WILDFIRE CLEANUP

Considerations for California's Public Health Officials

CDPH California Department Of PublicHealth

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PURPOSE

Local officials are faced with the challenge of conducting or overseeing debris removal operations after a large wildfire. To help provide a resource for Local Health Officers involved in debris management in their jurisdiction, this document contains three sections:

Section	Description
Health Hazards of Debris	This section provides basic information on components of debris and their potential impact on health.
Options for Debris Cleanup on Private Property	This section explains two options for local jurisdictions regarding cleanup of debris on private property – provision of a public assistance cleanup program or creation of an oversight process for private cleanup. The section also provides some suggestions for what local jurisdictions may want to consider when determining how to approach debris removal on private property. The appendix of this document includes copies of ordinances and paperwork used in several jurisdictions across the state in prior events.
Public Assistance Program for Private Property Debris Cleanup	This section provides an overview of the process for the public assistance program that has been used when state agencies (California Environmental Protection Agency and CalRecycle) or federal agencies (United States Environmental Protection Agency and the United States Army Corp of Engineers) have provided support and resources for local jurisdiction's public assistance cleanup programs. This section also addresses the local health emergency proclamation.

HEALTH HAZARDS OF DEBRIS

Hazardous Materials from Burned Structures

Asbestos

Many homes built before 1981 contain asbestos in tiles, pipe insulation, cement, and roof shingles.[1] When asbestos containing construction materials burn, airborne asbestos fibers are released and transported in smoke.[2] Asbestos fibers can also remain in ash and dust, with the possibility of becoming airborne at a later time.[2] Even though an occupational exposure limit (0.1 f/cc) exists for asbestos, the National Institute for Occupational Health and Safety (NIOSH) states that there is no safe level of asbestos.[3]

Household Hazardous Waste

Many people store products in their homes whose ingredients, even in the absence of a fire event, would be classified as household hazardous waste (HHW) because they require special care during disposal to protect human, animal, and environmental health. Examples of HHW items include batteries, lead based paint, pesticides, compressed gas cylinders, ammunition, automotive fluids, and electronics.[4] Even when not incinerated by the fire, these products can create exposure hazards if the chemicals are no longer confined in their container due to damage or alterations of the usual structure of the product.

Heavy Metals, Polycyclic Aromatic Hydrocarbons and Persistent Organic Pollutants

Wildfires will not only burn the infrastructure of a home, but also the objects inside a home. Combustion may alter the chemical make-up of household items that in their usual state do not cause health threats. High temperature burning of electrical equipment, appliances, plastics, lead paint, and other household items can release toxic chemicals and produce

[1] Occupational Safety and Health Administration. Asbestos. https://www.osha.gov/Publications/OSHA3507.html. Published January 2014.

[2] Mauney, M. Asbestos and Natural Disasters. https://www.asbestos.com/asbestos/natural-disasters/. Updated October 2018.

[3] Occupational Safety and Health Administration. Occupational Exposure to Asbestos. https://www.osha.gov/laws-regs/federalregister/1994-08-10. Published August 1994.

[4] Department of Toxic Substances Control. Emergency guidance on Wildfires #2. https://www.dtsc.ca.gov/HazardousWaste/upload/Emergency-Guidance-on-Wildfires-2.pdf. Published July 2017.

hazardous compounds. Laboratory analysis of wildfire debris indicates the presence of hazardous materials that pose a threat to human health.[5,6,7,8,9] Heavy metals including lead, cadmium, chromium, mercury, copper, manganese, nickel, arsenic, zinc, iron, and aluminum are present in wildfire debris.[5,6,7,8] In addition, polycyclic aromatic hydrocarbons (PAHs) and persistent organic pollutants (POPs), including polychlorinated biphenyls (PCBs), dioxins, and furans have been found in debris.[7,8,9] Assessment of residential burn debris and ash following the 2003, 2007, and 2015 California wildfires demonstrated elevated concentrations of heavy metals and PAHs.[7,8,9] While there was variation across the studies regarding level of heavy metals and PAHs identified in the debris and which screening levels they exceeded (including California Human Health Screening Levels (CHHSL), California Department of Toxic Substances Control Screening Levels (DTSC-SL), or the U.S. EPA Regional Screening Levels for residential and commercial property (RSL)), there was consistent demonstration that components of debris, especially arsenic, cadmium, and lead, exceeded health-based and groundwater protection criteria.[7,8,9] Fire ash assessments conducted in other countries (United Kingdom, Sweden, and Pakistan) also indicate the presence of toxic materials exceeding health and safety levels.[10,11]

