BEFORE THE OFFICE OF ENERGY INFRASTRUCTURE SAFETY

OEIS Docket: 2022 Wildfire Mitigation Plan Annual Report on Compliance	Docket #2022-EC_ARC

LIBERTY UTILITIES (CALPECO ELECTRIC) LLC'S (U 933-E) 2022 WILDFIRE MITIGATION PLAN ANNUAL REPORT ON COMPLIANCE

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Pursuant to Cal. Pub. Util. Code § 8386 and the Office of Energy Infrastructure Safety ("OEIS") Resolution M-4860, Liberty Utilities (CalPeco Electric) LLC ("Liberty") hereby files this Annual Report on Compliance ("ARC") regarding Liberty's 2022 Wildfire Mitigation Plan ("2022 WMP"). This ARC follows the guidance in Table 4 (Section 2) of the Wildfire Safety Division ("WSD") Compliance Operational Protocols issued on February 16, 2021, associated with the California Public Utilities Commission ("CPUC") Rulemaking ("R.") 18-10-007.

I. ASSESSMENT OF LIBERTY'S 2022 WMP INITIATIVES

Guidance: Submit an assessment of whether Liberty met the risk reduction intent by implementing all of their approved WMP initiatives, i.e., the degree to which initiative activities have reduced ignition probabilities. If Liberty fails to achieve the intended risk reduction, EC shall provide a detailed explanation of why and a reference to where associated corrective actions are incorporated into their most recently submitted WMP.

A. Overall 2022 WMP

In accordance with Cal. Pub. Util. Code § 8386(a), Liberty constructs, maintains, and operates its electric system in a manner that minimizes the risk of catastrophic wildfire posed by its electric power lines and equipment. Liberty's overarching WMP goal is to prevent and mitigate the risk of wildfires caused by utility equipment. In 2022, Liberty continued to identify ways to enhance its wildfire

prevention and mitigation efforts through enhancing or expanding existing programs and developing and implementing new programs. Liberty's overall progress in 2022 implementing its WMP met the risk reduction intent of its 2022 WMP to reduce ignition probabilities and minimize the societal consequences (with specific consideration to the impact on Access and Functional Needs ("AFN") populations and marginalized communities) of both wildfires and the mitigations employed to reduce them, including Public Safety Power Shutoff ("PSPS") events.

B. Risk Assessment and Mapping

For Risk Assessment and Mapping WMP initiatives, Liberty's progress in 2022 met the risk reduction intent of its 2022 WMP to reduce ignition probabilities and minimize the societal consequences of both wildfires and mitigations employed to reduce them.

In 2022, Liberty utilized modeling outputs from its first-generation wildfire risk model in discussions and planning processes related to WMP initiatives. Specifically, Liberty used its circuit risk analysis and fire risk mapping tool to inform planning and prioritize work in WMP initiatives within the Situational Awareness, Grid Design and System Hardening, Asset Management and Inspections, and Vegetation Management WMP categories. Liberty also continued its work with Reax to scope updates to its wildfire risk model and fire risk map, and initiated conversations with other vendors to scope workstreams related to wildfire and PSPS risk analyses. Liberty continued to collect data (*i.e.*, pole risk, vegetation risk, grid hardening mitigations) to update its circuit risk analysis. Additionally, Liberty participates in the Joint IOU Wildfire Risk Modeling Working Group to understand applicable modeling information and approaches among its peer utilities in California.

C. Situational Awareness and Forecasting

For Situational Awareness and Forecasting WMP initiatives, Liberty's progress in 2022 met the risk reduction intent of its 2022 WMP to reduce ignition probabilities and minimize the societal consequences of both wildfires and mitigations employed to reduce them. Specifically:

- Liberty continues to utilize its Fire Potential Index (“FPI”) daily during fire season to determine forecasted fire weather conditions. The FPI has been incorporated into Liberty's Fire Prevention Plan (“FPP”), which includes operating protocols for each FPI rating that are followed by field crews daily. Liberty’s FPI converts environmental, statistical, and scientific data into an easily understood forecast of short-term fire threat for Liberty’s service territory. The FPI provides a seven-day fire risk condition forecast for 11 geographic zones within Liberty’s service territory. FPI condition forecasts include five risk conditions (Low, Moderate, High, Very High, and Extreme) that are used to determine operating procedures, by zone, depending on the forecast fire risk. FPI condition forecasts are communicated to field staff daily to inform operational decisions when work restrictions are in place due to fire risk. This forecasting granularity provides a better understanding of the overall fire risk throughout the service area and allows for better decision-making in scheduling work by zone.
- In 2022, Liberty installed ten Distribution Fault Anticipation (“DFA”) units at the Meyers, Stateline, and Northstar Substations to monitor ten circuits. These units will be online within the first half of 2023 once the communication path for data collection is established. Data will be collected and analyzed by an algorithm developed by a specialized team at the Texas A&M Power System Automation Laboratory. Reports will be sent out periodically with recommendations on which circuits to investigate for specific problems identified by the algorithmic report process. The reports are generated by the DFA monitors, which look at the current and voltage wave forms in high fidelity. Liberty will be evaluating the effectiveness of this technology for preventative maintenance and anticipation of fault events.

- Liberty's weather monitoring program provides information to operations and allows for the safe operation of the electric grid during extreme weather events. Certain weather events can cause damage to the electrical system, which leads to the possibility of an ignition event. Real-time weather monitoring data is an important tool to help Liberty plan for operating activities during such extreme events. Liberty installed five additional weather stations in 2022. Liberty's weather station network currently consists of 35 stations that are distributed throughout the service territory and Liberty plans to add an additional four stations in 2023. In addition to Liberty's weather stations, there are dozens more RAWS and NWS weather stations within the service territory that are monitored through the MesoWest network.
- Liberty also commissioned a study by University of Nevada Reno ("UNR") to determine the potential effectiveness of High Impedance Fault Detection ("HIFD") in its distribution system. The study concluded that HIFD is not the best technology for Liberty to pursue and that technologies such as fast trip and sensitive earth relay settings have more potential to reduce wildfire risk and improve reliability. UNR concluded that HIFD has the potential to cause nuisance trips and would only provide coverage for about 70% of the faults on the line. Liberty did enable the Meyers 3400 circuit with capabilities to search for high impedance faults. However, based on the information collected by UNR, Liberty will only be using HIFD sparingly to check for high impedance faults on the Meyers 3400 circuit.

