



CITY OF  
**PALO ALTO**  
UTILITIES

---

## **2023 Utilities Wildfire Mitigation Plan**

---

Adopted by the Utilities Advisory Commission on June 7, 2023

# TABLE OF CONTENTS

---

- I. Utility overview and context ..... 1
  - A. Context table ..... 1
  - B. Statutory cross-reference table..... 2
  - C. Process for WMP adoption ..... 2
  - D. Plan location on the website..... 3
- II. Plan purpose and objectives ..... 3
  - A. Summary ..... 3
  - B. Scope ..... 4
  - C. Plan objectives ..... 5
- III. Roles and responsibilities ..... 6
  - A. City of Palo Alto Utilities Department ..... 6
  - B. Coordination with other departments ..... 7
  - C. Deenergization-related communication..... 9
- IV. Electric-line ignited wildfire risk drivers with prevention and mitigation efforts ..... 9
  - A. Primary risk drivers and specific mitigation efforts.. 9
  - B. Primary risk driver and specific mitigation effort..... 10
  - C. Other electric equipment-specific mitigation strategies... 11
  - D. Enterprise-wide Safety Risks ..... 13
  - E. Current and prior activities ..... 13
- V. Monitoring the plan..... 14
  - A. Measuring Plan and inspection performance..... 14
  - B. Performance and outcome metrics ..... 14
  - C. Applying previous Plan metrics to this Plan 15
  - D. Independent evaluation of this 2023 Plan. 16
- Appendix A: Wildfire-related activities..... 17
- Appendix B: Independent evaluator report ..... 20





# I. UTILITY OVERVIEW AND CONTEXT

---

## A. Context table

City of Palo Alto	
Size in Square Miles	26 square miles
Assets	Distribution
Number of Customers Served	29,849 residential and business customer accounts
Customer Classes	Residential and Small/Medium Business
Location/Topography	Urban
Percent Territory in CPUC High Fire Threat Districts	40% in Tier 2      0 % in Tier 3 ( <a href="#">PUC ArcGIS map</a> )
CAL FIRE FRAP Map Fire Threat Zones	40% High <i>Approx. based on visual interpretation of <a href="#">map</a>.</i>
Existing Grid Hardening Measures	Undergrounding
Impacted by another utility's PSPS?	Yes, as a transmission dependent utility, Palo Alto could be impacted by a PG&E PSPS.
Mitigates impact of another utility's PSPS?	Yes
Expects to initiate its own PSPS?	At this time, no. But as this report covers a one-year period, we cannot say for certain. The last PSPS event Palo Alto initiated was on September 6, 2022, affecting approximately 1,700 customers for about 30 minutes. We reenergized lines quickly upon learning that the deenergizing request was made after a miscommunication between CAISO and NCPA.
Prevailing wind directions & speeds by season	Please refer to <a href="#">Cal Fire's Santa Clara Unit 2021 Strategic Fire Plan</a> for information about wind regional wind conditions

**B. Statutory cross-reference table**

Code section	Pertaining to	Page
8387(b)(2)(A)	Accounting of responsibilities	6
8387(b)(2)(B)	Plan objectives	5
8387(b)(2)(C)	Preventive strategies and programs to minimize risk	9
8387(b)(2)(D)	Metrics used to evaluate Plan’s performance	14
8387(b)(2)(E)	Current Plan informed by previous Plan’s metrics	14
8387(b)(2)(F)	Protocols related to deenergizing and public safety impacts	11
8387(b)(2)(G)	Customer notification around deenergizing	9
8387(b)(2)(H)	Vegetation management	10
8387(b)(2)(I)	Electrical infrastructure inspection plans	14
8387(b)(2)(J)	A list of wildfire risks and drivers	9
8387(b)(2)(K)	Area that is a particularly high wildfire threat	4
8387(b)(2)(L)	Wildfire and safety risk methodology	9
8387(b)(2)(M)	Restoring service after a wildfire	12
8387(b)(2)(N)	Process to monitor Plan, identify any execution deficiencies, and audit inspection effectiveness	14
8387(b)(3)	Present Plan in an appropriately noticed public meeting	2

**C. Process for WMP adoption**

Palo Alto is a bit unique among POU’s in that we have a [Utilities Advisory Commission \(UAC\)](#). This commission is comprised of residents who meet monthly to provide advice to our City Council and staff on utilities-related matters, including our Wildfire Mitigation Plan (Plan). A Brown Act body, the UAC agendas are published in advance of each public meeting and opportunities for comment are provided. Each year, Palo Alto staff presents our Plan at a UAC meeting where we accept any com

ments and receive feedback from Commissioners.<sup>1</sup> [Minutes and videos](#) of past meetings are available on the City’s website. This Plan revision and accompanying independent evaluation report was presented at the June 7, 2023 UAC meeting.

