

2020 Utility Wildfire Mitigation Plan



Healdsburg Electric Department

10/21/2019

Table of Contents

Executive Summary.....	3
Wildfire Policy Statement	4
Purpose of Wildfire Mitigation Plan	4
Wildfire Mitigation Plan Components (PRC Section 8387).....	5
Wildfire Mitigation Plan Areas of responsibility [PRC-8387 (b)(2)(A)]	5
Objective of the Wildfire Mitigation Plan [PRC-8387 (b)(2)(B)].....	5
Overview of Preventative Strategies and Programs [PRC-8387 (b)(2)(C)].....	6
Key Performance Metrics [PRC-8387 (b)(2)(D)].....	7
Previous metrics related to wildfire [PRC-8387 (b)(2)(E)]	8
Disabling Reclosers & De-Energization	8
Customer Notification Procedures [PRC-8387 (b)(2)(G)].....	9
Vegetation Management Program [PRC-8387 (b)(2)(H)]	9
Wildfire Inspection Program [PRC-8387 (b)(2)(I)].....	10
Wildfire Risks [PRC-8387 (b)(2)(J)].....	10
Identification of Areas of Higher Risk [PRC-8387 (b)(2)(K)]	11
Methodology for Identifying Enterprise Wide Safety and Wildfire Risks [PRC-8387 (b)(2)(L)]	11
Process for restoring power after de-energization [PRC-8387 (b)(2)(M)].....	12
Wildfire Process & Procedure [PRC-8387 (b)(2)(N)]	12

Executive Summary

The City of Healdsburg is one of the fifty plus publicly owned electric utilities in the state of California. 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. The Healdsburg Electric Department is governed by the City Council providing direct local control in the operation and management of this community service.

Over the last few years, devastating and destructive wildfires driven by climate change have had a significant impact on California and the areas surrounding Healdsburg. As termed by former Governor Brown, this is the new "abnormal". These changes in our climate coupled with increased housing in and adjacent to wildland urban interfaces (WUI) now require electric utilities to reassess and rethink their past operational procedures and construction standards.

In response to the wildfires, specifically utility caused 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. Under the new laws every publicly owned utility to 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, the WMP must include vegetation management (VM) programs, inspection and maintenance programs, protocols for deactivating automatic reclosers and for deenergizing power lines in severe weather conditions. The WMP must include a plan to contact critical customers such as police, fire, hospitals, and communication service providers. The program must also describe how service will be restored after a wildfire and include processes for (i) measuring the performance of the plan measures, (ii) identifying and correcting any deficiencies in the plan and (iii) 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. The fire threat area covers roughly one-third of the City's entire service territory. Within this are 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) for 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 safety risks associated with its electric system. This Wildfire Mitigation Plan describes the safety-related measures that Healdsburg follows to reduce its risk of causing 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 frame work 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. 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 Electric Superintendent.



The City Council is the governing body for the Healdsburg Electric Department and provides policy approval and oversight. The wildfire mitigation plan will be implemented by the City's Electric Superintendent with oversight provided by the Utility Director and City Manager. Due to the small size of Healdsburg's electric department, the Electric 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 of value to the community.

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. An additional 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 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.

System Inspections – On an annual basis existing maintenance programs perform visual and detailed inspections of the City’s electric system. These inspections will continue with additional inspections related specifically to mitigating the risk of utility caused wildfires.

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.

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 – This portion of the plan identifies how the City staff will stay informed of the status of the City’s electric infrastructure and weather conditions conducive to wildfires. This requirement will rely heavily on technology but not forego the value of field observation of the Electric Superintendent, City staff, and qualified electrical workers.

Preventative Maintenance – As identified by the Electric Superintendent and electric department staff, routine maintenance will be prioritized and scheduled to reduce the risk of utility caused wildfires and promote overall system reliability and public safety.

Safety, Design, and Operational Standards – Electric Department Standard procedures will be updated to support the objectives and requirements of the wildfire mitigation plan.