D. Grid Design and System Hardening

For Grid Design and System Hardening WMP initiatives, Liberty's progress in 2022 met the risk reduction intent of its 2022 WMP to reduce ignition probabilities and minimize the societal consequences of both wildfires and mitigations employed to reduce them. In 2022, Liberty:

- Installed 9.6 miles out of its target of 9.6 miles for covered conductor ("CC") projects. Liberty has experienced no forced outages or ignitions due to an event occurring directly on a span containing covered conductor. Additional time is needed to verify the actual effectiveness experienced with covered conductor projects.
- Replaced 226 poles out of its target of 231 poles within its WMP pole replacement initiative, most of which were identified as G.O. 165 Level 2 replacements in the system-wide survey that Liberty completed in 2020.
- Replaced 1,858 expulsion fuses out of its target of 1,500 expulsion fuse replacements. At the end of 2022, Liberty became aware that one of the current-limiting fuse options on the market was experiencing failures in the field. Liberty halted expulsion fuse replacements because these current-limiting fuses failed to provide ignition risk reduction. The current-limiting fuse vendor suggested that no more fuses should be installed, and any fuses that were installed needed to be continuously checked to confirm they did not have any air gaps that would lead to excessive heat buildup. In collaboration with other utilities and experts in the field, Liberty determined that removing this current-limiting fuse altogether and replacing it with a traditional expulsion fuse—along with adding overreaching sensitive relay profiles to prevent the likelihood of the expulsion fuses operating, grubbing the poles, and clearing vegetation around the expulsion fuses—will reduce ignition risk more than keeping the current-limiting fuses in place.

- Installed two of its four targeted automatic reclosers. The remaining two automatic reclosers were delayed due to access issues caused by snow and avalanche danger. Automatic reclosers reduce risk with sectionalization, opportunities for distribution automation, and opportunities for grid topology improvement to reduce the size and number of customers affected by faults on the system. Reclosers also help Liberty more quickly identify and restore power to affected customers.
- Removed 145 tree attachments out of its target of 45 tree attachment removals. This initiative reduces ignition risk by removing conductors from trees and providing proper insulation.
- Installed four animal guards at substations out of its target of four animal guards. This initiative focuses on animal guarding exposed substation equipment with "green jackets," which are custom-made insulating green jackets that are field verified at each substation and then installed. Once installed, the green jackets eliminate exposed parts on equipment, which reduces ignition risk caused by animal or other object contact.
- Completed 0.24 miles out of its target of 0.36 miles for undergrounding projects in 2022. The remaining 0.12 miles was delayed due to permitting. The completed undergrounding comprised a portion of the Brockway 4202 Resiliency Project. The undergrounding of portions of this project were done to extend underground portions of the circuit near the substation to both improve wildfire mitigation and reliability and relieve congestion of a large amount of infrastructure in the area.

E. Asset Management and Inspections

For Asset Management and Inspections WMP initiatives, Liberty's progress in 2022 met the risk reduction intent of its 2022 WMP to reduce ignition probabilities and minimize the societal consequences of both wildfires and mitigations employed to reduce them.

Liberty continued to work on repairs found during its 2020 full system survey, prioritizing repairs by G.O. 95 level and wildfire risk, where applicable. Liberty completed the following work in 2022:

- 328.6 miles of detailed asset inspections out of its target of 307.8 miles.
- 2,735 intrusive pole inspections out of its target of 2,598.
- 503 miles of patrol asset inspections out of its target of 706.3 miles. Liberty's 2022 target of 706.3 miles was erroneously established and should have been closer to the 503 miles of patrol inspections that were completed.
- 45 substation inspections out of its target of 45.
- QA/QC on 0.0044% of its detailed asset inspections out of its target of 0.0050%.

F. Vegetation Management and Inspections

For Vegetation Management ("VM") and Inspections WMP initiatives, Liberty's progress in 2022 met the risk reduction intent of its 2022 WMP to reduce ignition probabilities and minimize the societal consequences of both wildfires and mitigations employed to reduce them. Liberty's key achievements in 2022 include:

- Completed 6.3 miles of its VM resiliency corridors program out of its target of 6 miles.
- Completed 201.6 miles of detailed inspections of vegetation around distribution electric lines and equipment out of its target of 222 miles. Actual miles were less than target due to a high amount of tree mortality. Inspection resources were shifted from detailed

inspections to patrol inspections to address the increased risk posed by dead and dying trees throughout the service territory.

- Completed 235 miles of patrol inspections of vegetation around distribution electric lines and equipment out of its target of 171 miles. Actual miles were greater than target due to a high amount of tree mortality. Inspection resources were shifted from detailed inspections to patrol inspections address the increased risk posed by dead and dying trees throughout the service territory.
- Completed 701 miles of LiDAR inspections of vegetation around distribution electric lines and equipment out of its target of 701 miles.
- Completed 515 acres of fuel management and reduction of slash from vegetation management activities out of its target of 280 acres.
- Completed 203 miles of removal and remediation of trees with strike potential to electric lines and equipment out of its target of 171 miles. Actual miles were greater than target due to a high amount of tree mortality. Tree work resources were shifted from removal and remediation of trees with strike potential to remediation of at-risk species to address the increased risk posed by dead and dying trees throughout the service territory.
- Completed 223 miles of remediation of at-risk species out of its target of 238 miles. Actual miles were less than target due to a high amount of tree mortality. Tree work resources were shifted from remediation of at-risk species to removal and remediation of trees with strike potential to address the increased risk posed by dead and dying trees throughout the service territory.
- Completed 701 miles of vegetation management to achieve clearances around electric lines and equipment out of its target of 701 miles.

- Completed 271.7 miles of QA/QC for its VM inspections out of its target of 221 miles.

G. Grid Operations and Operating Protocols

For Grid Operations and Operating Protocols WMP initiatives, Liberty's progress in 2022 met the risk reduction intent of its 2022 WMP to reduce ignition probabilities and minimize the societal consequences of both wildfires and mitigations employed to reduce them.

In 2022, Liberty installed two automatic reclosers. The operation of these automatic reclosers allows for remote monitoring, which can promote faster outage response and reduce electrical ignition. Additionally, in 2022, Liberty continued the use of fast trip/one-shot settings during high fire threat days to limit energy to overhead faults and minimize the chance of ignition. Liberty continued to follow its personnel work procedures in conditions of elevated fire risk as determined by its Fire Potential Index ("FPI") Operating Conditions.

H. Data Governance

For Data Governance WMP initiatives, Liberty's progress in 2022 met the risk reduction intent of its 2022 WMP to reduce ignition probabilities and minimize the societal consequences of both wildfires and mitigations employed to reduce them.