Debris samples from the 2015 California wildfires indicated that arsenic (mean 60.64 mg/kg), cadmium (mean 11.34 mg/kg), copper (mean 7,505 mg/kg), lead (mean 1,478 mg/kg), nickel (mean 49.84 mg/kg), and zinc (mean 6,749 mg/kg) exceeded the California background metals concentrations (arsenic – 11 mg/kg, cadmium – 1.7 mg/kg, copper – 96.4mg/kg, lead –

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[5] Wittig, V, Williams, S, DuTeaux, SB. Public Health Impacts of Residential Wildfires: Analysis of Ash and Debris from the 2007 Southern California Fires. *Epidemiology.* 2008; 19(6), S207.

[6] Plumee, GS, Martin, DA, Hoefen, T, Kokaly, R, Hageman, P, Eckber, A, Lamothe, PJ. Preliminary Analytical Results for Ash and Burned Soils from the October 2007 Southern California Wildfires. *USGS*. Retrieved from https://pubs.usgs.gov/of/2007/1407/pdf/OF07-1407_508.pdf. Published 2007.

[7] Geosyntec. ASSESSMENT OF BURNED DEBRIS REPORT CEDAR FIRE AND PARADISE FIRE AREAS SAN DIEGO COUNTY, CALIFORNIA. https://calepa.ca.gov/wp-content/uploads/sites/6/2016/10/Disaster-Documents-AshReport07-Report.pdf. Published February 2004.

[8] Geosyntec. ASSESSMENT OF BURN DEBRIS - 2007 WILDFIRES SAN BERNARDINO AND SAN DIEGO COUNTIES, CALIFORNIA. http://www.Cal OES.ca.gov/RecoverySite/Documents/CalEPA_AshReport%202007.pdf. Published December 2007.

[9] Geosyntec. ASSESSMENT OF BURN DEBRIS - 2015 WILDFIRES LAKE AND CALAVERAS COUNTIES, CALIFORNIA. https://calepa.ca.gov/wp-content/uploads/sites/6/2016/10/Disaster-Documents-2015yr-FireSample.pdf. Published December 2015.

[10] Petrilik J, Ryder RA. After Incineration the Toxic Ash Problem. International POPs Elimination Network (IPEN) Report. https://ipen.org/sites/default/files/documents/ipen_incineration_ash-en.pdf. Published April 2005.

[11] Allegrini E, Vadenbo C, Boldrin A, Astrup TF. Life cycle assessment of resource recovery from municipal solid waste incineration bottom ash. http://orbit.dtu.dk/files/118476591/2015_JEM_Allegrini_LCA_bottom_ash_recovery_self_archive_1_.pdf. Published 2015.

97.1 mg/kg, nickel – 509 mg/kg, and zinc – 236 mg/kg).[12,13] Levels of these metals, with the exception of zinc, also exceeded the U.S. EPA's Regional Screening Levels (RSLs) concentrations (arsenic – 0.11 mg/kg, cadmium – 4.5 mg/kg, copper – 3,100 mg/kg, lead – 80 mg/kg, nickel – 0.42 mg/kg, and zinc – 23,000 mg/kg),[13] which replaced the Preliminary Remediation Goals (PRGs) in 2008. Zinc continued to be listed as a potential risk to human health and the environment due to mean levels exceeding the upper background limit and other screening criteria.