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). Recommendations for system improvements will be based upon their ability to reduce wildfire risk and cost-effectiveness.

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.

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 purposed 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 track (at a minimum) the date, time, location, and equipment involved.

Metric 2: Inspection Records & Maintenance

System inspections and timely maintenance is one of the leading methods to improve safety and system reliability. The completion and findings from inspections related to the Plan will be track and reported annually. Needed maintenance and/or repairs identified during these inspections will be tracked and given priority in the work schedule. Each identified maintenance task or repair will be reported annually.

Metric 3: Vegetation Maintenance

Throughout the year, the City maintains tree clearance through a contract with qualified high-voltage tree trimmers and 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 aging 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. This is the first version of Healdsburg's WMP and therefore no discussion of past plans can be had. Future versions of the Plan will include a discussion of previous metrics and how they have shaped and improved policies and procedures to reduce the risk of utility caused wildfires.

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

As a key component of the Plan, 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, the City will implement recloser settings that shorten the time a fault will exist. These settings are planned to be implemented in the first half of 2020.

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 agency.
- 2) When energized powerlines subject to high winds or other weather or atmospheric conditions may create a 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 sole transmission service. The City has no control over PG&E's decision to de-energize the Healdsburg's single transmission service.

As time permits, de-energization of City operated high-voltage powerlines will be coordinated with 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 and use of 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, or other means available to City staff at the time of the event. 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.

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 required to meet the City's tree clearance requirements as summarized below. Appendix C 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-foot 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, 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.

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 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).

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 is done through the routine and thorough performance of tree trimming to provide adequate clearance from power lines.
 - 2) Routine maintenance, including inspections helps to ensure the City's electric system remains in good condition. The City follows CPUC General Order 165 and assures that necessary repair or replacements are identified and scheduled in a timely manner. The City's electric system must be well

constructed to provide continued safe and reliable electric service. At the time of reconstruction, the City constructs overhead facilities to meet or exceed CPUC General Order No. 95 (GO 95). Following current GO 95 standards helps to assure that the City's facilities are safe and reliable.

- 3) 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, patrols, staffing) to lessen the risk of wildfire.

- 4) Topographic and climatological risks include the following (listed in order of priority);
 - 1) Volume of vegetation (fuels) present in high-fire threat areas
 - 2) Periods of significantly low humidity
 - 3) High sustained winds and strong wind gusts
 - 4) Extended droughts or continued periods of below average rainfall
 - 5) Steep terrain and areas difficult to access
 - 6) Changing weather patterns that contribute to wildfire
 - 7) Housing and community activities within wildland urban interfaces (WUI)
 - 8) Wildfire history within and adjacent to the City (Appendix B)

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.

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 are tracked to establish trends.

To assess the risk of wildfire throughout the City's service territory and adjacent areas, City staff look at historical fires as well as vegetation and terrain surrounding the City. This annual review helps to confirm the need to 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 to mitigate the risk of wildfire, the lines will be re-energized in the following manner.

