# UTILITY WILDFIRE MITIGATION PLAN

(REVISED FOR CALENDAR YEAR 2021)


Healdsburg Electric Department

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# Executive Summary

Established in 1899, Healdsburg's electric department continues its historical trend of providing safe, reliable, and affordable electric service to Healdsburg's residents and businesses. Healdsburg's Electric Department is owned by the community of Healdsburg and governed by the City Council. This arrangement provides direct local control in the operation and management of the City's electric utility.

Wildfires continue to devastate the State or California and the areas surrounding Healdsburg are no exception to this. In 2020 both the Wallbridge and Glass fire burned significant areas in Sonoma County, reminding us of the continued need to prevent wildfire. Changes in our climate coupled with increased housing in and adjacent to wildland urban interfaces (WUI) require electric utilities to reassess and rethink past operational procedures and construction standards.

In response to the wildfires Senate Bill 901 (SB901), authored by Senator Dodd, was enacted in 2018. SB901 requires every electric utility to prepare a wildfire mitigation plan (WMP). SB901, in general, requires every publicly owned utility to construct, maintain, and operate its electrical facilities in a manner that reduces the risk of utility caused wildfires. Additionally, Assembly Bill 1054 (AB1054) by Assemblyman Holden amended SB901 with a requirement that every publicly owned utility must prepare and present a WMP to its governing body annually and file the plan with the newly created California Wildfire Safety Advisory Board. Per SB901, each WMP must include several key components that are key to reducing the risk of utility caused wildfires. The WMP must also include a plan to contact critical customers such as police, fire, hospitals, and communication service providers. The program must also re-evaluate past performance by measuring the performance of the plan measures, identifying, and correcting any deficiencies in the plan, and auditing implementation of the plan.

This document is the City of Healdsburg's wildfire mitigation plan in accordance with the requirements of SB901.

## Wildfire Policy Statement

It shall be the policy of the City of Healdsburg's Electric Department to construct, maintain, and operate electrical lines and equipment within high fire threat areas in a manner that reduces the risk of wildfire caused by electric utility equipment.

## Purpose of Wildfire Mitigation Plan

The City of Healdsburg's electric service area includes areas considered to be of a higher fire threat. In general, these areas include the City's Wildland Urban Interface (WUI) and are generally described as the areas around Fitch Mountain, the Healdsburg Ridge, and the northern most portions of the City's service territory. These areas were identified by staff and later confirmed by the City Council in 2017. The fire threat area covers roughly one-third of the City's entire service territory. Within this area, the City owns and operates roughly 14.5 miles of underground primary conductor and 7.5 miles of overhead primary conductor. Line protection devices (devices that interrupt power should a fault occur) in this area include two feeder breakers, three reclosers and numerous fuses.

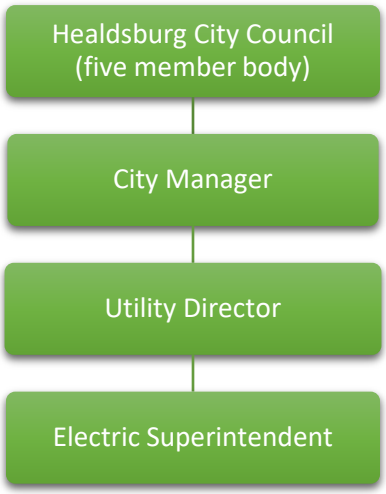
The City's Electric Department takes appropriate actions to help its customers prevent and respond to the increasing risk of wildfires. In its role as a public agency, Healdsburg closely coordinates with other local safety and emergency officials to help protect against fires and respond to emergencies. In its role as a utility, Healdsburg follows applicable design, construction, operation, and maintenance requirements to reduce risks associated with its electric system. This Wildfire Mitigation Plan describes the safety-related measures Healdsburg follows to reduce risk of wildfires. The WMP is not intended to be a final set of directions for the City's Utility Department staff. The intent of this document is to create an ever-improving framework for policies, procedures, and metrics that mitigate the risk of utility caused wildfires. Over time and as warranted utility practices, policies, and procedures will be reviewed, updated, and incorporated into this document with the goal of implementing effective and responsible wildfire mitigation measures.

## Wildfire Mitigation Plan Components (PRC Section 8387)

The City's wildfire mitigation plan is organized similar to the listed consideration of the California Public Resource Code (PRC) Section 8387 as modified by SB901 and AB1054. Each of SB901's areas of consideration are listed below and are used to develop key elements that frame the City's wildfire mitigation plan.

### Wildfire Mitigation Plan Areas of responsibility [PRC-8387 (b)(2)(A)]

The City's Electric Department is governed by Healdsburg's City Council, managed by the City Manager and Utility Director with day-to-day operations handled by the City's Electric Operations Superintendent.




The City Council is the governing body for Healdsburg's Electric Department and provides policy approval and oversight. The wildfire mitigation plan is implemented by the City's Electric Operations Superintendent with oversight provided by the Utility Director and City Manager. Due to the small size of Healdsburg's electric department, the Electric Operations Superintendent is responsible for the implementation of many aspects of the plan (inspections, tree trimming, SOPs, etc.).

### Objective of the Wildfire Mitigation Plan [PRC-8387 (b)(2)(B)]

The main objective of the Plan is to eliminate wildfires caused by electric utility equipment. To achieve this objective, various industry best practices, policies, procedures, and system improvements will be identified and implemented should they be applicable the community of Healdsburg and Healdsburg's electric distribution system.

A component of the Plan is to measure the effectiveness of specific wildfire mitigation strategies. Healdsburg's Electric Department staff will assess the merits of the Plan and modifications based

upon new information and applicable utility best practices. A key objective of the Plan is to identify cost-effective measures that produce the same or improved results.

## Overview of Preventative Strategies and Programs [PRC-8387 (b)(2)(C)]

New and existing strategies and programs for the Electric Department will be used to mitigate the risk and impact of utility caused wildfires. Primarily these programs rely on adequate staffing levels to perform prudent and timely maintenance. Strategies and programs are listed below and will be discussed further throughout this document.

**Vegetation Management –** The City's existing vegetation management program (tree trimming) exceeds the CPUC's requirements for vegetation clearance from electric powerlines. Through the Plan, the existing vegetation management program will be reassessed and enhanced where needed to further mitigate wildfire risk. The City's vegetation management program is discussed further within this document.

**Public Education and Notification –** Public education and notification are key components of the Plan. The Plan will identify how the City will inform and notify the public on the wildfire plan and prepare the public for potential de-energizations of portions or the entirety of the City's electric system.

**Situational Awareness –** Situational awareness allows City staff to be informed of the status of the City's electric infrastructure and weather conditions conducive to wildfires. City Staff will rely heavily on internet weather services and technology but not forego the value of field observation of the Electric Operations Superintendent, City staff, and Qualified Electrical Workers (QEW). In calendar year 2021, City staff will utilize recloser controls with remote indication and control to monitor system status and change protection settings as required by incoming weather events.