Challenges in Characterizing Risk from Debris

It is difficult to make statements regarding the exact content of debris and ash from a wildfire because it will vary depending on what structure the sample originated from and where, within the structure, the sample was taken. For example, debris from a home that contained vast amounts of electronics or where the owner had a hobby that utilized chemicals will have a larger array and greater concentrations of toxic substances than a home containing few of these items. Debris from a garage that stored paints and automotive fluids will contain higher levels of toxic contaminants than debris from a sparsely furnished bedroom.

Short of attempting to sample the debris from every structure and from multiple areas within each structure, which is neither efficient nor feasible in a large event, officials will need to make generalizations about how to characterize the resulting debris for the purposes of safely overseeing its removal and communicating health risks to the public.

Health Impacts of Debris

The presence of hazardous compounds in wildfire debris can cause health impacts when there is human exposure. Health effects will vary depending on the specific chemicals in the debris, the magnitude of the exposure, and the exposure route. Exposure can occur through inhalation of smoke or debris dust, dermal contact with debris, ingestion of contaminated food products and water, or incidental ingestion from contaminated hands.[14]

[12] Background Concentrations of Trace and Major Elements in California Soils. Kearney Foundation, 1996. https://envisci.ucr.edu/downloads/chang/kearney_special_report_1996.pdf.

[13] U.S. Environmental Protection Agency. Regional Screening Levels (RSLs) | Risk Assessment | US EPA, 2018. https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables.

[14] Grant, K., Goldizen, FC, Sly, PD, Brune, M, Neira, M, Van Den Berg, M, Norman, RE. Health consequences of exposure to e-waste: a systematic review. *The Lancet Global Health.* 2013;1(6):350-351

U.S. EPA classifies asbestos as a human carcinogen. Exposure to any level of asbestos is associated with asbestos-related diseases, including severe pneumoconiosis (asbestosis), bronchogenic carcinoma, and pleural mesothelioma.[15,16]

Heavy metals are also classified as human carcinogens and even at lower levels of exposure, heavy metals can induce organ damage.[17] While there were many different heavy metals detected in the debris from recent California wildfires, the ones most frequently occurring above human health screening standards were arsenic, cadmium, and lead. [7,8,9] Arsenic can cause a wide-variety of health effects including skin and respiratory irritation, nausea, vomiting and diarrhea, anemia, peripheral neuropathy, and skin, bladder and lung cancer.[18] Cadmium can cause renal damage, decreased bone mineralization, emphysema, and lung cancer.[19] Lead exposure can cause abdominal pain, anemia, and renal and nervous system damage.[20]

Polycyclic aromatic hydrocarbons (PAHs) include multiple different chemicals whose toxicity is still being studied. Some PAHs are known to cause skin and lung irritation.[21,22] They are identified as animal carcinogens and probable human carcinogens. [21,22] Reproductive effects have also been identified in animals.[21,22]

Persistent organic pollutants (POPs) also cause a variety of health impacts including skin toxicity, immunotoxicity, neurotoxicity, negative effects on reproduction, hormone

[15] Mossman BT, Churg A. Mechanisms in the pathogenesis of asbestosis and silicosis. *Am J Respir Crit Care Med.* 1998; 157:1666–1680.
[16] Agency for Toxic Substances and Disease Registry. Toxicological Profile for Asbestos. https://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=30&tid=4. Published September 2001.
[17] Tchounwou PB, Yedjou CG, Patlolla AK, Sutton DJ. Heavy metal toxicity and the environment. *EXS*. 2012; 101:133-64.
[18] Agency for Toxic Substances & Disease Registry. Toxicological Profile for Arsenic. https://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=22&tid=3. Published August 2007.
[19] Agency for Toxic Substances & Disease Registry. Toxicological Profile for Cadmium. https://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=48&tid=15. Published September 2012.
[20] Agency for Toxic Substances & Disease Registry. Toxicological Profile for Lead. https://www.atsdr.cdc.gov/ToxProfiles/TP.asp?id=96&tid=22. Published August 2007.
[21] Centers for Disease Control and Prevention. Polycyclic Aromatic Hydrocarbons (PAHs) What Health Effects Are Associated With PAH Exposure? https://www.atsdr.cdc.gov/csem/csem.asp?csem=13&po=11. Published July 2009.
[22] Agency for Toxic Substances & Disease Registry. Polycyclic Aromatic Hydrocarbons (PAHs). https://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=25. Updated March 2011.