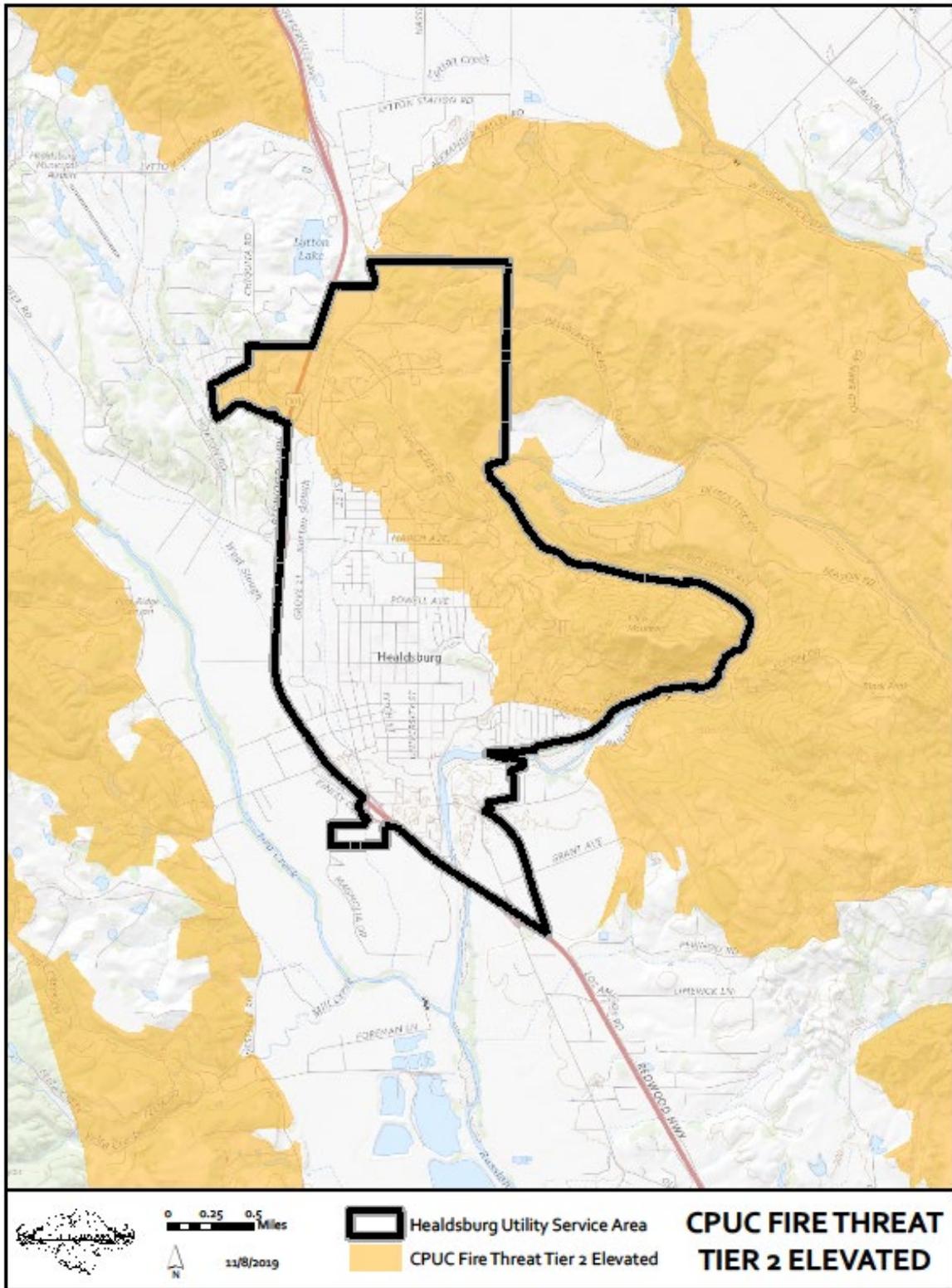
- 1) Overhead facilities in high fire threat areas must be patrolled and visually found to be clear of trouble, damage, or vegetation before re-energizing facilities.
- 2) If damaged facilities are found, those facilities will be isolated such that sections of overhead lines not damaged can be re-energized 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)]

