022 WMP Update Initiative (2022 WMP Update, pp. 129 –238)	2022 Initiative Activity
Asset Management & Inspections - Intrusive Pole Inspections / Intrusive Pole Inspection Program (7.3.4.6)	Monitor the age and structural integrity of 150 existing wood poles through means of a more detailed assessment of the pole's condition such as coring areas of identified damage and visual inspection of the poles apart from pole loading assessments results.
Asset Management & Inspections - LiDAR Inspections of Distribution Electric Lines and Equipment / Lidar Inspection Program [Primary] LiDAR Inspection Program [Primary] (7.3.4.7)	Sweep 211 circuit miles annually with LiDAR.
Asset Management & Inspections - Third Party Ground Patrol (7.3.4.9.1)	Inspect the entire overhead system with independent or third-party patrol beyond that required by GO 165.
Asset Management & Inspections - UAV Thermography Program (7.3.4.9.2)	Provide a top-down view of sub-transmission and distribution facilities; thereby, complimenting other inspections and reducing the risk of non-compliant issues going undiscovered.
Asset Management & Inspections - Patrol Inspections of Distribution Electric Lines and Equipment / Patrol Inspection Program [Primary] (7.3.4.11)	Execute careful, visual inspections of overhead electric distribution lines and equipment.
Asset Management & Inspections - Pole Loading Assessment Program to Determine Safety Factor / Pole Loading & Replacement Program Pole Loading & Replacement Program (7.3.4.13)	Assess and remediate 225 noncompliant distribution poles that pose a fire risk.

2022 WMP Update Initiative (2022 WMP Update, pp. 129 –238)	2022 Initiative Activity
Asset Management & Inspections - Quality Control of Inspections [Primary] (7.3.4.14)	Identify actionable outcomes of deficiencies and inspection protocols executed in the field.
Asset Management & Inspections – Substation Inspections/ GO-174 Substation Inspection Program [Primary] (7.3.4.15)	Inspect substations to determine needs for upgrades, replacements, or repairs, and to maintain structural integrity of the asset to prevent ignition risks from equipment failures, in compliance with GO 174.
Vegetation Management & Inspections- Additional Efforts to Manage Community and Environmental Impacts / Contracted Forester Service/ Environmental Impact Mitigation Activities (7.3.5.1)	Mitigate negative impacts from utility vegetation management to local communities and the environment, which includes coordination plans with community partners and lands management groups.
Vegetation Management & Inspections – Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment / Detailed Inspection Program (7.3.5.2)	Execute careful, visual inspections of 29 miles of overhead electric distribution lines and equipment. This includes individual pieces of equipment and structures that are carefully examined to ensure vegetation clearances established in GO 95 are established.
Vegetation Management & Inspections – Emergency Response Vegetation Management Due to Red Flag Warning or Other Urgent Conditions / Emergency Preparedness & Response Program (7.3.5.4)	Develop robust and detailed vegetation management and inspection initiatives according to detailed specifications, scope, and schedules.

2022 WMP Update Initiative (2022 WMP Update, pp. 129 –238)	2022 Initiative Activity
Vegetation Management & Inspections - Fuel Management and Reduction of "Slash" From Vegetation Management Activities / Enhanced Vegetation Management Program (7.3.5.5)	Plan and execute fuel management activities that reduce the availability of fuel in proximity to potential sources of ignition, including both reduction or adjustment of live fuel (in terms of species or otherwise) and of dead fuel, including "slash" from vegetation management activities that produce vegetation material such as branch trimmings and felled trees.
Vegetation Management & Inspections - Improvement of Inspections / Quality Control of Inspections (7.3.5.6) Target: 4 Vegetation Management Audits	Identify deficiencies in inspections protocols, and practice to improve training and lessons learned from third party contractors and inspections.
Vegetation Management & Inspections - LiDAR Inspections of Vegetation Around Distribution Electric Lines and Equipment / LiDAR Inspection Program (7.3.5.7)	Sweep 211 circuit miles using LiDAR to verify, document and resolve vegetation encroachment and overheating and degrading equipment issues before they contact bare conductors.
Vegetation Management & Inspections - Other Discretionary Inspections of Vegetation Around Distribution Electric Lines and Equipment / UAV & Ground Patrol (7.3.5.9.1)	Contract with a third party for inspections of 211 circuit miles of right-of-way and adjacent vegetation for potential hazards.
Vegetation Management & Inspections - Other Discretionary Inspections of Vegetation Around Distribution Electric Lines and Equipment / UAV & Ground Patrol (7.3.5.9.2)	Utilize infrared technology to perform inspections on vegetation adjacent to 211 circuit miles of overhead electric distribution lines and equipment.

2022 WMP Update Initiative (2022 WMP Update, pp. 129 –238)	2022 Initiative Activity
Vegetation Management & Inspections - Patrol Inspections of Vegetation Around Distribution Electric Lines and Equipment / Patrol Inspection Program (7.3.5.11)	Execute careful, visual inspections of 211 circuit miles of overhead electric distribution lines and equipment.
Vegetation Management & Inspections – Quality Assurance / Quality Control of Vegetation Inspections / Quality Control of Inspections (7.3.5.13)	Identify actionable inspection deficiencies and inspection protocols that are executed in the field.
Vegetation Management & Inspections - Recruiting and Training of Vegetation Management Personnel / Vegetation Management Program Staffing (7.3.5.14)	Contract to engage a full-time utility forester in its service territory.
Asset Management & Inspections - Substation Inspections/ GO-174 Substation Inspection Program [Primary]GO-174 Substation Inspection Program [Primary] / Substation Inspections (7.3.5.15)	Reduce the ignition probability and wildfire consequence attributable to at-risk vegetation species. This work may include activities such as tree trimming, brush and slash removal, and replacement of fixtures associated with ignition risk.
Vegetation Management & Inspections - Removal and Remediation of Trees with Strike Potential to Electric Lines and Equipment / Enhanced Vegetation Management Program [Primary] (7.3.5.16)	Remove or remediate 88 hazard trees that have a potential to fall in or make contact with electrical equipment, leading to electrical device and structure failures or ignition sources.

2022 WMP Update Initiative (2022 WMP Update, pp. 129 –238)	2022 Initiative Activity
Vegetation Management & Inspections – Substation Inspection / GO-174 Substation Inspection Program (7.3.5.17)	Inspect 144 substations to determine needs for upgrades, replacements, or repairs, and to maintain structural integrity of the asset to prevent ignition risks from equipment failures.
Vegetation Management & Inspections - Substation Vegetation Management / Substation Vegetation Management Inspections & Corrections (7.3.5.18)	Inspect substations and remove vegetation in and around substations that may result in contact with bare conductors.
Vegetation Management & Inspections - Vegetation Inventory System / GIS Data Collection & Sharing (7.3.5.19)	Document the inventory of vegetation growth, types, and clearances to achieve fuels reduction and clearance objectives in a centralized location. This includes the data captured surrounding at-risk and invasive species identification, growth cycle and off-cycle growth targets, vegetation fuel and forecasted load, and damaged or dying tree accounting for those that may lead to a fall in or another ignition risk driver.
Vegetation Management & Inspections - Vegetation Management to Achieve Clearances Around Electric Lines and Equipment / Enhanced Vegetation Management Program (7.3.5.20)	Conduct robust and detailed vegetation management and inspection initiatives to clear 72 circuit miles according to detailed specifications, scope, and schedules.
Grid Operations & Operating Protocols – Protective Equipment and Device Settings (7.3.6.2)	Develop plans and studies on developing and utilizing modern control systems (switches, sensors) that allow for optimized safety and protection of utility and public equipment.

2022 WMP Update Initiative (2022 WMP Update, pp. 129 –238)	2022 Initiative Activity
Grid Operations & Operating Protocols – Personnel Work Procedures and Training in Conditions of Elevated Fire Risk / PSPS Program & Procedures (7.3.6.4)	Enforce operational changes when a red flag warning (RFW) issuance or when its weather consultant forecasts high risk conditions through local weather stations and the National Fire Danger Rating System (NFDRS) reports. Operational changes include suspending all work, by BVES staff or its contractors, that might produce sparks or create fire hazards.
Grid Operations & Operating Protocols – PSPS Events and Mitigation of PSPS Impacts / PSPS Program & Procedures [Primary] (7.3.6.5 / 7.3.6.6)	Design and execute procedures for de-energization and reenergization protocols. The objective is to prepare a plan to provide restoration services quickly and safely while maintaining reliability standards.
Data Governance/Centralized Repository for Data/GIS Data Collection & Sharing [Primary] (7.3.7.1)	Improve ability to gather, track, and disseminate data across BVES, with certain stakeholders, and to the Energy Safety. Design, maintain, host, and upgrade a platform that supports storage, processing, and utilization of all utility proprietary data and data compiled by the utility from other sources.
Emergency Planning & Preparedness – Adequate and Trained Workforce / Resource Allocation Methodology (7.3.9.1)	Identify, hire, retain, and train qualified workforce to conduct service restoration in response to emergencies, including short-term contracting strategy and implementation.

2022 WMP Update Initiative (2022 WMP Update, pp. 129 –238)	2022 Initiative Activity
Community Outreach Program (7.3.9.2 / 7.3.10.1)	Identify and contact key community stakeholders through 360 engagements; increase public awareness of emergency planning and preparedness information; and design, translate, distribute, and evaluate effectiveness of communications taken before, during, and after a wildfire, including access and functional needs populations and limited English proficiency populations in particular.
Emergency Planning & Preparedness – Customer Support in Emergencies / Emergency Preparedness & Response Program (7.3.9.3)	Communicate with customers to ensure they are informed during emergencies which could help customers find the resources they need, such as access to a community resource center, prevent them from engaging in risky behavior, and free up BVES resources to address and resolve the emergency.
Emergency Planning & Preparedness – Disaster and Emergency Preparedness Plan – Emergency Preparedness & Response Program [Primary] (7.3.9.4)	Utilize the BVES emergency preparedness and response plan to reflect proactive planning and close coordination with local governments, first responders, mutual aid and expert agencies, other stakeholders, and customers.
Emergency Planning & Preparedness – Preparedness and Planning for Service Restoration / Emergency Preparedness & Response Program (7.3.9.5)	Provide training to employees on necessary tools, training, and protocols to support emergency restoration activities.

2022 WMP Update Initiative (2022 WMP Update, pp. 129 –238)	2022 Initiative Activity
Emergency Planning & Preparedness – Protocols in Place to Learn from Wildfire Events / Emergency Preparedness & Response Program (7.3.9.6)	Establish protocols to learn from wildfire events to ensure that BVES learns and adapts its practices following wildfire events within its service territory, across California, and in other dry mountainous environments.
Forest Service and Fuel Reduction Cooperation and Joint Roadmap (7.3.10.4)	Research all new and existing approaches to reducing fire related risk as it pertains to the actions taken by local, state, and federal entities. With the additional information that can be ascertained from these relationships BVES can adjust or update their existing wildfire mitigation programs to better reduce their overall wildfire risk and verify continued excellence to their customers.

5.2 Energy Safety Analysis of Substantial Vegetation Management Audits

Public Utilities Code section 8386.3(c)(5) requires Energy Safety to perform an audit of an electrical corporation's performance of its vegetation management work. Energy Safety refers to this audit as the Substantial Vegetation Management (SVM) audit. Pursuant to section 8386(c)(5), Energy Safety conducted an audit of BVES's compliance with the vegetation management requirements in its 2022 WMP Update.

On July 20, 2024, Energy Safety issued its SVM Audit and Report for BVES. (SVM Audit and Report.) The purpose of the SVM Audit is to assesses whether BVES met its quantitative commitments and verifiable statements in its 2022 WMP Update related to vegetation management activities.

Energy Safety reviewed the 17 applicable vegetation management initiatives detailed in BVES's 2022 WMP Update and found BVES was unable to provide supporting documentation or information consistent with statements and/or targets for one of the 17 vegetation management initiatives (Initiative 7.3.5.13 Quality Assurance / Quality Control of Vegetation Management). (SVM Audit and Report, p. 4.) BVES provided Energy Safety with

documentation demonstrating that the work associated with initiative 7.3.5.13 was completed shortly after the 2022 compliance year (January 2023). Energy Safety determined that a corrective action is not required for initiative 7.3.5.13. However, BVES must demonstrate that the January 2023 work completed for initiative 7.3.5.13 is not also counted toward its targets for the 2023 compliance year.

Energy Safety found that BVES substantially complied with the substantial portion of the vegetation management requirements in its 2022 WMP Update. (SVM Audit and Report, p. 4.)

The specific findings from Energy Safety's SVM Audit and Report are detailed in Appendix D.

5.3 Energy Safety Field Inspection Analysis

Energy Safety performs inspections utilizing an electrical corporation's initiative activity data applicable to the WMP year compliance period. Energy Safety conducts two types of inspections: 1) inspections of grid hardening and other work related to WMP initiatives related to physical infrastructure, and 2) inspections of general wildfire safety conditions at an inspection site. The second category of general wildfire safety conditions is not strictly related to WMP initiatives, and these inspections are supplemental to Energy Safety's WMP initiative-related inspection work.[6]

In the tables below, Energy Safety distinguishes its inspection activities related to WMP initiatives on grid hardening and physical infrastructure (WMP Inspection) and inspection activities related to general wildfire safety conditions (GWS Inspection).