**Routine Inspections –** To ensure the City's electric system remains in good condition the City follows CPUC General Order 165. These routine inspections help assure that necessary repairs or replacements are identified and corrected in a timely manner. Needed repairs within the fire area will be prioritized and moved up in the Electric Department's work schedule. The Electric Department's Preventative Maintenance and Inspection Program guides in the assessment of the City electric facilities and will be continually reviewed and revised to incorporate utility best practices.

**Increased Wood Pole Strength Requirements** - At the time of reconstruction, the City constructs overhead facilities to meet or exceed CPUC General Order No. 95 (GO 95). Following or exceeding current GO 95 standards helps to assure that the City's facilities are safe and reliable. Specifically, the City increases pole strength requirements beyond those

required by CPUC's GO 95 safety factors. City staff have considered the use of steel poles; however, steel poles do not reduce the risk of wildfire and therefore do not meet the intent of this plan. Steel is also known to weaken when heated, reducing the poles strength when exposed to elevated heat associated with wildfire. The heating of steel poles not only weakens the pole but can also damage or remove corrosion inhibiting coatings. For these reasons, the City has not adopted the use of steel poles within the fire area. Instead, the City will continue to rely on increased vegetation clearances, increased pole strength, and a robust preventative maintenance program.

**Increased Overhead Conductor Spacing** - Overhead conductors can increase the risk of utility caused wildfire. To mitigate that risk, in 2018 Healdsburg staff spoke with a provider supplying covered overhead conductor to assess the value of installing covered conductor in areas of higher fire risk. In that review, the City found that covered conductors are heavier requiring stronger and larger diameter wood utility poles, are subject to the same preventative tree trimming/removal requirements, and that if tree wire falls to the ground line-protection devices may not trip (de-energize) the line in an expedient manner. As such, the City will continue its policy of increasing conductor spacing and increased tree trimming requirements beyond those required of GO95. Increased tree clearance and increasing the spacing between overhead wires is a best practice to reduce tree caused power outages. To further prevent wildfire and power outages the City uses covered jumpers, wildlife guards, and other protective coverings at equipment locations. These coverings minimize wildlife and tree caused outages at equipment locations.

**Planned Replacement of Expulsion Fuses** – The use of non-expulsion fuses can reduce the risk of utility caused wildfire by significantly reducing sparks created when a fuse operates (blows). City staff have reviewed various non-expulsion fuses approved by CalFire and have selected two products that works well with the City's electric infrastructure. Ahead of the 2021 fire season electric staff plan to replace existing expulsion fuses within the fire area with non-expulsion fuses to reduce the risk of wildfire. New construction within the fire threat area will use non-expulsion fuses.

**Elimination of Split Bolt Connectors** – The use of split bolt connectors creates system reliability issues and can be an ignition source for wildfires. To mitigate this risk, the City has prohibited the use of split bolt connectors throughout the City's electric system and actively removed split bolt connectors found within high fire threat areas.

**Removal of Lightning Arrestors** – Lightning arrestors are used to limit the damage caused by lightning strikes to or near utility equipment. While a lightning arrestor can protect a line many times over, in some cases a lightning arrestor will catastrophically fail emitting sparks. To limit the risk of these sparks igniting a wildfire, the City has identified a CAL FIRE approved lighting arrestor that may be used within high fire treat areas. Lighting arrestors within the high fire threat areas will be replaced prior to the July 1, 2021.

**Operational Procedures** - The safe operation of the City's electric system helps lessen the risk of utility caused wildfires. As a standard practice, the City adjusts system protection settings during red-flag warnings and is researching additional field practices (vegetation management, disabling of recloser, patrols, staffing) to lessen the risk of wildfire. During red-flag warnings the City will revise existing work practices to further reduce the risk of wildfire. These practices are center on limitations of work during weather conditions conducive to wildfire but include other preventive measures such as increased inspections.

**Capital Improvements / System Hardening –** As identified by the Utility Director and department staff, Capital improvements will be recommended through the City's 5-year Capital Improvement Program (CIP) and other budgeting processes. Recommendations for system improvements will be based upon their ability to reduce wildfire risk and cost-effectiveness. In fiscal year 2020 the Electric Department reconstructed an overhead line within the Tier 2 area and worked to develop replace recloser controls for the City electric distribution system. The reconstruction increased the spacing of conductors and increase the strength of the overhead line by replacing the existing copper conductor with aluminum conductor with a steel core. The new recloser controls improve system protection, situational awareness, and speed Electric Staff's ability to de-energize lines should that be required.

**Staffing & Staff Training –** The City will not be able to reduce the risk of wildfire without staff. Further, electric department staffing must be maintained at appropriate levels with training to maintain staff knowledge and preparedness. This may include cross training to build redundancies within the department and from time-to-time succession planning for known and pending retirements. Additionally, short briefings (tailboards) will be had with staff ahead of weather events with a combination of conditions that favor the rapid spread of wildfire.

**Wildfire Preparedness, Response, and Recovery –** To minimize the chaotic nature typical of any emergency, this plan outlines necessary steps to prepare, respond, and recover from a wildfire affecting the City's electric system. Throughout the year these procedures will be reviewed and revised as needed to improve the City's Wildfire Mitigation Plan and ability to reduce the risk of wildfire.

## Key Performance Metrics [PRC-8387 (b)(2)(D)]

The purpose of the Plan is to reduce wildfire caused by utility equipment and the incident rate of utility caused wildfires as a primary metric. However other metrics exists to determine if the risk of wildfire mitigation is being reduced. Five primary metrics are identified below and will be used to measure the effectiveness of the City's wildfire mitigation efforts.

**Metric 1: Ignitions caused by Utility Equipment**

This metric will be tracked by City staff and reported annually. For the purposes of this plan and the annual reporting, an ignition caused by City owned utility equipment and includes a sustained ground fire of combustible vegetation. To be tracked by the City, staff must have

knowledge of the ignition and will track (at a minimum) the date, time, location, and equipment involved for each ignition.

**Metric 2: Inspection Records & Maintenance**
System inspections and timely maintenance is one of the leading methods to improve safety and system reliability. Inspections of overhead lines in the fire threat areas will begin in the spring of each year. Needed maintenance or repairs identified during these inspections will be tracked and given priority in the work schedule with higher priority repairs moved up in the Electric Department's work schedule. Each identified maintenance task or repair will be reported annually.

**Metric 3: Vegetation Maintenance**
Throughout the year, the City maintains proper vegetation clearance from utility lines by contract with a qualified high-voltage tree trimmer and at times augments this work with City staff. Under the terms of the contract, the contractor is required to report their work plan to the City and ensure that proper vegetation clearance from powerlines is met. Vegetation management performed within the high fire threat areas will be tracked throughout the year and reported annually.

**Metric 4: Overhead Equipment Failures**
Failure of overhead electric utility equipment can be a source of wildfire ignitions. Therefore, the rate of failures of overhead electric equipment, within the high fire threat areas, will be tracked and reported on an annual basis. Any patterns that emerge will be used to proactively replace utility owned equipment.

**Metric 5: Outage Response Time**
Utility response time to power-outages and other service-calls is a measurable metric that indicates the City's ability to mitigating unsafe conditions related to electric utility equipment. To track and gauge response time, staff's after-hours response time to power-outages or City owned equipment failures will be recorded throughout the year. Staff response time, from first call to the time they arrive on site, will be tracked for every confirmed power-outage, and reported annually.