#### **D. Plan location on the website**

Palo Alto’s Plan is the first substantive item found on our [Utilities Department safety webpage](#). Navigating to this page from our [main department page](#) takes only two clicks and is intuitive. Users click on “Utilities Services and Safety,” then “Wildfire Mitigation.” This year, we streamlined the information on the webpage to make it more easily readable by listing the specific links to current and past plans. Because our city also has a Fire Department and an Office of Emergency Services that respond to fires and other emergencies, we briefly note for readers how this wildfire Plan differs from others.

## **II. PLAN PURPOSE AND OBJECTIVES**

---

#### **A. Summary**

This Plan is written in compliance with Public Utilities Code section 8387 and describes how the City of Palo Alto’s Utilities Department (CPAU) maintains and operates our electrical lines and equipment in a manner that minimizes the risk of wildfire posed by those lines and equipment. As a comprehensive revision to our prior Plans, we took a fresh look at how best to produce this report and provide relevant information. As such and as the Wildfire Safety Advisory Board correctly predicted in its 2022 guidance opinion, we do not include redlines from our 2022 Plan. All the content in this Plan is new.

---

<sup>1</sup> We note that while the Board asks on page A1-1 of its *2023 POU WMP Guidance Advisory Opinion* that POUs “describe the process by which the governing body” adopts Plans, such is not legally required. PUC 8783(b)(3) requires a POU to “present its wildfire mitigation plan in an appropriately noticed public meeting...[and] shall accept comments on its wildfire mitigation plan from the public....” While not our governing board, the UAC meetings meet the legal requirement of a noticed public meeting where comments from the public are accepted.

**B. Scope**

The scope of this Plan is limited to providing information about mitigating electric line-ignited wildfires. We make a distinction between mitigating for possible electric line-ignited wildfires versus wildfires or wildfire suppression generally. The latter two are in the scope and under the purview of trained fire experts, such as our city's [Fire Department](#), and not within the expertise of utility engineers and technicians.<sup>2</sup> The former is within the scope of CPAU responsibilities and is the subject of the state code section mandating this Plan. Therefore, it is our sole focus.

Additionally, this Plan applies to the only area in our city identified as a high fire threat area in the California Public Utilities Commission (CPUC) State Fire Map. As of 2022, the high fire threat area in Palo Alto is all areas with the city limits west of Highway 280, which we refer to as the Foothills Area. (See below image). This area is about 8-square miles, is sparsely populated, and consists primarily of open space.