disruption, and predisposition to cancer.[23,24,25] Polychlorinated biphenyls, a subset of POPs, are known to cause chloracne and other rashes, renal and thyroid toxicity, and cancer of the liver and biliary tract.[23,26]

While there have not been long-term studies of individuals exposed to debris from the wildfires that have occurred in the past few years in California, studies of individuals exposed to toxic ash during the World Trade Center disaster showed increased lower respiratory disease, asthma and other reactive airway diseases, increased gastroesophageal reflux disease, and cancer.[27,28]

Environmental Impacts of Debris

In addition to hazardous levels of heavy metals and other compounds being found in wildfire debris, they have also been identified in surrounding areas above levels that are naturally occurring or due to known contamination from prior land use practices. Soil and water pollution from pesticides, POPs, PAHs, and heavy metals can cause long-term threats to the environment.[29,30] The high temperature of fires increases soil acidity, which leads to leaching.[31] Leachates from the land and post-fire storm water runoff affect water quality.[32,33] Post-fire storm events can mobilize large sediment loads containing heavy metals, including

[23] Centers for Disease Control and Prevention. Dioxins, Furans and Dioxin-Like Polychlorinated Biphenyls Factsheet. https://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html. Published April 2017

[24] World Health Organization. EXPOSURE TO DIOXINS AND DIOXIN-LIKE SUBSTANCES: A MAJOR PUBLIC HEALTH CONCERN. http://www.who.int/ipcs/features/dioxins.pdf. Published 2010.

[25] Loganathan, BG, Masunaga, S. CHAPTER 18 - PCBs, Dioxins, and Furans: Human Exposure and Health Effects. *Handbook of Toxicology of Chemical Warfare Agents.* 2009; 249-253.

[26] Agency for Toxic Substances and Disease Registry. Toxicological Profile for Polychlorinated Biphenyls (PCBs). https://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=142&tid=26. Published November 2000.

[27] Yip J, Webber MP, Zeig-Owens R, Vossbrinck M, Singh A, Kelly K, Prezant DJ. FDNY and 9/11: Clinical services and health outcomes in World Trade Center-exposed firefighters and EMS workers from 2001 to 2016. *American Journal of Industrial Medicine.* 2016; 59(9):695-708.

[28] Landrigan PJ, Lioy PJ, Thurston G, Berkowitz G, Chen LC, Chillrud SN, Gavett SH, … Small C. Health and environmental consequences of the world trade center disaster. *Environmental Health Perspective.* 2004; 112(6):731-9.

[29] Euripidou, E, Murray, V. Public health impacts of floods and chemical contamination. *J Public Health*. 2004; 26 (4):376–83.

[30] Wuana RA, Okieimen, FE. Heavy Metals in Contaminated Soils: A Review of Sources, Chemistry, Risks and Best Available Strategies for Remediation. *ISRN Ecology, 2011*.

[31] Ulery, AL., Graham, RC, Amrhein, C. WOOD-ASH COMPOSITION AND SOIL PH FOLLOWING INTENSE BURNING. *Soil Science.* 1993;156(5):358-364\

[32] Stein ED, Brown JS, Hogue TS, Burke MP, Kinoshita A. Stormwater contaminant loading following southern California wildfires. *Environmental Toxicology and Chemistry.* 2012; 31(11):2625-2638.