## Previous metrics related to wildfire [PRC-8387 (b)(2)(E)]

SB901 requires consideration of how previous versions of the WMP's metric have informed the current WMP. The 2020 WMP was the first version and a short summary of the previously discussed metrics follows.

**Metric 1 Ignition Caused by Utility Equipment:** During the 2020 wildfire season there were no known ignitions caused by City owned utility equipment. The intent of this metric is review and investigate equipment that due to its design, age, construction, or condition should be

replaced to reduce the risk of wildfire. Even thought there were no incidents of ignition this is still a good metric to track with future versions of the WMP.

**Metric 2 Inspection Records & Maintenance:** To prepare for the wildfire season Electric Department staff completed several different inspections in the months of April and May of 2020. These inspections include visual and intrusive inspections of existing facilities as well as inspections of vegetation clearance from overhead powerlines. The table below provides a summary of the inspections completed during 2020.

| Type of Inspection (Fire Area) | Grids Due | Grids Complete |
|---|---|---|
| Overhead Visual Inspections | 56 | 56 |
| Overhead Detailed Inspections | 8 | 8 |
| Vegetation Clearance | 56 | 56 |
| Wood Pole Intrusive Inspections | 3 | 3 |

From the inspections, maintenance tags were created for any issues found. During the inspections 17 tags were created with issues ranging from ranged minor issues such as missing or broken street-light moldings to needed pole replacements. All grade-two and grade-three tags were completed within one to three months of the inspections. There were no grade-one (immediate repair) tags issued during the 2020 inspections.

In 2020 the City also completed the North Fitch Mountain Reconductor project. This project replaced several poles with taller and stronger poles, replaced aging copper conductor with strong steel reinforced aluminum conductors, and increase spacing between the overhead conductors. This work was targeted fire mitigation work funded through the Electric Department's capital replacement program.

**Metric 3: Vegetation Maintenance: T**he City's standard is to maintain vegetation clearance throughout the year, trimming within the fire area happens continuously. Therefore, inspections are also performed on a frequent basis throughout the year. This year's contract period ended June 30, 2020. At that time vegetation was confirmed to have the required clearance.

Additionally, in 2020, the City had its high-voltage vegetation contractor remove several hazard-trees within the fire area. Hazard-trees are trees that show signs of either disease or decay and are at risk of falling into powerlines. This work was completed June 8 and June 11 of 2020 and helped to reduce the risk of wildfire.

**Metric 4: Overhead Equipment Failures:** No overhead equipment failures within the fire area were experienced during the 2020 calendar year.

**Metric 5: Outage Response Time:** Response time to outages ranged from seventeen minutes to sixty minutes with an average response time of forty-one minutes. The range of response time is due to mix of outage occurring during the daytime when electric crews are within the City and outages that occur afterhours when electric crews must respond from home.

## Disabling Reclosers & De-Energization [PRC-8387 (b)(2)(F)]

As a key component of the WMP, reclosing of circuit breakers and line reclosers serving high fire threat areas will be disabled when the National Weather Service issues red-flag warnings affecting any portion of the City electric service territory. Additionally, during Red-Flag warnings the City will implement recloser settings that shorten the time a fault will exist. In general, these settings include lowering instantaneous trip settings and improving the detection of ground faults. These settings are planned to be implemented in the first half of 2021.

For public safety, City staff may de-energize all or portions of the City's electric distribution system. De-energization of City facilities may occur due to one or more of the following conditions.

1) Upon the request of Healdsburg's Fire Department, Healdsburg's Police Department, CAL-FIRE or other State or local public safety agencies.
2) When energized powerlines subject to high winds or other weather or atmospheric conditions may create a substantial public safety risk.
3) When real-time information from qualified City field staff indicates that wind driven vegetation or other combustible debris are threatening City owned electric utility equipment.
4) When PG&E de-energizes the City's transmission source. The City has no control over PG&E's decision to de-energize the Healdsburg's transmission source.

As time permits, de-energization of City operated high-voltage powerlines will be coordinated between the City Manager's Office, Electric Department, and City Public Safety Departments. The decision to de-energize City owned powerlines will be communicated to the City Manager's office as soon as practical.

## Customer Notification Procedures [PRC-8387 (b)(2)(G)]

Customer notification is an important component and consideration of the Wildfire Mitigation Plan. The City's customer notification procedures start with customer education and continues with relevant updates when weather conditions are conducive to wildfires. Customer education will be predominantly through printed material, social media, and the City's webpage. Real-time communications leading up to and during a potential de-energization event will be predominately through social media and other technology resources immediately available to City staff.

Leading up to and during an event, City staff will coordinate customer notifications through the City Manager's office, City Emergency Operations Center (EOC), or other means available to City staff at the time of the event. The City Manager, as EOC Director, or the EOC Coordinator (Fire or Police Chief) may activate the City's Emergency Operations Plan. To provide the fastest means of notifying electric customers the City will rely on automated phone calls and social media. Social media and automated alerts may include NIXLE, Facebook, and/or Nextdoor.

The City will make efforts to communicate with critical facility operators, such as hospitals, emergency centers, fire departments, water plants, water utilities/agencies, schools, and telecommunications providers before, during, and after any PSPS effecting their City supplied electric service. Communication with critical facilities will be primarily through automated phone call but operators of these critical facilities will also be encouraged to monitor the City's Facebook page and signup for automated emergency alerts such as NIXLE.

City staff will continue to reach out to the community on an ongoing basis regarding the risks of wildfire. This will include the encouragement of City electric customers, first responders, and operators of critical facilities to updating their contact information such that the City can reach them should a de-energization need to occur.

## Vegetation Management Program [PRC-8387 (b)(2)(H)]

To reduce power outages, promote safety and comply with required clearance the City contracts with a qualified vegetation management contractor to maintain tree and vegetation clearance from energized overhead conductors. The City's clearance requirements, which exceed the requirements of GO-95, apply throughout the City not just within the high-fire risk areas. Contractors are, in general, required to meet the City's tree clearance requirements as summarized below. Appendix D includes the City's specification for electric line clearance services (tree trimming).

- Primary (12,000 volts) - trim to 7-feet and maintain no less than 4-feet of clearance during the contract period.
- Secondary (480 volts and below) - trim to 3-feet and maintain no less than 1 foot of clearance during the contract period. (pole to pole configuration).
- Service drop - maintain 6-inches during contract period (pole to customer weather head).
- Poles and Streetlights - trim a 3-foot radius around entire length of poles and streetlights during contract period (excluding customer poles).
- Guy Wires - trim to 3 feet and maintain no less than 1 foot of clearance during the contract period. (pole to pole configuration).
- Substation – 3-feet clearance from outside of wall from ground level to top of tree.

Through the contract period, the City's contractor is to prune and remove vegetation hazards. This includes removal of dead branches overhanging primary conductors shall be removed. Portions of dead, old decadent, rotten trees, or portions of trees weakened by decay or disease that may contact the line from the side or fall on the line, must be trimmed to eliminate the hazard.