For the 2022 compliance period, Energy Safety conducted 1,481 GWS Inspection activities and 294 WMP Inspection activities in BVES's territory. The results of these inspection activities are described in Table 2 and Table 3 below.[7]

Table 2: BVES's 2022 GWS Inspection Metrics

GWS Inspection Metrics for 2022 in BVES's Territory	Totals
Total GWS Inspection Activities	1,481

[6] If Energy Safety observes a general wildfire safety concern during an inspection activity, then that is recorded as a "defect" or "Wildfire Safety Concern (WSC)." If Energy Safety observes non-compliance with a WMP initiative during an inspection activity that an electrical corporation claimed to have occurred at a site, then that is recorded as a "violation."

[7] Energy Safety uses the term "inspection activity" to refer to a specific question or condition assessed during an inspection. For example, if Energy Safety is inspecting a particular utility pole and looking for eight different conditions associated with a WMP initiative, then that would count as eight WMP inspection activities. If a general wildfire safety inspection occurs at the same time at that utility pole, and 20 general wildfire safety conditions are assessed, then that would count as 20 general wildfire safety inspection activities. In this example, a single utility pole inspection would lead to 28 inspection activities.

GWS Inspection Metrics for 2022 in BVES's Territory	Totals
Total Defects or Wildfire Safety Concerns Observed	13
Rate of Defects or Wildfire Safety Concerns	0.88%
Defects Overdue for Correction	0
Defect Timely Correction Rate	100%

Table 3: BVES's 2022 WMP Inspection Metrics

WMP Inspection Metrics for 2022 in BVES's Territory	Totals
Total WMP Inspection Activities	294
Total Violations Observed	0
Violation Rate	0%
Violations Overdue for Correction	0

5.4 Bear Valley Electric Service 2022 WMP Update Initiative Activity Attainment

Based on Energy Safety's analysis of BVES's EC ARC, the IE ARC, and Energy Safety's independent examination of BVES's transmission and distribution system, as well as data submitted by BVES, BVES did not meet five of its 61 2022 WMP Update initiative activity targets, as shown below in Table 4.

Table 4: BVES's WMP Initiative Activity Attainment in 2022

2022 WMP Update Initiative (2022 WMP Update, pp. 136 -213)	2022 Initiative Activity	Details of Non-Attainment and Rationale
Online Diagnostic System Pilot / Continuous Monitoring Sensors (7.3.2.2.2)	Install continuous monitor sensors to provide usable grid insight information that is measured, reported, and documented.	BVES did not meet the initiative due to supply chain issues related to the relevant sensors.
Covered Conductor Replacement Program – Radford Line (7.3.3.3.3)	Replace 2.7 miles of bare wire with covered conductor.	Delayed approval of the appropriate permits.
Covered Conductor Project – Radford Line (7.3.3.6.2)	Replace the wood poles with fire resistant poles.	Delayed approval of the appropriate permits.
Asset Management & Inspections - Quality Control of Inspections [Primary] (7.3.4.14)	Identify actionable outcomes from deficiencies of inspection protocols executed in the field.	BVES completed quality control activities; however, evidence of quality assurance overview of the activities being performed was not provided.
Vegetation Management & Inspections – Quality Assurance / Quality Control of Vegetation Inspections / Quality Control of Inspections (7.3.5.13)	Identify actionable items of inspection deficiencies and inspection protocols that are executed in the field.	BVES did not provide information consistent with the completion of work identified in this statement.

6. Wildfire Risk Reduction: Performance Metrics and Overall WMP Execution

The Compliance Process applicable to the 2022 WMP Update compliance year defines goals for Energy Safety that extend beyond assessing compliance with WMP initiatives. Specifically,

Energy Safety examines the ultimate performance of an electrical corporation's infrastructure relative to its wildfire risk, as measured by changes in the occurrence of events that correlate to wildfire risk. Energy Safety also considers whether the electrical corporation exhibited issues related to its execution, management, or documentation in the implementation of its WMP.

Below, this report outlines the metrics chosen by Energy Safety to evaluate the performance of an electrical corporation's infrastructure relative to risk. These metrics include data on ignitions and PSPS events in the territory of the electrical corporation. The data utilized by Energy Safety were provided by BVES in its QDR submissions; but were analyzed and presented here using Energy Safety's own methodology. Where necessary, explanations of Energy Safety's methodology are provided.

This section also contains a discussion of any issues exhibited by BVES with respect to its execution, management, or documentation in the implementation of its WMP, if applicable.

6.1 Ignition Risk and Outcomes Metrics

Energy Safety assessed the performance of BVES's infrastructure relative to its wildfire risk, as measured by changes in the occurrence of events that correlate to wildfire risk.

Energy Safety requires electrical corporations to report data, such as ignitions in the HFTD, that help Energy Safety assess whether an electrical corporation reduced its wildfire risk while also reducing its reliance on PSPS events. In 2022, Energy Safety assessed each electrical corporation's infrastructure performance for the calendar years 2015 through 2022 with particular attention on the 2022 outcomes.

The collection of metrics evaluated are grouped into two categories: Ignition Risk Metrics, and Outcome Metrics. A list of all the metrics in each category is described fully in their respective following sections. For these sections, Energy Safety relied on data reported in the third quarter 2022 QDR for the 2015 through 2021 values, and the fourth quarter 2023 QDR for the 2022 values.[8] (2022 Q3 QDR; 2023 Q4 QDR.)

Normalizing Metrics:

For applicable performance metrics, the normalizing metrics Energy Safety uses are: "High Wind Warning Overhead Circuit Mile Days" (HWWOCMD), and "Red Flag Warning Overhead Circuit Mile Days" (RFWOCMD). To see the values for each year used, see Appendix E, Figure 4 through Figure 11. (2022 Q3 QDR, Tables 6 and 8; 2023 Q4 QDR, Tables 4 and 7.)

[8] The format of the required data reporting for all electrical corporations changed near the end of 2022, thus, all data for 2015-2021 were obtained from the third quarter 2022 QDR (old format) and all data for 2022 were obtained from the fourth quarter 2023 QDR (new format).

Energy Safety uses these normalizing metrics to ensure a more nuanced interpretation of wildfire risk outcomes. For example, the outcome metric of "acres burned" may be impacted by the presence of hot dry winds and, thus, this metric is presented in both raw counts and normalized by RFWOCMD. In this way, the acres burned are presented "accounting for" year by year variances in weather conditions that directly influence the outcome.

Findings:

- There were no ignitions reported by BVES from 2015 through 2022.
- Wire down events and outage events for BVES have increased since 2019.
- In 2022, BVES outage events from vegetation contacts made up approximately one-third of all outage events.
- BVES has not recorded any PSPS events from 2015 through 2022.
- From 2015 to 2022, BVES has not recorded any wildfire related outcome events.

6.1.1 Ignition Risk Metrics

Energy Safety reviewed the following metrics associated with ignition risk:

1. *Ignitions* – Incidents in which electrical corporation infrastructure was involved in an ignition,
2. *Wire Down Events* – Incidents in which overhead electrical lines fall to the ground, land on objects, or become disconnected from their moors,
3. *Unplanned Outages* – All unplanned outages experienced,
4. *Vegetation-Caused Outages* – A subset of unplanned outages experienced in which the cause was determined to be vegetation contact with electrical lines,
5. *PSPS Events* – Planned outages called public safety power shutoff (PSPS) events.

6.1.1.1 Ignitions Data Analysis

The Ignition Data Analysis section examines ignitions stemming from distribution and transmission lines located within HFTD Tier 2 and HFTD Tier 3 areas. (2022 Q3 QDR, Table 7.2; 2023 Q4 QDR, Table 6.) BVES's service territory is divided into three primary area designations: Non-HFTD, HFTD Tier 2, and HFTD Tier 3. For a sense of scale, the percent of OCM for each territory type in 2022 is as follows: non-HFTD = 0%, HFTD Tier 2 = 99.7%, and HFTD Tier 3 = 0.3% (2022 Q3 QDR, Tables 6 and 8; 2023 Q4 QDR, Tables 4 and 7.)

BVES has reported zero ignitions from 2015 to 2022. As a result, there are no raw or normalized figures provided.

6.1.1.2 Wire Down Events Data Analysis

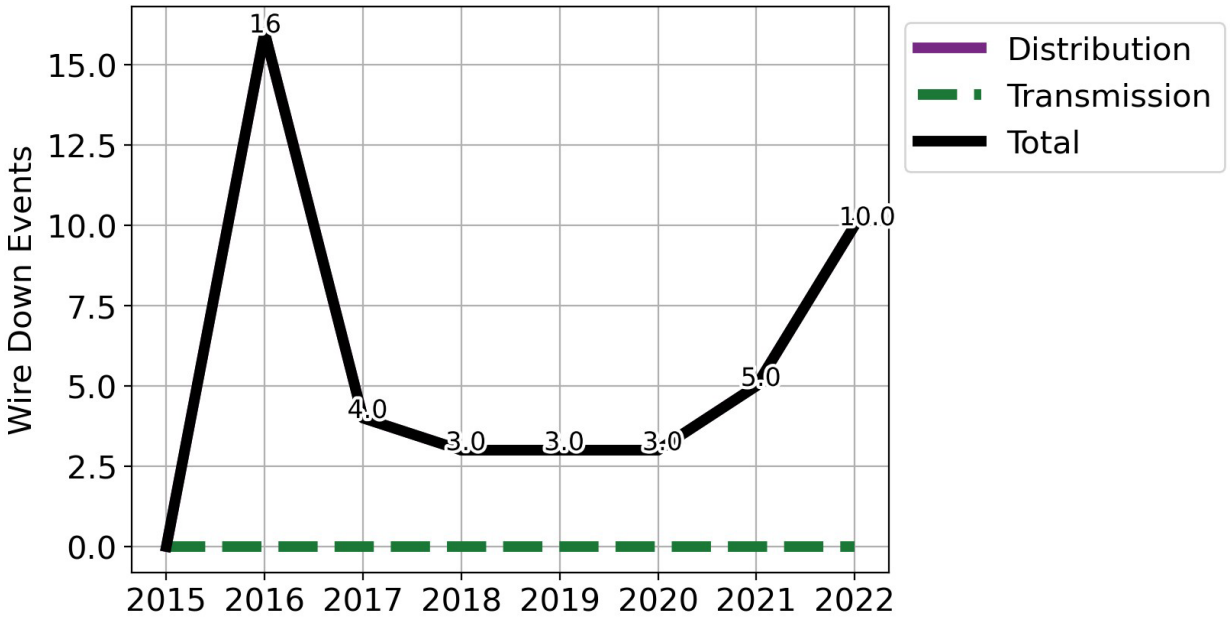
Wire down events are wildfire risks where a wire is touching the ground, touching an object, or has become disconnected from its mooring. This type of event poses a risk of ignition or a

danger to people if that wire is also energized with electricity. The data source for wire down information is the QDRs. (2022 Q3 QDR, Table 7.1; 2023 Q4 QDR, Table 5.)

Raw Wire Down Event Counts:

The BVES wire down event counts increased in 2022 compared to the years 2017 through 2021 (Figure 1). There are zero wire down event counts for transmission lines as the BVES territory contains distribution lines only.

Figure 1: BVES Wire Down Event Counts (2015 -2022) by Distribution and Transmission Lines



Wire Down Events Normalized by High Wind Warning Overhead Circuit Mile Days and Red Flag Warning Overhead Circuit Mile Days:

Please see Appendix E (Figure 6 and Figure 7) for wire down events normalized by HWWOCMD and RFWOCMD.

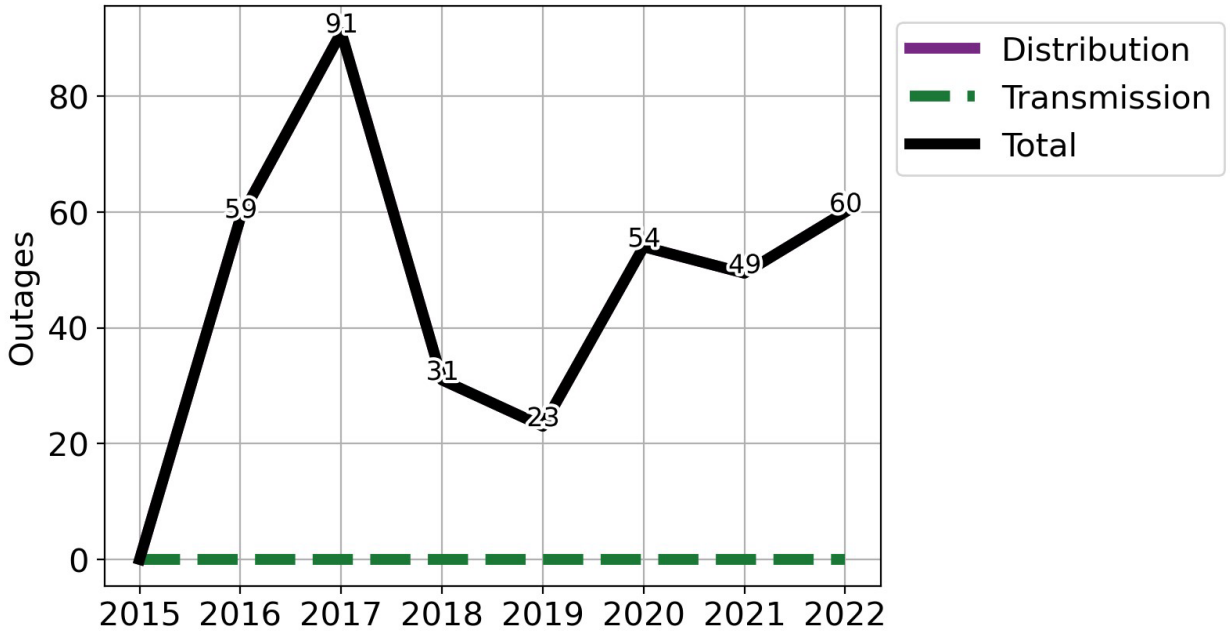
6.1.1.3 Outage Event Data Analysis

Power outages (outages) are unplanned power outage events (does not include PSPS events) tabulated by circuits and not by number of customers impacted. Outage events are tracked as outcomes that both may cause ignitions and impact a customer's quality of life. The data source for outage event information is the QDRs. (2022 Q3 QDR, Table 7.1; 2023 Q4 QDR, Table 5.)

