Department of Resources Recycling and Recovery
Site Safety and Health Plan

Valley Fire
Lake, Sonoma, & Napa Counties, California

September 2015

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ii. List of Acronyms

ARB	Air Resources Board
BMP	Best Management Practices
CalEPA	California Environmental Protection Agency
CalFire	The Department of Forestry and Fire Protection
CalRecycle	The Department of Resources Recycling and Recovery
CalTrans	California Department of Transportation
DROC	Debris Removal Operations Center
EPCRA	Emergency Planning and Community Right-to-Know
HazMat	Hazardous Materials
HHW	Household Hazardous Waste
ICS	Incident Command System
IMT	Incident Management Team
MPH	Miles per Hour
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PE	Professional Engineer
PM	Particulate Matter
REHS	Registered Environmental Health Specialist
USCG	United States Coast Guard
USEPA	United States Environmental Protection Agency

1. Introduction

This Site Safety and Health Plan (SSHP) has been developed for the activities performed by the Department of Resources Recycling and Recovery (CalRecycle) staff associated with removing debris caused by the Valley fire in Lake, Sonoma, and Napa counties.

The potential for widespread toxic exposures and threats both to public health and the environment exists in the aftermath of major disasters. The health effects of hazardous substances releases following earthquakes, floods, and wildfires are well-documented. Exposure to hazardous substances may lead to acute and chronic health effects, and may potentially cause long-term public health and environmental impacts. Uncontrolled hazardous materials and debris pose significant threats to public health through inhalation of dust particles and contamination of drinking water supplies. It is critical to remove hazardous materials and remove debris as quickly as possible to abate these impacts. State and local governments may need to enter private property to clear ash and fire debris or demolish and remove private structures deemed unsafe to eliminate immediate threats to life, public health, and safety.

On August 27, 2015, the Governor of California, Edmund G. Brown Jr., issued Executive Order B-33-15 (Order), to initiate cleanup of burnt debris and ash in Lake County as a result of wildfires (Appendix D). The Order stated that all State agencies with responsibility, regulatory authority, or expertise related to recovery efforts in connection with the Rocky and Jerusalem fires shall cooperate fully and act expeditiously in coordination with the California Environmental Protection Agency (CalEPA), to facilitate the removal of ash and debris from the fires and assist in the environmental restoration of Lake County. A provision in the *Proclamation of State of Emergency* of other recent fires in California, such as the Valley and Butte fires, placed these fires under this cleanup order as well.

The Order suspends statutes, rules, regulations and requirements to the extent they apply to the following activities: (a) removal, storage, transportation, and disposal of hazardous and non-hazardous solid waste and debris resulting from the fires that have burned in Lake County and that are subject to the jurisdiction of agencies within the California Environmental Protection Agency (CalEPA) and the California Natural Resources Agency; and (b) necessary restoration and rehabilitation of timberland, streams, rivers, and other waterways. Such statutes, rules, regulations, and requirements are hereby suspended only to the extent necessary for expediting the removal and cleanup of debris from the fire and for implementing any restoration plan by Lake County.

The Order allows state agencies to enter into contracts to arrange for the procurement of materials, goods, and services necessary to quickly remove dangerous debris and repair damaged resources. Because strict compliance with the provisions of the Government Code and the Public Contract Code applicable to state contracts would prevent, hinder, or delay these efforts, applicable provisions of those statutes, including

but not limited to travel, advertising and competitive bidding, were suspended to the extent necessary to address the effects of the fires.

Lastly, the Order states that State agencies shall work with local officials to design and implement a comprehensive structural debris removal plan that will treat the removal of structural debris as a single organized project.

The Department of Resources Recycling and Recovery (CalRecycle) was requested to assist with the design and implementation of the structural debris removal plan for the Valley Fire Incident in Lake, Sonoma, and Napa Counties in California, which is represented by a separate Valley Incident Lake County Operations Plan created by CalRecycle. Information related to this project was obtained from the Office of the Governor and Lake County. This SSHP document will be updated as deemed necessary.

Two types of health and safety documents were prepared for this project. The first one is a community health and safety plan to address public safety. The second is this CalRecycle SSHP which CalRecycle staff shall follow to ensure worker safety. Both plans are based on known conditions at the time and may be updated as newer information is received.

This document will be considered a DRAFT until all supporting documents, which include, but are not limited to, the community health and safety plan, Operational Debris Management Plan (Operations Plan), site confirmation sampling plan, and any air monitoring plans that are completed by CalRecycle or their consultants.

2. Background

The Lake County Solid Waste Local Enforcement Agency (LEA) is asking the Department of Resources Recycling and Recovery (CalRecycle) for assistance.

Purpose

The purpose of the site work is to remove structural debris from the fire damaged area. To date of this documents issuance and according to CalFire, over 1,250 residences and 700 other structures were destroyed, 93 structures were damaged, and 76,067 acres were burned as a result of the Valley Fire Incident, making it the third most destructive wildfire in California history. The site work will involve the excavation, loading, and transportation of site debris to a location of CalRecycle's choosing. Per the Governor's Order (see Appendix D), all the ash and debris may be transported to a facility for disposal as long as the facility accepts the material.

Metal debris and concrete will be recycled to the extent feasible.

A Disaster Recovery Operation Center (DROC) has been established at:

Middletown Senior Center
21297 Calistoga Rd.
Middletown, California 95461

Hours of Operation: 8:00am – 7:00pm

3. Scope of Work

CalRecycle's IMT has been asked by Lake County to assist in the remediation of structures after the Valley Fire Incident.

Purpose

CalRecycle has been asked to assist in the clean-up a total of over 1,250 homes and 700 other structures that were destroyed by the fires. Individual legal parcels of privately owned home sites were identified. The sites vary in composition. Some contain just foundations, ash and metal debris, while others are partially burned. The debris removal activities will cover structural debris and trees within the project area. The County Incident Commander and Operations Chief will make the final decision on what structures and material will be removed. Maps with the location of destroyed structures can be found in Appendix E.

As a result, CalRecycle will assist the County by:

- Removing and disposing of solid waste and demolition debris, including waste tires;
- Segregating and sorting recyclable metal debris and delivering it to recycling facilities;
- Removing trees, chimneys and other site artifacts that pose a safety hazard;
- Hauling ash debris to an appropriate facility;
- Recycling concrete debris;
- Providing traffic control signs;
- Site contouring, posting signs, and erosion protection;
- Installing erosion control devices.

Site Description and Background

Lake County is nestled in the inner coast range of California, east of Mendocino County and home to Clear Lake. The areas where structures were lost from the Valley Fire Incident include the communities of Cobb, Middletown, Loch Lomond and Hidden Valley in the southern part of Lake County. Parts of northern Napa County and eastern Sonoma County were also affected, resulting in a total area of 76,067 acres burned (Figures 1 and 2). Middletown, California marks the location of the Disaster Recovery Center as well as the approximate center of the burned land. It is located at latitude 38.7525 and longitude -122.615, and its elevation is about 1,100 feet above sea level.

For clarity, this project will be broken into 3 branches, Hidden Valley Branch, Middletown Branch, and Cobb Branch (Loch Lomond, Hobergs, and Cobb area) as shown in Figures 3, 4, 5, 6 and 7 of Appendix E.

Figure 1. General Site Location Map

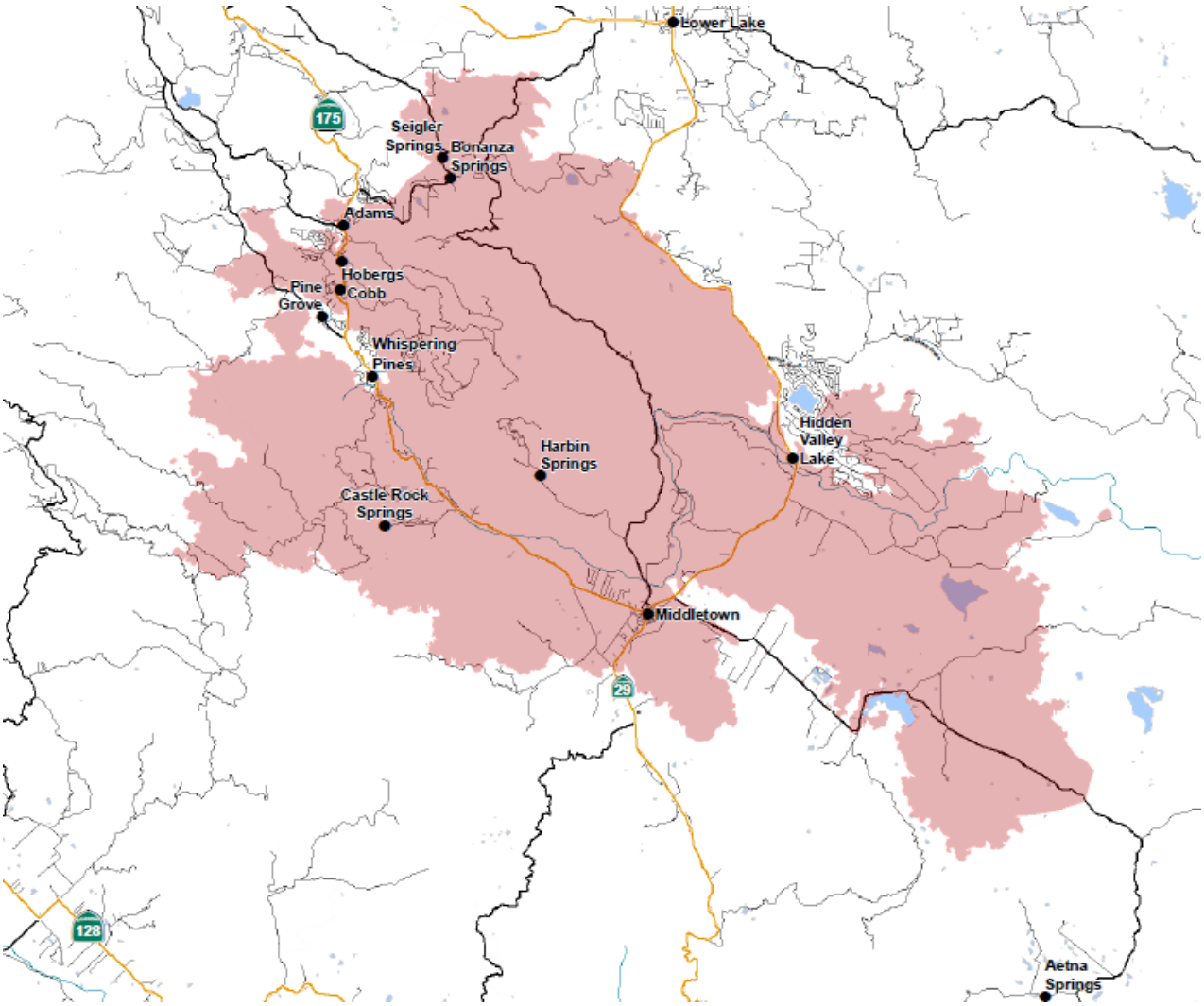
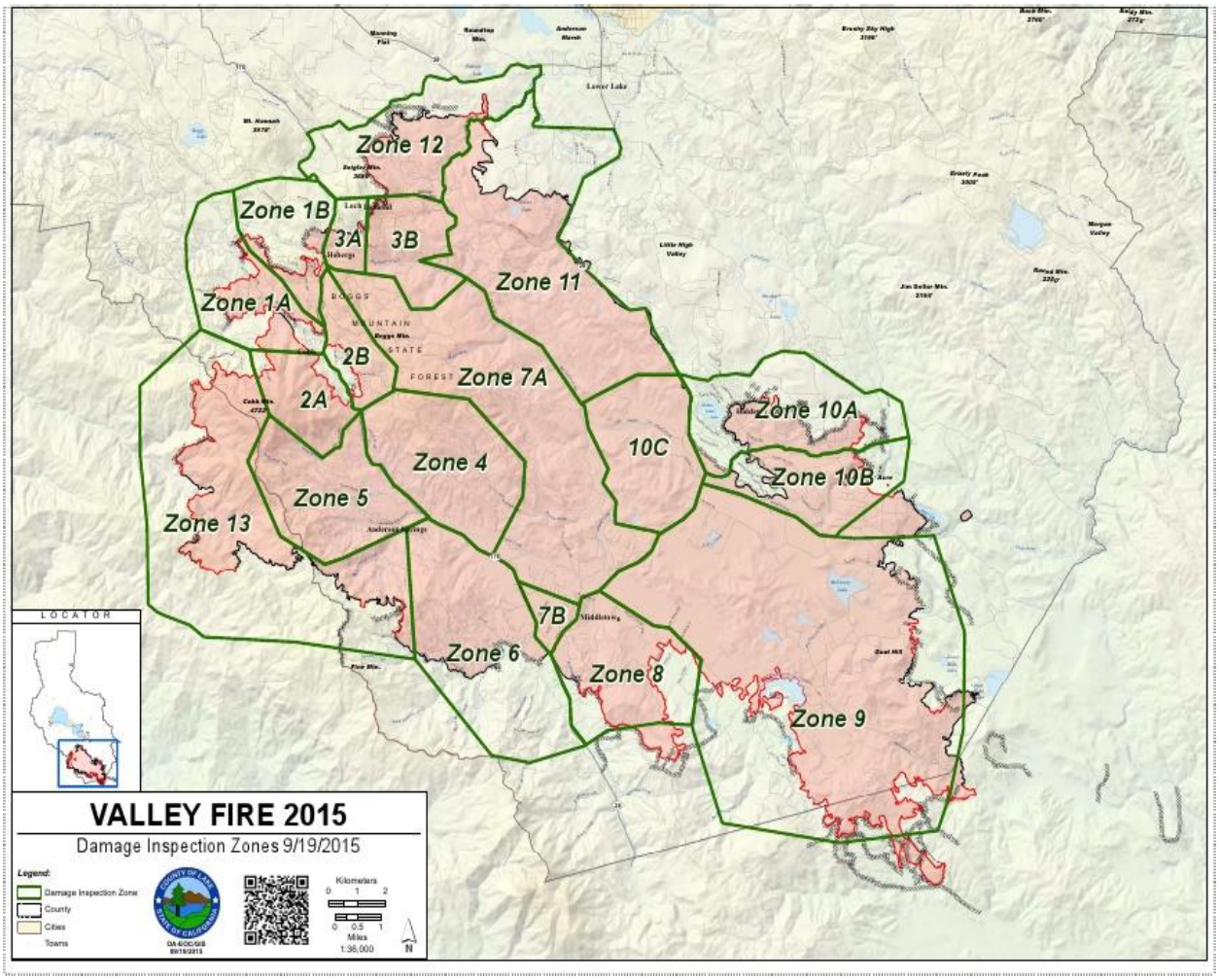