Due to the nature of the City's electric system, mowing or other means of ground vegetation management are not required.

## Wildfire Inspection Program [PRC-8387 (b)(2)(I)]

Starting each year in the month of May, a qualified City employee shall perform a visual patrol of all overhead supply wires within the high-fire threat areas (Tier 2 or 3). This patrol shall review specific items related to wildfire mitigation such as;

- Proper vegetation clearance from primary and secondary wires
- Condition of wood poles, cross-arms, and other support structures
- Review and prioritize pending maintenance tags within the high-fire threat areas.

Before and after a Red-Flag Warning covering a portion of the City's service territory, a visual patrol of aerial primary and secondary conductors within the Tier 2 areas will be performed. This patrol is intended to identify vegetation clearance and/or equipment issues that can be quickly corrected. The patrol following the Red-Flag event will document, by photo, any fallen vegetation, damaged facilities, or other potential causes of power outages.

The findings of these patrols will be recorded and reviewed by the Utility Director and Electric Superintendent. The Utility Director and Superintendent will review the patrol results to determine the systems performance during an event (outages, vegetation, damaged facilities). The intent of these patrols and data collection is to better predict system performance under specific or known weather events. In future years, the frequency of these patrols may be changed.

## Wildfire Risks [PRC-8387 (b)(2)(J)]

This section of the plan identifies, describes, and prioritizes wildfire risks and drivers found within the City's service territory. The identified risks are separated into two categories; i) risks associated with design, construction, operation, and maintenance of the City's electrical equipment and facilities and ii) risks associated with topographic and climatological factors within the City's service territory.

i. Risk associated with the design, construction, operation, and maintenance of the City's electric system include the following (listed in order of priority).
    1) Vegetation near or adjacent to the City electric lines presents the highest risk for utility caused wildfires. Mitigation of this risk it done through the routine and thorough performance of tree trimming to provide adequate clearance from power lines. As detailed in Appendix D, the City's high-voltage vegetation management program exceeds the requirements of the CPUC's GO 95 by increasing vegetation clearance for both high-voltage and low-voltage utility lines. Over the next 12 months, the City will evaluate the need to limit trimming within the fire area during the fire season or at times of elevated fire risk.
    2) Overhead Utility Equipment presents a risk of utility wildfire but can be mitigated through design standards, alternate equipment, and adjusted work practices. To mitigate the risk of utility caused wildfire, the City will enact the strategies discussed early within the plan. These strategies will be reviewed annually for their effectiveness in reducing the risk of wildfire.
    3) Reclosing or the automatic testing of faulted powerlines can increase the risk of utility caused wildfires. To lessen this risk, the City initiated the practice of

disabling reclosing during red-flag warnings affecting the City's service territory.

4) Certain work practices or operations can increase the risk of utility caused wildfire. As discussed earlier, the City plans to update and revise the current Preventative Maintenance & Inspection Program before the end of 2020. To reduce the risk of wildfire Staff plans to incorporate operational procedures to limit work activities during weather conducive to wildfire, to clarify inspection practices within the fire-threat areas and revise other work procedures, as necessary.

ii. Topographic and climatological risks include the following (listed in order of priority).

a) Volume of vegetation (fuels) present in high-fire threat areas increases the risk and speed of which wildfire can spread. Increasing vegetation clearance from overhead lines lowers the risk of wildfire. Additionally, the City's active and ongoing weed abatement program reduces the amount of fuels within the fire area and Urban Wildland Interface (WUI) further reducing the risk of wildfire.

b) Periods of significantly low humidity can dry vegetative fuels and create an increased risk of ignition. The City will monitor the National Weather Service alerts related to fire warnings and/or red-flag days affecting the City's service territory to remain aware of the elevated risks.

c) High sustained winds and strong wind gusts can down trees, break branches, or damage utility equipment. The City will monitor the National Weather Service for high-wind warnings, watches, and/or advisory affecting the City's service territory to remain aware of these events. Increasing vegetation clearance, weed abatement programs, and exceeding GO 95 design standards reduces the risk of wildfire caused by these events.

d) Extended droughts or continued periods of below average rainfall can increase dry vegetative fuel loads lending to the increase in wildfire risk. Prolonged droughts can also weaken or kill trees. The City's vegetation management program requires the identification and removal of diseased, dying, or hazard trees adjacent to the City's electrical lines. Routine visual inspections allow the City to remain aware of this risk factor. Steep terrain and areas difficult to access are present within the High Fire Threat Area in the City's service territory. Steep terrain can increase the speed and spread of wildfire and limit access delaying response times of local firefighting agencies. While the terrain and access cannot be changed by the Electric Department, prudent utility operations within the fire area can reduce the likelihood of wildfires caused by utility equipment.

e) Housing and community activities within wildland urban interfaces (WUI) can increase the risk of wildfire. The City has zoning and land use policies that help to mitigate the risk of wildfire associated with activities in the WUI. Additionally, the City manages an aggressive weed abatement program to reduce wildfire risks.

f) Wildfire history within and adjacent to the City's electric service area, shown in Appendix B, are indicators of the risk of wildfire. In review of historical wildfires, the City can confirm that Tier 2 areas covering the City's service area are in fact at higher risk of wildfire.

## Identification of Areas of Higher Risk [PRC-8387 (b)(2)(K)]

In 2017, Healdsburg's City Council directed City staff to submit to the CPUC updates to the City service territory that defined high-fire threat areas (Tier 2). The area defined closely aligned with the City's defined Wildland Urban Interface (WUI) and contain areas of improved property and structures adjacent to wildland vegetation (fuels) with potentially delayed or restricted fire response due to narrow and windy roads and steep terrain. These areas were defined as Tier 2 and provided to the CPUC's fire mapping process.

In working with the CPUC mapping team, the area was further refined and is shown in Appendix A. In accordance with this map, the City operates and maintains electric facilities within these area in a manner appropriate for high-fire threat areas. HED does not recommend any further changes to the High Fire Threat Areas affecting the City at this time.

## Methodology for Identifying Enterprise-Wide Safety and Wildfire Risks [PRC-8387 (b)(2)(L)]

To determine the level of risk to the City's electric system and service territory, City staff review historic outages within the wildland urban interface and their associated causes as a way to assess wildfire risk. Outages that have the potential for causing wildfires are noted and reviewed for potential corrective actions. On a rolling four-year window, the number of sustained outages is tracked to establish trends.

To assess the risk of wildfire throughout the City's service territory and adjacent areas, City staff reviewed historical fires as well as vegetation and terrain surrounding the City. This annual review helps to confirm the need for wildfire mitigation as well as identify areas of potential threat to the City's infrastructure.

## Process for restoring power after de-energization [PRC-8387 (b)(2)(M)]

Should the City proactively de-energize powerlines or the City loses its transmission source from PG&E due to a Public Safety Power Shutoff (PSPS) to mitigate the risk of wildfire, the lines will be re-energized in the following manner.