Raw Outage Event Counts:

Total unplanned outage event counts peaked at 91 in 2017, and then dropped to 31 and 23 in 2018 and 2019, respectively (Figure 2). The outage count in 2022 was 60. Because BVES only utilizes distribution lines, BVES has no outage data for transmission lines.

Figure 2: BVES Outage Events (2015-2022) by Distribution and Transmission Lines



Outage Events Normalized by High Wind Warning Overhead Circuit Mile Days and Red Flag Warning Overhead Circuit Mile Days:

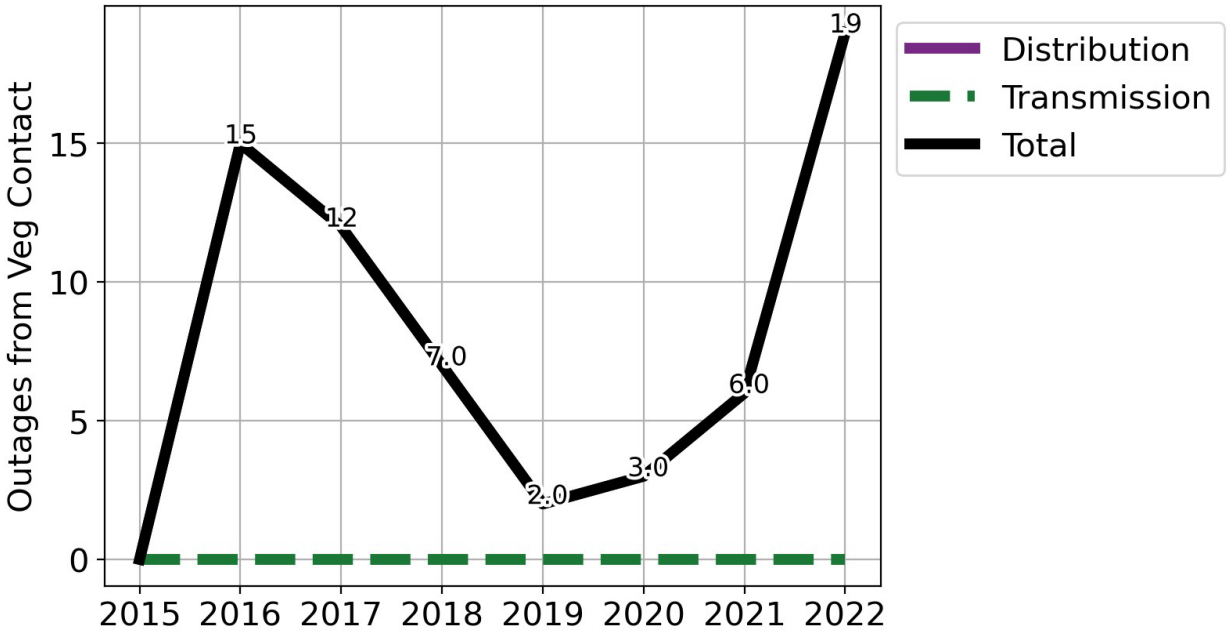
See Appendix E (Figure 8 and Figure 9) for events normalized by HWWOCMD and RFWOCMD.

Outage Events from Vegetation Contact Counts:

Unplanned outage events caused by vegetation contact are one of the most common and important regarding wildfire mitigation and, thus, are tracked separately.

Outage events caused by vegetation contact have increased slowly from 2019 to 2021 with a substantial increase from 2021 to 2022 (Figure 3). In 2022, BVES outage events from vegetation contacts made up approximately one-third of all outage events. There are no outage events reported for transmission lines as BVES only utilizes distribution lines.

Figure 3: BVES Outage Events from Vegetation Contact (2015-2022) by Distribution and Transmission Lines



Outage Events from Vegetation Contact Counts Normalized by High Wind Warning Overhead Circuit Mile Days and Red Flag Warning Overhead Circuit Mile Days:

See Appendix E (Figure 10 and Figure 11) for outage events caused by vegetation contact normalized by HWWOCMD and RFWOCMD.

6.1.1.4 Public Safety Power Shutoff Event Data Analysis

PSPS events are planned outages used as a wildfire mitigation tool during extreme fire conditions such as hot, dry, windy days. While useful as a wildfire mitigation measure, PSPS events carry their own risks and adverse impacts on customers – particularly vulnerable customers who need electricity to survive.

As PSPS events are typically issued during extreme fire conditions, the PSPS outcomes are presented first in raw count form, and then normalized by RFWOCMD to account for variances in weather across years.

The following four PSPS event parameters are presented by year and comprise the PSPS event data analysis:

- *Frequency* - Measured as the number or count of all PSPS events,

- *Scope* - Measured as the total number of utility circuits impacted because of all PSPS events,
- *Duration* - Measured by the total number of customer-hours because of all PSPS events, and
- *Impacts* - Measured by the number of critical infrastructure locations-hours impacted by all PSPS events.

BVES has not recorded any PSPS events from 2015 through 2022. The data source for PSPS events information is the QDRs. (2022 Q3 QDR, Table 11; 2023 Q4 QDR, Table 10.)

6.1.2 Outcome Metrics

This section presents outcome metrics on electrical corporation-related wildfires including:

- *Acres burned* – The total number of acres burned due to electrical corporation caused fires,
- *Structures damaged/destroyed* - The total number of structures damaged or destroyed due to electrical corporation caused fires,
- *Injuries/fatalities* - The total number of injuries and fatalities due to electrical corporation caused fires,
- *Value of assets destroyed* - The total value of assets destroyed due to electrical corporation caused fires.

From 2015 to 2022, BVES has not recorded any wildfire related outcome events. The data source for outcomes metrics information is the QDRs. (2022 Q3 QDR, Table 2; 2023 Q4 QDR, Table 2.)

6.2 Issues Related to Bear Valley Electric Service Execution, Management, or Documentation of its WMP Implementation

This section considers whether BVES exhibited issues related to its execution, management, or documentation in the implementation of its WMP.

Energy Safety's evaluation of BVES's documentation and reporting in 2022 found examples of cases where data on targets and actual attainments were either missing or unaccounted for. The EC ARC did not include data on 29 of the 31 quantitative WMP initiatives for its attainment while the Quarterly Data Report (QDR) did not include data for five of the 31 quantitative WMP initiatives. Energy Safety's evaluation can be found in Appendix A. Additionally, the following examples of misreporting were found by the IE:

- The IE found a lack of evidence for BVES's QA activities. While BVES provided verbal support during SME interviews of its review of third-party inspection results, the IE noted a lack of objective evidence for these QA activities. This is opposed to QC activities where BVES was able to provide substantial support for its work.
- In regard to general QA/QC procedures, the IE found that BVES lacks formal written processes and programs. The IE noted that while the informal system in place for BVES is effective in governing the majority of WMP compliance activities, detailed and written programs would enhance quality controls.
- The IE noted a general lack of granular documentation and detailed plans, processes, and procedures for many WMP initiatives. However, the IE also noted substantial improvement in this area compared to previous years.
- The IE found assessment of initiatives challenging at times due to a lack of distinct goals or targets for some initiatives in the WMP. As a result, the IE in many cases had to rely on BVES SME interviews, clarifications, and verbal explanations.

Taken together, this analysis shows that BVES must improve the accuracy of its WMP implementation documentation. Energy Safety will monitor and expects improvements regarding the accuracy of BVES's documentation and tracking processes going forward.

7. Conclusion

BVES completed 56 of 61 (91%) of its 2022 WMP Update initiatives, including eight of the 10 initiatives with the largest planned expenditure. However, there are five initiatives that BVES failed to execute for 2022. Two of these five initiatives had a material risk impact – the initiative to replace 2.7 miles of bare wires with covered conductors on the Radford Line, and the replacement of Radford Line wood poles with fire resistant poles.

For capital expenditures, BVES spent under the planned amount of $16.1 million on its 2022 WMP initiatives by nearly $877,000 (5%). BVES's operating expenses for WMP initiatives exceeded the expected amount of $4.3 million by approximately $938,000 (22%). The overall result is a spending slightly over the over budget of $20.4 million by approximately $61,000 (0.3%).

With respect to BVES's performance on ignition risk and outcome metrics, BVES reported that there were no ignitions, acres burned, or structures destroyed in 2022. The incidence of outages and wire-down events did increase slightly from 2021 to 2022.

For 31 of its 2022 WMP Update initiatives, BVES reporting contained inconsistencies, impairing Energy Safety's ability to clearly understand if initiative activities had been completed. (Appendix A.) The IE and Energy Safety identified several documentation and process tracking deficiencies. BVES must improve its documentation of WMP implementation going forward.

Energy Safety acknowledges that in 2022, BVES undertook efforts to reduce its wildfire risk, and in many instances achieved its WMP initiative activity targets. However, the failure to execute planned work on the Radford Line represented a missed opportunity to reduce wildfire risk in BVES's service territory and is therefore notable. On balance, BVES was successful in executing its plan for wildfire risk mitigation.

While Energy Safety acknowledges that BVES achieved its overarching objectives, there are still areas for improvement and continued learning. Energy Safety will continue to monitor BVES's implementation of its ongoing wildfire mitigation activities to push BVES to improve its ability to eliminate utility-caused catastrophic wildfires in California.

8. References

Table 5: Table of References

Reference	Citation
2022 IE ARC Response	Bear Valley Electric Service, "RE: BVES 2022 IE ARC," August 24, 2023. Available: https://efiling.energysafety.ca.gov/eFiling/Getfile.aspx?fileid=54552&shareable=true.
2022 Q3 QDR	Bear Valley Electric Service, "2023 Q3 Quarterly Data Report," Nov. 2, 2022. Available: https://efiling.energysafety.ca.gov/eFiling/Getfile.aspx?fileid=53191&shareable=true.
2022 Q4 QDR	Bear Valley Electric Service, "2022 Q4 Quarterly Data Report," Mar. 17, 2023. Available: https://efiling.energysafety.ca.gov/eFiling/Getfile.aspx?fileid=53474&shareable=true.
2022 WMP Decision	Office of Energy Infrastructure Safety, "Decision on 2022 Wildfire Mitigation Plan Update", December 6, 2022. Available: https://efiling.energysafety.ca.gov/eFiling/Getfile.aspx?fileid=53284&shareable=true.
2022 WMP Update	Bear Valley Electric Service, "BVES Wildfire Mitigation Plan 2022 Revision 1," Revised August 29, 2022. Available: https://efiling.energysafety.ca.gov/eFiling/Getfile.aspx?fileid=52981&shareable=true.
2023 Q4 QDR	Bear Valley Electric Service, "2023 Q4 Quarterly Data Report," February 2, 2024. Available: https://efiling.energysafety.ca.gov/eFiling/Getfile.aspx?fileid=56262&shareable=true.
Compliance Operational Protocols	California Public Utilities Commission, "2021 Compliance Operational Protocols", February 16, 2021. Available: https://efiling.energysafety.ca.gov/eFiling/Getfile.aspx?fileid=52615&shareable=true.
Compliance Process	Office of Energy Infrastructure Safety, "2022 Compliance Process", October 2022. Available: https://energysafety.ca.gov/wp-content/uploads/2022-wmp-compliance-process.pdf.
CPUC's Fire-Threat Map	California Public Utilities Commission, "CPUC Fire-Threat Map", August 19, 2021. Available: https://files.cpuc.ca.gov/safety/fire-threat_map/2021/CPUC%20Fire%20Threat%20Map_v.3_08.19.2021.Letter%20Size.pdf.
EC ARC	Bear Valley Electric Service, "2022 EC Annual Report on Compliance," March 31, 2023. Available: https://efiling.energysafety.ca.gov/Search.aspx?docket=2022-EC_ARC.
IE ARC	Sargent & Lundy Engineers, LTD., "Independent Evaluator ARC BVES 2022 WMP Compliance Assessment," June 30, 2023. Appendix I-V. Available: https://efiling.energysafety.ca.gov/eFiling/Getfile.aspx?fileid=54391&shareable=true.