Figure 2. Valley Fire Damage Inspection Zones



4. Key Personnel & Responsibilities

It is the policy of CalRecycle to provide safe and healthful working conditions for employees when performing debris removal after a state of emergency has been declared by the Governor. All CalRecycle personnel on-site during the remediation and clean-up project are to adhere to standard safety policies. Each employee is responsible for reporting any injuries, incidents, and safety infractions to the Site Safety and Health Officer (SSHO) so treatment can be obtained and/or corrective action taken.

KEY PROJECT PERSONNEL

Operations Chief:	Todd Thalhamer, PE Senior Engineer CalRecycle (916) 341-6356
Planning Section Chief	Diane Nordstrom-Lamkin, PG Engineering Geologist CalRecycle (916) 341-6448
Project Safety & Health Officer:	Diane Kihara, CIH, CSP CalRecycle/Health & Safety Section (916) 341-6392
Site Safety & Health Officer:	Marc Arico, AIH CalRecycle/Health & Safety Section (916) 341-6394
	Kevin Amegin, Environmental Scientist CalRecycle/Health & Safety Section (916) 341-6345
	Laura Tembreull, Environmental Scientist CalRecycle/Health & Safety Section (916) 341-6217

Onsite Operations/Onsite Operations Lead

The Operations Chief/Onsite Operations Lead is ultimately responsible for site safety and health, and will provide the materials and maintenance of equipment necessary to enhance and maintain safe site and work conditions. Responsibilities of the Operations Chief include project scheduling, cost updating, overall project direction and overseeing site safety. In addition, the Operations Chief is responsible for determining the extent and level of input required for technical issues that arise during the project. The Operations Chief will serve as the primary point of contact. In the event that the Site

Safety & Health Officer is not present at the site, the Operations Chief or their designee will assume all Safety and Health responsibility of the site.

Project Safety & Health Officer

The Project Safety and Health Officer will be responsible for review and approval of CalRecycle's Site Safety and Health Plan (SSHP), and will assist and advise the Site Safety and Health Officer (SSHO). He/she has the authority to stop unsafe operations, recommend the removal of unqualified personnel from the work area, and approve changes to CalRecycle's SSHP.

The Project Safety and Health Officer will have responsibility for integrating all aspects of CalRecycle's SSHP into this debris removal project. His/her duties include advising the SSHO on all related Health and Safety aspects, reviewing any Site Specific Plans for compliance and completeness, and establishing and monitoring all related Health and Safety procedures through site safety audits.

The Project Safety and Health Officer will coordinate with the SSHO to ensure overall compliance with the SSHP. The SSHO will provide ongoing communication with Project Safety and Health Officer on issues related to site operations.

Site Safety and Health Officer (SSHO)

The SSHO is responsible for overseeing work areas and identifying conditions that may pose a hazard to personnel or the public. Daily tailgate meetings shall be the manner in which the SSHO conveys any concerns or changes before work commences for the day. The SSHO is required to conduct regular safety inspections and implement and enforce the project safety program and procedures. The SSHO will work closely with the Operations Chief/Onsite Operations Lead to ensure that all site personnel review and comply with the terms of the community SSHP and/or CalRecycle's SSHP (if required). The SSHO performs duties such as verifying that the personnel have appropriate training, coordinating emergency medical care, conducting a daily site safety inspection (if required), and inspecting safety and health equipment. In addition, the SSHO is responsible for maintaining safety equipment, posting air monitoring results (if required), providing site orientation safety training for all personnel actively involved in site work (if required), and other site safety documentation.

The SSHO takes the following action(s) when appropriate:

- Orders the immediate shutdown of site activities in the case of a medical emergency, unsafe practice or if the SSHO deems it necessary.
- Ensures protective clothing and equipment are properly stored, used, and maintained.
- Ensures that the environmental and personnel monitoring operations are on-going and in accordance with technical specifications and required procedures.

- Restricts visitors from areas of potential exposure to harmful substances.

The SSHO will maintain the safety log, planned employee activities, and instrument monitoring and calibration records at the site. This log will include any daily safety meeting topics, training provided, site monitoring data, first aid administered, and all health and safety incidents. The log will also include a record of visits of all outside personnel. The SSHO will investigate all accidents and prepare an accident investigation report that will be forwarded to the Operations Chief.

Subcontractor Management and Personnel

Subcontractor management is responsible for the compliance of their personnel with the community health and safety plan. Since subcontractors are hired for their specific expertise, they must assume primary responsibility for the health and safety of their personnel. The subcontractor's Field Supervisor will also be responsible for performing regular safety inspections of their operations. The subcontractor shall participate in CalRecycle's safety tailgate meetings before commencing operations.

Subcontractors must also:

- Comply with all applicable Occupational Safety and Health Administration (OSHA) regulations as defined in California Code of Regulations, Title 8;
- Perform all work in accordance with this SSHP;
- Conduct weekly tailgate safety meetings and submit the minutes to the SSHO or the Operations Chief.

5. Logs, Reports and Record Keeping

The following logs, reports, and records will be developed and maintained for this site by the SSHO.

- Daily Safety Meetings
- Site Specific Health and Safety Plan
- Injury and Illness Prevention Program Records

6. Hazard Assessment

This section addresses the potential hazards identified with debris removal and clean-up of the site, which includes but is not limited to chemical, biological, physical, and environmental hazards. Hazard characterization and selection of worker protection methods for this site have been determined from previous clean up jobs as well as the site's history.

HAZARD ASSESSMENT

To provide protection for personnel on-site, the following table summarizes the high risk hazards that have been identified. This determination is based on the contaminants identified at the site, the work tasks performed, and the environmental conditions of the site.

SUMMARY OF SITE HIGH RISK HAZARDS

HAZARD	TYPE OF EXPOSURE	CONTROL MEASURES
Thermal stress	**Physical**	**Heat Stress** • Drink a quart of water per hour. • Take cooling rest breaks in the shade. • Avoid physical activity during the hottest part of the day if possible. • Wear cool and breathable clothing. • Apply sunscreen. • Wear a hat, sun visor, or some form of personal shade protection **Cold Stress** • Ensure clothing and boots have adequate insulation. • Avoid working alone. • Getting wet from rain or sweat can worsen heat loss in cold weather. • Wear rain protective clothing and rubber boots in rain and cold weather. • If wet, change into dry clothing when possible.
Vehicles/Heavy Equipment	**Physical**	• Limit personnel around heavy equipment especially when there are moving parts. • All workers shall observe all site safety rules. • Use cones and spotters to assist with safety around heavy equipment. • Communicate with machine operators frequently. • Listen for backup alarms. • All workers shall wear required PPE properly. Minimum PPE required: • High visibility safety vest • Hardhat

		• Safety Glasses • Hand protection • “Safety-Toe” boots
Unstable Structures	**Physical**	• Do not stand or work around standing structures or trees that have been damaged by fire. • Allow heavy equipment to safely knock down standing structures before working in an area. • Leave the area immediately if a structure shifts or unusual noises signal a possible collapse. Minimum PPE required: • Hardhat • Safety Glasses • Hand protection • Foot protection
Toxic metals	**Chemical:** Skin absorption/ Inhalation/ Ingestion	• Stay upwind. • Wet area to prevent high levels of dust. • Practice good housekeeping. • Maintain good hygiene, including washing hands before eating. • No smoking in the exclusion zone. • No eating or drinking in the exclusion zone. • All workers shall observe all site safety rules. • All workers shall wear required PPE properly. Minimum PPE required: ▪ Safety Glasses ▪ Hand protection ▪ Foot protection ▪ Tyvek coveralls ▪ Respiratory protection (case by case basis)
Asbestos	**Chemical:** Inhalation	• Stay upwind. • Obey Unified Incident Commanders & Project Safety & Health Officer or their designee. All workers shall observe all site safety rules. • All workers shall wear required PPE properly. Minimum PPE required: ▪ Safety Glasses ▪ Hand protection ▪ Foot protection ▪ Tyvek coveralls ▪ Respiratory protection (case by case basis)
Airborne Contaminants [Carbon Monoxide]	**Chemical:** Inhalation	• All workers shall observe all site safety rules. • Ensure all occupied spaces are properly ventilated. • Do not leave vehicles or equipment running near enclosed spaces or air intake of HVAC systems or breathing equipment.

Disease Vectors (Mosquitos, ticks, mice, etc)	**Biological:** Injection/ Inhalation	• Wear long-sleeved shirts and pants. • Do not stir up soil contaminated with rodent urine or droppings as the hanta virus may become airborne. • Wear insect repellent. • Check for ticks often • Do not touch live or dead animals. • Do not put gear down in possible rodent habitat. • Dampen area before clean-up activities. • Avoid activities at dawn and dusk.
Venomous snakes/ insects (Rattlesnakes, spiders, bees, wasps, etc)	**Biological:** Injection	• Wear long-sleeved shirts and pants. • Use gloves if moving debris. • Look before reaching • Inspect boots before putting on. • Wear insect repellent. • Do not disturb nests or hives.
Noise	**Physical**	• Increase distance from the noise source. • For staff susceptible to noise, minimize worker exposure by rotating staff. • Quiet areas away from the heavy equipment will be designated. • All workers shall wear required PPE properly. Minimum PPE required when noise exceeds 85 dBA: ▪ Earplugs or ear muffs

CHEMICAL HAZARDS

The chemical hazards that may be present as airborne contaminants in the smoke, burn ash, soil, and soot at the site are discussed below. The information that follows provides a discussion of the hazards that may be present at the site. This SSHP includes the OSHA Permissible Exposure Limits (PELs), which are the regulatory exposure limits for workplace safety. The PELs are time-weighted average (TWA) exposure concentrations. When applicable, the Short-term Exposure Limits (STELs) and concentrations in the air that would be Immediately Dangerous to Life or Health (IDLH), are also provided. STELs are TWA 15-minute exposure concentrations that should not be exceeded at any time during a workday, even if the 8-hour exposure limit is not exceeded.