In 2022, Liberty advanced its wildfire mitigation data processes and scoped plans to improve its data processes and risk modeling practices in accordance with the Final OEIS 2023-2025 WMP Technical Guidelines issued on December 6, 2022. Liberty has implemented various enterprise software upgrades that supported Liberty's data governance goals in 2022, particularly upgrades to its Geographic Information System ("GIS") and Outage Management System ("OMS"). GIS is one of Liberty's main central WMP databases, and Liberty spent significant efforts in 2022 to align aspects of its GIS database with OEIS reporting requirements. Additionally, Liberty has discussed with vendors potential data solutions to consolidate data collection to improve data analytics and risk analysis. Subsequent to months of data discovery, project design, and solution customization for Liberty's specific risk

management data integration, Liberty is developing a solution to link Liberty's risk data sources and integrate with Liberty's SAP implementation later this year.

I. Resource Allocation Methodology

For Resource Allocation Methodology WMP initiatives, Liberty's progress in 2022 met the risk reduction intent of its 2022 WMP to reduce ignition probabilities and minimize the societal consequences of both wildfires and mitigations employed to reduce them.

In 2022, Liberty utilized its first-generation wildfire risk model outputs in discussions and planning processes related to WMP initiatives. Specifically, Liberty used its circuit risk analysis and fire risk mapping tool to inform planning and prioritize work in WMP initiatives within the Situational Awareness, Grid Design and System Hardening, and Asset Management and Inspections WMP categories.

J. Emergency Planning and Preparedness

For Emergency Planning and Preparedness WMP initiatives, Liberty's progress in 2022 met the risk reduction intent of its 2022 WMP to reduce ignition probabilities and minimize the societal consequences of both wildfires and mitigations employed to reduce them. In 2022, Liberty:

- Held its Incident Command System ("ICS") Training and Public Safety Power Shutoff ("PSPS") Table-Top Exercise on June 15, 2022 and its PSPS Full Scale Exercise with Public Safety Partners ("PSPs") on June 23, 2022. Both exercises included enhanced documentation and use of lessons learned.
- Conducted ICS training for Liberty's Incident Management Team personnel, including FEMA ICS 100 and ICS 200.
- Continued maintenance of its emergency response plans.

- Continued development and implementation of its Access and Functional Needs ("AFN") Plan. Liberty submitted its 2022 AFN Plan to the CPUC on January 31, 2022.
- Participated in Community Advisory Boards and meetings with various community leaders or PSPs to share information on Liberty's wildfire mitigation, PSPS preparedness, and community outreach efforts.

K. Stakeholder Cooperation and Community Engagement

For Stakeholder Cooperation and Community Engagement WMP initiatives, Liberty's progress in 2022 met the risk reduction intent of its 2022 WMP to reduce ignition probabilities and minimize the societal consequences of both wildfires and mitigations employed to reduce them. In 2022, Liberty:

- Continued its advertising campaign specific to Wildfire Mitigation and PSPS preparation and awareness. This included placing 47 social media posts on Liberty's social media channels, placing six posts to Liberty's website, sending four rounds of bill inserts, distributing 28 sets of emails, and continuing Liberty's print and digital advertising. Areas of focus included PSPS education, wildfire awareness, vegetation management, Low Income and AFN outreach, and Community Based Organization ("CBO") collaboration.
- Continued its public education and outreach efforts associated with its WMP, focusing on PSPS education and wildfire awareness. Liberty attended or participated in 39 in-person events and 19 virtual events to share information related to Liberty's wildfire mitigation efforts, PSPS preparedness, and community outreach.
- Held a PSPS Table-Top Exercise on June 15, 2022 and a PSPS Full Scale Exercise with PSPs on June 23, 2022.
- Continued development and implementation of its AFN Plan. Liberty submitted its 2022 AFN Plan to the CPUC on January 31, 2022.

- Continued additional engagement with CBOs and PSPs. These engagements are essential to preparing customers and stakeholders for potential PSPS and wildfire events.

II. 2022 WMP CHANGE ORDERS AND OTHER OPERATIONAL CHANGES

Guidance: Submit a full and complete listing of all change orders and any other operational changes, such as initiative location changes, made to WMP initiatives, with an explanation of why the changes were necessary, and an assessment of whether the changes achieved the same risk reduction intent.

A. Change Orders

Liberty did not file any change orders in 2022 for its 2022 WMP.

B. Operational Changes

Liberty did not make any operational changes in 2022 related to its 2022 WMP.

III. 2022 WMP INITIATIVE SPEND

Guidance: Submit descriptions of all planned WMP initiative spend vs. actual WMP initiative spend and an explanation of any differentials between the planned and actual spends.

A. Planned 2022 WMP Initiative Spend vs. Actual 2022 WMP Initiative Spend

Table 1: Planned 2022 WMP Initiative Spend vs. Actual 2022 WMP Initiative Spend

2022 WMP Initiative #	Initiative Activity	Planned 2022 Spend	Actual 2022 Spend	Explanation of Differential
7.3.1.1	A summarized risk map that shows the overall ignition probability and estimated wildfire consequence along the electric lines and equipment	$55,000	-	Liberty did not incur costs related to risk mapping in 2022.
7.3.1.2	Climate-driven risk map and modelling based on various relevant weather scenarios	-	-	-
7.3.1.3	Ignition probability mapping showing the probability of ignition along the electric lines and equipment	-	-	-
7.3.1.4	Initiative mapping and estimation of wildfire and PSPS risk-reduction impact	-	-	-
7.3.1.5	Match drop simulations showing the potential wildfire consequence of ignitions that occur along the electric lines and equipment	-	-	-

2022 WMP Initiative #	Initiative Activity	Planned 2022 Spend	Actual 2022 Spend	Explanation of Differential
7.3.2.1	Advanced weather monitoring and weather stations	$115,000	$373,599	Lower than expected capital costs due to missing targeted weather station installations. Liberty captured additional O&M costs related to fuel sampling, weekly fire season meetings, and weather analytics that were not forecasted.
7.3.2.2	Continuous monitoring sensors	$190,000	-	Actual Distribution Fault Anticipation ("DFA") costs captured in 7.3.2.3.
7.3.2.3	Fault indicators for detecting faults on electric lines and equipment	-	$52,274	DFA costs were less than forecasted in 7.3.2.2, with some costs shifting to 2023.
7.3.2.4	Forecast of a fire risk index, fire potential index, or similar	$10,000	-	Liberty did not incur costs related to its fire potential index ("FPI") in 2022.
7.3.2.5	Personnel monitoring areas of electric lines and equipment in elevated fire risk conditions	-	-	-
7.3.2.6	Weather forecasting and estimating impacts on electric lines and equipment	-	-	-
7.3.3.1	Capacitor maintenance and replacement program	-	-	-
7.3.3.2	Circuit breaker maintenance and installation to de-energize lines upon detecting a fault	$400,000	-	Liberty did not incur costs in 2022.
7.3.3.3	Covered conductor installation	$14,915,000	$9,609,726	Actual costs for CC were lower than projected because portions of some projects were completed in 2021 and because some projects came in under budget.
7.3.3.4	Covered conductor maintenance	-	-	-
7.3.3.5	Crossarm maintenance, repair, and replacement	-	-	-
7.3.3.6	Distribution pole replacement and reinforcement, including with composite poles	$6,000,000	$6,909,449	Pole replacement costs were higher than projected in 2022 due to a higher percentage of hard rock and hard to access poles than anticipated.