1) Overhead facilities in high fire threat areas must be patrolled and visually found to be clear of trouble, damage, or vegetation before re-energizing facilities by a qualified electrical worker.
2) If damaged facilities are found, those facilities will be isolated such that sections of overhead lines not damaged can be re-energized restoring power to customers. To the

extent additional resources are needed to repair the damage, the City will leverage mutual aid agencies and contractors to obtain material and qualified personnel.

3) Any damaged facilities or vegetation issues will be documented and photographed before being repaired or cleared.
4) Repairs to damaged facilities will be performed consistent with City and utility design standards and then re-energized.

## Wildfire Process & Procedure [PRC-8387 (b)(2)(N)]

i) The Plan's oversight, monitoring, and auditing will occur at least annually with any lessons learned being prioritized for incorporation into the plan, related standards, and procedures. The City's Utility Director will collect the results of oversight and monitoring of the program. This may include the use of qualified external stakeholders and consultants. As required and necessary, City staff will present this plan to the City Council for their consideration and action.

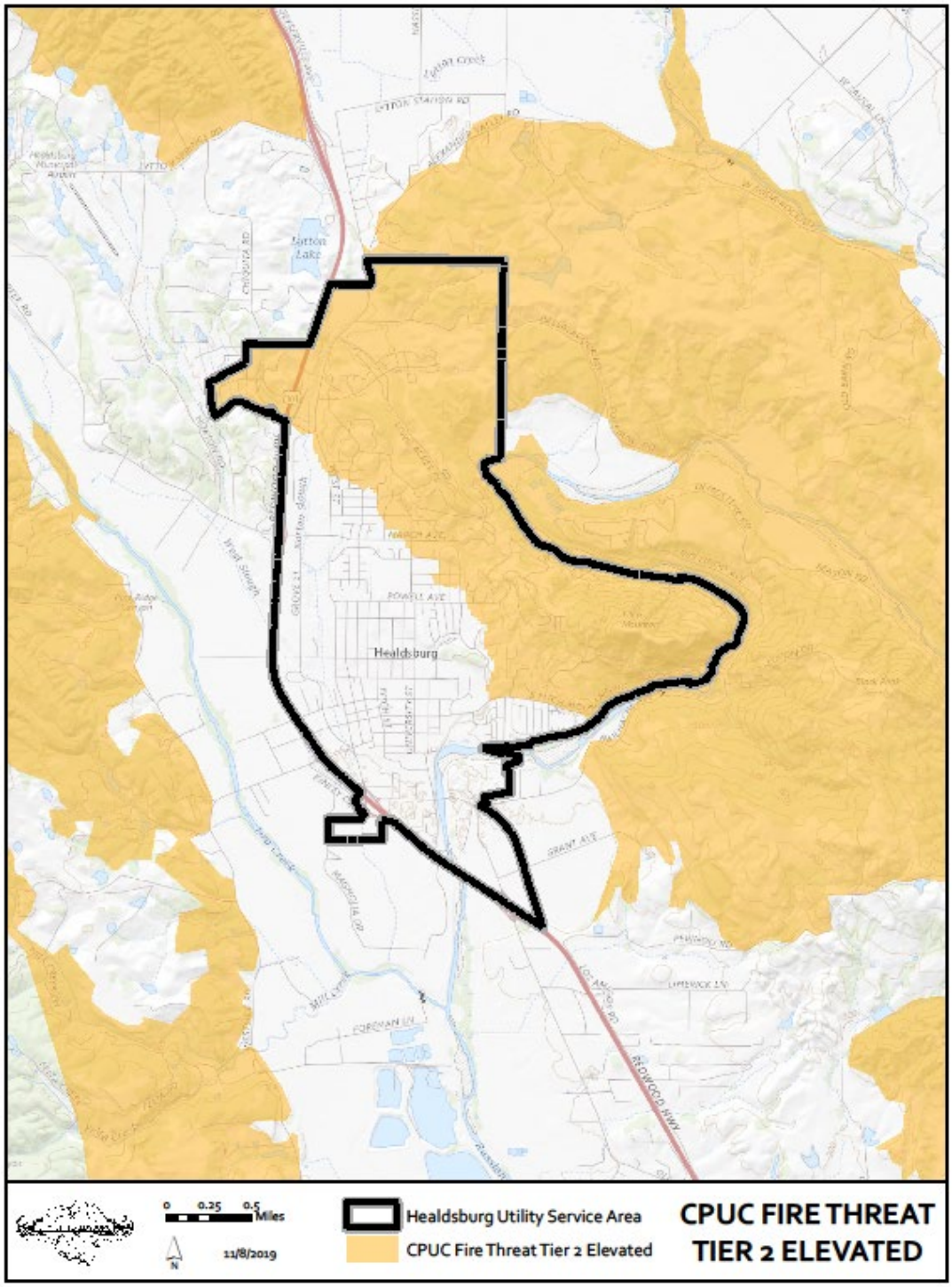
ii) The identification of deficiencies and areas of improvement will be noted through the annual auditing process or as issues are identified. City Staff may implement deficiency mitigation, remediation, and/or improvements at any time in a continued effort to mitigate wildfires.

iii) Quality control of inspections (line, equipment, & tree), construction standards, and operating procedures will be the responsibility of the City's Electric Superintendent. Through the scheduling of inspections, review of inspections performed, and the completion of any maintenance work found, the Electric Superintendent shall track and record the effectiveness of operations and maintenance staff.

iv) City staff will continue to review and consider new utility equipment meant to reduce the risk of wildfire. Equipment will be reviewed for the effectiveness and applicability to the City's electric system including the evaluation of non-expulsion fuses, tree-wire, the use of lightning arrestors, and other equipment.