A. Toxic Metals

Ash and debris from residential structures burned by fires can contain concentrated amounts of heavy metals, such as antimony, arsenic, cadmium, copper, lead, mercury,

and zinc. Exposure to toxic metals may be encountered from burn ash or soil. Burn ash sample analysis obtained from previous clean up investigations from other burn sites indicates that non-hazardous household or municipal waste contains various toxic metals. Test results indicate the predominant metals of concern in burn ash are not readily soluble in water; therefore, they are not readily leachable into ground water. However, burn ash can pose a health risk if it becomes airborne and is inhaled, ingested, or comes into direct contact with the skin. The toxic metals of primary concern include antimony, arsenic, barium, beryllium, cadmium, total chromium, cobalt, copper, lead, mercury, nickel, selenium, thallium, vanadium and zinc.

Lead can be found in indoor paint on walls, doors, and sills, as well as outdoor paint, if the house was built before 1978. Lead paint is also extensively used in outdoor paint as an anti-corrosive. Lead can be found in plumbing fixtures, car batteries, sports gear such as fish and dive tackle, old TV's and e-waste. Lead is non-biodegradable and should be presumed to be in the ash. Lead can affect nearly every system in the body.

Chromium is a naturally occurring element found in rocks, animals, plants, and soil. It can exist in several different forms. The most common forms are chromium (III) and chromium (VI). No taste or odor is associated with chromium compounds. Chromium (VI) and chromium (III) are used for chrome plating, dyes and pigments, leather tanning, and wood preserving. Chromium is also a common component of burn ash from the remnants of treated wood used in building construction. Ingesting high levels of chromium (VI) may result in anemia, damage to the stomach or intestines, or breathing problems. Sperm damage and damage to the male reproductive system have also been seen in laboratory animals exposed to chromium (VI). Skin contact with certain chromium (VI) compounds can cause skin ulcers. Some people are extremely sensitive to chromium (VI) or chromium (III). Allergic reactions consisting of severe redness and swelling of the skin have been noted.

Copper is a metal that occurs naturally in rocks, soil, water, and air. Copper has many uses including use as a wood and leather preservative and making different kinds of products like wire, plumbing pipes, sheet metal, brass and bronze pipes and faucets. Since copper can be found in many household items, there is a possibility of copper being present at high levels in burn ash form residences. Copper is an essential nutrient, meaning plants and animals must in take some copper from eating, drinking, and breathing. In excess, copper exposure can result in damage to the gastrointestinal system, the blood, and liver.

Arsenic is used as a pesticide and also as a wood preservative. It is a component of chromated copper arsenate, which used to make "pressure treated" wood preservative that used to be used in residential and industrial lumber. Now, wood treated with chromated copper arsenate is not used in the U.S. for residential buildings, but is still used in industrial building. Because of the older age of homes and mixture of structure types in the project area, there is a possibility of being exposed to high levels of arsenic from inhaling dust and burn ash. Exposure to high levels of arsenic can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of "pins and needles" in hands and

feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small "corns" or "warts" on the palms, soles, and torso. Skin contact with inorganic arsenic may cause redness and swelling.

Summary of Metals in Soil

Metals	OSHA Exposure [1] Limit	IDLH	Health Hazard	Route of Entry
Antimony	PEL: 0.5 mg/m^3	50 mg/m^3	Irritation, lung	Ingestion/inhalation
Arsenic	PEL: 0.01 mg/m^3	5 mg/m^3	Cumulative systemic poison, regulated carcinogen	Inhalation/ingestion/absorption
Barium	PEL: 0.5 mg/m^3	50 mg/m^3	Acute lung and gastrointestinal effects	Ingestion/inhalation/absorption
Beryllium	PEL: 0.0002 mg/m^3 Ceiling: 0.025 mg/m^3	4 mg/m^3	Cumulative lung damage, carcinogen	Ingestion/inhalation/absorption
Cadmium	PEL: 0.005 mg/m^3	9 mg/m^3	Cumulative kidney and lung damage, regulated carcinogen	Ingestion/inhalation
Chromium (III)	PEL: 0.5 mg/m^3	25 mg/m^3	Irritation	Ingestion/inhalation
Cobalt	PEL: 0.02 mg/m^3	20 mg/m^3	Cumulative lung changes, dermatitis	Ingestion/inhalation
Copper	PEL: 1 mg/m^3	100 mg/m^3	Mild irritant	Ingestion/inhalation
Lead	PEL: 0.05 mg/m^3	100 mg/m^3	Cumulative neurological effects, cumulative blood effects, kidney, reproductive	Inhalation/ingestion
Mercury	PEL: 0.025 mg/m^3 Ceiling: 0.1 mg/m^3	10 mg/m^3	Central nervous system, kidney, reproductive, “Skin”	Ingestion/inhalation/ absorption
Molybdenum	PEL: 10 mg/m^3	5000 mg/m^3	Irritation	Ingestion/inhalation
Nickel	PEL: 0.5 mg/m^3	10 mg/m^3	Cumulative lung damage, suspected carcinogen	Ingestion/inhalation
Selenium	PEL: 0.2 mg/m^3	1 mg/m^3	Irritation	Ingestion/inhalation
Silver	PEL: 0.01 mg/m^3	10 mg/m^3	Irritation	Ingestion/inhalation
Thallium	PEL: 0.1 mg/m^3	15 mg/m^3	“Skin”, cumulative systemic toxicity, CNS effects	Ingestion/inhalation/Absorption
Vanadium	PEL: 0.05 mg/m^3	35 mg/m^3	Irritation of mucous membranes, acute and chronic bronchial damage	Ingestion/inhalation

Zinc Oxide	PEL: 10 mg/m^3	500 mg/m^3	Mild irritant, lung	Ingestion/inhalation

[1] Permissible exposure limits, California Code of Regulations, Title 8, General Industry Safety Orders, Airborne Contaminants, §5155

B. Asbestos

Asbestos is a naturally occurring group of fibrous minerals that can only be identified under a microscope. There are several types of these flexible, fire-resistant fibers. In the past, asbestos was added to a variety of products to strengthen them and provide heat insulation and fire resistance and is still in use today. More than 3,000 products in use today contain asbestos. Asbestos can be found in linoleum masking material, pipe and building insulation, some concretes, and in stucco or “popcorn” ceiling material. In most products, asbestos is combined with a binding material so that it is not readily released into the air. However, asbestos fibers may be present in burn ash because asbestos does not burn or degrade, unlike the binding material. **All CalRecycle staff should be aware that asbestos containing waste (ACW) may be present and that asbestos is a human carcinogen with no known risk-free levels of exposure**.

If asbestos fibers should become airborne and are inhaled, they can remain in the lungs for a long period of time, producing risk for severe health problems that do not appear until many years later. Asbestos fibers can have serious effects on health if inhaled. Increased exposure to asbestos will increase the risk of developing an asbestos-related disease, such as asbestosis and mesothelioma. The amount of time between exposure to asbestos and the first signs of disease can be as long as 30 years. It is known that smokers exposed to asbestos have a much greater chance of developing lung cancer than just from smoking alone.

Any level of exposure to asbestos is associated with an increased risk of cancer. The regulatory occupational exposure limit or permissible exposure limit (PEL) of airborne concentration to asbestos is 0.1 fiber/cc (cubic centimeter) of air. OSHA has classified asbestos as a regulated carcinogen.

As a precaution, each work site will be treated as if it contains asbestos. Work practices that minimize the disturbance of asbestos containing materials, such as wet methods, will be used to control dust emissions. During debris removal, if asbestos containing waste (ACW) are encountered and must be disturbed, an initial exposure assessment consistent with the requirements of Title 8, CCR, Section 1529 shall be performed.

Heavy equipment that is used to demolish structures or remove debris can rupture building materials that may contain asbestos and cause it to be released into the air. Therefore, wetting the debris and structures before work begins and during work is crucial because it reduces the potential for air migration of asbestos.

If asbestos containing materials are encountered, a Cal/OSHA registered Asbestos Removal Contractor will be responsible for overseeing the safe removal of ACW identified on-site by the contractor for partially destroyed structures. CalRecycle staff

are not responsible for ACW removal. Engineering control measures such as wet methods shall be implemented to ensure that no asbestos fibers will be released during such an operation. If the engineering control is not feasible, or does not provide adequate protection, the SSHO must require respiratory protection for CalRecycle workers. The recommended respirator is a full face APR with HEPA filters. The SSHO shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter (0.1 f/cc) of air as an eight (8) hour time weighted average (TWA). The SSHO shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes.

C. Nuisance Dusts

Nuisance dusts refer to airborne dust particles without specific occupational exposure standards. Dust from this site may contain various types of structural debris such as concrete, wood, glass, metal, plastic, dirt and ash. High levels of nuisance particulates in the air may reduce visibility and can get into the eyes, ears and nose. The CalOSHA designated PEL is a TWA of 10 mg/m^3. Every effort should be made to control dust with wet methods and to limit exposure to airborne dust by staying upwind and wearing dust masks.

Airborne contaminants in dust, ash, and soot may irritate airways and otherwise affect breathing.

- Stay upwind of dust generating activities.
- Use wet method to minimize dust in the air.
- When exposure to dust cannot be controlled or avoided, use a well-fitted, NIOSH-certified air-purifying respirator (such as an N-95 or more protective respirator) to reduce the effects of dust.
- Use a high efficiency particulate air (HEPA)-type vacuum when cleaning dust. A typical household vacuum can put dust back into the air.

D. Other Potential and Known Chemical Hazards

Carbon Monoxide (CO) is an odorless, colorless gas and a byproduct of combustion. CO is produced any time you burn fuel in cars or trucks, small engines, stoves, lanterns, grills, fireplaces, gas ranges, or furnaces. CO can build up indoors, in trenches, or in partially enclosed outdoor spaces. Too much CO in surrounding air can cause acute poisoning. The most common symptoms of CO poisoning are headache, dizziness, weakness, upset stomach, vomiting, chest pain, and confusion. Continued exposure to CO can result in fainting and ultimately death. The CalOSHA designated PEL for CO is a time-weighted average of 25 ppm. It is important to keep any generators in a well ventilated area and to ensure the exhaust is not collecting in an enclosed space or being pulled into a nearby HVAC system. No cars or heavy equipment should be left running in any enclosed space. If someone is experiencing symptoms of carbon

monoxide poisoning, immediately move them to fresh air and take them to the hospital if condition does not improve quickly.

Airborne contaminants in smoke are made up of a complex mixture of gases and fine particles produced when wood and other organic matter burn. The biggest health threat from smoke comes from fine particles that can irritate your eyes and respiratory system. In healthy adults, this can cause problems such as burning eyes, runny nose, and bronchitis. Those individuals with chronic heart and lung diseases are more susceptible to ill effects from smoke and particulates. Fine particles can aggravate chronic heart and lung diseases and even are linked to premature death in people with these conditions. Watching air quality reports and limiting time and exertion outdoors when too much smoke is in the air is the most effective control measure.

Gasoline is a mixture of petroleum-derived chemicals. Benzene, toluene, xylene and ethyl benzene are the airborne contaminants of most concern. Health hazards associated with gasoline exposure are mild irritation and effects on the central nervous system. It is a fire and explosion hazard. The CalOSHA designated PEL for benzene is a TWA of 1 ppm; for toluene, the PEL is 10 ppm, and for xylene the PEL is 100 ppm.

Diesel is a fuel oil and a refined petroleum solvent that is mixture of paraffins and aromatics. Health hazards associated with diesel exposure are mild irritation to the eyes, skin, and throat. It is a fire hazard.

Household Hazardous Waste (HHW)

Household hazardous wastes such as flammable gas tanks, paints, petroleum lubricants/fuels, pesticides may be on-site. If household hazardous materials are discovered by the contractors, the material will be segregated by the CalRecycle staff and/or the contractors to a temporary on-site storage. As necessary, the County will collect and transport HHW to the County facility at no charge to CalRecycle and/or contractors.

PHYSICAL HAZARDS

A. Thermal Stress

1. Heat Stress

With the possible combination of ambient factors such as high air temperature, low air movement, high radiant heat, and protective clothing, the potential for heat stress is a major concern. All on-site personnel will be made familiar with the symptoms of heat stress and the conditions during which they may occur. Heat stress symptoms may include elevated heart rate, nausea, headache, lightheadedness, and lack of coordination or decreased job performance or slurred speech. The following table summarizes the causes and symptoms of the varying degrees of heat illness.