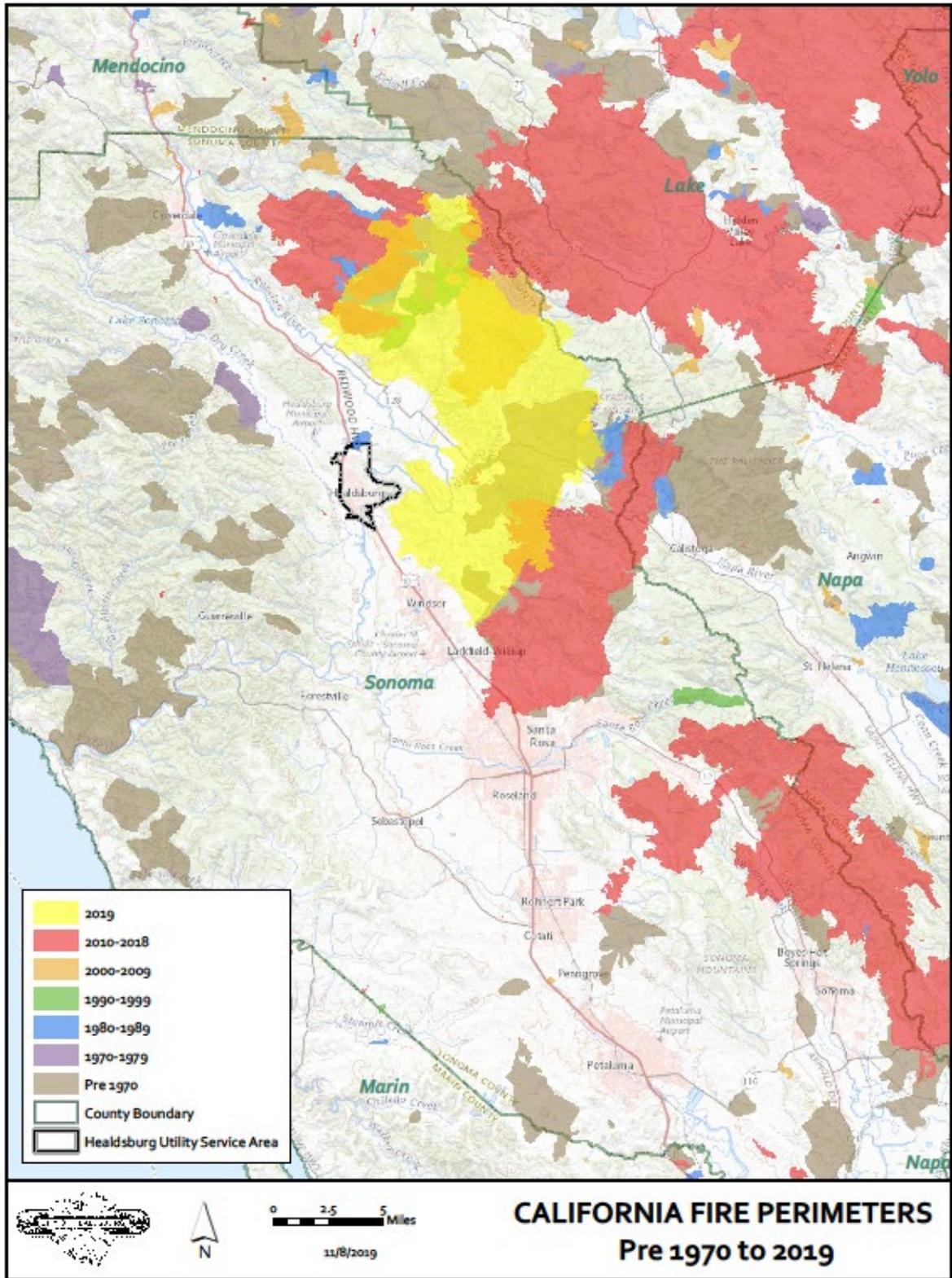
- i) The Plan's oversight, monitoring, and auditing will occur annually with any lessons learned being prioritized for incorporation into the plan, related standards, and procedures. The oversight and monitoring of the program will be provided by the City's Utility Director. This may include the use 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. Deficiencies and improvements may be implemented by City Staff 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. Utility equipment will include 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 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



APPENDIX B – LOCAL WILDFIRE HISTORY



APPENDIX C – VEGETATION MANAGEMENT REQUIREMENTS

SPECIFICATIONS

for

ELECTRIC LINE CLEARANCE SERVICES

TERMS AND DEFINITIONS

Terms

1-1a 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.

1-1b 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.

GENERAL SPECIFICATIONS

Scope of Work

The Work to be done consists of furnishing all labor, methods, materials, tools, permits, and equipment, which are necessary to accomplish the specified Electric Line Clearance Services, in accordance with accepted industry practices, the scope of which includes, but is not necessarily limited to, the following: hazardous tree pruning, line clearance tree trimming, tree removal, and associated work, to include brush and log disposal.