[33] Finlay SE, Moffat A, Gazzard R, Baker D, Murray V. Health impacts of wildfires. *PLoS Curr*. 2012; 4:e4f959951cce2c.

mercury.[34] Given the low solubility of these contaminants and the adherence of contaminants to soil and ash, these contaminants can persist for years in the environment after a fire.[6] Exposure to these contaminants through direct ingestion or contact with contaminated soil, disruption of the food chain, inhalation of contaminated air, and drinking of contaminated water puts those in the burned areas and areas adjacent to debris sites at risk.

Precautionary Principle

Despite the increasing incidence of fires, there are few studies on the direct impact of debris on health. Scientific literature is incomplete due to the difficulty of quantifying human exposure and performing long-term studies for health effects. In the absence of this research, it is crucial for health officials to utilize the precautionary principle in the face of uncertainty.[35] Because there is evidence to suggest that debris from burned residential structures can be hazardous, it should treated with caution and preventive actions should be taken to protect the public from any harm. In order to mitigate the potential health risks, debris management operations need to include environmental and public health officials.

Prevention of Exposure During Debris Removal

Each stage of the debris removal process presents a potential for human exposure to the hazardous constituents in the debris. Workers, whether doing the preliminary sweeps for asbestos, identifying and removing HHW products, or performing the large-scale debris removal should have appropriate safety training and be provided proper personal protective gear. Their work should be monitored to ensure it follows the site-specific health and safety plan. Dust control methods should be implemented within debris removal operations. In addition, air quality on the site and in community locations adjacent to debris removal work should be monitored for dust and debris ash. Trucks and other equipment carrying debris to transfer and disposal locations should be monitored to ensure they have fully captured the debris and it is not being released onto roadways during travel. Landfills should have proper oversight to ensure waste is properly disposed. Finally, after debris has been removed from a site, soil testing should occur to confirm that the removal is completed to the remediation goals set by the local jurisdiction to protect health so that there is not a long-term risk of exposure to individuals who use that property.

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[34] Burke MP, Hogue TS, Ferreira M, Mendez CB, Navarro B, Lopez S, Jay JA. The Effect of Wildfire on Soil Mercury Concentrations in Southern California Watersheds. *Water, Air, & Soil Pollution*. 2010; 212(1-4):369-385.

[35] Kriebel D, Tickner J, Epstein P, Lemons J, Levins R, Loechler EL, Quinn M, … Stoto M. The precautionary principle in environmental science. *Environ Health Perspect*. 2001; 109(9):871-6.

OPTIONS FOR DEBRIS CLEANUP ON PRIVATE PROPERTY

Background

After an emergency that creates substantial debris within a community, the local jurisdiction will need to make decisions regarding mass debris-clearing operations. Some jurisdictions will already have debris management plans in place, while others will need to plan operations at the time of the emergency. Jurisdictions are responsible for managing and removing debris on the public road right-of-way and on public properties. In addition, in each event, the jurisdiction will need to determine how they plan to approach the management of debris on private property.

Typically, private property owners are responsible for their own debris cleanup. However, if substantial amounts of debris are located on private property, it could pose a public health or economic threat to the jurisdiction. The jurisdiction will need to assess the extent, location, and nature of the debris and use that information to guide their decisions. If it is determined that the debris is likely to pose a public health threat, jurisdictions will need to have greater involvement in management of the cleanup of private property.

Some considerations when deciding how to approach debris cleanup on private property, including whether or not to offer a disaster public assistance program, include:

- What is the magnitude, location, and nature of the debris? Is the debris purely in rural wildland areas or were residential or commercial structures destroyed? What was on the properties before the fire and what would happen to that content if burned?
- Does the debris pose an imminent threat to public or environmental health? Is there likely to be public exposure to the debris? For example, is the debris on property adjacent to areas open to the public such as parks or schools? Is the debris likely to impact local environmental resources such as ground or surface water or agricultural areas?
- Will failure to completely remove the debris create a long-term threat to public health? For example, will the property have elevated levels of a chemical that would then preclude it from being used without future remediation?
- Does the magnitude of the debris constitute a potential economic threat to community if the debris is not removed in timely manner?
- Are there resources and expertise available for the local jurisdiction to run a public assistance program for private property cleanup? Are there local funds, staff and

expertise available to coordinate a program? Is the jurisdiction eligible for state or federal assistance, including funding?