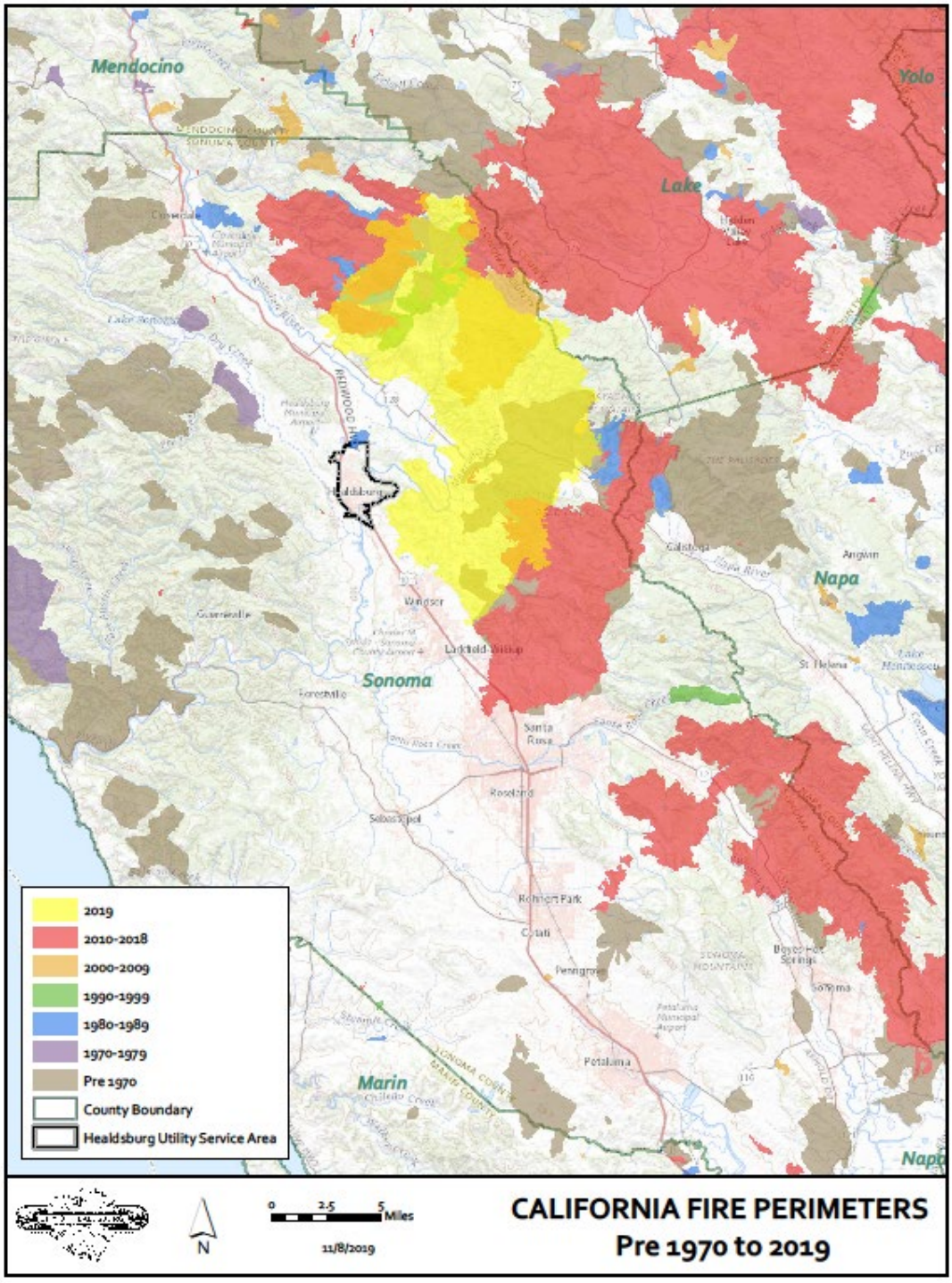
v) As needed, but at least every five-years, City staff will review system protection settings to ensure proper coordination and possible improvements to reduce the risk of wildfire mitigation. Coordination of protection devices is necessary to ensure system faults are cleared in a proper and expedient manner.

# APPENDIX A – HIGHER FIRE THREAT AREAS WITHIN HEALDSBURG'S SERVICE TERRITORY



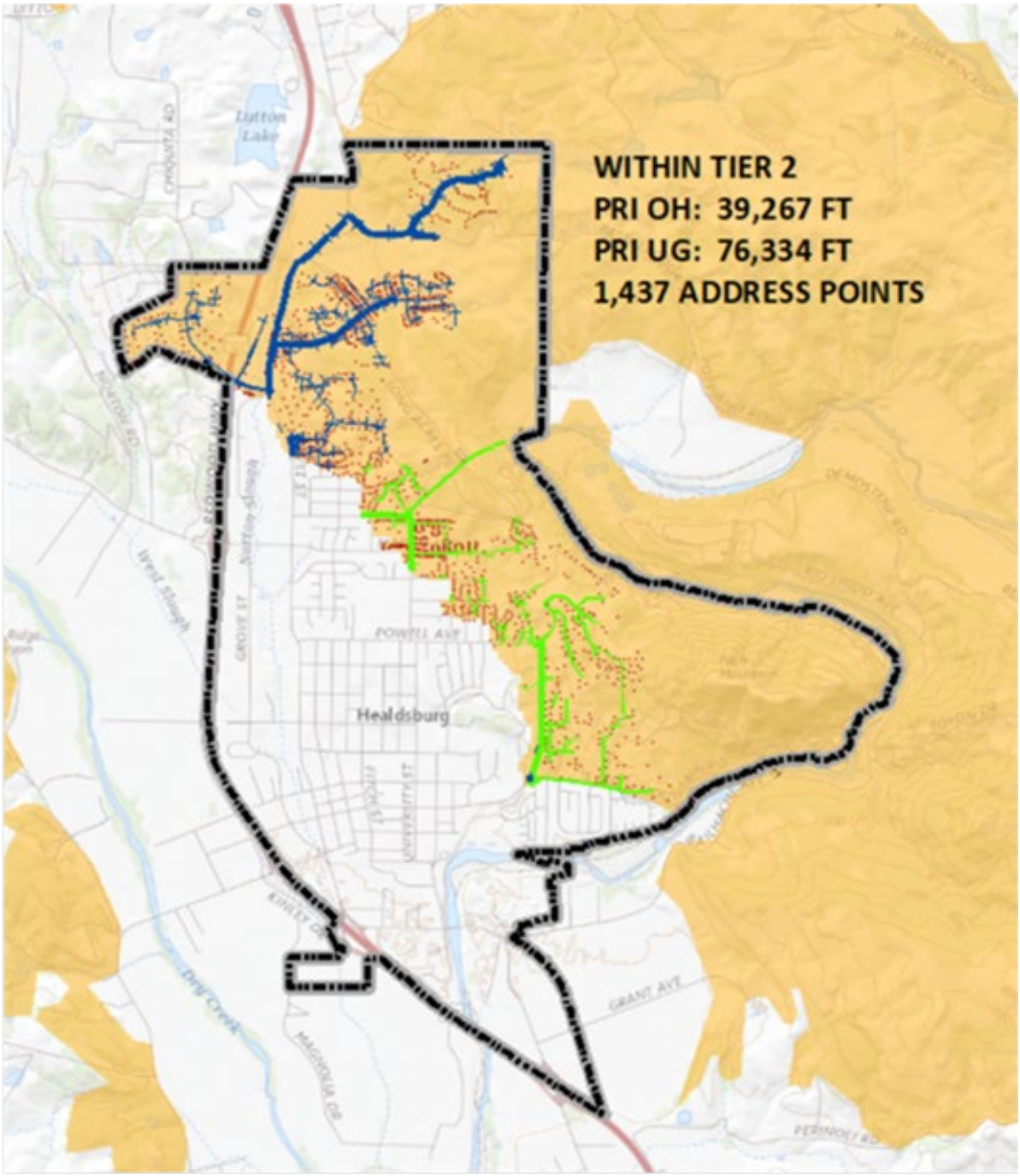

*The above graphic shows the CPUC fire threat areas that affect the City of Healdsburg's Service territory.*

# APPENDIX B – LOCAL WILDFIRE HISTORY




*The above graphic shows historical wildfires in and around the City of Healdsburg. These historical fires help inform the City of the risk of wildfire. This graphic does not include the recent Walbridge Fire and Glass Fire.*

# APPENDIX C – DISTRIBUTION LINES WITHIN FIRE THREAT AREAS




*The above image approximates the footage of over-head and underground high-voltage distribution line within the Tier 2 area. Of the City's roughly 60 miles of distribution line, 30 are overhead. Of the 30 miles of overhead only 7.5 miles or 25% are within the Tier 2 area.*

# TECHNICAL SPECIFICATIONS

# for

# ELECTRIC LINE CLEARANCE SERVICES

**TERMS AND DEFINITIONS**

Terms

1-la The terms "CITY" or "CITY REPRESENTATIVE" or “SUPERINTENDENT” as used

herein shall be considered synonymous and refer to the City of Healdsburg and its employees or duly authorized agents. They are treated throughout the Contract Documents as if they were singular in number and masculine gender.