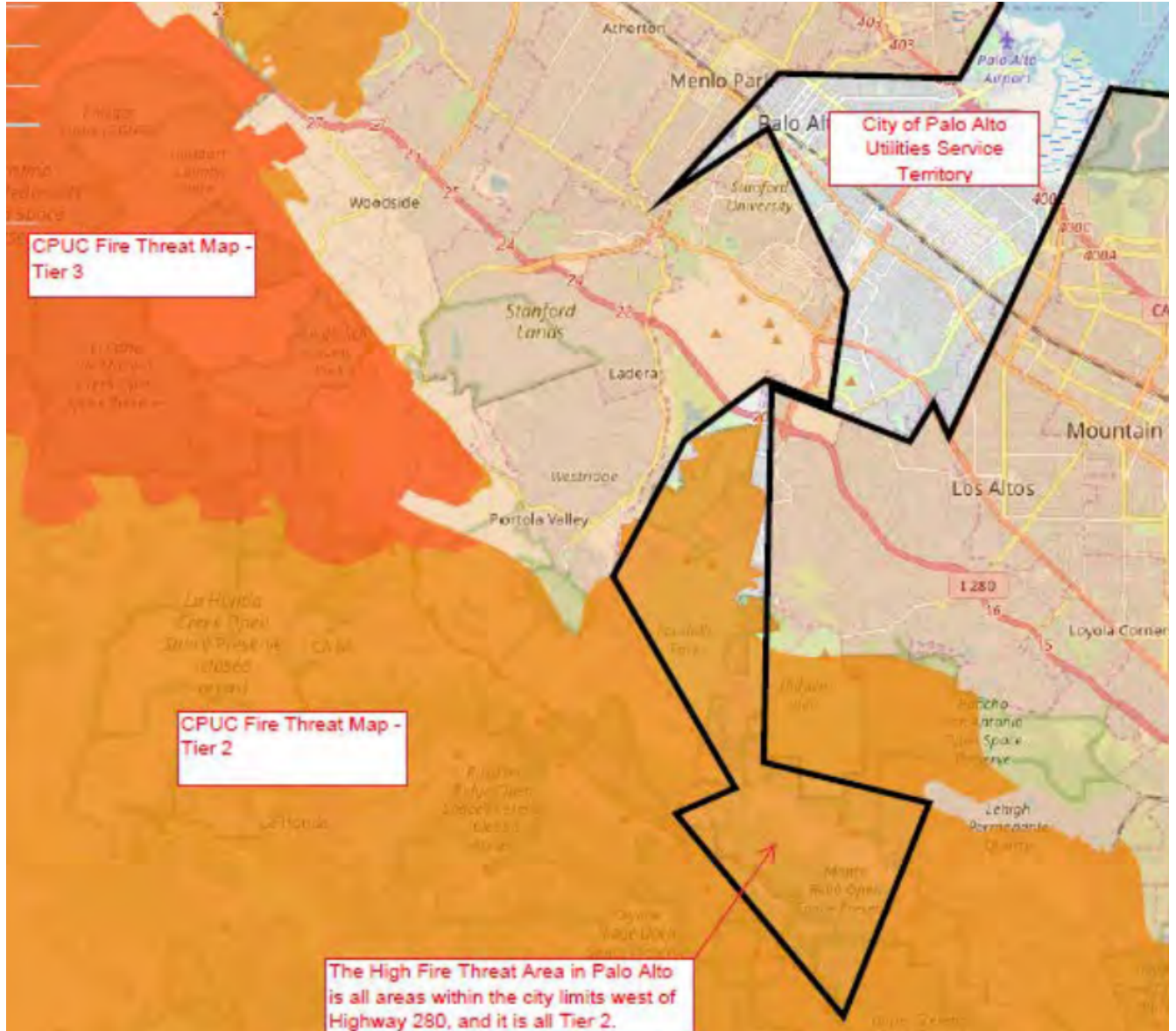
Lastly and per the Board's request of all POU's, in this updated Plan we deliberately omit general information the Board already understands in favor of specific information about our territory, our infrastructure, and our projects. For example, the Board already knows that CPAU, and other POU's, meet all applicable GO 95 standards; we do not reiterate that here. To avoid redundancy, we also do not include appendixes submitted in prior years, although we may refer to them. This is not to short shrift our efforts, but rather to acknowledge that both CPAU and the Board have limited resources to write and review Plans, the Board has already reviewed the appendixes and offered guidance, and recycling past information is not as helpful as providing new information.

---

<sup>2</sup> In our 2021 report, we attached as "Appendix A" our Fire Department's *Palo Alto Foothills Fire Management Plan Update*; it can be viewed at: <https://www.cityofpaloalto.org/files/assets/public/oes/plans/foothills-fire-management-plan-update-2016-final.pdf>



High fire threat area also known as the Foothills area.



### C. Plan objectives

The Plan's primary objective is to help guide CPAU staff in minimizing the probability that our distribution system may be an original or contributing source for wildfire ignition. We strive to ensure that our infrastructure is safe and resilient by taking proactive actions to maintain our equipment, refine our existing Public Safety Power Shutoff protocols as needed, and underground the electric lines in our single high fire threat area.