Heat Stress Condition	Causes & Symptoms
Heat rash	Also known as prickly heat, skin remains wet as sweat does not evaporate.
Heat cramps	Painful muscle spasms that are caused by lack of salt in the body. Usually a result from sweating heavily and drinking large amounts of water without replacing the body's salt loss.
Heat exhaustion	Continuous loss of fluids and salt from sweating can cause heat exhaustion. Symptoms include heavy sweating, cool and moist skin, and a weak pulse. Possible fainting, weakness, dizziness, nausea, diarrhea, blurred vision and a normal or slightly high body temperature. Advanced stages can cause vomiting or loss of consciousness.
Heat stroke	Most serious heat illness – when sweating no longer helps the body regulate its internal temperature. Skin is hot, may or may not be dry. Often red or spotted. Individual is slightly confused & disoriented. Delirium, convulsions, or even unconsciousness may occur. Body temperature may be 105 degrees Fahrenheit or higher.

The use of protective clothing and equipment can increase the effects of heat stress conditions on site workers. At 75 degrees Fahrenheit ambient temperature, the SSHO will become keenly aware of the effects of heat stress on project personnel, and will alert the crew to become aware of any symptoms and encourage the crew to drink water frequently. Suitably cool water will be provided such that each crew member will have enough water to drink at least one quart per hour. At 80 degrees, shade will be provided. At 95 degrees, high heat procedures shall be implemented. These procedures will include close supervision of employees; active observation of employees and effective communication with employees. The SSHO shall be responsible for performing all heat related monitoring for his employees and document ambient temperatures throughout the day. The symptoms of heat-related disorders and preventive measures will be discussed during a safety "tailgate" meeting. In the meeting, the SSHO will review the high heat procedures, encourage employees to drink plenty of water, and remind employees of their right to take a cool-down rest when necessary.

In high heat conditions, the SSHO shall monitor for heat stress. Site personnel shall follow the appropriate work practices and monitor their potential heat stress condition. To reduce the potential for heat stress a shaded area(s) will be available for employees outside of the exclusion zone, where employees may cool down after removing personal protective clothing. Shade shall be provided if the temperature exceeds 80 degrees. The worker may sit in the shade, rest, and drink water for no less than 5 minutes at a time when they feel the need to do so to protect them from overheating. All workers will be encouraged to take rest breaks as often as is necessary in the shaded area and replenish fluids. At a minimum, workers will break every 2 hours for 10 to 15

minute rest periods. The frequency of breaks may need to be increased upon worker recommendation to the SSHO. If personnel should begin to feel the onset of any heat stress signs or symptoms, they will immediately cease work, proceed to a shaded area and rehydrate. Also, if resting pulse rates exceed 110 beats after a 3-minute waiting period, then additional breaks will be taken. Workers are encouraged to increase water consumption to at least one quart per hour, or 2 gallons per day. Workers will avoid fluids that contain caffeine during the hottest part of the day. Workers are encouraged to drink small volumes of cool water about every 20 minutes for rehydration.

Workers should be paired using the buddy system to watch co-workers for signs and symptoms of heat stress. At no time should employees be left alone or unattended during conditions of high heat exposure.

2. Cold Stress

Cold temperatures can also cause stress on the body. With the possible combination of ambient factors such as low air temperature, high winds, high sweat production, and the possibility of rain, the potential for cold stress is a concern. All on-site personnel will be made familiar with the symptoms of cold stress and the conditions during which they may occur.

Cold Stress Condition	Causes & Symptoms
Hypothermia	Occurs when body heat is lost faster than it can be replaced and the normal body temperature (98.6°F) drops to less than 95°F. Hypothermia is most likely at very cold temperatures, but it can occur even at cool temperatures (above 40°F), if a person becomes chilled from rain, sweat, or submersion in cold water. Mild symptoms: • Shivering, teeth chattering, lips begin to turn blue Moderate to Severe symptoms: • As the body temperature continues to fall, symptoms will worsen and shivering will stop. • The worker may lose coordination and fumble with items in the hand, become confused and disoriented • He or she may be unable to walk or stand, pupils become dilated, pulse and breathing become slowed, and loss of consciousness can occur. A person could die if help is not received immediately.
Frostbite	An injury to the body that is caused by freezing of the skin and underlying tissues. The lower the temperature, the more quickly frostbite will occur. Frostbite typically affects the extremities,

	particularly the feet and hands. Amputation may be required in severe cases. Symptoms • Reddened skin develops gray/white patches. • Numbness in the affected part. • Feels firm or hard. • Blisters may occur in the affected part, in severe cases
Trench Foot	Caused by prolonged exposure to wet and cold temperatures. It can occur at temperatures as high as 60°F if the feet are constantly wet. Non-freezing injury occurs because wet feet lose heat 25-times faster than dry feet. To prevent heat loss, the body constricts the blood vessels to shut down circulation in the feet. The skin tissue begins to die because of a lack of oxygen and nutrients and due to the buildup of toxic products. Symptoms • Redness of the skin, swelling, numbness, blisters

To prevent cold stress, workers should wear warm, layered clothing that protects them from cold, wet and windy conditions; take frequent breaks in warm, dry locations; and avoid exhaustion and fatigue, which depletes energy needed to keep warm. Drinking water and warm beverages, avoiding caffeine and eating high-calorie foods like pasta also can help prevent cold stress.

B. Physical Safety Hazards

There are numerous physical hazards associated with this project which, if not identified and addressed, could present operational problems as well as accidents and personal injury to the work force. In order to minimize physical hazards, standard safety protocols have been developed and will be followed at all times. The SSHO will observe the general work practices of all personnel and enforce safe procedures to minimize physical hazards.

1. Tripping, Slipping, and Falling Hazards

CalRecycle personnel will be reminded daily to maintain sure footing on all surfaces. In order to minimize tripping hazards caused by debris, job supplies, and equipment, material will be removed daily from the work areas and stockpiled in their respective storage areas. Extra precaution should be made around unstable chimneys and unstable trees. This “housekeeping” effort will be enforced by the SSHO throughout the day.

2. Head, Back, and Musculoskeletal Injuries

While performing site activities, CalRecycle staff may encounter situations where head trauma could occur. To prevent injuries that may be caused by overhead obstructions, impact, and penetration of falling objects, hard hats shall be worn. Cal Recycle staff should not stand work or stand near any structures or trees that have been damaged by the fire, as those structures may be unstable and can collapse.

Personnel are to use proper lifting techniques whenever they lift heavy objects and seek assistance if the object is too heavy to lift safely.

3. Heavy Equipment and Traffic

The use of heavy equipment for debris removal presents a potential safety hazard for personnel. ALL SITE PERSONNEL WILL WEAR VISIBLE PROTECTIVE CLOTHING. Only qualified personnel will operate heavy equipment. All other on-site personnel shall remain a safe distance from heavy equipment.

Personnel needing to approach heavy equipment while operating will observe the following protocols:

a. Make eye contact with the operator (and spotter),
b. Signal the operator to cease heavy equipment activity,
c. Approach the equipment and inform the operator of intentions.

All construction equipment working within the residential zones shall maintain a speed of **15 mph or less**.

All equipment must be in good working condition when in use at the Site. Equipment that does not appear to be in good repair or appears to be unsafe will not be put into service until all necessary repairs are made.

4. Fatigue

Stress, long hours, and fatigue may increase the risk of injury and illness. Fatigue can increase the incidence of mistakes and oversight of safety precautions. To avoid excess fatigue, personnel should:

- Pace work throughout the day to avoid physical exhaustion.
- Rest and take breaks BEFORE exhaustion builds up.
- Get an adequate amount of sleep each night.
- Stay well hydrated and nourished.

C. Noise Hazards

CalRecycle personnel exposure to high noise levels may come from the presence of heavy equipment used during debris removal. Employees may not be exposed to noise

greater than the levels permitted by Cal/OSHA (90 dBA TWA for an 8 hour day). If levels are higher than this, engineering, administrative, or work practice controls are required. When the noise levels cannot be controlled through these methods, hearing protection will be worn. The SSHO will monitor employee noise exposure with a sound level meter and take appropriate action. Hearing protection will be provided. Hearing protection will be required if employees are exposed above 85 dBA for 8 hours. Equipment used for cleanup activities can generate noise well above 85 dBA. Noise exposure will be reduced significantly the farther a person is away from the source. The goal will be to limit exposure below 85 dBA.

D. Radiological Hazards

While unlikely to be an issue, a radiological survey shall be performed around the impacted structures, as needed. The survey equipment should be designed for general radiological surveying such as a Ludlum 2241 or equivalent.

The action level for this project is set at two times background. Should a level of 2x background be detected, the surveyor will isolate (i.e., cordon off) the area and notify the Operations Chief and/or the affected county. The elevated reading(s) will be traced until the source can be determined to be from natural sources such as brick or geological formations. Should the reading not be from natural sources, the Operations Chief will determine the location and rate and develop an action plan to secure the source if the reading exceeds 1mR/hr at one foot. Some examples of radiation sources that are sometimes found in homes are radium painted dials, compasses, and watches.

BIOLOGICAL HAZARDS

The following table summarizes some potential biological hazards:

Hazard	Avoidance
Disease Vectors: ▪ **Mosquitos** ▪ **Ticks** ▪ **Rodents**	Mosquitos, ticks, and rodents may transmit diseases, such as West Nile virus, Rocky Mountain spotted fever, Lyme disease, and hanta virus. To reduce risk of infection by insects, wear long-sleeved shirts and pants, check for ticks often, wear insect repellant, and reduce field activities at dawn and dusk. To reduce risk of infection by rodents or other animals, do not handle live or dead animals and do not stir up soil contaminated with rodent urine or droppings as the hanta virus may become airborne. Dust masks should be worn when opening or cleaning cabins, barns or outbuildings.

Animal and insect bites or stings: ▪ **Bees** ▪ **Wasps** ▪ **Snakes** ▪ **Spiders** ▪ **Dogs** ▪ **Rodents**	Animal and insect bites and stings can cause localized swelling, itching, and minor pain that can be handled by first aid treatment. In sensitive individuals, however, effects can be more serious such as anaphylactic shock that can lead to severe reactions in the circulatory, respiratory, and central nervous system, and in some cases, even death. Do not attempt to capture any wild or semi-wild animals such as cats, rats or snakes due to the possibility of a bite or parasitic infestation. Use gloves and wear protective boots when disturbing debris piles. Leave area if a rattling is heard. Stray or displaced dogs may be present at the site. Contact the Sheriff to remove.
▪ **Poison Oak**	Three leaflet plant whose sap and crushed leaves contain a chemical, which if absorbed into the skin cause an allergic reaction. Recognize and avoid the plant. If exposed, wash the affected area as quickly as possible with soap and cold water.

SAFE WORK PRACTICES

Debris remediation activities shall stop immediately if a container, metal drum, or object that may be potentially dangerous is struck. Operations will not resume until the Site Health and Safety Officer determines the safety of the operation. If containers/drums are found to be rusted, in poor decrepit condition or bulging, they should not be touched or moved. Any container/drum suspected of containing hazardous materials/waste shall be viewed as dangerous and may be flammable.

DUST CONTROL

The contractors shall provide water or dust palliative, or both, to prevent dust nuisance at each site. Dust resulting from contractor's performance of the work shall be controlled at all times during this project. The contractor will provide fire grade firefighting nozzles with shut off valves for dust control. Each removal crew will be provided at least one fire nozzle. These types of fire nozzles in past projects have proven successful in applying the appropriate amount of water needed to control dust.

7. Safety Inspections

The CalRecycle SSHO and/or his or her designee will perform their own daily safety inspections. A report including results of the inspection and any corrective actions taken will be filed in the project files, with a copy to the CalRecycle Operations Chief. Identified safety and occupational health deficiencies and corrective measures shall be recorded.

8. Standard Field Activity Procedures

To ensure the safety of personnel in the work area, CalRecycle staff shall practice the following debris remediation activities:

- Stay upwind and a safe distance away from the source of any chemical hazard whenever possible.
- Do not stand on the debris pile.
- Do not touch or attempt to collect samples of soil, waste material or debris of any kind without appropriate personal protective equipment.
- Avoid all heavy equipment or machinery operations that can pose a safety hazard. If heavy equipment or other vehicles are present, stay out of traffic routes. If staff needs to remain in traffic areas, advise equipment operators of your presence. Make sure they see you and stop the equipment before you approach them.
- When encountering asbestos containing waste (ACW) appropriate control measures, such as wetting down the area, must be used to prevent airborne dust.
- Never put notebooks or other equipment down in waste areas.
- Do NOT barbeque and/or cook at the job site.
- Scavenging of waste is strictly FORBIDDEN.
- Portable fire extinguisher shall be available at the job site at all times.
- Avoid dust clouds and dusty operations. Stand upwind and out of the dust plume area. Leave dusty areas immediately and reenter only after dust has settled or after dust control is in effect. Avoid being splashed by the water truck or entering freshly sprayed areas.
- When dusty operations are anticipated, control measures such as a water truck, shall be used.
- Avoid loud or sustained high noise levels. If you cannot hear the person next to you or the sound is loud enough to be uncomfortable, leave the area immediately and do not reenter without adequate hearing protection.
- Do not enter enclosed areas. Such enclosed areas include, sumps, drains, ground water wells, other sub-grade conduits, and any low areas where gas may collect.
- Avoid walking in the waste and near operating equipment.