Reference	Citation
Pub. Util. Code § 8386	California Public Utilities Commission, "California Public Utilities Code Section 8386", Available: https://leginfo.legislature.ca.gov/faces/codesTOCSelected.xhtml?tocCode=PUC&tocTitle=+Public+Utilities+Code+-+PUC
SVM Audit and Report	Office of Energy Infrastructure Safety, "2022 Substantial Vegetation Management Audit and Report Bear Valley Electric Service, Inc.", July 29, 2024. Available: https://efiling.energysafety.ca.gov/eFiling/Getfile.aspx?fileid=57085&shareable=true.

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APPENDICIES

9. Appendicies

Appendix A: Bear Valley Electric Service Reporting Inconsistencies

Energy Safety receives data from the electrical corporations in the form of Quarterly Data Reports (QDR). These QDR submissions include information on the electrical corporation's progress toward meeting quantitative WMP initiatives. By analyzing the QDR dataset for 2022, Energy Safety can determine if the electrical corporation's data reflect attainment or non-attainment of quantitative WMP initiatives. Qualitative WMP initiatives are not considered in this analysis.

Differences in how BVES's initiative performance is reported in its WMP, QDR, EC ARC, and IE ARC are summarized in Table 6 and appear as dissonance. (2022 WMP Update, Table 5.3.1; 2022 Q4 QDR, Table 1; EC ARC, Appendix A; IE ARC.)

Table 6: BVES Quantitative WMP Initiatives with Dissonance

2022 WMP Update Initiative Activity	QDR Attainment Status	EC ARC Attainment Status	IE ARC Attainment Status	Dissonance
Online Diagnostic System Pilot / Continuous Monitoring Sensors (7.3.2.2.2)	Not Met Target: 1 Actual: 0	Inconclusive Target: 1 Actual: Missing	Not Met Target: 1 Actual: 0	EC ARC does not include data on actual attainment.
Situational Awareness & Forecasting - Situational Awareness Hardware Program / Fault Indicators for Detecting Faults on Electric Lines and Equipment (7.3.2.3) Target: 50 Fault Indicators	Met Target: 50 Actual: 99	Inconclusive Target: Missing Actual: 99	Met Target: 50 Actual: 99	EC ARC does not include data on initiative target.

2022 WMP Update Initiative Activity	QDR Attainment Status	EC ARC Attainment Status	IE ARC Attainment Status	Dissonance
Covered Conductor Installation - Covered Wire Program - 4kv Systems (7.3.3.3.1 And 7.3.3.3.2) Target: 4.3 Circuit Miles	Met Target: 12.90 Actual: 12.96	Inconclusive Target: Missing Actual: 30.2	Met Target: 12.90 Actual: 12.96	EC ARC does not include data on initiative target.
Covered Conductor Replacement Program – Radford (7.3.3.3.3) Target: 2.7 Miles	Not Met Target: 2.7 Actual: 0	Not Met Target: Missing Actual: Missing	Not Met Target: 2.7 Actual: 0	EC ARC does not include data on target or actuals.
Covered Conductor Project – Radford Line(7.3.3.6.2)	Not Met Target: 2.7 Actual: 0	Not Met Target: Missing Actual: Missing	Not Met Target: Actual:	EC ARC does not include data on target or actuals.
Grid Automation Program [Primary] / Installation of System Automation Equipment (7.3.3.9.1) Target: 2 Substations Connected To SCADA	Met Target: 2 Actual: 2	Inconclusive Target: Missing Actual: 3	Met Target: 2 Actual: 3	EC ARC does not include data on initiative target.
Grid Design & System Hardening - Grid Automation Program / FLISR / Installation of System Automation Equipment (7.3.3.9.2) Target: 9 Switches	Missing Target: Missing Actual: Missing	Met Target: Missing Actual: Missing	Met Target: 9 Actual: 9	QDR and EC ARC do not include data on target or actuals.

2022 WMP Update Initiative Activity	QDR Attainment Status	EC ARC Attainment Status	IE ARC Attainment Status	Dissonance
Tree Attachment Removal Program (7.3.3.12.2) Target: 80 Tree Attachments	Met Target: 80 Actual: 83	Inconclusive Target: Missing Actual: 644	Met Target: 80 Actual: 83	EC ARC does not include data on initiative target.
Pole Loading & Replacement Program [Primary] (7.3.3.13) Target: 165 Poles	Missing Target: Missing Actual: Missing	Missing Target: Missing Actual: Missing	Met Target: 165 Actual: 197	QDR and EC ARC do not include data on target or actuals.
Asset Management & Inspections – Detailed Inspections of Distribution Electric Lines and Equipment / Detailed Inspection Program [Primary] (7.3.4.1) Target: 29 Circuit Miles	Met Target: 29 Actual: 32.41	Missing Target: Missing Actual: Missing	Met Target: 29 Actual: 32.41	EC ARC does not include data on target or actuals.
Asset Management & Inspections - Infrared Inspections of Distribution Electric Lines and Equipment / UAV Thermography Program UAV Thermography Program (7.3.4.4) Target: 211 Circuit Miles	Not Met Target: 211 Actual: 206.7	Missing Target: Missing Actual: Missing	Met Target: 211 Actual: 211	EC ARC does not include data on target or actuals.

2022 WMP Update Initiative Activity	QDR Attainment Status	EC ARC Attainment Status	IE ARC Attainment Status	Dissonance
Asset Management & Inspections - Intrusive Pole Inspections / Intrusive Pole Inspection Program (7.3.4.6) Target: 150 Poles	Met Target: 850 Actual: 853	Missing Target: Missing Actual: Missing	Met Target: 850 Actual: 853	EC ARC does not include data on target or actuals.
Asset Management & Inspections - LiDAR Inspections of Distribution Electric Lines and Equipment / LiDAR Inspection Program [Primary] LiDAR Inspection Program [Primary] (7.3.4.7) Target: 211 Circuit Miles	Not Met Target: 211 Actual: 206.7	Missing Target: Missing Actual: Missing	Met Target: 211 Actual: 211	EC ARC does not include data on target or actuals.
Asset Management & Inspections - Third Party Ground Patrol (7.3.4.9.1) Target: 211 Circuit Miles	Not Met Target: 211 Actual: 206.7	Missing Target: Missing Actual: Missing	Met Target: 211 Actual: 211	EC ARC does not include data on target or actuals.
Asset Management & Inspections - UAV Thermography Program (7.3.4.9.2) Target: 211 Circuit Miles	Not Met Target: 211 Actual: 206.7	Missing Target: Missing Actual: Missing	Met Target: 211 Actual: 211	EC ARC does not include data on target or actuals.

2022 WMP Update Initiative Activity	QDR Attainment Status	EC ARC Attainment Status	IE ARC Attainment Status	Dissonance
Asset Management & Inspections - Patrol Inspections of Distribution Electric Lines and Equipment / Patrol Inspection Program [Primary]Patrol Inspection Program [Primary] (7.3.4.11) Target: 211 Circuit Miles	Not Met Target: 211 Actual: 206.7	Missing Target: Missing Actual: Missing	Met Target: 211 Actual: 211	EC ARC does not include data on target or actuals.
Asset Management & Inspections - Pole Loading Assessment Program to Determine Safety Factor / Pole Loading & Replacement Program Pole Loading & Replacement Program (7.3.4.13) Target: 225 Poles	Missing Target: Missing Actual: Missing	Missing Target: Missing Actual: Missing	Met Target: 225 Actual: 381	QDR and EC ARC do not include data on target or actuals.
Asset Management & Inspections - Substation Inspections/ Go-174 Substation Inspection Program [Primary] (7.3.4.15) Target: 144 Monthly Substation Inspected	Met Target: 144 Actual: 144	Missing Target: Missing Actual: Missing	Met Target: 144 Actual: 152	EC ARC does not include data on target or actuals.

2022 WMP Update Initiative Activity	QDR Attainment Status	EC ARC Attainment Status	IE ARC Attainment Status	Dissonance
Vegetation Management & Inspections – Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment / Detailed Inspection Program (7.3.5.2) Target: 29 Circuit Miles	Met Target: 29 Actual: 32.41	Missing Target: Missing Actual: Missing	Met Target: 29 Actual: 32.41	EC ARC does not include data on target or actuals.
Vegetation Management & Inspections - Improvement of Inspections / Quality Control of Inspections (7.3.5.6) Target: 4 Vegetation Management Audits	Met Target: 4 Actual: 5	Inconclusive Target: Missing Actual:10	Met Target: 4 Actual: 4	EC ARC does not include data on targets.
Vegetation Management & Inspections - LiDAR Inspections of Vegetation Around Distribution Electric Lines and Equipment / LiDAR Inspection Program (7.3.5.7) Target: 211 Circuit Miles	Not Met Target: 211 Actual: 206.7	Missing Target: Missing Actual: Missing	Met Target: 211 Actual: 211	EC ARC does not include data on target or actuals.

2022 WMP Update Initiative Activity	QDR Attainment Status	EC ARC Attainment Status	IE ARC Attainment Status	Dissonance
Vegetation Management & Inspections - Other Discretionary Inspections of Vegetation Around Distribution Electric Lines and Equipment / UAV & Ground Patrol (7.3.5.9.1) Target: 211 Circuit Miles	Not Met Target: 211 Actual: 206.7	Missing Target: Missing Actual: Missing	Met Target: 211 Actual: 211	EC ARC does not include data on target or actuals.
Vegetation Management & Inspections - Other Discretionary Inspections of Vegetation Around Distribution Electric Lines and Equipment / UAV & Ground Patrol (7.3.5.9.2) Target: 211 Circuit Miles	Not Met Target: 211 Actual: 206.7	Missing Target: Missing Actual: Missing	Met Target: 211 Actual: 211	EC ARC does not include data on target or actuals.
Vegetation Management & Inspections - Patrol Inspections of Vegetation Around Distribution Electric Lines and Equipment / Patrol Inspection Program (7.3.5.11) Target: 211 Circuit Miles	Not Met Target: 211 Actual: 206.7	Missing Target: Missing Actual: Missing	Met Target: 211 Actual: 211	EC ARC does not include data on target or actuals.

2022 WMP Update Initiative Activity	QDR Attainment Status	EC ARC Attainment Status	IE ARC Attainment Status	Dissonance
Vegetation Management & Inspections - Quality Assurance / Quality Control of Vegetation Inspections / Quality Control of Inspections (7.3.5.13) Target: 72 Quality Control Reviews	Missing Target: Missing Actual: Missing	Missing Target: Missing Actual: Missing	Met Target: 72 Actual: 132	QDR and EC ARC do not include data on target or actuals.
Vegetation Management & Inspections - Removal and Remediation of Trees with Strike Potential to Electric Lines and Equipment / Enhanced Vegetation Management Program [Primary] (7.3.5.16) Target: 88 Hazard Trees Removed/Remediated	Met Target: 88 Actual: 147	Missing Target: Missing Actual: Missing	Met Target: 88 Actual: 147	EC ARC does not include data on target or actuals.
Vegetation Management & Inspections - Substation Inspection / Go-174 Substation Inspection Program (7.3.5.17) Target: 144 Substations Inspected	Met Target: 144 Actual: 144	Missing Target: Missing Actual: Missing	Met Target: 144 Actual: 152	EC ARC does not include data on target or actuals.

2022 WMP Update Initiative Activity	QDR Attainment Status	EC ARC Attainment Status	IE ARC Attainment Status	Dissonance
Vegetation Management & Inspections - Substation Vegetation Management / Substation Vegetation Management Inspections & Corrections (7.3.5.18)	Met Target: 144 Actual: 144	Missing Target: Missing Actual: Missing	Met Target: N/A Actual: N/A	EC ARC does not include data on target or actuals.
Vegetation Management & Inspections - Vegetation Management to Achieve Clearances Around Electric Lines and Equipment / Enhanced Vegetation Management Program (7.3.5.20) Target: 72 Circuit Miles Cleared	Met Target: 72 Actual: 87	Missing Target: Missing Actual: Missing	Met Target: 72 Actual: 86.84	EC ARC does not include data on target or actuals.
Community Outreach Program (7.3.9.2/ 7.3.10.1) Target: 360 Engagements (Radio, Newspaper, Online, Mail)	Met Target: 360 Actual:712	Missing Target: Missing Actual: Missing	Met Target: 360 Actual: 712	EC ARC does not include data on target or actuals.
Emergency Planning & Preparedness – Customer Support in Emergencies / Emergency Preparedness & Response Program (7.3.9.3)	Missing Target: Missing Actual: Missing	Missing Target: Missing Actual: Missing	Met Target: 0 Actual: 0	QDR and EC ARC do not include data on target or actuals.

Appendix B: Bear Valley Electric Service EC ARC Information on WMP Initiative Activity Attainment

Summarized in Table 7 is each of BVES's 61 initiative targets from its 2022 WMP Update, and BVES's self-reporting on compliance contained in its EC ARC.