2022 WMP Initiative #	Initiative Activity	Planned 2022 Spend	Actual 2022 Spend	Explanation of Differential
7.3.3.7	Expulsion fuse replacement	$1,500,000	$3,431,689	Expulsion fuse replacement costs were higher than projected in 2022 because Liberty completed more fuse replacements than planned and underestimated the average cost per pole.
7.3.3.8	Grid topology improvements to mitigate or reduce PSPS events	-	$264,092	Actual costs include planning, design and permitting costs that were not projected.
7.3.3.9	Installation of system automation equipment	$360,000	$191,333	Liberty installed two of its four targeted automatic reclosers. The remaining two automatic reclosers were delayed due to access issues caused by snow and avalanche danger and will be installed in 2023.
7.3.3.10	Maintenance, repair, and replacement of connectors, including hotline clamps	-	-	-
7.3.3.11	Mitigation of impact on customers and other residents affected during PSPS event	-	-	-
7.3.3.12	Other corrective action	$2,536,000	$6,658,246	In addition to the projected costs for tree attachment removals and animal guard installations in 2022, Liberty captured actual costs for open wire/grey wire and substation equipment replacement.
7.3.3.13	Pole loading infrastructure hardening and replacement program based on pole loading assessment program	-	-	-
7.3.3.14	Transformers maintenance and replacement	-	-	-
7.3.3.15	Transmission tower maintenance and replacement	-	-	-
7.3.3.16	Undergrounding of electric lines and/or equipment	$7,000,000	$474,984	Two of three underground projects in the projected costs were delayed, primarily due to permitting delays.

2022 WMP Initiative #	Initiative Activity	Planned 2022 Spend	Actual 2022 Spend	Explanation of Differential
7.3.3.17	Updates to grid topology to minimize risk of ignition in HFTDs	-	-	-
7.3.4.1	Detailed inspections of distribution electric lines and equipment	$400,000	$919,391	In 2022, Liberty did not record asset inspection costs at the WMP initiative level, and thus detailed asset inspection costs are estimated as a percentage of its G.O. 165 WMP expense account.
7.3.4.2	Detailed inspections of transmission electric lines and equipment	-	-	-
7.3.4.3	Improvement of inspections	-	-	-
7.3.4.4	Infrared inspections of distribution electric lines and equipment	-	-	-
7.3.4.5	Infrared inspections of transmission electric lines and equipment	-	-	-
7.3.4.6	Intrusive pole inspections	$150,000	$99,050	Intrusive pole inspection costs were lower than expected due to overestimating internal labor and contractor expense.
7.3.4.7	LiDAR inspections of distribution electric lines and equipment	-	-	-
7.3.4.8	LiDAR inspections of transmission electric lines and equipment	-	-	-
7.3.4.9	Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations	$4,600,000	$3,578,513	Liberty's costs associated with repairs from its 2020 system-wide survey were lower than projected in 2022.
7.3.4.10	Other discretionary inspection of transmission electric lines	-	-	-
7.3.4.11	Patrol inspections of distribution electric lines and equipment	$60,000	-	In 2022, Liberty did not record asset inspection costs at the WMP initiative level, and thus patrol asset inspection costs are not estimated.

2022 WMP Initiative #	Initiative Activity	Planned 2022 Spend	Actual 2022 Spend	Explanation of Differential
7.3.4.12	Patrol inspections of transmission electric lines and equipment	-	-	-
7.3.4.13	Pole loading assessment program to determine safety factor	-	-	-
7.3.4.14	Quality assurance / quality control of inspections	$30,000	-	In 2022, Liberty did not record asset inspection costs at the WMP initiative level, and thus QA/QC of inspections costs are not estimated.
7.3.4.15	Substation inspections	$10,000	-	In 2022, Liberty did not record asset inspection costs at the WMP initiative level, and thus substation inspection costs are not estimated.
7.3.5.1	Additional efforts to manage community and environmental impacts	$754,000	$928,068	Expenses were higher than projected for this initiative due to unplanned costs incurred to complete heritage surveys and Liberty's contribution to the National Forest Foundation to implement the US Forest Service Liberty Utilities Resilience Corridors Project.
7.3.5.2	Detailed inspections of vegetation around distribution electric lines and equipment	$715,000	$872,050	Liberty renegotiated rates for its vegetation inspection contracts which were higher than projected when target expenses were developed.
7.3.5.3	Detailed inspections of vegetation around transmission electric lines and equipment	-	-	-
7.3.5.4	Emergency response vegetation management due to red flag warning or other urgent conditions	-	-	-

2022 WMP Initiative #	Initiative Activity	Planned 2022 Spend	Actual 2022 Spend	Explanation of Differential
7.3.5.5	Fuel management and reduction of "slash" from vegetation management activities	$1,163,000	$1,515,124	Liberty offered wood hauling for all customers after completion of vegetation management activities for the first time in 2022. Expenses were higher than projected due to a high level of participation by customers.
7.3.5.6	Improvement of inspections	-	-	
7.3.5.7	LiDAR inspections of vegetation around distribution electric lines and equipment	$764,000	$754,192	Liberty costs were slightly less than projected for this activity.
7.3.5.8	LiDAR inspections of vegetation around transmission electric lines and equipment	-	-	-
7.3.5.9	Other discretionary inspections of vegetation around distribution electric lines and equipment	-	-	-
7.3.5.10	Other discretionary inspections of vegetation around transmission electric lines and equipment	-	-	-
7.3.5.11	Patrol inspections of vegetation around distribution electric lines and equipment	$357,000	$638,341	Liberty renegotiated rates for its vegetation inspection contracts which were higher than projected when target expenses were developed
7.3.5.12	Patrol inspections of vegetation around transmission electric lines and equipment	-	-	-
7.3.5.13	Quality assurance / quality control of vegetation inspections	$418,000	$447,301	Liberty renegotiated rates for its vegetation inspection contracts which were higher than projected when target expenses were developed.
7.3.5.14	Recruiting and training of vegetation management personnel	-	-	-