License and Certification

At the time, Bids are submitted and throughout the contract period, the Contractor shall be licensed in accordance with the provisions of the California Contractors State License Board. A Contractor's **Class C-61/D-49** license is required to perform the Work. **The Contractor or his Field Supervisor/Representative shall be a Certified Arborist with the International Society of Arboriculture (ISA).**

Pre-Bid Conference

A pre-bid conference is scheduled on **Thursday, June 27, 2019 at 10:00 a.m.** in the Conference Room, City of Healdsburg Corporation Yard, 550 Westside Rd., Healdsburg, California 95448. Attendance is strongly recommended as the meeting will discuss the details and nuances of the contract.

Bid Prices and Bid Award

This is a lump sum priced Contract. The lump sum Base Bid shall be based upon the work area as specified by the City of Healdsburg and by the term of the Contract, at a rate that shall include all labor, "overhead" and/or "Bidder's profit", equipment, power saws, hydraulic and hand tools, chippers, aerial trucks, fuel, permits, fees, licenses, and all other materials and equipment as may be necessary to perform the Work.

The Base Bid includes the Electric Line Clearance work throughout the City (See attached Appendix A: Contract Area Map). This is the minimum work that may be awarded by the City.

The Bidder is also required to submit unit prices for stump grinding, a two-man crew with aerial device and chipper, and a three-man crew with aerial device and chipper to perform additional work on an hourly basis. These unit prices are required with labor at the straight-time rate, time- and-a-half rate and double-time rate. Seven-unit costs in all are required, a unit prices for stump grinding, three-unit prices for the two-man crew with aerial device and chipper and three-unit prices for the three-man crew with aerial device and chipper. All unit prices shall include all necessary equipment and tools to carry out the work. All work done with unit prices shall conform to the standards set forth in the Specifications.

Additional line clearance services may be requested by the City to accomplish normal and emergency work that arises during the Contract period. **The decision to utilize the Contractor to perform additional**

line clearance services, in addition to the area Work awarded, will be at the City's sole discretion. The Contractor is expected to make his services available to perform this additional work whenever possible. The extent of the additional work and the time line to complete it shall be mutually agreed upon by the City and the Contractor prior to commencement of such work. Determination of which unit cost to apply for hours worked will be made by examination of the straight time and overtime definitions included in the General Prevailing Wage Determinations along with the crew size utilized for such work. A separate change order will be issued for agreed to additional work. **These additional unit price quotes have no effect on the award of the Contract. The Bidder shall provide lump sum bids for the Base Bid and Crew Unit Prices for any additional work; failure to include both will render the bid non-responsive.**

Changes in Work

All change order proposals must be submitted on completed City Change Order forms. All such change order proposals must itemize all cost impacts of the proposed change order and include a total price for that change order and the amended Contract Price that would become effective upon execution of the change order.

Maps – part of tech specs

The attached Maps show the Contract Work area as well as each Grid within that area. Copies of City of Healdsburg Electric detailed electrical facility maps will be provided to the successful Bidder to identify the specific locations of all Work required in this Contract. The City of Healdsburg Representative will identify other utilities' lines within the Contract boundary. These lines may require pruning, but that work is **not** part of this Contract.

Authority of the City Representative/Superintendent

The designated City Representative shall decide any and all questions that may arise as to the quality or acceptability of work performed and progress of the Work; all questions that arise as to the interpretation of the specifications; and all questions as to the acceptable fulfillment of the Contract on the part of the Contractor.

Coordination of Work

A fully qualified representative of the Contractor shall be readily available to meet with the City Representative as needed for the purpose of correcting problems, conflicts, complaints, work schedules, personnel, and equipment requirements. The Contractor or his representative shall be responsible for coordinating all work activity covered by this Contract with the City Representative. The Contractor shall establish a uniform time schedule for performance of routine tree work that shall be in conformance with general Contract work hours or special work requirements, and as agreed to by the City Representative.