Table 7: BVES WMP Initiative Activity Attainment Information from EC ARC

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Risk Assessment & Mapping - A Summarized Risk Map That Shows the Overall Ignition Probability and Estimated Wildfire Consequence Along the Electric Lines and Equipment / Ignition Probability & Wildfire Consequence Mapping (Primary) (7.3.1.1)	Develop a fire model resulting in several high-resolution risk maps based on several characteristics of the service area and climate history/forecast.	Technosylva contracted for: • Through use of Wildfire Analyst (WFA)-E FireSim, provision of on-demand, real time wildfire behavior modelling, predictive spread conditions, and derivation of potential impacts analysis. • Ability to conduct simulations on-demand, to reflect changing conditions or local data observations, including proactive "what if" scenarios. • Asset risk analysis using historical weather climatology to support WMP development and mitigation planning. Complete.
Online Diagnostic System Pilot / Continuous Monitoring Sensors (7.3.2.2.2)	Install continuous monitor sensors to provide usable grid insight information that is measured, reported, and documented.	In progress but not complete. Not complete.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Situational Awareness & Forecasting - Situational Awareness Hardware Program / Fault Indicators for Detecting Faults on Electric Lines and Equipment (7.3.2.3)	Install 50 fault indicators.	Complete, installed 99 fault indicators.
Weather Consultant / Forecast of a Fire Risk Index, Fire Potential Index, or Similar (7.3.2.4)/(7.2.3.6)	Utilize a combination of weather parameters (such as wind speed, humidity, and temperature), vegetation and fuel conditions, and other factors to determine current fire risk and to create a forecast potential indicative of a fire risk.	Technosylva contracted for: • Weather and wildfire risk forecasting for customer assets and the service territory using daily weather prediction integration to support PSPS activation calls and response operations. Complete.
Grid Operations & Protocol / Personnel Monitoring Areas of Electric Lines and Equipment in Elevated Fire Risk Conditions (7.3.2.5)	Address personnel needs during high-risk conditions.	Complete, no elevated fire risk events.
Capacitor Maintenance and Replacement Program (7.3.3.1)	Maintain existing equipment, reduce the risk of ignitions due to equipment faults and failures, and deploy new equipment to reduce risk ignition drivers.	EC ARC did not report on compliance for initiative.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Circuit Breaker Maintenance and Installation to Deenergize Lines Upon Detecting a Fault (7.3.3.2)	Remediate, adjust, or install new equipment to improve or replace existing fast switching circuit breaker equipment to improve the ability to protect electrical circuits from damage caused by overload of electricity or short circuit.	EC ARC did not report on compliance for initiative.
Covered Conductor Installation - Covered Wire Program - 4kv Systems (7.3.3.3.1 And 7.3.3.3.2)	Install 12.9 miles of overhead sub-transmission (34.5-kV) and distribution (4-kV) bare wire with covered wire.	EC ARC did not report on compliance for initiative.
Covered Conductor Replacement Program – Radford (7.3.3.3.3)	Replace 2.7 miles of bare wire with covered conductor.	EC ARC was reported as not complete due to delay in approval of the appropriate permits.
Covered Conductor Maintenance (7.3.3.4)	Maintain the installed covered conductor in accordance with prescribed maintenance standards and industry best practices.	EC ARC did not report on compliance for initiative.
Crossarm Maintenance, Repair, and Replacement (7.3.3.5)	Remediate, adjust, or install new equipment related to crossarms in accordance with GO 95.	EC ARC did not report on compliance for initiative.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Grid Design & System Hardening - Pole Loading & Replacement Program / Distribution Pole Replacement and Reinforcement, Including Composite Poles (7.3.3.6.1)	Assess and remediate noncompliant distribution poles in compliance with GO 95 and 165.	EC ARC did not report on compliance for initiative.
Covered Conductor Project – Radford Line (7.3.3.6.2)	Replace wood poles with fire resistant poles.	EC ARC was reported as not complete due to delay in approval of the appropriate permits.
Grid Automation Program [Primary] / Installation of System Automation Equipment (7.3.3.9.1)	Implement two substations to the SCADA network as part of the Grid Automation Program.	Complete, connected to three substations.
Grid Design & System Hardening - Grid Automation Program // FLISR / Installation of System Automation Equipment (7.3.3.9.2)	Install nine smart high voltage switches and integrates three existing auto-reclosers and one auto transfer switch on the 34.5 kV system	EC ARC did not report on compliance for initiative.
Grid Design & System Hardening - Maintenance, Repair, and Replacement of Connectors, Including Hotline Clamps (7.3.3.10)	Remediate, adjust, or install new equipment to improve or replace existing connectors, including hotline clamps.	EC ARC did not report on compliance for initiative.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Grid Design & System Hardening - BVPP Phase 4 Upgrade Project / Mitigation of Impact on Customers and Other Residents Affected During PSPS Event (7.3.3.11.2)	Implement Phase Three upgrades, which will include installing new catalyst housing directly above the engine. New placement will reduce heat loss and improve emissions bandwidths. The housing will include the double stacked element system to provide additional assistance in meeting emissions requirements. It also relocates oil and water piping, battery boxes, and controller stands while increasing accessibility and safety. The project will also address several age-related issues and aligns each generator to limit vibrations and abnormal wear on the engine.	EC ARC did not report on compliance for initiative.
Safety & Technical Upgrades of Substations / Other Corrective Action (7.3.3.12.1)	Repair, maintenance, and replacement work associated with substations to function safely, reliably, and properly to reduce increased ignition risk.	Complete.
Tree Attachment Removal Program (7.3.3.12.2)	Remove legacy service attachments and wires that are affixed to trees, replacing with structures and poles that are more fire resistant.	Complete, removed 644 tree attachments.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Pole Loading & Replacement Program [Primary] (7.3.3.13)	Assess and remediate noncompliant distribution poles that pose a fire risk	EC ARC did not report on compliance for initiative.
Transformers Maintenance and Replacement (7.3.3.14)	Repair, maintenance, and replacement work associated with transformers to enable safe operational function and to reduce increased ignition risk.	EC ARC did not report on compliance for initiative.
Undergrounding of Electric Lines and Equipment (7.3.3.16)	Underground (UG) electrical lines and equipment in accordance with GO 128.	EC ARC did not report on compliance for initiative.
Asset Management & Inspections – Detailed Inspections of Distribution Electric Lines and Equipment / Detailed Inspection Program [Primary] (7.3.4.1)	Execute careful, visual inspections of overhead electric distribution lines and equipment.	Complete.
Asset Management & Inspections - Improvement of Inspections (7.3.4.3)	Identify actionable outcomes of deficiencies and inspection protocols executed in the field. This will support improvement of training and applying lessons learned from third party evaluations and inspections.	EC ARC did not report on compliance for initiative.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Asset Management & Inspections - Infrared Inspections of Distribution Electric Lines and Equipment / UAV Thermography Program UAV Thermography Program (7.3.4.4)	Utilize infrared technology to perform inspections on overhead electric distribution lines, equipment, and ROWs. This technology includes heat-sensing cameras that can identify risk drivers such as increased “hot” areas or conditions that may indicate deterioration, which can lead to potential failures and ignitions.	Complete.
Asset Management & Inspections - Intrusive Pole Inspections / Intrusive Pole Inspection Program (7.3.4.6)	Monitor the age and structural integrity of 150 existing wood poles through means of a more detailed assessment of the pole’s condition such as coring areas of identified damage and visual inspection of the poles apart from pole loading assessments results.	Complete.
Asset Management & Inspections - LiDAR Inspections of Distribution Electric Lines and Equipment / LiDAR Inspection Program [Primary] LiDAR Inspection Program [Primary] (7.3.4.7)	Perform annual LiDAR sweep of 211 circuit miles.	Complete.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Asset Management & Inspections - Third Party Ground Patrol (7.3.4.9.1)	Inspect with independent or third party patrol inspection beyond that required by GO 165 of the entire overhead system.	Complete.
Asset Management & Inspections - UAV Thermography Program (7.3.4.9.2)	Provide a top-down view of sub-transmission and distribution facilities; thereby, complimenting other inspections and reducing the risk of non-compliant issues going undiscovered.	Complete.
Asset Management & Inspections - Patrol Inspections of Distribution Electric Lines and Equipment / Patrol Inspection Program [Primary] (7.3.4.11) Target: 211 Circuit Miles	Execute careful, visual inspections of overhead electric distribution lines and equipment.	Complete.
Asset Management & Inspections - Pole Loading Assessment Program to Determine Safety Factor / Pole Loading & Replacement Program Pole Loading & Replacement Program (7.3.4.13)	Assess and remediate 225 noncompliant distribution poles that pose a fire risk.	EC ARC did not report on compliance for initiative.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Asset Management & Inspections - Quality Control of Inspections [Primary] (7.3.4.14)	Identify actionable outcomes of deficiencies and inspection protocols executed in the field.	EC ARC did not report on compliance for initiative.
Asset Management & Inspections – Substation Inspections/ GO-174 Substation Inspection Program [Primary] (7.3.4.15)	Inspect substations to determine needs for upgrades, replacements, or repairs, and to maintain structural integrity of the asset to prevent ignition risks from equipment failures through GO 174.	Complete.
Vegetation Management & Inspections- Additional Efforts to Manage Community and Environmental Impacts / Contracted Forester Service/ Environmental Impact Mitigation Activities (7.3.5.1)	Mitigate negative impacts from utility vegetation management to local communities and the environment, which includes coordination plans with community partners and lands management groups.	Complete.
Vegetation Management & Inspections – Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment / Detailed Inspection Program (7.3.5.2)	Execute careful, visual inspections of 29 miles of overhead electric distribution lines and equipment. This includes individual pieces of equipment and structures that are carefully examined to ensure vegetation clearances established in GO 95 are established.	Complete.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Vegetation Management & Inspections – Emergency Response Vegetation Management Due to Red Flag Warning or Other Urgent Conditions / Emergency Preparedness & Response Program (7.3.5.4)	Provide robust and detailed vegetation management and inspection initiatives according to detailed specifications, scope, and schedules.	Complete.
Vegetation Management & Inspections - Fuel Management and Reduction of “Slash” From Vegetation Management Activities / Enhanced Vegetation Management Program (7.3.5.5)	Plan and execute fuel management activities that reduce the availability of fuel in proximity to potential sources of ignition, including both reduction or adjustment of live fuel (in terms of species or otherwise) and of dead fuel, including "slash" from vegetation management activities that produce vegetation material such as branch trimmings and felled trees.	Complete.
Vegetation Management & Inspections - Improvement of Inspections / Quality Control of Inspections (7.3.5.6)	Identify deficiencies in inspections protocols, and practice to improve training and lessons learned from third party contractors and inspections.	Complete.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Vegetation Management & Inspections - LiDAR Inspections of Vegetation Around Distribution Electric Lines and Equipment / LiDAR Inspection Program (7.3.5.7)	Sweep 211 circuit miles using LiDAR to verify, document and resolve vegetation encroachment and overheating and degrading equipment issues before they contact bare conductors.	Complete.
Vegetation Management & Inspections - Other Discretionary Inspections of Vegetation Around Distribution Electric Lines and Equipment / UAV & Ground Patrol (7.3.5.9.1)	Contract for third party inspections of 211 circuit miles of right-of-way and adjacent vegetation of potential hazards.	Complete.
Vegetation Management & Inspections - Other Discretionary Inspections of Vegetation Around Distribution Electric Lines and Equipment / UAV & Ground Patrol (7.3.5.9.2)	Utilize infrared technology to perform inspections on vegetation adjacent to 211 circuit miles of overhead electric distribution lines and equipment.	EC ARC did not report on compliance for initiative.
Vegetation Management & Inspections - Patrol Inspections of Vegetation Around Distribution Electric Lines and Equipment / Patrol Inspection Program (7.3.5.11)	Execute careful, visual inspections of 211 circuit miles of overhead electric distribution lines and equipment.	Complete.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Vegetation Management & Inspections – Quality Assurance / Quality Control of Vegetation Inspections / Quality Control of Inspections (7.3.5.13)	Identify actionable items of inspection deficiencies and inspection protocols that are executed in the field.	EC ARC did not report on compliance for initiative.
Vegetation Management & Inspections - Recruiting and Training of Vegetation Management Personnel / Vegetation Management Program Staffing (7.3.5.14)	Contract to engage a full-time utility forester in its service territory.	Complete.
Asset Management & Inspections - Substation Inspections/ GO-174 Substation Inspection Program [Primary]GO-174 Substation Inspection Program [Primary] / Substation Inspections (7.3.5.15)	Reduce the ignition probability and wildfire consequence attributable to at-risk vegetation species. This work may include activities such as tree trimming, brush and slash removal, and replacement of fixtures associated with ignition risk.	EC ARC did not report on compliance for initiative.
Vegetation Management & Inspections - Removal and Remediation of Trees with Strike Potential to Electric Lines and Equipment / Enhanced Vegetation Management Program [Primary] (7.3.5.16)	Remove or remediate 88 hazard trees that have a potential to fall in or make contact with electrical equipment, leading to electrical device and structure failures or ignition sources.	Complete.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Vegetation Management & Inspections – Substation Inspection / GO-174 Substation Inspection Program (7.3.5.17)	Inspect 144 substations to determine needs for upgrades, replacements, or repairs, and to maintain structural integrity of the asset to prevent ignition risks from equipment failures.	Complete.
Vegetation Management & Inspections - Substation Vegetation Management / Substation Vegetation Management Inspections & Corrections (7.3.5.18)	Inspect substations and remove vegetation in and around substations that may result in contact with bare conductors.	EC ARC did not report on compliance for initiative.
Vegetation Management & Inspections - Vegetation Inventory System / GIS Data Collection & Sharing (7.3.5.19)	Document the inventory of vegetation growth, types, and clearances to achieve fuels reduction and clearance objectives in a centralized location. This includes the data captured surrounding at-risk and invasive species identification, growth cycle and off-cycle growth targets, vegetation fuel and forecasted load, and damaged or dying tree accounting for those that may lead to a fall in or another ignition risk driver.	EC ARC did not report on compliance for initiative.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Vegetation Management & Inspections - Vegetation Management to Achieve Clearances Around Electric Lines and Equipment / Enhanced Vegetation Management Program (7.3.5.20)	Inspect vegetation clearance for 72 circuit miles according to detailed specifications, scope, and schedules.	Complete.
Grid Operations & Operating Protocols – Protective Equipment and Device Settings (7.3.6.2)	Develop plan and studies on developing and utilizing modern control systems (switches, sensors) that allow for optimized safety and protections of utility and public equipment.	EC ARC did not report on compliance for initiative.
Grid Operations & Operating Protocols – Personnel Work Procedures and Training in Conditions of Elevated Fire Risk / PSPS Program & Procedures (7.3.6.4)	Enforce operational changes when a red flag warning (RFW) issuance or when its weather consultant forecasts high risk conditions through local weather stations and the National Fire Danger Rating System (NFDRS) reports. Operational changes include suspending all work, by BVES staff or its contractors, that might produce sparks or create fire hazards.	EC ARC did not report on compliance for initiative.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Grid Operations & Operating Protocols – PSPS Events and Mitigation of PSPS Impacts / PSPS Program & Procedures [Primary] (7.3.6.5/ 7.3.6.6)	Design and execute procedures for de-energization and reenergization protocols. The objective is to prepare a plan to provide restoration services quickly and safely while maintaining reliability standards.	Complete.
Data Governance/Centralized Repository for Data/GIS Data Collection & Sharing [Primary] (7.3.7.1)	Improve ability to gather, track, and disseminate data across BVES, with certain stakeholders, and to the Energy Safety. Design, maintain, host, and upgrade a platform that supports storage, processing, and utilization of all utility proprietary data and data compiled by the utility from other sources.	Complete.
Emergency Planning & Preparedness – Adequate and Trained Workforce / Resource Allocation Methodology (7.3.9.1)	Identify, hire, retain, and train qualified workforce to conduct service restoration in response to emergencies, including short-term contracting strategy and implementation.	Complete.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Community Outreach Program (7.3.9.2/ 7.3.10.1)	Identify and contact key community stakeholders through 360 engagements; increase public awareness of emergency planning and preparedness information; and design, translate, distribute, and evaluate effectiveness of communications taken before, during, and after a wildfire, including access and functional needs populations and limited English proficiency populations in particular.	Complete.
Emergency Planning & Preparedness – Customer Support in Emergencies / Emergency Preparedness & Response Program (7.3.9.3)	Ensure customers stay informed during emergencies which could help customers find the resources they need, such as access to a community resource center, prevent them from engaging in risky behavior, and free up BVES resources to address and resolve the emergency.	Complete.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Emergency Planning & Preparedness – Disaster and Emergency Preparedness Plan – Emergency Preparedness & Response Program [Primary] (7.3.9.4)	Utilize the BVES emergency preparedness and response plan reflects proactive planning and close coordination with local governments, first responders, mutual aid and expert agencies, other stakeholders, and customers.	Complete.
Emergency Planning & Preparedness – Preparedness and Planning for Service Restoration / Emergency Preparedness & Response Program (7.3.9.5)	Provide training to employees on necessary tools, training, and protocols to support emergency restoration activities.	Complete.
Emergency Planning & Preparedness – Protocols in Place to Learn from Wildfire Events / Emergency Preparedness & Response Program (7.3.9.6)	Establish protocols to learn from wildfire events to ensure that BVES learns and adapts its practices following wildfire events within its service territory, across California, and in other dry mountainous environments.	Complete.