2022 WMP Initiative #	Initiative Activity	Planned 2022 Spend	Actual 2022 Spend	Explanation of Differential
7.3.5.15	Remediation of at-risk species	$5,704,000	$3,148,611	Actual spend was less than target due to a high amount of tree mortality. Tree work resources were shifted from remediation of at-risk species to removal and remediation of trees with strike potential to address the increased risk posed by dead and dying trees throughout the service territory.
7.3.5.16	Removal and remediation of trees with strike potential to electric lines and equipment	$2,709,000	$5,443,730	Actual spend was greater than target due to a high amount of tree mortality. Tree work resources were shifted from remediation of at-risk species to removal and remediation of trees with strike potential to address the increased risk posed by dead and dying trees throughout the service territory.
7.3.5.17	Substation inspection	-	-	-
7.3.5.18	Substation vegetation management	-	-	-
7.3.5.19	Vegetation inventory system	-	-	-
7.3.5.20	Vegetation management to achieve clearances around electric lines and equipment	$1,493,000	$2,671,110	Liberty completed more work units than projected in this category to maintain clearance for all 701 miles of its system leading to greater than projected costs. Additionally, Liberty did not project costs for pole clearing activities related to PRC 4292 which are recorded in this category.
7.3.5.21	Vegetation management activities post-fire	-	-	-
7.3.6.1	Automatic recloser operations	-	-	-
7.3.6.2	Protective equipment and device settings	-	$47,183	Costs related to this initiative were not projected for 2022.

2022 WMP Initiative #	Initiative Activity	Planned 2022 Spend	Actual 2022 Spend	Explanation of Differential
7.3.6.3	Crew-accompanying ignition prevention and suppression resources and services	-	-	-
7.3.6.4	Personnel work procedures and training in conditions of elevated fire risk	$250,000	$293,292	Higher than expected costs.
7.3.6.5	Protocols for PSPS re-energization	-	-	-
7.3.6.6	PSPS events and mitigation of PSPS impacts	$100,000	-	Liberty did not incur costs in 2022.
7.3.6.7	Stationed and on-call ignition prevention and suppression resources and services	$100,000	-	Liberty did not incur costs in 2022.
7.3.7.1	Centralized repository for data	$400,000	-	Liberty did not incur costs in 2022.
7.3.7.2	Collaborative research on utility ignition and/or wildfire	$120,000	-	Liberty did not incur costs in 2022.
7.3.7.3	Documentation and disclosure of wildfire-related data and algorithms	-	-	-
7.3.7.4	Tracking and analysis of near miss data	-	-	-
7.3.8.1	Allocation methodology development and application	$300,000	-	Liberty did not incur costs in 2022.
7.3.8.2	Risk reduction scenario development and analysis	-	-	-
7.3.8.3	Risk spend efficiency analysis	-	-	-
7.3.9.1	Adequate and trained workforce for service restoration	$1,304,000	-	Projected costs for 7.3.9.1. captured in 7.3.9.3 and 7.3.9.5.
7.3.9.2	Community outreach, public awareness, and communications efforts	-	-	-
7.3.9.3	Customer support in emergencies	-	$64,591	Projected costs for 7.3.9.1. captured in 7.3.9.3 and 7.3.9.5.
7.3.9.4	Disaster and emergency preparedness plan	-	-	-
7.3.9.5	Preparedness and planning for service restoration	-	$662,399	Projected costs for 7.3.9.1. captured in 7.3.9.3 and 7.3.9.5.
7.3.9.6	Protocols in place to learn from wildfire events	-	-	-
7.3.10.1	Community engagement	$144,000	$83,637	Lower than expected costs related to communication and outreach.
7.3.10.2	Cooperation and best practice sharing with agencies outside CA	-	-	-
7.3.10.3	Cooperation with suppression agencies	-	-	-
7.3.10.4	Forest service and fuel reduction cooperation and joint roadmap	-	-	-
TOTAL		**$55,126,000**	**$50,131,976**	**-**

IV. 2022 WMP INITIATIVE IMPACT ON PSPS

Guidance: Submit a description of whether the implementation of WMP initiatives changed the threshold(s) for triggering a PSPS event and/or reduced the frequency, scale, scope and duration of PSPS events.

A. 2022 WMP Initiative Impact on PSPS Thresholds

Liberty's PSPS thresholds are currently fixed and do not change based on initiative progress. Liberty anticipates that, as these initiatives progress, more data can be used to evaluate wildfire risk reduction impacts. Liberty may find a different way to combine existing fire- and weather-based threshold modeling with initiative risk reduction.

B. WMP Initiative Impact on Frequency, Scale, Scope and Duration of PSPS Events

Most WMP initiatives generally support Liberty's vision for mitigating PSPS events and customer impacts resulting from PSPS events. Specifically, the combination of covered conductor installations, resiliency corridors, and microgrids will reduce impacts and frequency of PSPS events and service interruptions. Liberty's enhancements to its 2022 AFN Plan and continued use of its PSPS Operations and Communications Playbook will increase support to its customers and communities and are intended to mitigate the impact to customers in the event that Liberty does have to initiate a PSPS event.

In recent years, Liberty has taken steps to establish its PSPS program through the development of protocols, procedures, and the establishment of PSPS thresholds detailed throughout its 2022 WMP Update. The PSPS work over the last few years, in combination with an anticipated increase in fire weather events (*i.e.*, RFW, longer fire season, high winds, etc.), may lead to more frequent use of PSPS in the next 10 years. Therefore, the information presented in Table 2 below evaluates how implementation of Liberty's 2022 WMP initiatives is anticipated to affect a given PSPS characteristic, rather than whether a PSPS characteristic will increase/decrease in the next 10 years.

Table 2: Anticipated Impact of 2022 WMP Initiatives on PSPS Event Characteristics

PSPS characteristic	Anticipated Impact of 2022 WMP Initiatives	Comments
Number of customers affected by PSPS events (total)	Decrease	A key objective for Liberty is to limit the number of customers impacted by PSPS events through various WMP initiatives. In time, grid hardening efforts such as covered conductor, microgrids, and the addition of sectionalizing devices will help to reduce the number of customers affected by PSPS.
Number of customers affected by PSPS events (normalized by fire weather, *e.g.*, Red Flag Warning line mile days)	Decrease	A key objective for Liberty is to limit the number of customers impacted by PSPS events through various WMP initiatives. In time, grid hardening efforts such as covered conductor, microgrids, and the addition of sectionalizing devices will help to reduce the number of customers affected by PSPS.
Frequency of PSPS events in number of instances where utility operating protocol requires de- energization of a circuit or portion thereof to reduce ignition probability (total)	Decrease	Weather is the primary factor that drives PSPS frequency. In time, grid hardening efforts, such as covered wire and microgrids, will eventually lead to higher thresholds for de-energization, which would potentially reduce the frequency of PSPS events.
Frequency of PSPS events in number of instances where utility operating protocol requires de- energization of a circuit or portion thereof to reduce ignition probability (normalized by fire weather, *e.g.*, Red Flag Warning line mile days)	Decrease	Weather is the primary factor that drives PSPS frequency. In time, grid hardening efforts, such as covered wire and microgrids, will eventually lead to higher thresholds for de-energization, which would potentially reduce the frequency of PSPS events.
Scope of PSPS events in circuit- events, measured in number of events multiplied by number of circuits targeted for de- energization (total)	Decrease	The work that results in reducing impact to customers and the frequency of events will also reduce the scope of PSPS events.
Scope of PSPS events in circuit- events, measured in number of events multiplied by number of circuits targeted for de- energization (normalized by fire weather, *e.g.*, Red Flag Warning line mile days)	Decrease	The work that results in reducing impact to customers and the frequency of events will also reduce the scope of PSPS events.
Duration of PSPS events in customer hours (total)	Decrease	Weather events determine the length of time circuits need to be de-energized. If scope and number of customers are being reduced over time, then re-energization time should decrease, which is a factor in the duration of PSPS events. PSPS training could reduce the duration of PSPS events with increased preparedness.