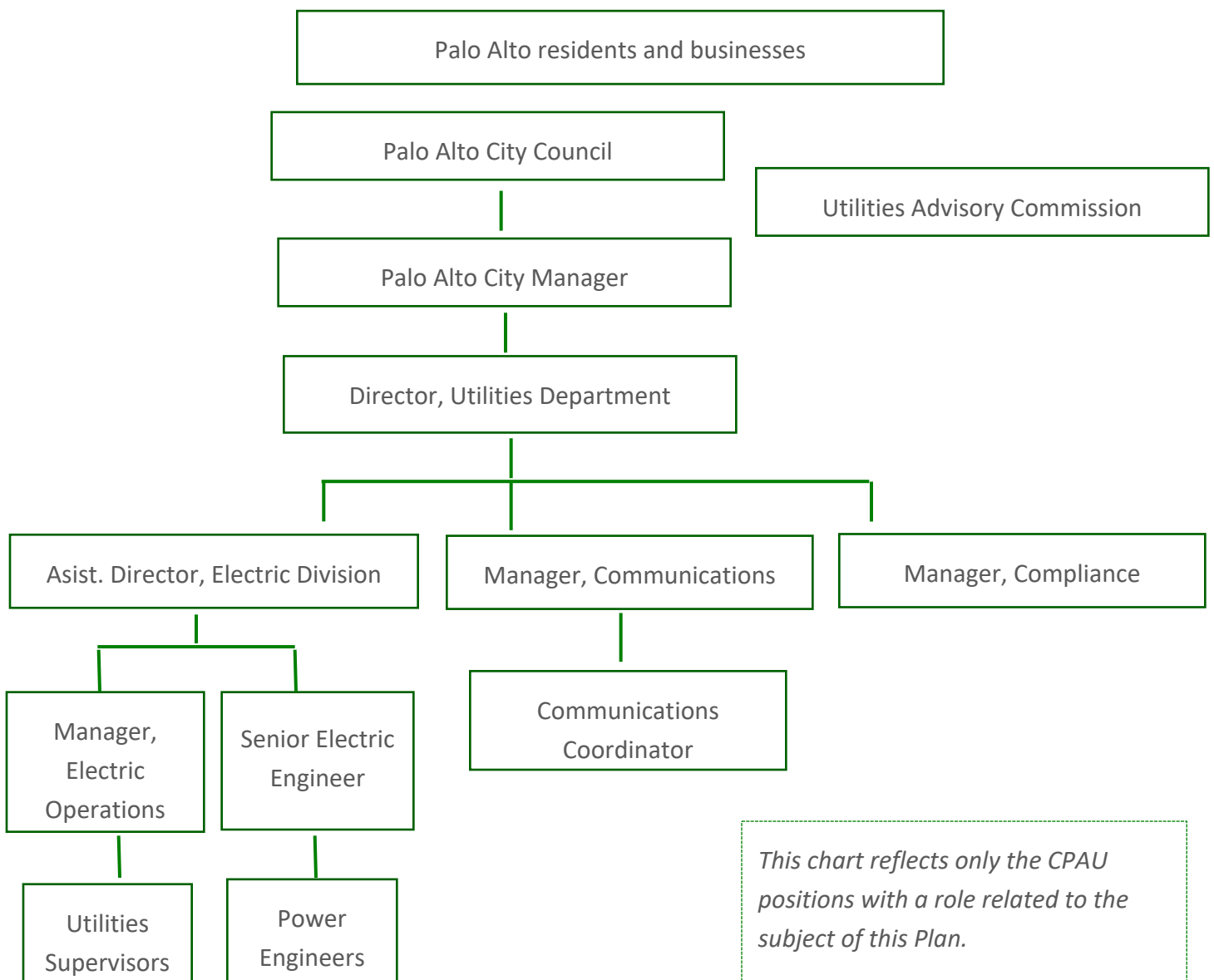


A secondary objective is to improve the resiliency of our distribution system and a final goal, to measure the efficacy of our mitigation strategies. Please see Appendix A for a listing of mitigation projects.

### III. ROLES AND RESPONSIBILITIES

---

#### A. City of Palo Alto Utilities Department



In Palo Alto, the City Council is our governing body. As noted above, the UAC is the Brown Act body that provides advice on utilities-related matters. CPAU operates and maintains all the utilities in the city, including electric, water, gas, fiber, and wastewater. The Department also employs communications staff to engage with the community and a Compliance Manager who, among other duties, ensures reports such as this Plan are completed timely and appropriately.

The electric staff noted above all play a role in preventing electric-line ignited wildfires. Specifically, our engineers produce safe and resilient designs and oversee fire mitigation projects.<sup>3</sup> Our operators inspect, repair, and maintain our equipment while flagging any potential causes for concern. Our communications team produces safety communication material to our community and our compliance manager ensures we meet or exceed laws and regulations.

#### **B. Coordination with other departments**

As one part of a larger body, CPAU works closely with other departments and internal divisions. These include our Public Works Department and its Urban Forestry and Environmental Services Divisions, the Fire Department, the Office of Emergency Services, and the Engineering and Operations team for our water utility. Together, these departments and divisions proactively prepare for wildfires, act to mitigate climate and fire-related risks, maintain electric and water infrastructure, develop plans for deenergization events, ensure appropriate vegetation management, and lead Palo Alto's robust [climate action efforts](#). As these divisions, departments, and teams are under the umbrella of one City, there is a strong history of working together closely.

For example, during the January 2023 storm events, the above departments held daily calls to share information on immediate needs, infrastructure repairs, and communication received from external agencies. In less urgent times, these departments work together to prepare reports, conduct inter-division meetings on the status of projects of joint interest, and collaborate on how best to engage the community to proactively provide utilities-related information.

---

<sup>3</sup> To keep the public informed of CPAU's capital improvement projects, we place related information [on our website](#). This information includes the name(s) of those responsible for the projects.



Public Works' Urban Forestry Division employs Foresters who work with Utilities to ensure appropriate tree clearance standards.

The staff of the City's Office of Emergency Services work to prevent, mitigate against, and prepare for hazards of all types. They are trained to communicate with the community and other agencies during emergencies in ways Utilities staff is not.



The Fire Department not only plans for and responds to wildfires but is also trained on best practices in communicating with the community and other agencies during wildfires.