The Contractor shall also submit to the City Representative before the start of work each day, a detailed schedule of work proposed for the day so that the City Representative can properly schedule inspections and any other related work. The schedule shall be neatly printed or typed and shall be signed by the Contractor's field representative.

Conformity and Allowable Deviation

Deviations from these specifications as may be required by unforeseen events or emergencies must be pre-approved in all cases by the City Representative.

Supervision, Inspection, and Contract Compliance

2-10a Contractor must provide for adequate supervision and inspection of all the Work performed to ensure that each requirement of these Specifications is consistently met within word and intent.

2-10b The City Representative shall at all times, have access to the Work, and shall be furnished with every reasonable facility for ascertaining full knowledge of the progress and workmanship of work performed under this Contract.

2-10c The City Representative will inspect each area of the Work. In the event the inspection finds unsatisfactory work in an area, the Contractor shall immediately correct the defective work as directed by the City Representative.

2-10d Before starting the Work, the Contractor shall designate in writing an on-site field representative (Contractor's Field Supervisor) who shall have complete authority to act for him in all matters concerning the technical and commercial aspects of the Work.

An Alternate Field Representative shall also be designated for those brief periods whenever the Contractor's Field Supervisor may be unavailable due to illness or other short-term personal matters. The Contractor's Field Supervisor or the Alternate Field Representative shall be readily available whenever the Work is in progress.

2-10e Whenever the Contractor's Field Supervisor is not present on any part of the work where it may be necessary to give directions, orders will be given by the City Representative and shall be received and obeyed by Contractor's employees without delay. The Contractor will be given notice by the City as soon as reasonably possible that the Contractor's employees were given direction by the City Representative. The reason for the City Representative's directions will be specified.

Workmanship

2-11a The Contractor shall perform all the Work with workmen under its immediate supervision and will not subcontract any portion of the Contract.

2-11b The Contractor shall keep himself fully informed of all existing state and federal laws and all municipal ordinances and regulations of the City of Healdsburg that in any manner affect those engaged or employed in the Work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. All the Work shall be performed in accordance with the best practices of the trades involved and in accordance with the Contract Documents.

2-11c The Contractor agrees to prohibit the use or possession of alcohol, narcotics, firearms, or drugs of any nature other than medication for which the Contractor's employee has a current doctor's prescription. The use of prescription medications will not be allowed while working or prior to work if such use impairs the employee's abilities to perform work safely. Contractor's employees are to be appropriately and neatly clothed to comply with state and federal regulations and to provide a respectable appearance to City residents as determined by the City Representative. The Contractor shall immediately remove any personnel from the Work site who is observed to be violating this provision.

2-11d The Contractor is reminded that the Work performed under this Contract is an integral part of a continuing City service to which the citizens are accustomed. All public contact shall be courteous, congenial, and informational only. Discourtesy will not be tolerated.

2-11e The Contractor shall only employ competent craftsmen/skilled workers to do the Work. If any person employed by the Contractor fails or refuses to carry out directives of the City Representative or appears to the City Representative to be incompetent or to act in a disorderly or improper manner, he shall be removed immediately on the request of the City Representative and such person shall not again be employed to perform work on this Contract.

The City Representative may request either written or verbal verification of the qualifications of the Contractor's employees to perform the Work assigned. Any such request shall be complied with expeditiously.

2-11f The Contractor shall review these provisions with the personnel employed by the Contractor for the Work.

2-12 Hours of Work/Days of Work.

Scheduled line clearance tree work shall be performed during normal City Electric Department field personnel working hours, 7:30 a.m. to 3:30 p.m., Monday through Friday (excluding City- recognized holidays), or as agreed to by the City Representative. Nonconforming work hours or workdays must be pre-approved by City Representative. No adjustment in the Contract amount will be made for nonconforming work hours or workdays.

2-13 Temporary Suspension

The City Representative shall have the authority to suspend the Work wholly or in part, for such period as he may deem necessary, due to unsuitable weather, or to such other conditions as are considered unfavorable for the suitable prosecution of the Work.