- What are the political pressures and opinions regarding offering a disaster public assistance program for private property cleanup?

Option A: Local Jurisdiction Operates a Public Assistance Program for Private Property Debris Cleanup

In a large event, some local jurisdictions will choose to operate a disaster public assistance cleanup program whereby the local government coordinates either its own staff or contractors to perform cleanup operations on private property with owner consent via the opt-in Right-of-Entry (ROE) process. This program may be operated and funded entirely locally or, if eligible, the program may involve state or federal funding and assistance with program operation.

Many larger jurisdictions in California have debris management plans that include operating local disaster public assistance programs for private property cleanup and have substantial experience running these programs. Smaller jurisdictions may rely heavily on State or Federal assistance to set up and implement a program. For details on the process for state/federal disaster public assistance program for private property cleanup, see the below section on the Process for the Disaster Public Assistance Program for Private property Debris Cleanup.

Even if a local jurisdiction operates a disaster public assistance program for private property cleanup, there will be some property owners who decline to participate. The local jurisdiction will then need to determine what oversight they will provide and what requirements they will place on private property owners who chose to cleanup on their own or who fail to cleanup.

Option B: Local Jurisdiction Provides Oversight or Guidance for Private Property Debris Cleanup

Local jurisdictions may decide to not offer or operate a disaster public assistance program for private property cleanup but instead to create an oversight process for the cleanup on private residential properties. In addition, even if the local jurisdiction offers a public assistance program for private property debris cleanup, it will need to determine the type of oversight they plan to provide for private property owners who elect not to participate in the public program.

Over the past few years, there have been significant variations across local jurisdictions in the type of oversight of private property cleanup provided in response to disaster events. Some jurisdictions have had minimal involvement in the cleanup of debris on private property, instead relying on property owners to know and follow local, state and federal regulations without any monitoring. In some examples, the local jurisdiction may not require documentation that cleanup has been completed before issuing permits for rebuilding. Other jurisdictions have taken a more comprehensive approach to ensure that cleanup efforts, whether through a public assistance program or private effort, follow best-management practices and adhere to health and safety standards.

When evaluating how to structure the oversight of private property cleanup, there are many things for local jurisdictions to consider, including but not limited to:

- What is the expectation from, and obligation to, the community for the local jurisdiction to provide a process to protect public health and ensure safety of cleanup? What is desired by the local governing body for assurances that property owners follow best practices for health and safety and complete the work to a certain standard without posing harm to other individuals or properties?
- What authority is needed to address problems or complaints that may arise from private property owners doing their own cleanup? Is there a local agency with current authority to address health and safety issues or is it necessary to pass an ordinance or create new regulations to provide such authority?
- How will the local jurisdiction address private residential properties for which the owner fails to cleanup? Is there existing authority and an existing process to ensure cleanup?
- How will the local jurisdiction ensure the requirements and expectations for property owners who opt to do private cleanup are consistent with those established under the public program? Will both options result in similar protections for the short and long-term public health and safety of the community?
- What is the availability of resources, including staff time and expertise, for oversight of cleanup on private property?
- If multiple neighboring jurisdictions are impacted by the event, are standards for the cleanup process and completion similar with similar protections for health and safety?

While the approach to cleanup of private property is ultimately the decision of the local governing body, Local Health Officers should be included in the discussions to ensure consideration is given to the potential for immediate and long-lasting impact on the public

and environmental health of the community. As previously explained, debris from structures burned by wildfires has been shown to contain known household hazardous materials, asbestos, and other chemicals such as heavy metals, polycyclic aromatic hydrocarbons, and polychlorinated biphenyls. The potential for human exposure creates a public health hazard, and at least for the duration of a declared "local emergency," it is within the authority of a Local Health Officer to "take any preventive measure as may be necessary to protect and preserve the public health from any public health hazard" (California Health and Safety Code § 101040) within his or her jurisdiction.