### **C. Deenergization-related communication**

CPAU’s communications staff is responsible for engaging the community about deenergization events. In doing so, and in deciding whether to deenergize lines, CPAU utilizes the “Utilities Wildfire Mitigation Response and Communications Procedure for Public Safety Power Shutoff.”<sup>4</sup> This procedure includes proactively sending to customers a specific recorded message to customers living in the Foothills area, and a more general but still targeted message to all customers. These messages are sent prior to deenergizing lines, to allow residents time to act, if necessary.

Palo Alto also sends emails to Foothills residents, with specific information about conditions that may prompt deenergization, the anticipated dates and times of a shutoff, how to prepare, and where to find more information. During a deenergization event, CPAU continues to email and call customers. The calls and emails prior to and during any shutoffs are supplemented with frequent information posted on CPAU’s website and social media accounts.

## **IV. ELECTRIC-LINE IGNITED WILDFIRE RISK DRIVERS WITH PREVENTION AND MITIGATION EFFORTS**

---

### **A. Primary risk drivers and specific mitigation efforts**

Palo Alto recognizes that the Board is most interested in specific risks unique to each POU and its service territory rather than general risks carried by all electric utilities. As such and as we are in the process of undergrounding the lines in our only high fire threat area, we note only the risk associated with the equipment in the Foothills area. The more general risks Palo Alto regularly mitigates, but does not belabor here, include:

- Electric system operating, management, and construction practices
- 

<sup>4</sup> This document was previously provided to the Board as Attachment G in Palo Alto’s 2022 Plan. As a newer procedure that remains accurate, it has not been updated since our submittal.



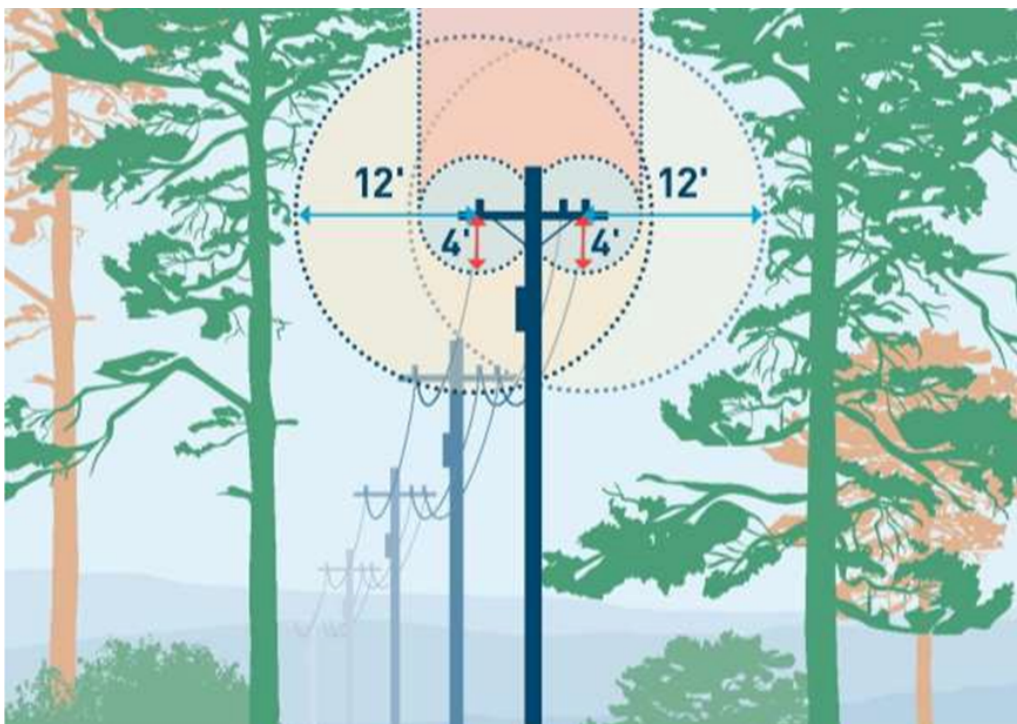
- Weather, including high winds
- Extended drought

With regard to weather monitoring, Palo Alto installed a weather station in the Foothills area, allowing staff direct, localized weather data. CPAU staff also monitor regional conditions, receive red flag warnings, and communicate with our first-responder departments on any actions needed due to weather conditions.

### **B. Primary risk driver and specific mitigation effort**

*Vegetation type, density, and management practices.* Risks include vegetation intruding into power lines, falling onto lines, or roots damaging underground equipment. Mitigation efforts include ongoing physical inspections, ensuring the proper type of vegetation is placed at the correct distance from equipment, and adherence to our City’s [Line Clearing Program](#) and our [Tree Technical Manual](#) for proper care of trees. Palo Alto is fortunate to have a dedicated Urban Forestry Division within our Public Works Department, staffed by trained and experienced urban foresters. These individuals regularly evaluate every tree twice each year in our high fire threat area with a potential for contact with our electric lines.