2022 WMP Update Initiative	2022 WMP Update Activity Target	2022 Actual (EC ARC, pp. 5-14, 28-48)
Forest Service and Fuel Reduction Cooperation and Joint Roadmap (7.3.10.4)	Research new and existing approaches to reducing fire related risk as it pertains to the actions taken by local, state, and federal entities. With the additional information that can be ascertained from these relationships BVES can adjust or update their existing wildfire mitigation programs to better reduce their overall wildfire risk and verify continued excellence to their customers.	Complete.

Appendix C: Bear Valley Electric Service EC ARC Information on WMP Initiative Expenditures

Summarized in Table 8 is the forecast and actual expenditure for each category of initiatives from BVES's 2022 WMP Update, and BVES's self-reporting on expenditure contained in its EC ARC.

Table 8: BVES WMP Initiative Expenditures Information from EC ARC

2022 WMP Update Initiative Activity	2022 WMP Update Identifier	2022 Expense Planned[9]	2022 Expense Actual	2022 Expense (Over)/Under Spend (EC ARC, pp. 28-48)
A summarized risk map that shows the overall ignition probability and estimated wildfire consequence along the electric lines and equipment	7.3.1.1	$29,980	$30,470	$(490)
Climate-driven risk map and modelling based on various relevant weather scenarios	7.3.1.2	$8,160	$8,620	$(460)
Ignition probability mapping showing the probability of ignition along the electric lines and equipment	7.3.1.3	$28,170	$28,560	$(390)
Initiative mapping and estimation of wildfire and PSPS risk-reduction impact	7.3.1.4	$27,490	$27,840	$(350)

[9] BVES's planned expenditure between its 2022 WMP Update, 2022 Q1 QDR, and 2022 EC ARC do not align. What is presented in this table is BVES's EC ARC reporting.

2022 WMP Update Initiative Activity	2022 WMP Update Identifier	2022 Expense Planned[9]	2022 Expense Actual	2022 Expense (Over)/Under Spend (EC ARC, pp. 28-48)
Match drop simulations showing the potential wildfire consequence of ignitions that occur along the electric lines and equipment	7.3.1.5	$27,720	$28,080	$(360)
Advanced weather monitoring and weather stations	7.3.2.1	$3,720	$3,450	$270
Continuous monitoring sensors	7.3.2.2.2	$0	$0	$0
Fault indicators for detecting faults on electric lines and equipment	7.3.2.3	$263,260	$244,030	$19,230
Forecast of a fire risk index, fire potential index, or similar	7.3.2.4	$13,000	$13,600	$(600)
Personnel monitoring areas of electric lines and equipment in elevated fire risk conditions	7.3.2.5	$11,520	$0	$11,520
Weather forecasting and estimating impacts on electric lines and equipment	7.3.2.6	$13,000	$13,600	$(600)
Capacitor maintenance and replacement program	7.3.3.1	$8,990	$9,270	$(280)

2022 WMP Update Initiative Activity	2022 WMP Update Identifier	2022 Expense Planned[9]	2022 Expense Actual	2022 Expense (Over)/Under Spend (EC ARC, pp. 28-48)
Circuit breaker maintenance and installation to de-energize lines upon detecting a fault	7.3.3.2	$60,640	$62,570	$(1,930)
Covered conductor installation	7.3.3.3.1 & 7.3.3.3.2	$6,570,390	$9,538,930	$(2,968,540)
Covered conductor installation	7.3.3.3.3	$1,235,990	$109,030	$1,126,960
Covered conductor maintenance	7.3.3.4	$30,140	$34,230	$(4,090)
Crossarm maintenance, repair, and replacement	7.3.3.5	$52,740	$59,900	$(7,160)
Distribution pole replacement and reinforcement, including with composite poles	7.3.3.6.1	$400,000	$1,357,770	$(957,770)
Distribution pole replacement and reinforcement, including with composite poles	7.3.3.6.2	$4,382,140	$386,560	$3,995,580
Distribution pole replacement and reinforcement, including with composite poles	7.3.3.6.4[10]	$576,800	$389,790	$187,010

[10] There is no initiative 7.3.3.6.4 in the 2022 WMP Update. However, the EC ARC description of 7.3.3.6.4 corresponds to what is reported as 7.3.3.6.3 in the WMP.

2022 WMP Update Initiative Activity	2022 WMP Update Identifier	2022 Expense Planned[9]	2022 Expense Actual	2022 Expense (Over)/Under Spend (EC ARC, pp. 28-48)
Installation of system automation equipment	7.3.3.9.1	$210,000	$679,580	$(469,580)
Installation of system automation equipment	7.3.3.9.2	$123,610	$167,190	$(43,580)
Maintenance, repair, and replacement of connectors, including hotline clamps	7.3.3.10	$12,730	$13,130	$(400)
Other corrective action	7.3.3.12.1	$97,620	$101,090	$(3,470)
Other corrective action	7.3.3.12.2	$661,810	$709,110	$(47,300)
Pole loading infrastructure hardening and replacement program based on pole loading assessment program	7.3.3.13	$1,216,160	$1,011,840	$204,320
Transformers maintenance and replacement	7.3.3.14	$83,320	$15,300	$68,020
Undergrounding of electric lines and/or equipment	7.3.3.16	$75,000	$283,580	$(208,580)
Detailed inspections of distribution electric lines and equipment	7.3.4.1	$8,420	$16,430	$(8,010)

2022 WMP Update Initiative Activity	2022 WMP Update Identifier	2022 Expense Planned[9]	2022 Expense Actual	2022 Expense (Over)/Under Spend (EC ARC, pp. 28-48)
Improvement of inspections	7.3.4.3	$150,390	$172,240	$(21,850)
Infrared inspections of distribution electric lines and equipment	7.3.4.4	$59,400	$54,190	$5,210
Intrusive pole inspections	7.3.4.6	$33,000	$18,820	$14,180
LiDAR inspections of distribution electric lines and equipment	7.3.4.7	$65,000	$62,030	$2,970
Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations	7.3.4.9.1	$40,000	$23,660	$16,340
Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations	7.3.4.9.2	$59,400	$54,190	$5,210
Patrol inspections of distribution electric lines and equipment	7.3.4.11	$19,650	$38,330	$(18,680)

2022 WMP Update Initiative Activity	2022 WMP Update Identifier	2022 Expense Planned[9]	2022 Expense Actual	2022 Expense (Over)/Under Spend (EC ARC, pp. 28-48)
Pole loading assessment program to determine safety factor	7.3.4.13	$64,010	$53,250	$10,760
Quality assurance / quality control of inspections	7.3.4.14	$20,390	$21,550	$(1,160)
Substation inspections	7.3.4.15	$228,840	$288,000	$(59,160)
Additional efforts to manage community and environmental impacts	7.3.5.1	$38,410	$48,120	$(9,710)
Detailed inspections and management practices for vegetation clearances around distribution electrical lines and equipment	7.3.5.2	$8,420	$16,430	$(8,010)
Emergency response vegetation management due to red flag warning or other urgent weather conditions	7.3.5.4	$97,250	$131,180	$(33,930)
Fuel management (including all wood management) and management of “slash” from vegetation management activities	7.3.5.5	$115,000	$153,900	$(38,900)
Improvement of inspections	7.3.5.6	$171,560	$203,650	$(32,090)

2022 WMP Update Initiative Activity	2022 WMP Update Identifier	2022 Expense Planned[9]	2022 Expense Actual	2022 Expense (Over)/Under Spend (EC ARC, pp. 28-48)
Remote sensing inspections of vegetation around distribution electric lines and equipment	7.3.5.7	$65,000	$62,030	$2,970
Other discretionary inspections of vegetation around distribution electric lines and equipment	7.3.5.9.1	$40,000	$23,660	$16,340
Other discretionary inspections of vegetation around distribution electric lines and equipment	7.3.5.9.2	$59,400	$54,190	$5,210
Patrol inspections of vegetation around distribution electric lines and equipment	7.3.5.11	$19,650	$38,330	$(18,680)
Quality assurance / quality control of vegetation management	7.3.5.13	$60,240	$76,220	$(15,980)
Recruiting and training of vegetation management personnel	7.3.5.14	$31,610	$40,940	$(9,330)
Identification and remediation of “at- risk species”	7.3.5.15	$125,500	$170,030	$(44,530)

2022 WMP Update Initiative Activity	2022 WMP Update Identifier	2022 Expense Planned[9]	2022 Expense Actual	2022 Expense (Over)/Under Spend (EC ARC, pp. 28-48)
Removal and remediation of trees with strike potential to electric lines and equipment	7.3.5.16	$137,000	$185,420	$(48,420)
Substation inspection	7.3.5.17	$5,200	$5,300	$(100)
Substation vegetation management	7.3.5.18	$17,860	$19,880	$(2,020)
Vegetation management enterprise system	7.3.5.19	$171,500	$231,590	$(60,090)
Vegetation management to achieve clearances around electric lines and equipment	7.3.5.20	$1,725,000	$2,308,560	$(583,560)
Automatic recloser operations	7.3.6.1	$20,390	$21,550	$(1,160)
Protective equipment and device settings	7.3.6.2	$12,460	$13,170	$(710)
Personnel work procedures and training in conditions of elevated fire risk	7.3.6.4	$7,930	$8,380	$(450)
Protocols for PSPS re-energization	7.3.6.5	$28,160	$10,130	$18,030