PSPS characteristic	Anticipated Impact of 2022 WMP Initiatives	Comments
Duration of PSPS events in customer hours (normalized by fire weather, *e.g.*, Red Flag Warning line mile days)	Decrease	Weather events determine the length of time circuits need to be de-energized. If scope and number of customers are being reduced over time, then re-energization time should decrease, which is a factor in the duration of PSPS events. PSPS training could reduce the duration of PSPS events with increased preparedness.

V. 2022 WMP WSD DEFICIENCIES AND LIBERTY CORRECTIVE ACTIONS

Guidance: Submit a summary of all defects within the annual compliance period, the corrective actions taken and the completion and/or estimated completion date.

A. 2022 WMP Areas for Continued Improvement Identified by OEIS

Table 3: 2022 WMP Areas for Continued Improvement Identified by OEIS

OEIS Area for Continued Improvement (Code and Title)	Corrective Actions Taken	Completion and/or Estimated Completion Date
LU-22-01: Collaboration and Research in Best Practices in Relation to Climate Change Impacts and Wildfire Risk and Consequence Modeling.	Liberty participated in the Energy Safety-led Wildfire Risk Modeling Working Group meetings on August 10, 2022 and September 14, 2022. These meetings addressed best practices in relation to integrating climate change into projections of wildfire risk.	Liberty's efforts related to this area are ongoing.
LU-22-02: Inclusion of Community Vulnerability in Consequence Modeling.	Liberty participated in the Energy Safety-led Wildfire Risk Modeling Working Group meeting on November 17, 2021. This meeting addressed social vulnerability as a driver in consequence modeling.	Liberty's efforts related to this area are ongoing
LU-22-03: Wildfire Consequence Modeling Improvements.	Liberty improved its wildfire consequence modeling. Liberty's wildfire consequence modeling is conducted simultaneously with wildfire likelihood modeling because they are linked through its fire occurrence submodel. For each ignition, the following data is recorded: • Fire area (acres) • Structures within modeled perimeter An overall wildfire CoRE score is calculated for each circuit using a MAVF. Safety and financial impacts are the two inputs to the MAVF used to calculate wildfire CoRE by circuit: 1. Safety: Safety is quantified in terms of equivalent fatalities ("EF"), which is estimated from the number of structures within each	Liberty responded to this OEIS Area for Continued Improvement in its 2023 WMP pre-submission on 3/6/2023. Liberty's efforts related to this area are ongoing.

OEIS Area for Continued Improvement (Code and Title)	Corrective Actions Taken	Completion and/or Estimated Completion Date
	modeled fire perimeter. Recent data from California suggesting a ratio of one fatality for every 260 structures destroyed28 are used here. The EF range is 0 – 20. 2. Financial impacts: Financial impacts are estimated from acres burned and the number of structures within each modeled fire perimeter, assuming a value of $1,000,000 per structure and $2,000 per acre burned. The financial impacts range is 0 - $1 billion.	
LU-22-04: Review, Re-categorize and Fully Justify Risk Events that are Defined as "Other" and "Unknown."	• The primary causes of risk events included in the "Other" category are related to winter weather events, specifically wind and snow unloading. In 2022, Liberty has begun categorizing these winter storm outages as "Wire-to-wire Contact," "Vegetation Contact," or "Equipment failure" based on the specific circumstances of each outage related to winter storms. These causes represent a significant percentage of Liberty's total risk events because the majority of its service territory exists in mountainous, high-elevation terrain. • A new category of risk events for "Snow Unloading" will significantly reduce the number of risk events that fall under the "Other" category. This new risk category will also more accurately separate these snow-related outages from other "Wire-to-wire Contact" outages. All outages in the "Wire-to-wire Contact" category are counted as "events with probability of ignition" according to Table 2 of the WMP quarterly reports. Without a new category for "Snow Unloading", many winter outages that occur when risk of ignition is significantly reduced in heavy snow will incorrectly be counted as high-risk events. • Liberty has recently taken several steps that will decrease the number of unknown outages in 2023. In order to conduct a root cause analysis of unknown outages, system control now sends daily outage logs to the local operations managers to review and verify information. Operations managers review these lists with their teams to verify cause, restoration times, customer counts and completed repairs, before sending any corrections back to system control to update the outage database. In addition, Liberty's system control department has assigned more dedicated electric dispatchers, which will improve performance and communication between system control and troublemen, resulting in more accurate outage data.	Liberty responded to this OEIS Area for Continued Improvement in its 2023 WMP pre-submission on 3/6/2023. Liberty's efforts related to this area are ongoing.
LU-22-05: Further Evaluate Risk Trends to Apply More Specific Lessons Learned.	• Liberty has recently taken several steps that will decrease the number of unknown outages in 2023. In order to conduct a root cause analysis of unknown outages, system control now sends daily outage logs to the local operations managers to review and verify information. Operations managers review these lists with their teams to verify cause, restoration times, customer counts and completed repairs, before sending any corrections back to system control to update the outage database. In addition, the Liberty system control department has assigned more dedicated electric dispatchers, which will improve performance and communication between system control and troublemen, resulting in more accurate outage data.	Liberty responded to this OEIS Area for Continued Improvement in its 2023 WMP pre-submission on 3/6/2023. Liberty's efforts related to this area are ongoing.
LU-22-06: Update Equipment and	Liberty does not currently have equipment for detecting ignitions along the grid but plans to sponsor eight fire cameras in its service territory. Available	Liberty responded to this OEIS Area