In addition, for the foothills area, Urban Forestry uses an enhanced vegetation management buffer as shown in the diagram below:



This practice exceeds GO 95 minimum standards for the voltage. Specifically, a 4-foot radial clearance is the minimum required in high fire danger areas for lines between 750 volts and 300kv; Palo Alto has a minimum of 10 feet and a target of 12 feet for all circuits in the foothills.



Additionally, other jurisdictions sharing a border with our high fire threat area are just as interested in vegetation management. For example, in November and December 2022, the Los Altos Hills County Fire District engaged in a project to clear vegetation along a two-mile route adjacent to a road running through both Palo Alto and Los Altos. This project involved pruning trees and clearing the area of vegetation and debris to ensure a safe evacuation route in the event of a wildfire, while providing safe entry and exit points for first responders.

Palo Alto utilizes a variety of vegetation treatment methods to reduce the risk of wildfire, including tree or branch removal, trimming, mowing, brush cutting, discing, and herbicide use. Our Urban Forestry Department is planning a program to help remove potential fall-ins from trees outside of Palo Alto's maintenance envelope. In the future, to help staff track and manage flammable new growth, Palo Alto may utilize GIS and growth modeling. Currently, this work is performed manually with physical inspections.

### **C. Other electric equipment-specific mitigation strategies**

- *Disabling certain reclosures.* In the Foothills area, we have two reclosers on the distribution line that automatically open when they sense a large amount of current flowing due to a fault. After a preset delay, they both can automatically reclose; however, as a method to minimize fire risk, the reclosing function is permanently disabled on both reclosures and at the circuit breaker of the substation serving this area. Restoring service intentionally requires manual reclosing, which occurs only after staff have physically inspected the lines, performed any needed repairs, and ensured that the outage cause is removed. While this practice means potentially longer outage times, it is an important risk mitigation activity.
- *Utilizing specific fuses.* We utilize non-expulsion fuses in our high fire threat area. Specifically, CPAU utilizes Eaton's Cooper PowerE series ELFE fuse, a full range, current-limiting dropout fuse with a self-contained design that eliminates noise and explosive showers. If these fuses explode, any hot metal is contained within the fuse holder, preventing contact with vegetation.
- *Deenergizing, then reenergizing when prudent.* We consider deenergizing our lines as a last resort, realizing that while the lack of power could be an inconvenience for some, it can also cause significant health and safety concerns for others. However, we will utilize this option when necessary to minimize the risk of an electric-line ignited wildfire in our high fire threat area. Factors we consider when determining whether to deenergize include:
  - The possible safety impacts to our customers
  - Any fire activity in the vicinity



- Any evacuation orders and other information from emergency personnel
- Information from local fire agencies, vegetation staff, and our own operators
- Local and regional weather conditions including wind, humidity, precipitation and any red flag warnings
- The state of vegetation in the area (ie: very dry)
  - *Restoring power after a wildfire or deenergization event.* Lines will only be reenergized when (1) the risk has passed, (2) the lines are inspected, and (3) any needed repairs are complete. CPAU utilizes a Public Safety Power Shutoff (PSPS) policy and procedure<sup>5</sup> when determining whether to deenergize lines because of a wildfire risk. Our written protocol also includes customer notification procedures and reenergization information. In addition to customer notification from the Utilities Department, PSPS communication is also coordinated with staff of Palo Alto's Office of Emergency Services. The decision to institute a PSPS also includes working with CPAU's water utility staff to determine if we should pump water up to the reservoirs located in the Foothills area in advance of shutting off power to ensure there is sufficient water and water pressure for any firefighting activities.
  - *Coordination with PG&E.* As a transmission-dependent utility, CPAU communicates with PG&E regarding their potential deenergization events that may impact our service territory.
- *Studying device coordination strategies.* Staff has engaged in protective device coordination studies to ensure that any fault is isolated quickly and any impact limited. Based on these studies, we changed our fuse type and size, as noted above, on distribution lines and changed relay settings for reclosers and a station circuit breaker.

---

<sup>5</sup> The Draft PSPS Policy and Process was included as Appendix G in our 2019 Wildfire Mitigation Plan and the final version was included as Appendix F in our 2022 update. As noted above and as the Board has received the same information twice already, we do no re-submit it here for a third time. Information on PSPS events can also be found [on our webpage here](#).