2022 WMP Update Initiative Activity	2022 WMP Update Identifier	2022 Expense Planned[9]	2022 Expense Actual	2022 Expense (Over)/Under Spend (EC ARC, pp. 28-48)
PSPS events and mitigation of PSPS impacts	7.3.6.6	$7,790	$8,240	$(450)
Centralized repository for data	7.3.7.1	$101,280	$123,800	$(22,520)
Documentation and disclosure of wildfire-related data and algorithms	7.3.7.3	$8,380	$8,860	$(480)
Tracking and analysis of near miss data	7.3.7.4	$7,250	$7,660	$(410)
Allocation methodology development and application	7.3.8.1	$7,930	$8,380	$(450)
Risk reduction scenario development and analysis	7.3.8.2	$29,760	$30,230	$(470)
Risk spend efficiency analysis	7.3.8.3	$29,760	$30,230	$(470)
Adequate and trained workforce for service restoration	7.3.9.1	$8,060	$8,500	$(440)
Community outreach, public awareness, and communications efforts	7.3.9.2	$81,580	$101,320	$(19,740)

2022 WMP Update Initiative Activity	2022 WMP Update Identifier	2022 Expense Planned[9]	2022 Expense Actual	2022 Expense (Over)/Under Spend (EC ARC, pp. 28-48)
Customer support in emergencies	7.3.9.3	$61,980	$49,980	$12,010
Disaster and emergency preparedness plan	7.3.9.4	$7,300	$7,710	$(410)
Preparedness and planning for service restoration	7.3.9.5	$6,980	$7,370	$(390)
Protocols in place to learn from wildfire events	7.3.9.6	$6,890	$7,280	$(390)
Community engagement	7.3.10.1	$30,740	$26,490	$4,250
Cooperation and best practice sharing with agencies outside CA	7.3.10.2	$17,220	$18,200	$(980)
Cooperation with suppression agencies	7.3.10.3	$7,250	$7,660	$(410)
Forest service and fuel reduction cooperation and joint roadmap	7.3.10.4	$13,650	$20,960	$(7,310)
Total	N/A	$20,363,940	$20,425,340	$(61,400)

Appendix D: Substantial Vegetation Management Audit and Report of Bear Valley Electrical Services

On July 29, 2024, Energy Safety issued its Substantial Vegetation Management Audit and Report for BVES (SVM Audit and Report). The purpose of the SVM Audit and Report is to assess whether BVES met its quantitative commitments and verifiable statements in its 2022 WMP Update related to vegetation management.

The findings from Energy Safety's SVM Audit and Report are detailed in Table 9. (SVM Audit and Report, Table 1.)

Table 9: Energy Safety's Findings from BVES 2022 SVM Audit and Report of WMP Vegetation Management Initiatives

2022 WMP Update Initiative Number	2022 WMP Update Initiative Name	Determination
7.3.5.1	Additional Efforts to Manage Community and Environmental Impacts	Performed Required Work
7.3.5.2	Detailed Inspections and Management Practices for Vegetation Clearances around Distribution Electrical Lines and Equipment	Performed Required Work
7.3.5.4	Emergency Response Vegetation Management due to Red Flag Warning or Other Urgent Climate Conditions	Performed Required Work
7.3.5.5	Fuel Management (including all wood management) and Reduction of "slash" from Vegetation Management Activities	Performed Required Work
7.3.5.6	Improvement of Inspections	Performed Required Work
7.3.5.7	Remote Sensing Inspections of Vegetation Around Distribution Electric Lines and Equipment	Performed Required Work

2022 WMP Update Initiative Number	2022 WMP Update Initiative Name	Determination
7.3.5.9	Other Discretionary Inspections of Vegetation Around Distribution Electric Lines and Equipment, Beyond Inspections Mandated by Rules and Regulations	Performed Required Work
7.3.5.11	Patrol Inspections of Vegetation Around Distribution Electric Lines and Equipment	Performed Required Work
7.3.5.13	Quality Assurance / Quality Control of Vegetation Management	Did Not Perform Required Work
7.3.5.14	Recruiting and Training of Vegetation Management Personnel	Performed Required Work
7.3.5.15	Identification and Remediation of “At-Risk Species”	Performed Required Work
7.3.5.16	Removal and Remediation of Trees with Strike Potential to Electric Lines and Equipment	Performed Required Work
7.3.5.17	Substation Inspections	Performed Required Work
7.3.5.18	Substation Vegetation Management	Performed Required Work
7.3.5.19	Vegetation Management System	Performed Required Work
7.3.5.20	Vegetation Management to Achieve Clearances Around Electric Lines and Equipment	Performed Required Work
7.3.5.21	Vegetation Management Activities Post-Fire	Performed Required Work

Appendix E: Performance Metrics Appendix Figures

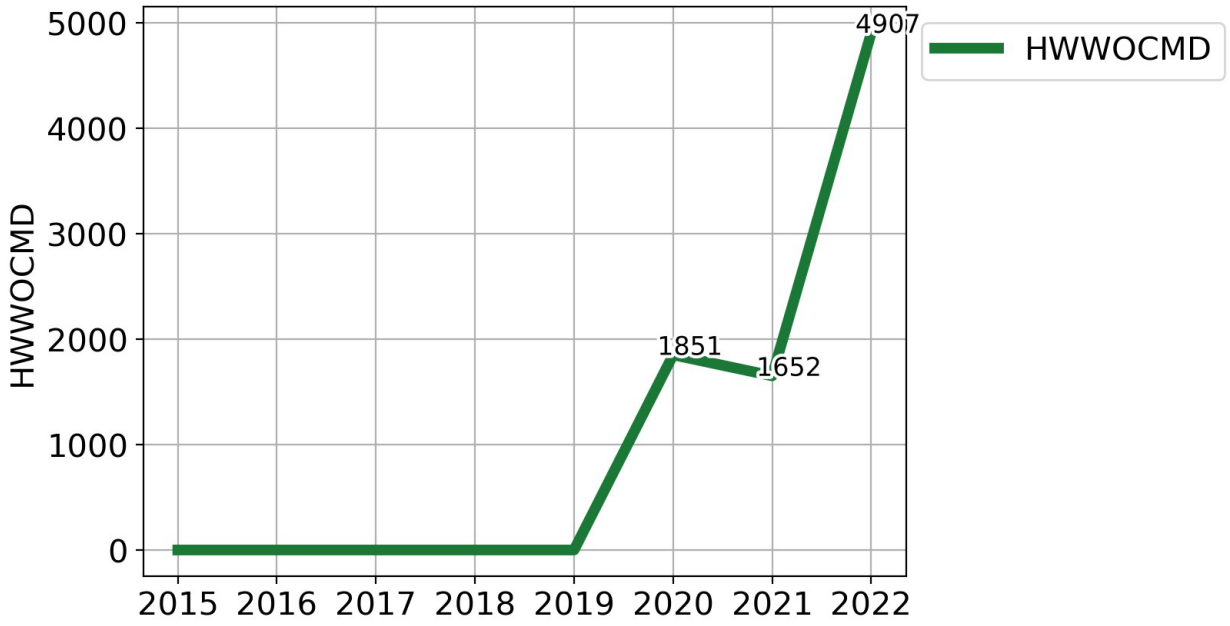
9.1.1 Normalizing Metrics

Data for this appendix comes from the QDRs as reported by BVES. (2022 Q3 QDR, Tables 6, 7.1, 7.2, and 8; 2023 Q4 QDR, Tables 4, 5, 6, and 7.)

High Wind Warning Overhead Circuit Mile Days:

There has been a substantial increase in the frequency of HWWOCMD from 2019 to 2022 as shown in Figure 4. No reporting was provided for 2015 to 2019.

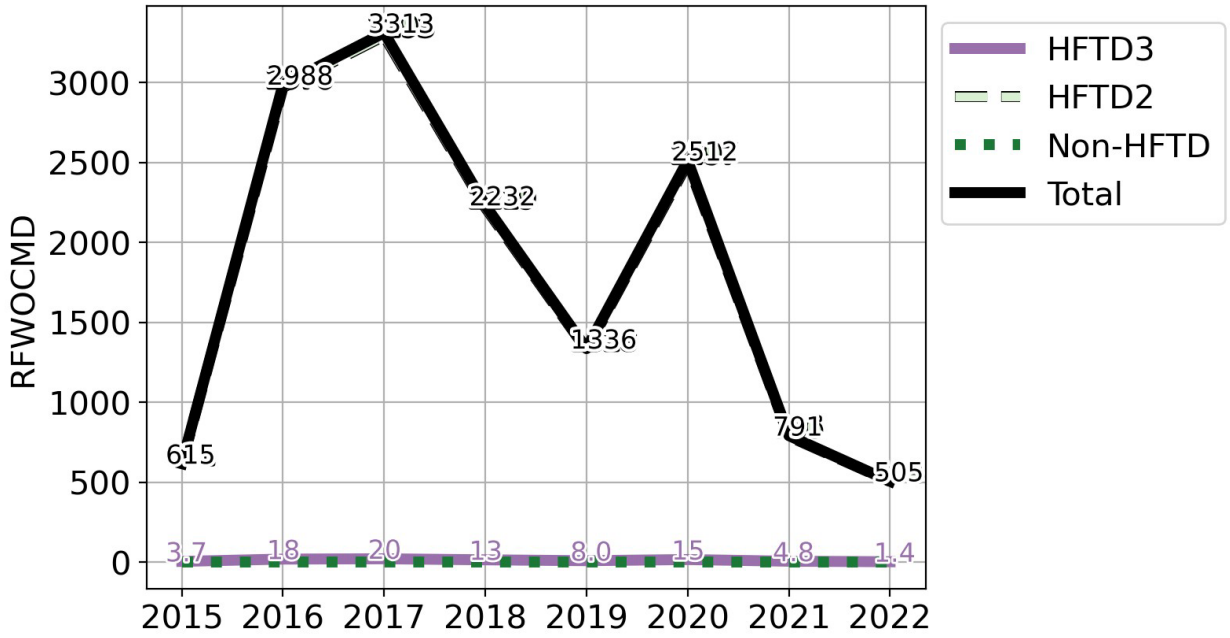
Figure 4: BVES High Wind Warning Overhead Circuit Mile Days (2015-2022)



Red Flag Warning Overhead Circuit Mile Days:

There was an overall decline of RFWOCM from 2017 to 2022 with a slight increase in 2020 shown in Figure 5.

Figure 5: Red Flag Warning Overhead Circuit Mile Days for BVES Territory from 2015-2022 by HFTD Locations

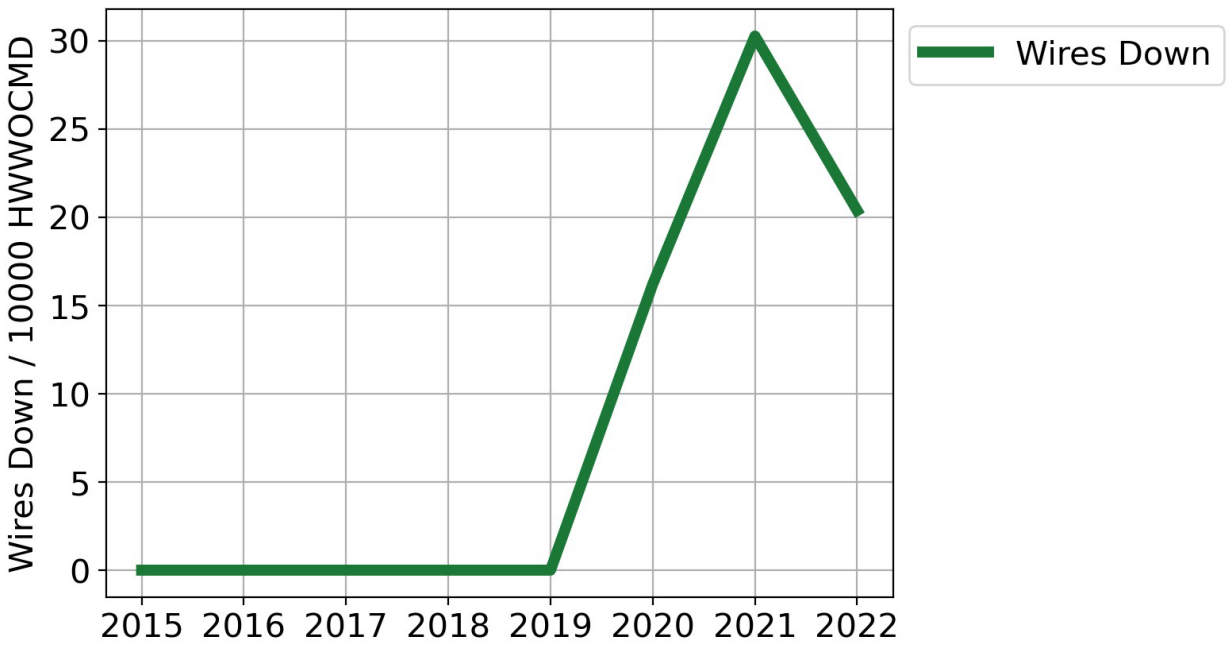


9.1.2 More Detailed Ignition Risk Findings

Wire Down Events Normalized by High Wind Warning Overhead Circuit Mile Days:

When accounting for weather conditions that are associated with downed wires, the number of wire down events normalized by HWWOCMD has been increasing since 2019 with the exception of a slight decrease from 2021 to 2022 (Figure 6). This shows that when adjusting for year-to-year variance in weather, the increase we see in the raw counts for 2022 is actually a decrease. Note that since there were zero HWWOCMDs from 2015 to 2019, a value of zero was assumed for these years when normalizing by HWWOCMDs.