The Environmental Health Director will also need to be involved, particularly if the Environmental Health Department is the Certified Unified Program Agency (CUPA) regulating hazardous materials management; the Solid Waste Local Enforcement Agency (LEA) regulating solid waste; and/or if it manages a local drinking water or on-site septic program.

In operating an oversight program for private property debris removal (option B), there have been several common elements that have been used by local jurisdictions:

- If the local jurisdiction does not already have a debris management ordinance in effect, the governing body passed an urgency ordinance or the local jurisdiction has utilized other legal process (e.g., Health Officer Order) to create the program. It is critical that this process include specific authority for several key components of the work:
    - Designation of which agency or department is responsible for oversight and operation of the program. In some jurisdictions, debris operations are overseen by the Department of Public Works; in others it has been led by the County Administrator's Office; and in others it has been led by the Environmental Health Department. Regardless of which organization is appointed as lead entity, multiple agencies should be involved and provide support for the work.
    - Coordination between participating agencies is enhanced with the activation and operation of a local Debris Removal Operations Center (DROC).
    - Creation and implementation of the program including the development of rules and regulations. There must be a process for investigation of complaints as well as enforcement and citation authority for failure to adhere to program requirements.
    - Determination of deadlines for when property owners must enroll in the oversight program and when property owners must complete the cleanup process is needed for citation and summary nuisance abatement if a property is not cleaned up by the deadline. Establishment of deadlines should consider the

imminent threat of the disaster event as well as how much time remediation of the threat may take.

- The department or agency operating the oversight program has required private property owners to submit information for review and approval regarding how the property owner intends to perform the debris removal. Information that has been required has included:
    - Identification of the individual or agency who will be performing the work and verification that that person is a qualified, licensed contractor.
    - Submission of plans for how the contractor performing the cleanup will adhere to health and safety standards regarding worker safety; household hazardous material removal; asbestos removal and disposal; air monitoring and dust control; debris removal; safe transport of debris to appropriate disposal location; soil grading; certification that the foundation is intact or verification of its removal; confirmation sampling; and recycling of appliances and vehicles.
- The department or agency operating the program has worked with a geologist or other expert to establish cleanup standards that include standards for evaluating soil samples after debris removal to confirm that the debris removal has remediated hazards.
- The department or agency operating the program has required private property owners to submit documentation that the work has been finished including a signed certification from a licensed professional indicating that the property has completed cleanup sufficient to meet standards and has properly disposed of removed debris. This documentation is subsequently reviewed and approved before the local jurisdiction issues new building permits.

For local jurisdictions interested in creating a program to oversee private property cleanup, refer to the Appendix that includes examples of ordinances and program documents that have been used in prior cleanup efforts.

The California CUPA Forum and the California Conference of Directors of Environmental Health have also been compiling examples at https://www.ccdeh.com/documents/emergency-preparedness-policy-committee/fire-disaster-docs and https://calcupa.org/wildfire-boilerplate/index.html.

PUBLIC ASSISTANCE PROGRAM FOR PRIVATE PROPERTY DEBRIS CLEANUP (OPTION A)

Debris management operations are the responsibility of the affected jurisdiction; however, should the need for debris management operations exceed the ability of the affected jurisdiction, under certain circumstances, they may be eligible for state or federal assistance. To be eligible for California Disaster Assistance or Federal Disaster Assistance funding, there must be a state or federally declared emergency for the area. In addition, costs for debris removal from private property will only be reimbursed if the debris poses an imminent threat to public health and safety.[36,37]

In California, local jurisdictions request state assistance for debris removal on private property via the California Governor's Office of Emergency Services (Cal OES). If the request is granted, state or federal agencies will provide resources and support for debris management operations. CalRecycle is often mission tasked with leading the private property debris removal operations. Although CalRecycle has significant expertise and experience in disaster debris removal operations, prior to FY 2018-2019, they did not have funding or authorization for a formal program. State assistance for debris cleanup operations was previously performed on an ad hoc basis in response to receiving a mission task from Cal OES.