1-lb The term "CONTRACTOR" and "BIDDER" used in this specification shall be considered synonymous and refers to the corporation, company, partnership, firm, or individual who has entered into a Contract for the performance of the Work specified herein.

Definitions

1-2a BIDDER: Any individual, firm, partnership, corporation, or combination thereof, submitting a Bid for the Work, acting directly or through a duly authorized representative.

1-2b CONTRACT: The written agreement covering the Work between the City and Contractor.

1-2c DAYS: The term days shall mean **consecutive calendar day(s)** unless otherwise specified.

1-2d PROPOSAL: The offer or proposal of the Bidder submitted on the prescribed Bid Proposal form setting forth the price(s) for the Work and the additional required information.

1-2e SPECIFICATION: These are project specific specifications and supplement the General Conditions required to complete the Work.

**TECHNICAL SPECIFICATIONS**

General

3-1a Contractor shall establish a field office or marshaling area as a base for daily operations. The Contractor shall keep the City Representative informed in writing as to the name, local address, and telephone number of the Contractor's representative(s) who will be responsible and available outside normal working hours for emergency tree trimming or removal, repairs, cleanup, or the maintenance of traffic control devices.

3-1b The Contractor shall provide the original copy of the City provided Grid Maps when they are complete to the City Representative. See section 3-14 of the Technical requirements.

3-2 Permits and Licenses

The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the Work.

3-3 Equipment and Equipment Operation

In general, standard tree-pruning equipment shall always be operated and maintained in a satisfactory condition and in compliance with state and federal/OSHA regulations. The City will not loan equipment to the Contractor.

3-4 Tools

3-4a Each crew shall, in addition to having the required vehicle and chipper, have all the necessary small tools, climbing lines, rigging, ropes, and lines to efficiently and safely complete routine pruning and removal of trees, including but not restricted to, pole pruners, hand pruners, axes, safety saddles, hand saws, tree climbers, and a leaf blower. The City will not loan tools to the Contractor. The City Representative may suspend the Work where he observes that proper tools and equipment are not being used or used properly to perform the Work.

3-4b Each truck-mounted aerial device crew shall have, in addition to those tools itemized in the above paragraph:

1 - Hydraulic Pruner

1 - Hydraulic Saw

1 - Gas-Powered Chain Saw

3-5 Notification of Property Owners

3-5a The Contractor shall notify and obtain permission by a property owner or resident a minimum of twenty-four (24) hours prior to any scheduled line clearance tree work. The City of Healdsburg will provide paper “Door Hangers” for the Contractors use in order to officially notify customers of impending work. Contractor shall be responsible for proper distribution of said “Door Hangers”. If the Contractor cannot obtain permission to perform the necessary work, the City Representative will assist in notifying the property owner.

3-5b If a property Owner or resident objects to tree pruning or other tree-care work, the contractor may be required to delay pruning until the objection is resolved. If the objection to pruning occurs while work is in progress, the Contractor shall immediately stop work on the tree or trees in question and immediately notify the City Representative. Work shall not resume at the location of the objection until authorized by the City Representative.

3-5c The City shall not be liable for any expense to the Contractor arising from work delayed by a property owner or occupant's objections to tree trimming.

Safety Standards

3-6a All current federal, state, and local electric line clearance tree trimming, aerial device, and vehicle traffic safety orders shall be adhered to. All employees and equipment working within the ten (10) foot proximity of energized conductors in excess of 300 volts shall be qualified line clearance tree trimmers or qualified line clearance tree trimmer trainees using appropriate tools and equipment. Qualified line clearance tree trimmers and qualified line clearance tree trimmer trainees shall be as defined in Title 8 of the California Electrical Safety Orders.

3-6b The Contractor shall always use EXTREME CAUTION to ensure safe distance/working space from energized above and below ground high-voltage equipment and lines near the area of work.

**The Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons (including his employees), traffic control, work conditions and property during performance of the Work and until acceptance by the City.** Safety provisions shall conform to all applicable federal, state, county, and local laws, ordinances, codes, the requirements set forth in this specification, and any regulations that may be detailed in other parts of these Contract Documents. Where any of these are in conflict, the more stringent requirement shall be followed. The Contractor's failure to be thoroughly familiarized with the aforementioned safety provisions shall not relieve the Contractor from compliance with the obligations and penalties resulting therefrom.

3-6c Contractor shall have established and maintain an Injury and Illness Prevention Program (IIPP) pursuant to Title 8, Section 3203 of the California Administrative Code. Such program shall include, but not be limited to, a safety training program instructing Contractor's employees in general safe work practices and shall include specific instructions with regard to hazards unique to the employee's job assignment. Contractor shall schedule periodic inspections to identify and correct unsafe conditions and

work practices. A copy of this program must be made available on site to the City of Healdsburg upon request.

3-7 De-energizing Conductors

Whenever it is determined that an electrical hazard exists in a tree that has to be climbed and this hazard cannot be cleared from the ground with a non-conductive pole pruner or pole saw, then the Contractor shall request that the circuit be de-energized and grounded for the length of time required to clear the tree or trees from the conductors. If the electrical hazard is an emergency (potential for personnel injury, property damage or conductor damage), then the circuit will be de-energized as soon as possible. If not, the City requires a seventy-two (72) hour notification period to notify the residents of the planned outage.

3-8 Public Convenience and Safety

3-8a The Contractor shall so conduct his operations in a manner to cause the least possible obstructions and inconvenience to public traffic. The Contractor shall comply with all City, County, and State requirements for traffic control. Traffic control measures shall be in conformance with the California Manual on Uniform Traffic Control Devices for Construction and Maintenance Work Zones.

3-8b Contractor shall provide informational work, traffic, and other signing as required to adequately warn pedestrian and vehicular traffic of the Work in progress. The Contractor may be required to direct pedestrians and traffic around the work area with the use of cones, delineators, and/or flaggers.

3-8c At the end of each day's work and at other times when tree-pruning operations are suspended for any reason, the Contractor shall remove all equipment and other obstructions from that portion of the roadway and/or sidewalk open for use by public traffic and pedestrians.

3-9 Priority of Pruning

The Contractor will give first priority to trees in contact with 12,000-volt lines when scheduling work throughout the Contract period. The City will provide a list of locations where trees are in contact with 12,000-volt lines whenever the City is aware of such conditions. All electric line clearing locations shall be processed in the order they are scheduled. The City Representative must approve any deviation from this schedule.