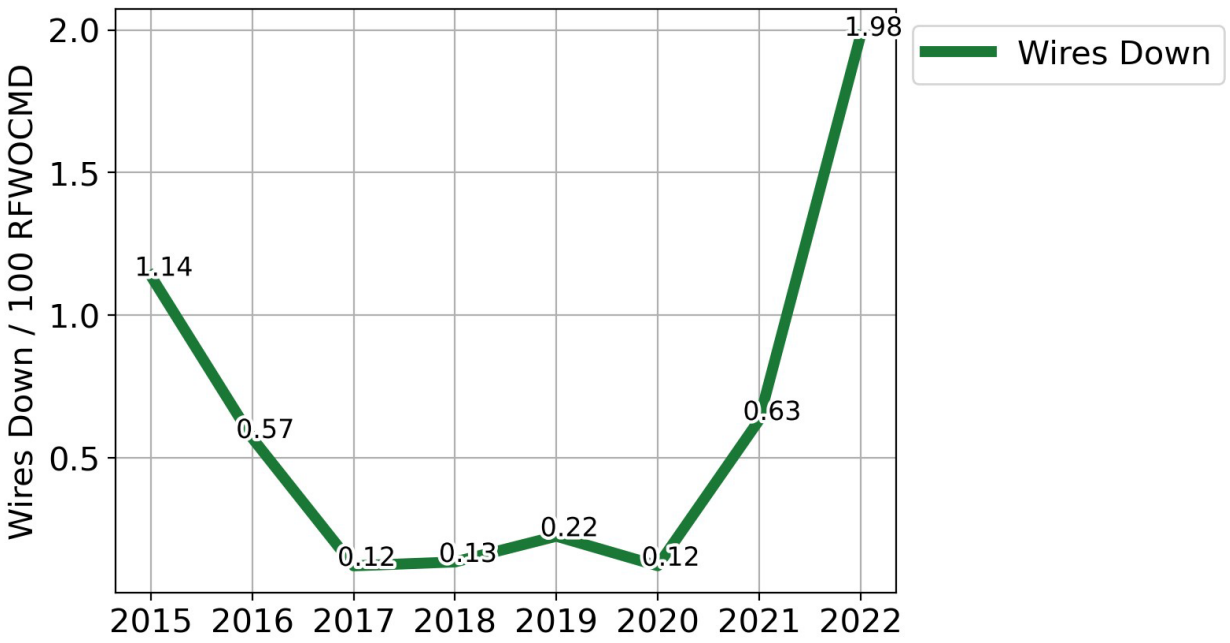
Figure 6: BVES Wire Down Events Normalized by HWWOCMD (2015-2022)



Wire Down Events Normalized by Red Flag Warning Overhead Circuit Mile Days:

Wire down events that were normalized by RFWD increased from 2017 to 2022 (Figure 7). In 2022, the number of RFWOCMDs was very low compared to other years, which results in a seemingly relatively large increase of wire down events when the data are normalized due to dividing by a very small number. The increase does not indicate an increase in the raw number of wire down events.

Figure 7: Wire Down Events Normalized by RFWOCMD (2015-2022)

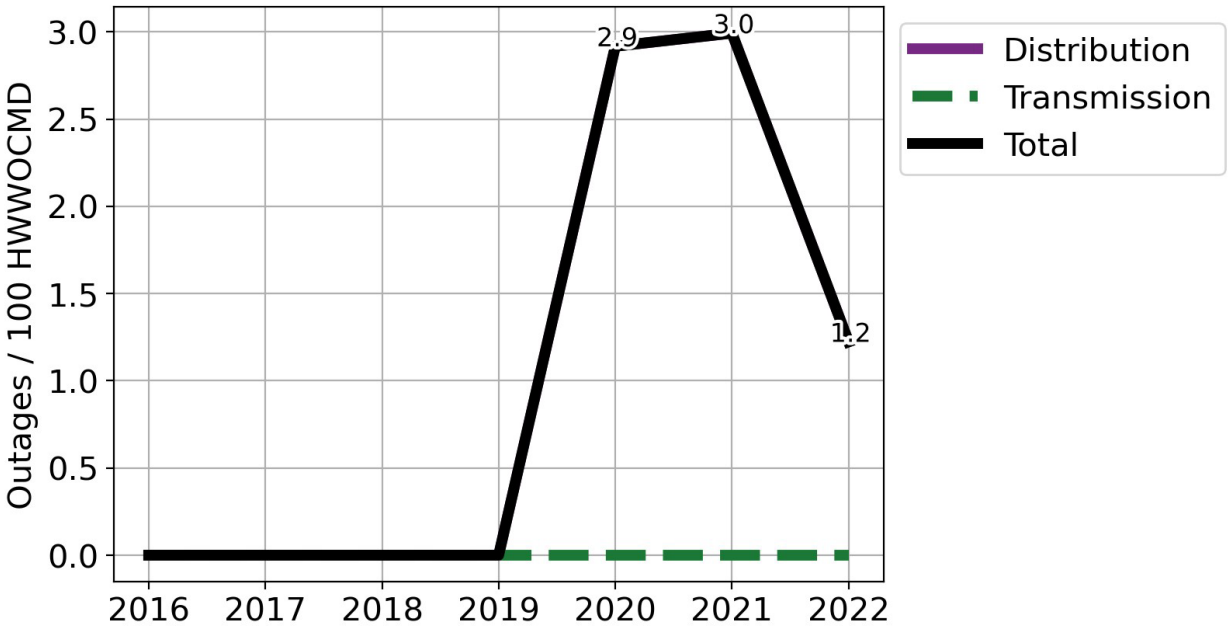


Outage Events Normalized by High Wind Warning Overhead Circuit Mile Days:

In order to view the outage event trends with respect to weather patterns that are typically associated with them, outage event counts have been normalized by HWWOCMD.

Once the outage event counts are adjusted for year-to-year variances in weather, outage events in 2022 have decreased from the highs in 2020 and 2021 (Figure 8). There are no outage events for transmission lines as BVES only has distribution lines. Note that since there were zero HWWOCMDs from 2015 to 2019, a value of zero was assumed for these years when normalizing by HWWOCMDs.

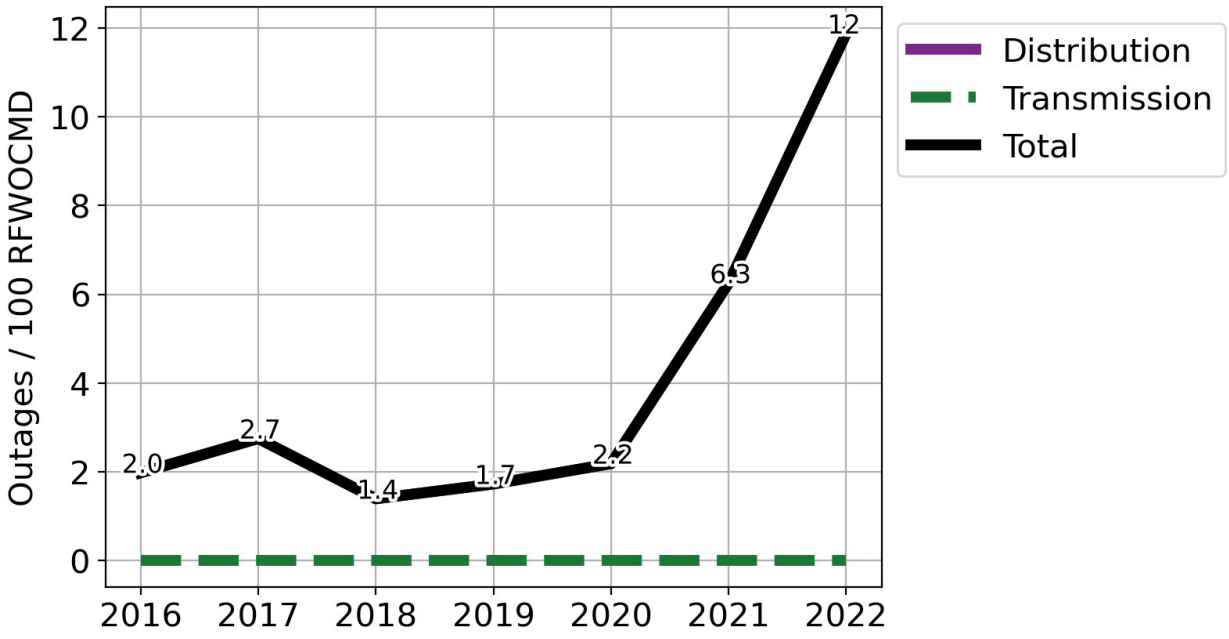
Figure 8: BVES Outage Events Normalized by HWWOCMD (2015-2022) by Distribution and Transmission Lines



Outage Events Normalized by Red Flag Warning Overhead Circuit Mile Days:

Outage events that were normalized by RFWOCMDs have continued to increase from 2016 to 2022 (Figure 9). In 2022, the number of RFWOCMDs was very low compared to other years, which results in a seemingly relatively large increase when the data are normalized due to dividing by a very small number. The increase does not indicate an increase in the number of raw outage events.

Figure 9: Outage Events Normalized by RFWOCMD (2015-2022)

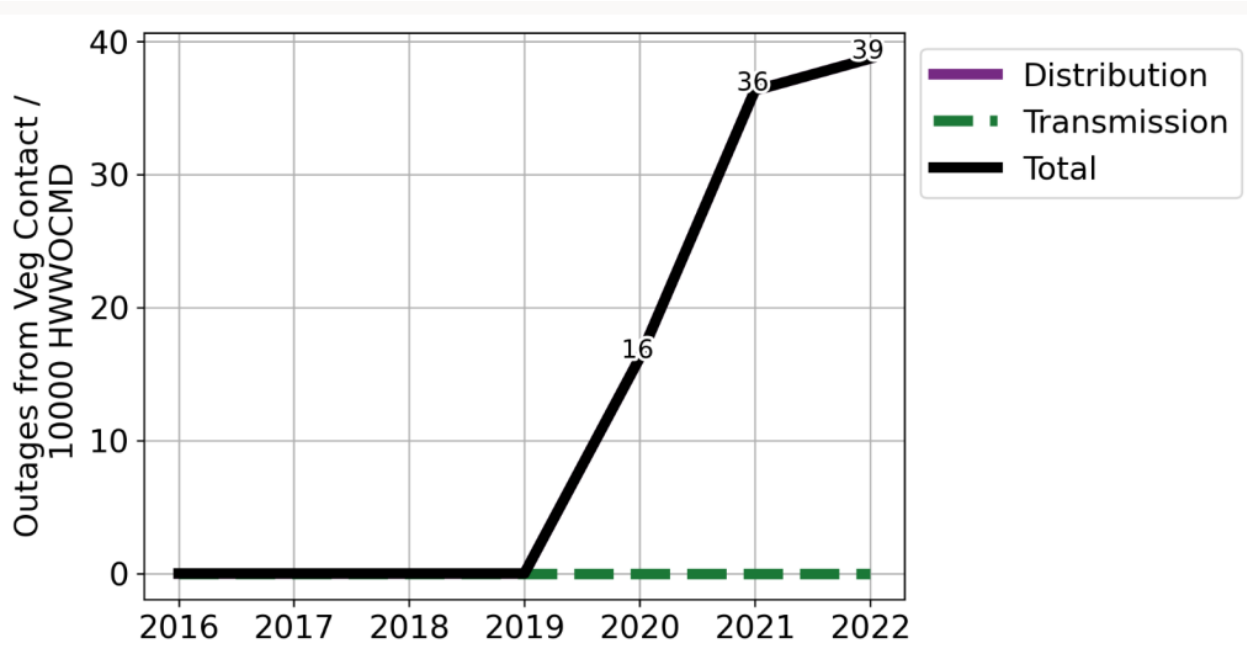


Outage Events from Vegetation Contact Counts Normalized by High Wind Warning Overhead Circuit Mile Days:

To gain insights on outage events from vegetation contacts adjusted for weather conditions, the raw counts were normalized by HWWOCMD.

The normalized number of outage events mirrors the upward trend from 2019 ending in a maximum in 2022. This shows that the weather does not explain the increase in raw outage events from vegetation contact. There are none for transmission lines as BVES only has distribution lines. Note that since there were zero HWWOCMDs from 2015 to 2019, a value of zero was assumed for these years when normalizing by HWWOCMDs.

Figure 10: BVES Outage Events from Vegetation Contacts Normalized by HWWOCMD (2015-2022) by Distribution and Transmission Lines



Outage Events from Vegetation Contact Counts Normalized by Red Flag Warning Overhead Circuit Mile Days:

Outage events increased from vegetation contact have increased substantially from 2020 to 2022 show in Figure 11. In 2022, the number of RFWOCMDs was very low compared to other years, which results in a seemingly relatively large increase when the data are normalized due to dividing by a very small number. The normalized increase does not indicate an increase in the number of raw outage events due to vegetation contact.

Figure 11: Outage Events from Vegetation Contact Counts Normalized by RFWOCMD (2015-2022)