OEIS Area for Continued Improvement (Code and Title)	Corrective Actions Taken	Completion and/or Estimated Completion Date
Procedures for Detecting Ignitions Along the Grid.	ignition detection technology for electrical grids is limited, but Liberty is aware that infrared cameras and AI smoke detection algorithms are beginning to be deployed by some other utilities. Liberty will evaluate deploying these technologies and any other ignition detection equipment that becomes available. Additionally, Liberty's procedures (*i.e.*, call System Control to quickly de-energize a circuit if deemed an immediate safety or wildfire risk and call emergency services (*i.e.*, 911) for suppression resources if personnel onsite are unable to suppress immediately) are aimed at automatically, accurately and notifying (in real time) suppression resources and key stakeholders if an ignition is detected or if Liberty deems a risk event as a wildfire risk.	for Continued Improvement in its 2023 WMP pre-submission on 3/6/2023. Liberty's efforts related to this area are ongoing.
LU-22-07: Update Progress Associated with Distribution Fault Anticipation ("DFA") / High-Impedance Fault Detection Research.	Liberty has made significant progress with DFA. DFA is still in the implementation phase. Ten DFA units have been installed at the Meyers, Stateline and Northstar Substations to monitor ten circuits. These units will be online within the first half of 2023 once the communication path for data collection is established. It is anticipated that the units will be collecting data in the early part of this year. The data will be collected and analyzed by an algorithm developed by a specialized team at the Texas A&M Power System Automation Laboratory. Reports will be sent out periodically with recommendations on which circuits to investigate for specific problems identified by the algorithmic report process. The reports are generated by DFA monitors, which look at the current and voltage wave forms in high fidelity. Liberty will evaluate the effectiveness of this technology for preventative maintenance and anticipation of fault events. Based on the results, Liberty will evaluate if and then how much to expand the program in future years. Liberty also commissioned a study by the University of Nevada, Reno ("UNR") to look at the potential effectiveness of HIFD in its distribution system. The study concluded that HIFD is not the best technology for Liberty to pursue and that technologies such as fast trip and sensitive earth relay settings have more potential to reduce wildfire risk and improve reliability. UNR concluded that HIFD has the potential to cause nuisance trips and would only provide coverage for about 70% of the faults on the line. Liberty did enable the Meyers 3400 circuit with capabilities to search for high impedance faults. However, based on the information collected by UNR, Liberty will only be using HIFD sparingly to check for high impedance faults on the Meyers 3400 circuit. Based on this information, Liberty is not moving forward with HIFD technology at this time, but it will still be a consideration for the future depending on technology advancements.	Liberty responded to this OEIS Area for Continued Improvement in its 2023 WMP pre-submission on 3/6/2023. Liberty's efforts related to this area are ongoing.
LU-22-08: Justification of Weather Station Density.	Liberty's weather station network currently consists of 35 stations that are distributed throughout the service territory and Liberty plans to add an additional four stations in 2023. In addition to Liberty's weather stations, there are dozens more RAWS and NWS weather stations within the service territory that are monitored through the MesoWest network. In 2023, Liberty will determine if new weather stations are needed in future years by using weather station optimization tools like the one developed by the Pyregence consortium and by leveraging expertise from the National Weather Service	12/31/2023

OEIS Area for Continued Improvement (Code and Title)	Corrective Actions Taken	Completion and/or Estimated Completion Date
	("NWS") Reno's meteorology team. If blind spots are identified, Liberty will target these areas for additional weather station installation in 2024 and 2025.	
LU-22-09: Apply Joint Lessons Learned Concerning Covered Conductor.	Liberty considers covered conductor ("CC") to be an effective method for wildfire mitigation and also understands that it is important to evaluate all reasonable options for system hardening projects. Liberty subject matter experts ("SMEs") have modified initial effectiveness projections from 85% to 75% based on participation in the Joint IOU CC Group. Liberty has decided to temporarily slow the implementation of CC projects and put more focus on other initiatives while collecting more information on the actual effectiveness and best use cases for CC. Two key initiatives that Liberty is putting more focus on are sensitive relay profiles ("SRP") and traditional overhead hardening. Those initiatives are presented in Liberty's 2023 WMP. Liberty is assessing whether CC is best used on lines in heavily wooded areas with constrained clearances and/or areas where long spans are needed. See below for additional information regarding changes to Liberty's CC program: • Covered Conductor Effectiveness: Through participation in the CC Effectiveness workstreams, Liberty SMEs have modified initial effectiveness projections from 85% to 75%. • Covered Conductor Selection: Liberty is continuing consideration of all applicable WMP initiatives. Liberty's wildfire mitigation planning efforts have resulted in decisions to implement more SRP and implementation of more conventional overhead hardening. Other initiatives strongly considered when applicable include undergrounding and microgrids. • Technology Considerations: Liberty has been and will continue to increase its efforts on evaluating alternatives and combined efforts for system hardening for all projects. Those considerations include technology efforts for safety, reliability, and wildfire mitigation. • Cost Considerations: Costs for all types of work have increased considerably over the last three years. While average costs for covered conductor decreased between 2021 and 2022, costs can vary significantly on a project-by project basis due to the wide range of construction techniques required in the rough and varied terrain of Liberty's service territory. • Data Sharing: Liberty will continue to share data on CC effectiveness as requested. Because of the limited amount of CC installed in the Liberty system the data does not yet provide enough information to draw conclusions. Liberty intends to continue to participate in the CC Effectiveness Working Group to benefit from data collected by the entire group.	Liberty responded to this OEIS Area for Continued Improvement in its 2023 WMP pre-submission on 3/6/2023. Liberty's efforts related to this area are ongoing.
LU-22-10: Determine Best Practices for Covered Conductor Inspection and Maintenance.	Liberty participated in the Joint IOU Covered Conductor Working Group throughout 2023, including discussions related to CC inspection and maintenance. Refer to "Appendix F - CC Effectiveness Workstream_2023 WMP Report Draft" of Liberty's 2023 WMP pre-submission.	Liberty responded to this OEIS Area for Continued Improvement in its 2023 WMP pre-submission on 3/6/2023. Liberty's efforts