- Always be alert and watch for sharp objects such as medical syringes, nails and broken glass, which may penetrate your boots or your hands, should you fall.

- Examine your boots and clothing after walking through waste to determine if you have been contaminated. Not all contamination is visible! Make sure all PPE is disposed of properly. If it is hazardous, everything should go in hot trash (including PPE). If it is not hazardous, throw it into the municipal waste.

- Stay clear of steep slopes. Slopes greater than 10% should be avoided altogether.

- Driving with your boots on can be hazardous and may cause you to lose of control of the vehicle.

- When parking on a hill or incline, set the parking brake.

- Avoid contaminating the interior of vehicles. Whenever possible, do not enter the vehicle with contaminated boots or clothing.

- Remember to use all personal protective equipment according to the manufacturer's instructions.

- Observe site conditions and wind direction. Note traffic patterns, work areas, and unusual activities.

- Keep vehicles away and upwind of all hazards including traffic, dust, active areas, landfill gas collection, venting or flame-off areas, etc.

- Entry into any excavation, trench, or confined space is prohibited. Watch for openings in the ground, and avoid stepping into the spoils from excavations or trenches.

Personal Hygiene

- Avoid hand or body contact with waste materials or any dirty or contaminated surfaces.

- Application of makeup is prohibited at the work area.

- Avoid touching eyes, nose or mouth with or without gloved hands. Hands and face should be washed with a disinfectant soap, immediately after leaving the work site. Always wash up thoroughly before leaving the site or as soon as possible thereafter.

- Be sure to containerize all contaminated materials in a plastic bag until you can properly dispose of them.

- Disposable gloves may not be reused.
- Always carry boots in plastic bags separately from other personal clothing.
- Water from sealed containers or coolers may be consumed if done carefully and away from contaminant sources. If possible, remove all personal protection equipment before entering any office to get drinking water.
- Eating and smoking are prohibited while on a solid waste facility, except in designated areas.
- Wash hands before eating and before and after using the restroom. Partial or complete personal decontamination may be required to prevent transfer of contaminants to yourself or facilities.
- Always double check your gear and equipment to insure that no uncontrolled contaminants leave the site with you.
- Whenever possible, dispose of all collected waste materials you may have generated, contaminated or not. Salvaging of ancient wastes is prohibited. This will reduce the likelihood of spreading contamination into shared vehicles or to your office or home.

Personal Safety

- Due to the possible presence of illegal drug use, operations staff shall exercise caution while traveling on site and particularly when entering an unfamiliar property.

9. Work and Support Areas

To prevent migration of contamination caused by tracking by personnel or their equipment, work areas and personal protective equipment will be clearly specified prior to beginning operations. CalRecycle staff shall obey all designated work areas or zones as suggested by the NIOSH/OSHA/USCG/EPA's document titled, "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities." Daily safety briefings will provide an overview of that day's work.

Upon entrance into the site, CalRecycle Team members will control access to site work zones. Each work area will be designated into one of three zones: exclusion or "hot" zone, a contamination reduction zone (CRZ), and a support zone. CalRecycle staff will be working in all three zones during the duration of this debris removal operation.

EXCLUSION ZONE

The exclusion zone is considered the zone of contamination and is the area where inhalation, oral contact, or dermal contact with contaminants must be avoided.

CONTAMINATION-REDUCTION ZONE

The contamination-reduction zone (CRZ) or "transition zone" will be established between the exclusion zone and support zone. In this area, personnel will perform decontamination of themselves and equipment to remove any contamination.

SUPPORT ZONE

The support zone will consist of a clearly marked area where the support equipment and personnel not donned in the appropriate level of personal protective equipment will be located. Smoking, drinking, and eating will be allowed only in designated areas in the support zone. The location of support zone may be changed in the event of a sustained change in the prevailing wind direction or other unpredictable events.

ACCESS CONTROLS

The Operations Chief or their designee shall establish the physical boundaries of each zone daily and shall instruct all workers and visitors on the limits of the restricted areas. No one shall be allowed to enter the restricted area without the required personal protective equipment for that area. The SSHO shall ensure compliance with all restricted area entry and exit procedures.

The Operations Chief or their designee shall also designate a decontamination point for personnel to exit from the contaminated area and enter into the clean area where

personnel may rest and drink.

VISITOR ACCESS

Visitors should check in immediately upon arrival with the Operations Chief or their designee. Only authorized visitors will be allowed access to the contaminated areas. All CalRecycle staff will be required to provide and wear the appropriate level of personal protective equipment. Other site visitors will not be admitted to the exclusion and contamination reduction zones. The project area has limited access to residents living within and around the area so vehicular traffic may increase during the clean-up activities.

Failure to comply with this site entry procedure will result in expulsion from the site. A visitors log will be kept by the Operations Chief or their designee.

10. Personal Protective Equipment

All personnel entering the exclusion or contamination reduction zone must wear the appropriate level of protection as designated by this SSHP. It has been determined that personal protective equipment will be used by personnel when performing activities related to debris removal operations at this site. When personnel can control their exposure through engineering or administrative controls, they shall do so.

The level of protection required shall be upgraded or downgraded based on the results of personal air monitoring, action levels from direct reading instruments or a change in site conditions. Changes in protection levels must be determined by the SSHO or their designee and approved by the Operations Chief/Onsite Operations Lead and Project Health and Safety Officer.

LEVELS OF PROTECTION

Personnel working in the hot zone will use the following levels of protection:

- Level C: Used when criteria for using air-purifying respirators are met and a lesser level of skin protection is required.

- Level D: Used for all personnel in the exclusion zone.

General Considerations

The selection of a respirator for any given situation shall require consideration of the following factors:

- The nature of the hazard;
- The characteristics of the hazardous operation or process;
- The location of the hazardous area with respect to a safe area having respirable air;
- The period of time for which respiratory protection may be provided;
- The activity of the workers in the hazardous area;
- The physical characteristics, functional capabilities and limitations of various types of respirators; and/or,
- The respirator protection factors and respirator fit.

LEVELS OF PROTECTION WORN IN THE EXCLUSION ZONE

Level C

- Respiratory Protection: During each day's tailgate meeting, the Site Safety and Health Officer will determine site conditions and whether the type of respirator worn is different from the SSHP's recommendation.
    - A full face piece air purifying respirator/combination cartridge for protection against chemical/organic vapors, pesticides/fertilizers with HEPA filter shall be donned when working in the exclusion zone; a half-face air purifying respirator/combination cartridge shall be donned only if the SSHO deems it safe while in the exclusion zone.
- Protective Clothing: Reflective safety vest;
- Head: Hard hat;
- Hand: Appropriate gloves if necessary;
- Boots: Safety toe shoe/boot;
- Eye: Safety glasses;
- Hearing: Earplugs if necessary.

Level D

- Protective Clothing: Visible protective clothing;
- Head: Hard hat;
- Hand: Not required;
- Foot: Safety toe shoes/boot;
- Hearing: Earplugs if necessary;
- Eye: Safety glasses

SUPPORT ZONE

Personnel working in the support zone will use the following personal protective equipment:

Foot: Safety Toe shoe/boot
Head: Not required

RESPIRATORY PROTECTIVE EQUIPMENT

All CalRecycle personnel using respiratory protective equipment shall follow CalRecycle policy and procedures. The following issues covered below should be followed when using respiratory protection for this site.

Cartridge Changes
All cartridges will be changed a minimum of once daily. However, water saturation of the HEPA filter or dusty conditions may necessitate more frequent changes. Changes will occur when personnel begin to experience increased inhalation resistance, or breakthrough of a chemical with warning properties.

Inspection and Cleaning
Respirators will be checked periodically by the SSHO and inspected before each use by the wearer. All respirators and associated equipment will be decontaminated and hygienically cleaned after use.

Facial Hair
No personnel who have facial hair which interferes with the respirator's sealing surface, will be permitted to wear a respirator or to perform functions which require a respirator.

Corrective Lenses
Normal eyeglasses may be worn under full-face respirators. However, during annual fit testing, health and safety staff will ensure that the eye glasses do not interfere with the seal of the face-piece to the face of the user. Contact lenses can be worn with any type of respirator, but their use is not recommended in dusty atmospheres while wearing a half-mask face-piece. For workers requiring corrective lenses, special spectacles designed for use with respirators will be used.

Medical Certification
Only workers who have been certified by a physician, as being physically capable of respirator usage will be issued a respirator.

Voluntary Respirator Use
The use of disposable dust masks provided by CalRecycle falls under the "voluntary respirator use" requirements of 8 CCR 5144 (c)(2) (see Section 10.0). CalRecycle will provide all respirator users with information related to voluntary respirator use as needed.

Note: The Health and Safety Officer encourages all field staff to use disposable dust masks voluntarily for level D activities.

11. Decontamination Procedures

All personnel and equipment must be free from contamination when they leave the work site.

PERSONNEL DECONTAMINATION

Decontamination of personnel shall be accomplished to ensure that any material which personnel may have contacted in the exclusion zone is removed in the contamination-reduction zone. If personal decontamination is required, CalRecycle staff shall consult with the Operations Chief/Onsite Operations Lead, SSHO or their designee.

EQUIPMENT DECONTAMINATION

Any equipment and vehicles that come in contact during the debris removal will undergo decontamination. Each party will be responsible for final decontamination of their equipment.

WASTE HANDLING

Contaminated clothing will be bagged and disposed of at the end of each day.

12. Site Monitoring

AIR MONITORING

Based on prior debris removal operations, air monitoring may be performed to evaluate air emissions at the site. The purpose of air monitoring is to identify and quantify airborne contaminants to assist with worker protection. If it is determined necessary, air monitoring will be performed onsite with the use of direct reading instrument(s) or by integrated sampling. CalRecycle's SSHO or their designee shall have the ability to perform air monitoring instrumentation independently from the contractor assigned to the project.

The SSHO or their designee shall log where site monitoring is conducted if needed. All CalRecycle instruments used for air monitoring during this project shall be calibrated prior to use with the calibration log and sampling results properly maintained. Air flow measurements shall be corrected for high altitude. An air monitoring log can be found in Appendix B.

Monitoring of the air in the community and work sites for asbestos, heavy metals, and dust will be monitored by a certified industrial hygienist for the duration of the project until such time the industrial hygienist determines that air monitoring may cease. The contractor shall employ a third party certified industrial hygienist to perform this work.

The methods used for air monitoring will meet the following provisions:

- Fugitive Dust – United States Environmental Protection Agency (USEPA) approved equivalent methods for particulate matter 2.5 microns or greater in diameter (PM-2.5) and/or particulate matter 10 microns or greater in diameter (PM-10) monitoring;
- Heavy Metals - National Institute for Occupational Safety and Health (NIOSH) Method 7300, Metal Scan; and
- Asbestos - NIOSH Method 7402, High Volume.

13. Emergency Response

Prior to all debris removal activities, all personnel shall review emergency egress routes for the site. All personnel shall follow direction of the Project Manager/Onsite Project Lead and/or SSHO when an emergency situation arises.

EMERGENCY ASSISTANCE INFORMATION

Emergency Contact	Telephone Number
Fire/Police/Ambulance	9-1-1
St. Helena Hospital-Clear Lake 15630 18th Ave Clearlake, CA 95422 **Trauma via Air Transport:** **Santa Rosa Memorial Hospital** 1165 Montgomery Dr Santa Rosa, CA 95405	(707) 994-6486 (707) 546-3210
Cal/OSHA **Region 2 - Sacramento Regional Office** **William Estakhri, Regional Manager** **2424 Arden Way, Ste. 300** **Sacramento, CA 95825**	Phone:(916) 263-2803 Fax:(916) 263-2824 Email:DOSHREG2Sacramento@dir.ca.gov

EMERGENCY SERVICES

All personnel shall be provided concise and clear directions and accessible transportation to local emergency services. A map showing directions to the nearest hospital will be posted on site. Fire extinguishers and a first aid kit shall be present on the site at all times.