#### **D. Enterprise-wide Safety Risks**

Palo Alto’s protocol for identifying and addressing enterprise-wide safety risks is a collaborative effort with various City departments. Together the goal is to prevent, protect from, mitigate, respond to, and recover from hazards and threats. The City’s Office of Emergency Services (OES) leads that coordination with City departments with the goal of developing, maintaining, and sustaining a citywide, comprehensive, all hazard, risk-based emergency management program that engages the whole community. The following reports and plans have been developed and are updated to provide information regarding the risks in Palo Alto and the necessary actions to take.

- *Threat and Hazard Identification and Risk Assessment Report*<sup>6</sup> - The result of the THIRA process is an organized evaluation of vulnerability and implementation measures based on the necessary capabilities to deal with the natural and non-natural hazards and threats of most concern.

- *Local Hazard Mitigation Plan*<sup>7</sup> - Identifies and prioritizes potential and existing hazards across jurisdictional borders, including hazards that may be further amplified by climate change, and provides mitigation objectives with prioritized actions.

- *Foothills Fire Management Plan*<sup>8</sup> - Addresses a broad range of integrated activities and produced planning documents to address and mitigate the impacts of fire hazards in the Palo Alto Foothills Area.

#### **E. Current and prior activities**

Our earlier Plans note mitigation tasks our city has already completed, such as preparing a Foothills Fire Mitigation Plan and acting as “territory lead” for the CPUC’s fire threat map. Additionally, prior Plans note ongoing efforts, which continue. These include regular vegetation management, inspection and maintenance of our electric system, and electric infrastructure designs that consider fire safety.<sup>9</sup> Attachment A shows the status of our mitigation-related activities.

---

<sup>6</sup> The Threat and Hazard Identification and Risk Assessment Report can be found [here](#).

<sup>7</sup> The Local Hazard Mitigation Plan can be found [here](#).

<sup>8</sup> The Foothills Fire Management Plan can be found [here](#).

<sup>9</sup> See Palo Alto’s 2022 Wildfire Mitigation Plan, pages 13-18 for more information.

## V. MONITORING THE PLAN

---

### A. Measuring Plan and inspection performance

In preparing our annual Plans, we take the opportunity to evaluate our current Plan for any deficiencies, or if any best practices have changed. In doing so, we consider what, if anything, related to wildfires occurred in our high fire threat area. Any events related to wildfires or our electric infrastructure in this area could inform our future Plans and help us understand the effectiveness of our current Plan.

Since we began submitting these annual reports, we have had no wildfires in our high fire threat area. We have had zero wires down events, and no incidences that required an unplanned inspection. We also had no incidents in the Foothills area during the January 2023 storms.

With regard to inspections, we examine our electric equipment in our high fire threat area more frequently than in other areas of our service territory. We strive to ensure that all inspections are completed by June, before the historic start of fire season, or earlier, depending on drought conditions. Inspections are completed manually. Staff analyzes the results of the inspections for trends of any failures or maintenance needs, which can inform future design changes. Staff also monitors the performance of equipment during windy and raining weather as described in the metrics below.

### B. Performance and outcome metrics

CPAU audits the effectiveness of our Plan's mitigation and prevention efforts by using two broad metrics: performance and outcomes. Information specific to each are below:

*i. Performance metrics*

- a. Vegetation management. This metric includes the amount of vegetation cleared or number of trees trimmed in the high fire threat area.
- b. Infrastructure maintenance in high fire threat area. Includes the number of equipment and lines inspected and repaired (if needed) in the high fire threat area.
- c. Project status. This metric involves monitoring the progress of any projects related to preventing electric-line ignited wildfires in our high fire threat area and ensuring that projects progress on the proper timeline.

*ii. Outcome metrics*

- a. Electric-line ignited wildfire. This metric includes any fire started by CPAU's electric equipment in our high fire threat area that traveled greater than one linear meter from the ignition point. In at least the past 20 years, there have been zero such fires.
- b. Downed lines in our high fire threat area. For purposes of this Plan, a wires down event includes any instance where an electric line in the high fire threat area of our service territory falls to the ground or on to a foreign object. CPAU will not normalize this metric by excluding unusual events, such as severe storms. Instead, we will supplement this metric with a qualitative description of any such unusual events.

**C. Applying previous Plan metrics to this Plan**

Our initial Plan specified two metrics for evaluating performance. Below, we discuss each and how they have informed this revised Plan:

*i. Outages to the overhead lines in the high fire threat area*

In our 2020 Plan, we described how we would evaluate any outages in our high fire threat area. (Page 21). We also noted a related project in Appendix F, rebuilding the overhead lines, the status of which is presented below in Appendix A. Our evaluation of any outages in the high fire threat area described in 2020 remain: Determine if our activities (a) should have prevented any outages, (b) were adequate to prevent an outage, (c) could be improved, and (d) could not have prevented an outage. This evaluation and this metric remain for 2023 because they properly inform our efforts in preventing outages.