OEIS Area for Continued Improvement (Code and Title)	Corrective Actions Taken	Completion and/or Estimated Completion Date
		related to this area are ongoing.
LU-22-11: Address Unmet Grid Hardening Targets.	Liberty establishes targets for its grid hardening WMP initiatives each year based on the best available current information at the time of establishing targets. Liberty selects a portfolio of initiatives that aligns with its current risk methodology and risk, and other operational and compliance considerations. Liberty continually reprioritizes its workload, including wildfire mitigation efforts, based on changing conditions and workload constraints. As demonstrated by its missed grid hardening targets in 2021, events outside of Liberty's control such as the Caldor and Tamarack fires that burned into Liberty's service territory can divert resources away from planned WMP mitigation efforts. For instance, Liberty replaced 211 poles in 2021 as part of its WMP Pole Replacement initiative (7.3.3.6). Energy Safety assesses that Liberty missed its target of 400 poles for this initiative. However, Liberty replaced an additional 175 poles in 2021 resulting from fire or storm damage in 2021, which impacted available resources. These pole replacements were unplanned as part of Liberty's 2021 WMP but ultimately required the same resources that were planned for in Liberty's 2021 WMP. Based on these circumstances, the remaining Level 2 poles planned in Liberty's 2021 WMP Pole Replacement initiative were planned to be completed in 2022. Liberty completed 98% of its planned pole replacements in 2022. Likewise, Liberty completed 100% of its planned covered conductor projects in 2022, which included the projects that Liberty had planned to complete in 2021. Liberty considers its WMP targets as its best estimate of the work that it can complete in a given year and understands that its targets can be impacted by outside factors such as wildfires and storms in its service territory that damage assets. Liberty will consider missed targets from a previous year in its current year WMP planning and in establishing future WMP initiative targets. Additionally, Liberty assesses its completed grid hardening efforts, such as covered conductor projects, asset repairs, and replacements completed in recent years along with enhanced vegetation management work to review holistically what is effectively working system-wide to reduce wildfire risk. To the extent possible, Liberty's risk mitigation planning utilizes updated risk metrics and analyses available in conjunction with subject matter expertise from operations, vegetation management, wildfire prevention, and engineering. This collaborative approach and information sharing amongst the various work groups is a vast improvement to Liberty's previous WMP submissions and allows Liberty to set future targets that will improve Liberty's overall wildfire mitigation planning.	Liberty responded to this OEIS Area for Continued Improvement in its 2023 WMP pre-submission on 3/6/2023.
LU-22-12: Progress on Formal QA/QC Program for Asset Inspections.	Liberty's Asset Inspection QA/QC Program was initially established as described in the 2022 WMP. Liberty is in the process of enhancing the Asset Inspection QA/QC Program with the implementation anticipated in the third quarter of 2023. The Asset Inspection QA/QC Program is intended to confirm that the inspection and corrective action process for existing electric distribution and	Liberty responded to this OEIS Area for Continued Improvement in its 2023 WMP pre-submission on 3/6/2023.

OEIS Area for Continued Improvement (Code and Title)	Corrective Actions Taken	Completion and/or Estimated Completion Date
	transmission assets are conducted and documented in an accurate and effective manner. The program is designed to provide reasonable assurance that Liberty's electric system is maintained adequately to serve Liberty customers in a safe and reliable manner. The program is designed to meet the compliance requirements of G.O. 165 and G.O. 174 for inspection frequency, record-keeping, and reporting. The program also manages and documents the required corrective actions, timelines, and the completion of any needed corrective actions in accordance with G.O. 95 and G.O. 128. Quality Control inspections are completed through statistical sampling and appropriate sample sizes to gauge acceptable quality levels ("AQL") and conformance levels ("CL") based on the selected margin of error ("MoE"). The procedure includes personnel qualification requirements, sampling methodology, sample size by priority, process assessment (QA), results evaluation (QC), description of post inspection verification (i.e., desktop review, field review), and types of QC inspections (i.e., overhead poles, devices and conductors, underground structures and devices, padmount devices, intrusive pole inspections).	
LU-22-13: Further Integrate Risk-Informed Decision Making into Inspection Scheduling and Planning.	• In 2023, Liberty plans to evaluate its risk modeling and evaluation of the model results to inform all mitigation planning and not just asset inspections. • In fall 2022, Liberty engaged with IBM to cocreate a risk-based work management solution that consolidates and scores for asset risk based on health (age and condition) and other criticality factors the teams scoped. The conceptual product IBM is developing for Liberty can link Liberty's risk data sources, including vegetation LiDAR analytics and eventually integrate with Liberty's SAP implementation later this year. IBM's Maximo asset health and predict solution can integrate tree risk analytics at the circuit and/or circuit segment level to better plan work that is influenced by asset risk of failure and tree risk of failure. This consolidated asset/vegetation risk view will help operations plan work effectively throughout the year or adjust planned work for elevated fire risk days. • In late January 2023, Liberty executed an agreement with Technosylva to provide wildfire risk analytics utilizing its Wildfire Risk Reduction Model ("WRRM"). Liberty received its first analytics package with the results from WRRM in late February 2023. With the help of Direxyon, the Technosylva data results will be processed, analyzed, and modeled for various scenarios and risk reduction interventions that is both temporal and spatial.	Liberty responded to this OEIS Area for Continued Improvement in its 2023 WMP pre-submission on 3/6/2023. Liberty's efforts related to this area are ongoing.
LU-22-14: Participate in Vegetation Management Best Management Practices Scoping Meeting.	Liberty participated in the Energy Safety-led Utility Vegetation Management Scoping Meeting on February 10, 2023.	2/10/2023

OEIS Area for Continued Improvement (Code and Title)	Corrective Actions Taken	Completion and/or Estimated Completion Date
LU-22-15: Improve Transparency of the Initiative Selection Process.	Refer to Section 7.1.4.1 of Liberty's 2023 WMP. Liberty did not utilize RSE calculations for its initiative selection process. See Section 6 for additional information on Liberty's risk based decision making framework for the initiative selection process.	Liberty responded to this OEIS Area for Continued Improvement in its 2023 WMP pre-submission on 3/6/2023. Liberty's efforts related to this area are ongoing.
LU-22-16: Commit to Short-Term PSPS Reduction Targets.	Liberty provides its PSPS objectives in Section 9.1 of its 2023 WMP. Additionally, Liberty provides details on its progress related to wildfire and PSPS risk modeling in Section 6 of its 2023 WMP. Liberty's progress on grid hardening (Section 8.1.2), situational awareness (Section 8.2), emergency management, training, and preparedness (Section 8.4), and community outreach and engagement (section 8.5) suggest that potential PSPS impacts would be reduced due to those efforts. Liberty has not implemented a PSPS event and Liberty is not able to provide quantified risk reduction projections with the data available. Utilities with prior PSPS activations have been able to show quantifiable changes in frequency, scope, and duration based on data gathered from those events. For instance, other utilities are able to take year-over-year event statistics from prior seasons and present those in their current year WMP. Utilities use the number of PSPS activations (frequency), the number of customers de-energized (scope), the number of circuits de-energized (scope), and the customer minutes interrupted (duration) to quantify the percent reduction in frequency, scope, and duration. Because Liberty has not implemented a PSPS event, actual event statistics do not exist to analyze PSPS performance.	Liberty responded to this OEIS Area for Continued Improvement in its 2023 WMP pre-submission on 3/6/2023. Liberty's efforts related to this area are ongoing.

VI. CONCLUSION

Liberty appreciates this opportunity to provide this 2022 WMP Annual Report on Compliance and looks forward to working with Energy Safety and other stakeholders to advance Liberty's wildfire mitigation planning efforts.

Respectfully submitted,

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