2-14 Billing and Payment

2-14a The Contractor shall submit invoices for payment in proper form to the City for all work performed. The invoices shall indicate the number of hours worked, what Grid Maps were completed, and dates work was accomplished. **A certified copy of all payroll records relative to this project shall be submitted to the City of Healdsburg and uploaded to the Department of Industrial Relations (“DIR”)- PWC -100 Compliance Unit. The City will provide the DIR project # for this contract. Receipt of certified payroll records by the City of Healdsburg is a prerequisite to payment.**

2-14b Payment shall be made based on five separate billing invoices for completion of 20, 40, 60, 80, and 100 percent of the awarded work area. Essentially five (5) payments will be made (four [4] partial payments and a final payment).

2-14c The City shall make final payment after all the Work called for under this Contract has been completed to the satisfaction of the City Representative and the signed grid maps have been returned, subject to required withholding for any Stop Notices received by the City. **Payment for any portion of the Work does not constitute final approval or acceptance of that portion so paid for. All required tree-to-power line-clearances as specified in Technical Requirements, Section 3-11, Table of Required Minimum Clearances, must be met when final payment is requested by the Contractor.**

2-14d Unless the Contractor has elected to post securities in lieu of retention in accordance with California Public Contract Code Section 22300 and the Contract, and the Contractor and the City have executed an escrow agreement in accordance with the Public Contract Code and the Contract, the City will make progress payments to the Contractor in accordance with applicable law in the amount of ninety-five (95) percent of the value of the labor actually performed and the material incorporated in the Work as specified in Contractor’s verified application for payment upon approval by the City’s authorized representative(s). Payment of progress payments will not be construed as acceptance of the Work performed. If the Contractor has elected to post securities in lieu of retention in accordance with Public Contract Code Section 22300 and the Contract and the Contractor and the City have executed an escrow agreement in accordance with the Public Contract Code and the Contract, the City will make payments to the Contractor or the Contractor’s escrow agent in accordance with such escrow agreement.

2-15 Securities in Lieu of Retention

2-15a In accordance with Public Contract Code Section 22300, except where federal regulations or polices do not permit substitution of securities, the Contractor may substitute securities for any moneys withheld by the City to ensure performance of the Work. At the Contractor’s request and expense, securities equivalent to the amount withheld will be deposited with the City, or with a state or federally chartered bank in California as the escrow agent, who will then pay those moneys to the Contractor under the terms of an Escrow for Security Deposit agreement. The Escrow for Security Deposit agreement is provided in the Contract Documents. Upon satisfactory completion of the Work, the securities will be returned to the Contractor.

2-15b Alternatively, at the Contractor's request and expense, the City will pay retentions earned directly to the escrow agent. At the Contractor's expense, the Contractor may direct investment of the payments into securities. Upon satisfactory completion of the Work, the Contractor will receive from the escrow agent all securities, interest, and payments received by the escrow agent from the City pursuant to this provision and the terms of the Escrow for Security Deposit agreement. The Contractor will within 20 days of receipt of payment, pay to each subcontractor the respective amount of interest earned, less costs of retention withheld from each Subcontractor, on monies withheld to ensure the Contractor's performance of the Work.

2-15c Securities eligible for investment in accordance with this provision include those listed in Government Code Section 16430, bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by the Contractor and the City.

2-15d The Contractor will be the beneficial owner of any securities substituted for moneys withheld and will receive any interest thereon.

2-16 Cellular Phone

The Contractor's Field Supervisor shall be reachable during all working hours via a cellular phone. The Contractor's cellular phone shall be portable type and holster mounted so the Contractor's field representative can always carry it to allow the City Representative or Electric Department to contact the Contractor's Field Supervisor. The Contractor shall pay all required communication expenses.

2-18 Pre-Work Conference

After Contract award and prior to commencement of Work, the Contractor, together with the Contractor Field Supervisor, shall attend a meeting with the City Representative and others to discuss the key elements of 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.