MEDICAL EMERGENCY PROCEDURES

The following procedures should be observed if an accident occurs:

Minor Injury

- Notify the SSHO;
- Have qualified first aid personnel treat injury; and
- Record injury and include name of injured person, nature of injury and treatment given.

Serious or Major Injury

In the event of a medical emergency when actual or suspected serious injury occurs, the following procedures shall be implemented:

- Survey the scene and evaluate whether the area is safe for entry.
- Remove the exposed or injured person(s) from immediate danger.
- Render first aid if necessary. Decontaminate affected personnel after critical first aid is given.
- Obtain paramedic services or ambulance transport to local hospital. This procedure shall be followed even if there is no visible injury.

    1. Call 9-1-1.
    2. Identify location, request medical assistance, provide name and telephone number.
    3. Request assistance from emergency medical service and/or additional assistance.

- Other personnel in the work area shall be evacuated to a safe distance until the SSHO determines that it is safe for work to resume. If there is any doubt regarding the condition of the work area, work shall not commence until all hazard control issues are resolved.
- Fill out accident reporting forms and associated documents.

If a fatal injury occurs, the following additional steps will be followed:

- Notify immediate supervisor;
- Notify Operations Chief/Onsite Operations Lead;
- CalRecycle will initiate contact with Cal/OSHA and other appropriate agencies;
- All work activities on the project must be stopped on the project for 24 hours; and
- Assist Cal/OSHA as directed.

<u>FIRST AID</u>

Only qualified personnel shall give first aid and stabilize an individual needing assistance. Top priority will be given to life support techniques (e.g., CPR) and life-threatening problems (e.g., airway obstruction, shock, etc.). Professional medical

assistance shall be obtained at the earliest possible opportunity.

SPILL RESPONSE PROCEDURES

CalRecycle does not expect a risk of leaks or spills of contaminated liquids or hazardous liquids. However, propane tanks should be removed with caution.

In the case of a spill of such contaminated or hazardous materials, the following procedures shall be followed:

- Determine a spill has occurred;
- Notify the SSHO;
- Identify protective clothing or equipment required to respond;
- Contain the spill;
- Document incident; and
- Initiate appropriate clean-up!

EARTHQUAKE RESPONSE

If an earthquake should occur during the course of site activities, the following steps should be taken:

- Stop working;
- Remain calm and do not panic;
- If indoors, stay indoors away from windows and take cover under heavy furniture if possible;
- Do not use or do anything that might be a source of ignition, i.e., smoking, cutting, or welding;
- If outdoors, stay away from power lines, power poles, and windows.

SITE EVACUATION PLAN

In the general case of a large fire, explosion, or toxic vapor release, the site must be evacuated. Personnel must evaluate the situation and assess the upwind direction. Personnel must evacuate to an upwind location following these steps:

- All personnel will assemble in an upwind area when the situation permits; a head count will be taken.
- Determine the extent of the problem. Dispatch a response team in appropriate protective clothing to evacuate any missing personnel or to correct the problem.
- The above procedures will apply to all Team members and will be discussed with them prior to the commencement of work.

The hand signal of “both hands on the waist” will be used to notify all personnel to leave

the area immediately if all other means to communicate to staff on site fails.

EMERGENCY WARNING SIGNAL

In the event of an emergency, a “warning” horn will be sounded which will be the indicator to stop work or evacuate the job site. After three loud blasts from the “warning” horn, staff will assemble at a pre-determined location. This location will be pre-determined at the tailgate meeting before work commences on site.

14. Emergency & Hospital Information

The nearest hospital to the job site is:

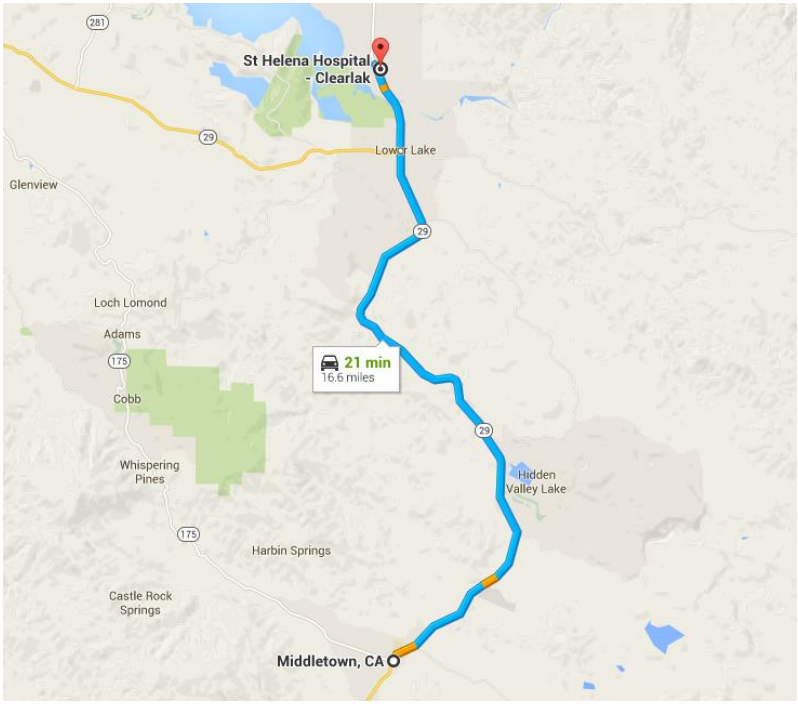
St. Helena Hospital-Clear Lake
15630 18th Ave
Clearlake, CA 95422
(707) 994-6486

Middletown, CA

1. Head west on Main St toward Calistoga Rd — 62 ft
2. Turn right at the 1st cross street onto CA-29 N/Calistoga Rd
   Continue to follow CA-29 N — 14.5 mi
3. Continue straight onto CA-53 N — 2.0 mi
4. Turn right onto 18th Ave
   Destination will be on the right — 0.1 mi

St Helena Hospital - Clearlak
Clearlake, CA 95422

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.



15. Training and Medical Surveillance Requirements

Training

All CalRecycle staff at this job site shall comply with CalRecycle's Health and Safety Field Policy training requirements.

All personnel are required to have current training in the following areas:

- 40-hour hazardous waste operations and emergency response (or equivalent).
- 8-hour health and safety refresher training, if applicable.
- First Aid/Cardiopulmonary Resuscitation (CPR).
- Respiratory fit testing for full face and half face shall be current.

Medical Surveillance

All CalRecycle staff at this job site shall comply with CalRecycle's Health and Safety Field Policy – medical surveillance requirements. CalRecycle staff may view the Health and Safety policy and requirements at: http://www.CalRecycle.ca.gov/Safety/Manual/.

16. Site-Specific Pre-Job Safety Orientation

All personnel entering the exclusion zone will be trained in the provisions of this SSHP and shall meet the requirements for CalRecycle's Health and Safety Policies, be required to sign the sign-in sheet and attend a site safety orientation meeting where the following topics will be covered:

- Key personnel and their responsibilities for site;
- CPR and first aid trained personnel;
- Site hazards;
- Personal protective equipment/required levels of protection;
- Location of safety equipment such as fire extinguishers;
- Site standard operating procedures and safe work practices;
- Work zones and site control measures;
- Emergency and spill response and contingency plans.

Appendix A: Daily Tailgate Meeting Format

Date: _____
Location: _____
Presented by: _____

Topics Covered:
Health and Safety Plan

- On-site organization and coordination
- Emergency medical care and procedures including evacuation
- Contingency plan
- Additional controls for complex and/or hazardous jobs

Specific Precautions for Day's Activities
Other: _____

Attendee List

Print Name	Signature
_____	_____
_____	_____
_____	_____
_____	_____

Start on time.

No. 1 – Make a clear announcement to the group for the meeting to start.
No. 2 – Explain why the meeting is being held.
No. 3 – Keep the meeting from going off on a tangent. If an employee brings up a topic with merit, the SSHO agrees to talk about that topic at a later date. **Keep the tailgate meeting moving and keep the promise to discuss at a later time!**
No. 4 – Ask questions about causes and corrective actions from previous jobs.
Allow time for discussion and questions.
No. 5 – Discuss job hazards at the site along with safety controls that will prevent accidents.
No. 6 – Ensure you point out things that are being done right as well as problem areas.
No. 7 – Discuss seasonal safety information.
No. 8 – Use a real accident or safety concerns case to emphasize a point. The more recent and the more close (geographically) to your location, the more effective the example will be (e.g. no scavenging for bottles). Personal experiences are usually the best example. The tailgate meeting should be no more than10 to15 minutes to hold the attention of the group. A copy of the daily tailgate meetings will be placed with this Site Specific Health & Safety Plan.

Appendix B: Air Monitoring Log

Department of Resources Recycling and Recovery
Health and Safety Program

Project Lead _____ SSHO _____

Site and Location _____

While on the job site, the Program Manager and/or Onsite Project lead shall perform air monitoring which will assist us in evaluating any potential hazards

DATE	TIME	STAFF	MONITORING LOCATION	INSTRUMENT	READING	FIELD CONDITIONS	COMMENTS

It is important to record all the information asked for on this form. ***Use space on back of Log to record additional information****:*

Time: Record the time you begin monitoring.

Location: Identify where you are (e.g. near a trench, spoil pile, etc.)

Field Conditions: Weather (e.g. wind, rain, heat)

Comments: Recordings may include but not be limited to the approximate depth of the trench, proximity to water or homes.

Appendix C: On-Site Safety Inspection

Department of Resources Recycling and Recovery
Health and Safety Program

Completed by _____ Date _____

Site and Location _____

Project Lead _____ SSHO _____

EQUIPMENT	YES	NO	N/A	COMMENTS/DATE CORRECTED
PPE assessment performed-PPE requirements in place	☐	☐	☐	
Employees trained in the use & maintenance of PPE	☐	☐	☐	
Hard hat areas designated and enforced	☐	☐	☐	
Hearing protection utilized in required areas	☐	☐	☐	
Eye protection in place where needed	☐	☐	☐	
Safety foot protection required where appropriate	☐	☐	☐	
Approved respiratory protection equipment available	☐	☐	☐	
Did respirator breakthrough occur?	☐	☐	☐	
Air monitoring instrumentation calibrated & working properly	☐	☐	☐	
Tools in good condition (sampling) *Defective tools shall be removed from service*	☐	☐	☐	
Employees are properly trained in equipment	☐	☐	☐	
Is personal monitoring conducted?	☐	☐	☐	
Fire extinguisher onsite	☐	☐	☐	
GENERAL				
No smoking and/or eating in the work area in effect	☐	☐	☐	

Evacuation procedures posted	☐	☐	☐	
Emergency telephone numbers posted	☐	☐	☐	
First aid kit and fire extinguisher available	☐	☐	☐	
Daily tailgate safety meeting performed	☐	☐	☐	
ENVIRONMENT	**YES**	**NO**	**N/A**	**COMMENTS/DATE CORRECTED**
Work area adequately illuminated	☐	☐	☐	
Temperature within normal limits	☐	☐	☐	
Heat and cold stress discussed	☐	☐	☐	
Noise levels within normal limits	☐	☐	☐	
Slip and trap hazards mitigated	☐	☐	☐	
HEAVY EQUIPMENT				
Operators qualified/trained	☐	☐	☐	
Back up alarms working	☐	☐	☐	
Operators working at safe speeds	☐	☐	☐	
Safe loading and unloading of material observed	☐	☐	☐	

It is important to record all the information asked for on this form.

Comments _____

_____

_____

_____

_____

Appendix D: Executive Order B-33-15

Executive Department
State of California

EXECUTIVE ORDER B-33-15

WHEREAS on July 31, 2015, I proclaimed a State of Emergency to exist in California due to wildfires burning throughout the state, including those that were burning in Lake and Trinity counties; and

WHEREAS wildfires have burned thousands of acres of land, destroyed structures, including homes, damaged critical infrastructure, and forced the closure of major highways and local roads; and

WHEREAS the Federal Emergency Management Agency granted a Federal Fire Management Assistance Grant for the Rocky Fire burning in Lake County; and

WHEREAS the wildfires have created a substantial amount of ash, burnt vegetation, and debris in Lake and Trinity counties;

WHEREAS this debris is threatening public health and safety, and must be removed and disposed of quickly and properly to ensure that the areas can be reoccupied safely; and

WHEREAS under the provisions of section 8571 of the Government Code, I find that strict compliance with the various statutes and regulations specified in this order would prevent, hinder, or delay the mitigation of the effects of the wildfires.