Since January 1, 2020, we have had 10 outages in the Foothills area. None were a result of a PSPS event or weather-related. Most were caused by animal activity in this heavily wooded area or a car hitting a pole. However, trees contacting equipment also caused outages.

*ii. Fire ignitions*

An important metric, we stated in our 2020 Plan that we would provide the number of fires occurring in our high fire threat area that were less than 10 acres in size, specifically describing any fires larger than 10 acres. Since January 1, 2020, we have had zero wildfires in our high fire threat area over 10 acres with no calls to 911 to report of a fire of any size. We have had four smaller fires with ignition sources that do not include City infrastructure, but from sources such as vehicle fires or



hot coals thrown in a dumpster. All fires were quickly extinguished by either private individuals or City personnel.

If we experience any wildfires in this area, whether ignited by our electric infrastructure or not, we will work with our Fire Department, Office of Emergency Services, and any related local government agency to review the cause, how or if our equipment related to the cause or was impacted, and collaborate on any after-action activities.

With this new Plan, we add one more metric:

*iii. Wires down*

This metric includes instances of any electric lines or conductors that fall to the ground or comes in contact with a foreign object in our high fire threat area. For each wires down event, CPAU will utilize an evaluation system similar to our outage evaluation, reviewing the cause, what actions may have prevented the event, and if there are areas for improvement.

**D. Independent evaluation of this 2023 Plan**

CPAU contracted with Dudek to perform a comprehensive evaluation of this Plan. The final evaluation report, included here as Attachment B, was presented at a public UAC meeting on June 7, 2023.

CPAU staff realize that there is no legal mandate to retain an independent evaluator on an ongoing basis. We do so this year as this Plan is our first comprehensive revision and we find value in a review the first time we fully revise this document. However, this does not convey an intent to continue the practice going forward, not when we can utilize internal resources in the form of specially trained fire and vegetation staff. The decision about contracting for an independent review in the future will depend on factors such as CPAU's resources, any events in our high fire threat area, the status of our undergrounding project, any significant changes to our Plan, and so on.

## APPENDIX A: WILDFIRE-RELATED ACTIVITIES



Our key mitigation activity is undergrounding eleven miles of electric lines in the Foothills area. This project involves installing substructure work, including boxes for electric and fiber lines; removing electric lines and fiber lines from poles; and installing pad-mount equipment where possible.

This iterative project consists of multiple phases and is expected to be complete in 2025. CPAU already installed two of four required substructures and is designing the next two. The actual undergrounding of lines is expected to begin mid-2023.

*Image is a high-level visual representation of the project area, timeline, and how many feet below the surface equipment will be placed.*

## ADDITIONAL MITIGATION ACTIVITIES

Activity	Description	Status	Projected completion date
Utilizing fiberglass	Some poles will remain in our high fire threat area once lines are all underground. We will use new fiberglass crossarms when replacement is needed to enhance resiliency.	CPAU engineering staff finalized the design and specifications for fiberglass crossarms and ordered the necessary materials. Shipping constraints delayed shipment; materials were received in the Spring of 2023.	2024
Fiber optic extension	Concurrently with the above project, we will design and install new fiber optic cable to enhance the communications capability in our high fire threat area.	Segments of underground communication conduit are being installed along with the electric substructure work, phase by phase. Two phases are complete with two more in development.	Summer 2025
Emergency generators	Installing emergency backup generators at the water pumping stations and wastewater lift station in our high fire threat area.	Staff is working on the requirements for each site. Staffing shortages have delayed this project.	2024/2025
Wood pole inspection	To ensure proper infrastructure maintenance, this project involves inspecting, testing,	This is a regular, reoccurring project.	June 2023

	treating, and reinforcing 700 wood utility poles through our territory.		
SCADA switch to facilitate deenergization	To facilitate the ability to quickly shut off power on the line serving our high fire threat area, CPAU staff will install a remotely operable switch, providing Electric Dispatch Operators at our Utility Control Center the capability to deenergize the line immediately.	We have selected the location of the remote switch and will install it while completing the above-mentioned undergrounding project	Early 2025
Outage Management System	To provide enhanced customer communication during outages, CPAU is updating our Outage Management System. The upgrades will provide additional functionalities, including the ability to notify customers and mobilize resources in response to outages and emergencies, send updates by email, text, and social media outlets, and improve customer service.	Implementation of the new System is underway.	August 2023

## **APPENDIX B: INDEPENDENT EVALUATOR REPORT**

---

See attachment B