3-10 Type of Pruning

3-10a **Natural pruning techniques:** Pruning techniques recommended by the International Society of Arboriculture (ISA) shall be utilized. Care shall be taken to avoid practices that can cause severe damage or injury to the tree. Practices such as flush cutting, stubbing, or cuts that damage the branch bark ridge or collar are prohibited. When cutting back to a lateral (side) branch, that branch should be at least one-third (1/3) of the diameter of the limb that was removed.

3-10b **Pruning:** All trees are to be pruned so as to obtain the minimum clearance requirements from all electric conductors owned by the City of Healdsburg as set forth in the Table of Required Minimum

Clearances. Dead branches overhanging primary conductors shall be removed. Portions of dead, old decadent, or rotten trees or portions of trees weakened by decay or disease that may contact the line from the side or fall on the line, must be trimmed to eliminate the hazard. Extreme care shall be taken while working around energized conductors. The Contractor's Field Supervisor on the job shall analyze the Work and bring to the attention of the City Representative any potential safety hazards.

3-10c **Directional Pruning:** Trees and vegetation that require trimming to provide acceptable clearance shall be pruned in accordance to generally accepted practices of the International Society of Arboriculture (ISA). These methods may include Natural Pruning, Drop-Crotching, V-Notching, and/or Through Pruning to promote growth away from the lines.

3-10d **Side Prunes and Slope Backs:** Where line-clearance pruning adversely alters the shape of a tree, additional pruning shall be done to give the tree satisfactory shape and appearance. Whenever possible, slope back a high side prune to prevent the wall effect that is an unsightly style of pruning and increases the chances of limb failure.

3-11 Table of Required Minimum Clearances

3-11a The following are required clearances between trees and power lines when line clearance tree pruning is being performed:

Primary 12,000 volts ….. trim to 7 feet and maintain no less than 4 feet of clearance during the contract period

Secondary 120/240 volts ..... trim to 3 feet and maintain no less than 1 foot of clearance during the contract period. (pole to pole configuration)

Service drop 120/240 volts ..... maintain 6” during contract period. (pole to customer weather head) - see note below.

Poles and Streetlights trim a 3-foot radius around entire length of poles and streetlights during contract period (excluding customer poles)

Guy Wires ..... trim to 3 feet and maintain no less than 1 foot of clearance during the contract period. (pole to pole configuration)

Substation …… 3 feet clearance from outside of wall from ground level to top of tree

***Note**: Provide minimum pruning where service conductor shows strain or evidence of abrasion from tree contact. Any evidence of abrasion shall be reported to the City Representative. In instances where large branches or tree trunks are involved, the Contractor shall notify the City Representative for possible rerouting of service drop(s) or installation of tree guard(s) by City crews.*

3-11b While obtaining minimum clearance, consideration shall be given to conductor sag due to changes in temperature. **In any event, assume two (2) feet of additional sag for 12kV circuits.** This additional clearance must be added to the applicable Section 3-11a clearances.

3-11c Where conditions exist that prohibit the Contractor from obtaining the required minimum clearances (i.e., to comply with state or local ordinances, for designated heritage trees, for major trunks

or leads), clearance may be reduced, where agreed to by the City Representative to comply with an ordinance or other required specifications.

3-12 Removal of Brush, Debris, and Wood

All tree pruning and debris resulting from tree-care work shall be promptly removed from the Work site and properly and legally disposed of at the expense of the Contractor.

3-13 Final Cleanup

The Contractor's Work shall be performed in an environmentally responsible manner. Precautions shall be taken to prevent damage or injury to any adjacent trees or other plant life that are not a part of this Contract, to any other personal or real property, and to any person or animal. Any damage to property that can be repaired shall be repaired by the Contractor to the satisfaction of the City Representative. Damage to property that cannot be repaired to the satisfaction of the City Representative will result in damaged property being replaced at the Contractor's sole expense, prior to final payment to the Contractor by the City. Any expenses incurred by the City to repair damage will be deducted from the Contractor's final payment. Upon completion of tree pruning or other tree-care work of a separate tree or a group of trees, the area shall be cleaned to a condition at least equal to that, which existed when work was started. Final cleanup of the Work area shall be satisfactory to the City Representative and affected property owner(s).

3-14 Weekly Reporting Requirements

The Contractor shall fill out all necessary information on each Grid Map. The individual Grid Map sheets shall be used during patrols and identify all lines that do and do not require trimming. Lines that do not require trimming shall be highlighted green. Lines that require trimming shall be clearly marked (highlighted) designating primary or secondary. Primary lines shall be highlighted pink and secondary/service lines shall be highlighted blue. Lines that require trimming shall have the date and tree type clearly marked on the map in the area the trimming was performed. This information shall be filled out no later than the completion of the work within the grid area. This is necessary to ensure an immediate record is established and will guarantee that information is not lost if a tree crew must pull off a job. All completed Grid Maps for a given week shall be gathered by the Contractor and turned in to the City Representative by no later than Wednesday of the following week. A sample of the Grid Map is included in Appendix A.

3-15 Boundaries of the Contract Area

All City overhead power lines may require trimming to comply with the Specifications. City of Healdsburg Electric Department circuit maps are provided to identify the location of the Work area required in this Contract. (See attached Appendix A: Contract Area Map) **The attached maps do not show all overhead**

**secondary system (less than 600 volt) facilities that require pruning. Field inspection of the Work area is essential for preparation of a responsive Bid.**

***Note**: PG&E power line facilities exist in the Contract Area and are **not** part of the Work.*

3-16 Cooperation with the Local Community

The Contractor shall cooperate in a timely and responsible manner in resolving local community or other agency/utility complaints arising from the Contractor's work or operations on this project. This shall include, but not be limited to, any community complaint directed at the speed of the Contractor's vehicles arriving/departing the site; vehicular/equipment noise; dust, litter, or other contaminants; vehicle degradation of road surfaces; actions of Contractor's staff both on and near the job site, etc. On the Owner's receipt of any local community complaint, the City Representative will immediately notify the Contractor of the nature of the complaint for the Contractor's timely resolution. If, in the sole opinion of the City Representative, the complaint is reasonable and the Contractor fails to correct the situation or moves too slowly in attempting to correct it, the City will act in both its and the community's interest. Any ascertainable cost incurred by the City for taking any action(s) that should have rightly been performed by the Contractor to resolve the complaint, will be deducted from the Contract cost.

3-17 Work Done by the City for the Contractor

The City **will not** perform any work for the Contractor except in an emergency or as determined necessary by the City Representative to adequately protect the City's electrical or other facilities. The City will be reimbursed for any work that is done for the Contractor (deduction from the Contract) including hiring additional contractors if needed. This will include all costs (direct straight time or overtime wages, all overheads, administration, engineering, vehicle, and equipment costs).

3-18 Specification Deviations

If there are any deviations from the specifications set forth herein, the Bidder shall note the deviations in his Bid. Failure to note a deviation from the specifications may be grounds for rejection by the City of that Bid. Where deviations are noted, the City reserves the right to accept a Bid containing such deviations provided that, in the sole opinion of the City, the deviation or deviations so noted do not affect the overall capability of the item Bid to perform the function for which it is to be acquired and such deviations result in a lesser total cost to the City for the subject item.