NOW, THEREFORE, I, EDMUND G. BROWN JR., Governor of the State of California, in accordance with the authority vested in me by the Constitution and statutes of the State of California, in particular, sections 8625 and 8571 of the California Government Code, do hereby issue this Executive Order, effective immediately.

IT IS HEREBY ORDERED THAT:

1. State statutes, rules, regulations and requirements are hereby suspended to the extent they apply to the following activities: (a) removal, storage, transportation, and disposal of hazardous and non-hazardous solid waste and debris resulting from the wildfires that have burned and continue to burn in areas that are subject to the jurisdiction of agencies within the California Environmental Protection Agency and the California Natural Resources Agency; and (b) necessary restoration and rehabilitation of timberland, streams, rivers, and other waterways. Such statutes, rules, regulations and requirements are hereby suspended only to the extent necessary for expediting the removal and cleanup of debris from the fires, and for implementing any restoration plan. Individuals who desire to conduct activities under this suspension of statutes, rules, regulations, and requirements shall first request that the appropriate Agency Secretary, or his delegate, make a determination that the proposed activities are eligible to be conducted under this suspension. The Secretary for the California Environmental Protection Agency and the Secretary for the California Natural Resources Agency shall

use sound discretion in applying this Executive Order to ensure that the suspension serves the purpose of accelerating cleanup and recovery, while at the same time protecting public health and the environment. This order shall apply to, but is not necessarily limited to: solid waste facility permits; waste discharge requirements for storage and disposal; emergency timber harvesting; emergency construction activities; and waste discharge requirements and/or Water Quality Certification for discharges of fill material or pollutants. To the extent it is within their administrative authority, the boards, departments and offices within the California Environmental Protection Agency and the California Natural Resources Agency shall expedite the granting of other authorizations, waivers or permits necessary for the removal, storage, transportation, and disposal of hazardous and non-hazardous debris resulting from the fires, and for other actions necessary for the protection of public health and the environment.

2. As necessary to assist local governments and for the protection of public health and the environment, state agencies shall enter into contracts to arrange for the procurement of materials, goods, and services necessary to quickly remove dangerous debris, repair damaged resources, and restore and protect the impacted watershed. Applicable provisions of the Government Code and the Public Contract Code, including but not limited to travel, advertising, and competitive bidding requirements, are suspended to the extent necessary to address the effects of the fires.

3. The Office of Emergency Services shall provide local government assistance to Lake and Trinity counties, as appropriate, under the authority of the California Disaster Assistance Act, California Government Code section 8680 et seq. and California Code of Regulations, Title 19, section 2900 et seq.

4. Health and Safety Code sections 103525.5 and 103625, and Penal Code section 14251, requiring the imposition of fees, are hereby suspended with regard to any request for copies of certificates of birth, death, marriage, and dissolution of marriage records, by any individual who lost such records as a result of the wildfires. Such copies shall be provided without charge.

5. Vehicle Code sections 9265(a), 9867, 14901, 14902 and 15255.2, requiring the imposition of fees, are suspended with regard to any request for replacement of a driver's license, identification card, vehicle registration certificate, or certificate of title, by any individual who lost such records as a result of the wildfires. Such records shall be replaced without charge.

6. The provisions of Vehicle Code sections 4602 and 5902, requiring the timely registration or transfer of title, are suspended with regard to any registration or transfer of title by any resident of Lake and Trinity counties who are unable to comply with those requirements as a result of the wildfires. The time covered by this suspension shall not be included in calculating any late penalty pursuant to Vehicle Code section 9554.

7. The provisions of Unemployment Insurance Code section 1253 imposing a one-week waiting period for unemployment insurance applicants are suspended as to all applicants who are unemployed as a direct result of the wildfires, who apply for unemployment insurance benefits during the time period beginning August 27, 2015 and ending on the close of business on February 27, 2015, and who are otherwise eligible for unemployment insurance benefits in California.

This Executive Order is not intended to, and does not, create any rights or benefits, substantive or procedural, enforceable at law or in equity, against the State of California, its agencies, departments, entities, officers, employees, or any other person.

I FURTHER DIRECT that as soon as hereafter possible, this order be filed in the Office of the Secretary of State and that widespread publicity and notice be given of this proclamation.

IN WITNESS WHEREOF I have hereunto set my hand and caused the Great Seal of the State of California to be affixed this 27th day of August 2015.

EDMUND G. BROWN JR.
Governor of California

ATTEST:

ALEX PADILLA
Secretary of State

Appendix E:

Valley Fire Damage Maps

Figure 3. Structure Damage Report Map – Hidden Valley Branch

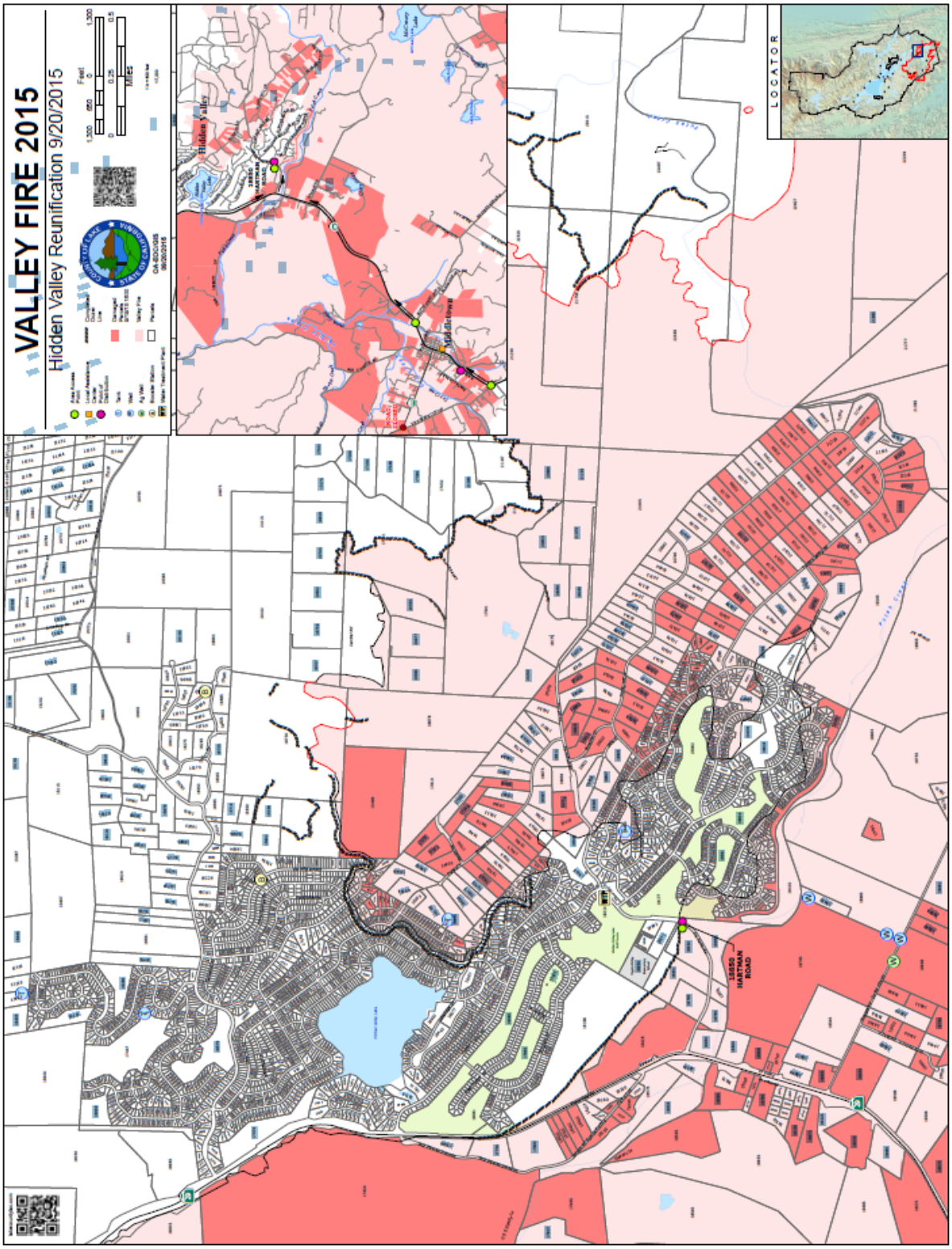


Figure 4. Structure Damage Report Map – Middletown Branch

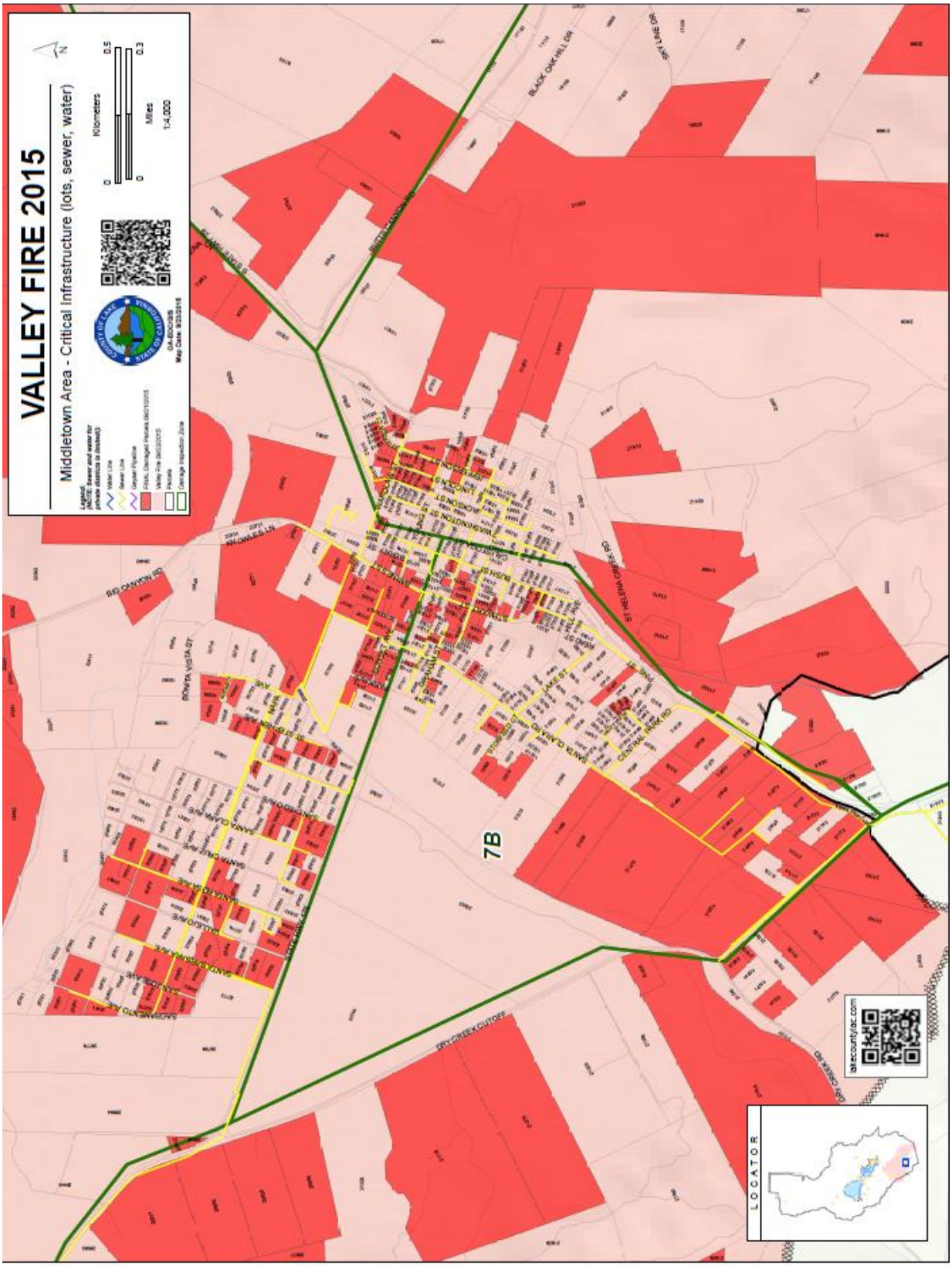


Figure 5. Structure Damage Report Map – Cobb Branch – Loch Lomond Area

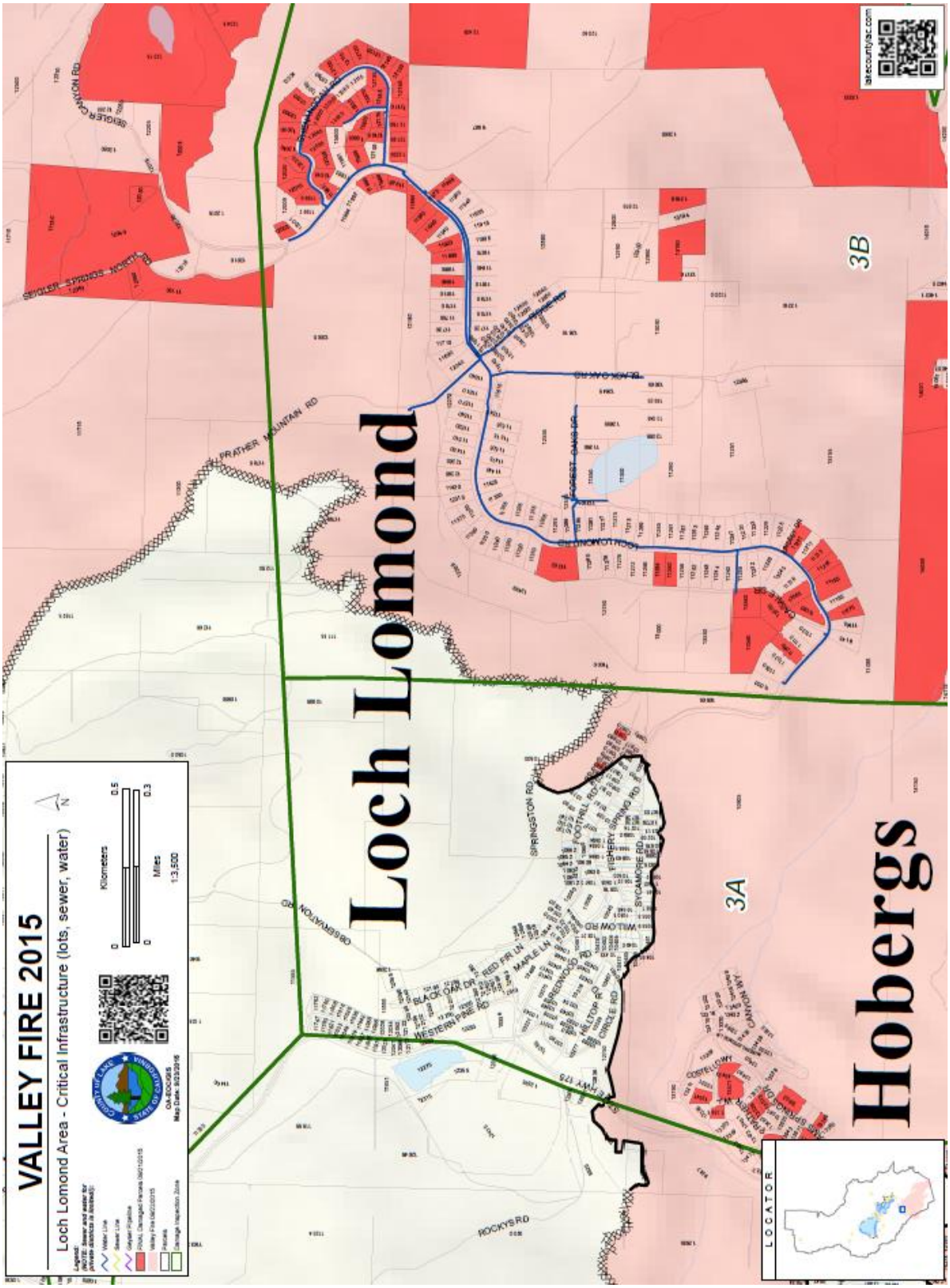


Figure 6. Structure Damage Report Map – Cobb Branch – Hobergs Area

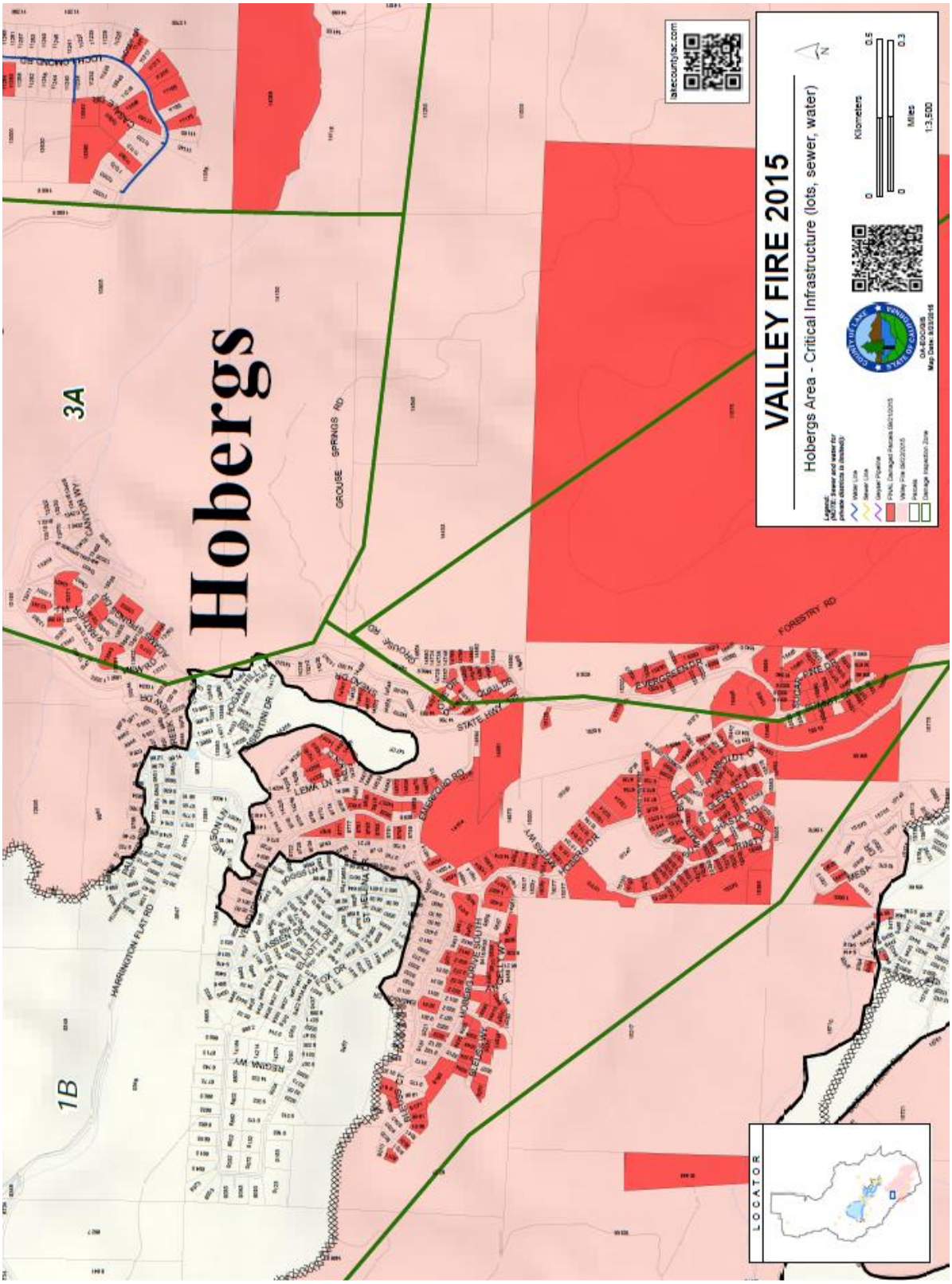
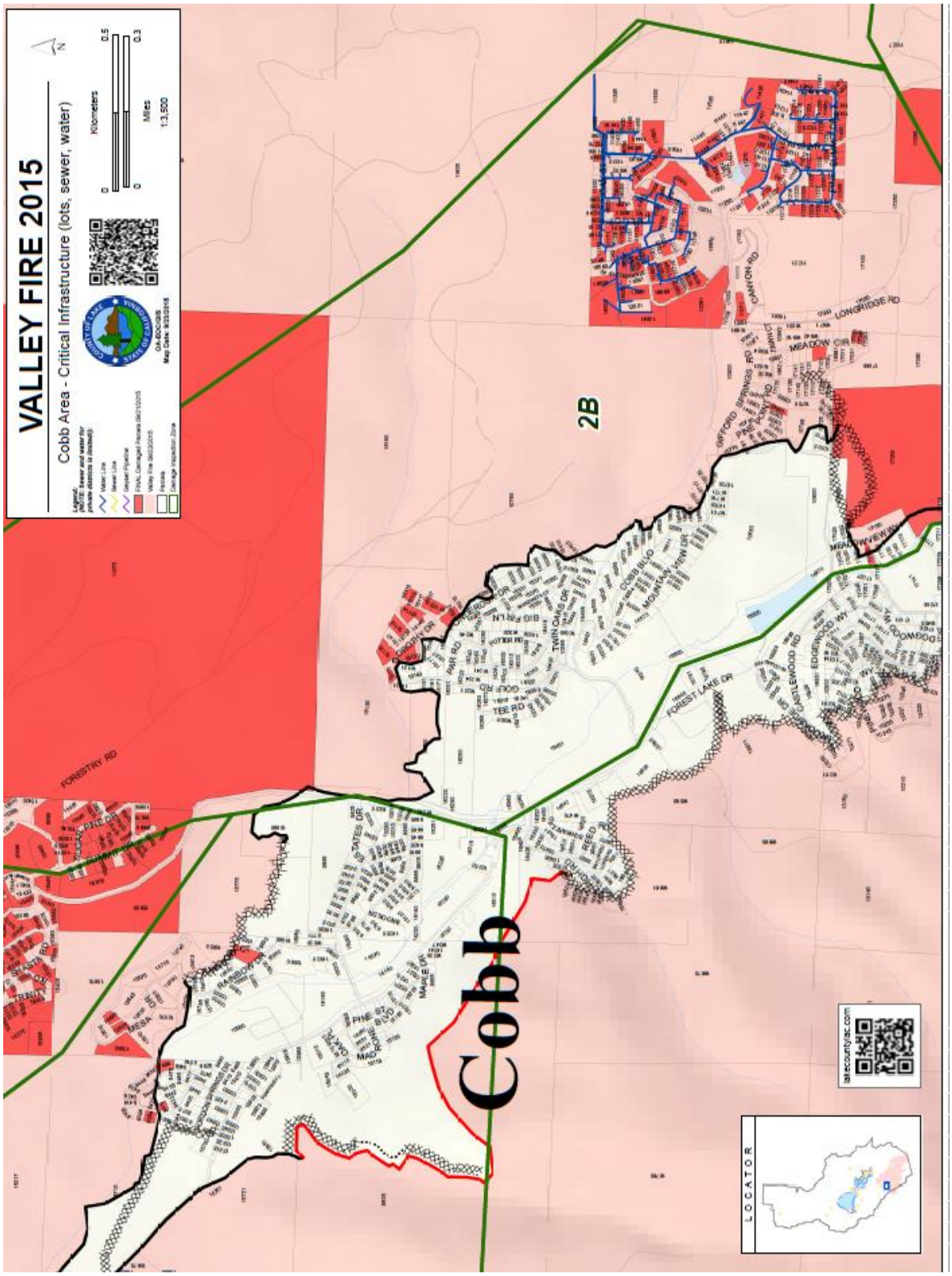


Figure 7. Structure Damage Report Map – Cobb Branch - Cobb Area



Approvals

Prepared by:

Laura Tembreull, Environmental Scientist

Peer reviewed by:

Marc Arico, Associate Industrial Hygienist

Michael Chen, Associate Industrial Hygienist

Joanna Johnson, CIH, CSP, Associate Industrial Hygienist

The undersigned personnel certify that this health and safety plan will be utilized for the protection of the health and safety of workers during the field investigation of the Site.

Diane Kihara, CIH, CSP	9/29/2015 Date
FOR TT Todd Thalhamer, PE	9/29/2015 Date
FOR DNL Diane Nordstrom-Lamkin, PG	9/29/2015 Date
Wes Mindermann, PE	9/29/2015 Date

The undersigned personnel have been briefed about the contents of this health and safety plan, and intend to comply with its provisions:

Signature	Name	Date