In addition, only recently has there been substantial federal involvement in debris cleanup operations. As a result, there has been the perception of variation in regard to the roles that various agencies play, what aspects of cleanup are included or excluded in the public assistance program, and how response operations are structured.

Below is a summary of the high-level steps that generally occur in a public assistance program for private property debris cleanup.

Request and Approval for Assistance

The local governing body places a formal request to Cal OES for assistance. To address debris removal on private property, the request needs to include demonstration that the debris poses an imminent threat to public health. This is accomplished by a declaration of a local health emergency by the County or City Health Officer or via alternative methods where a qualified subject matter expert submits documentation that debris removal is necessary to reduce a threat to public health and safety. Over the past few years, the documentation Cal

[36] CA CCR Title 19 Section 2925
[37] 44 CFR 206.224

OES or FEMA have required as demonstration of an imminent threat to public health has varied. In more recent events, Cal OES has required a declaration of a local health emergency under California Health and Safety Code § 101080.

Once Cal OES receives a request for assistance with debris removal, they determine if the request is eligible.[38] If it is determined that the request meets eligibility requirements and resources are available, Cal OES and/or FEMA authorize assistance and Cal OES works with FEMA to determine which agencies will lead which aspects of the cleanup.

Organizing a Local Debris Incident Management Team

The local jurisdiction, in coordination with state and federal responding agencies, convenes a Debris Incident Management Team (DIMT) and creates a disaster specific plan for the public assistance cleanup program including monitoring and oversight. The DIMT typically operates under a Unified Command consisting of the local jurisdiction and Cal OES. If the wildfire impacts tribal land, the Governor's Office of the Tribal Advisor or the California Environmental Protection Agency's Native American Tribal Relations contact should be included.

Ideally, a local jurisdiction will have a debris management plan created in advance that identifies which local agencies and departments will lead specific aspects of the cleanup. Local agencies and departments that may need to be involved include the County Administrator's Office, County Counsel, Assessor, Code Enforcement, Planning and Building Departments, Public Works Agency, Public Health Department, Environmental Health Department, Local Enforcement Agency (LEA), Certified Unified Program Agency (CUPA), and Water and Sanitation Agencies.

The DIMT identifies damaged properties and determines whether the properties are eligible for inclusion in the public assistance program. This may or may not include mobile homes, non-residential structures destroyed on residential property, or commercial properties. Cal OES/FEMA make the ultimate determination as to eligibility.

Private properties are enrolled in the assistance program either voluntarily by property owners executing a Right of Entry (ROE) agreement or through the local jurisdiction's nuisance abatement process. This may be influenced by the legal interpretation of the County Counsel as well as the language included in relevant emergency declarations or Local

[38] California Governor's Office of Emergency Services. State of California Emergency Plan 2017. Available from: http://Cal OES.ca.gov/cal-oes-divisions/planning-preparedness/state-of-california-emergency-plan-emergency-support-functions

Health Officer Orders. In past public assistance debris removal operations, jurisdictions required all property owners to sign a ROE agreement for both Phase 1 of the cleanup which includes inspection and removal of HHW and asbestos containing material (ACM), and for Phase 2 which is large scale debris removal. In more recent efforts, it has been determined to be in the public interest and within the authorities of the local emergency declaration or Health Officer Orders to perform Phase 1 HHW and ACM "sweeps" without having individual property ROE agreements in place.

Phase 1: Removal of Asbestos Containing Material and Household Hazardous Waste

Working with the Certified Unified Program Agency (CUPA) and the Solid Waste Local Enforcement Agency (LEA), the DIMT will identify and permit locations for temporary solid waste facilities or transfer stations to be used for classifying and segregating household hazardous materials and loading material for transport to final disposal location. If a local or state emergency proclamation has been made, the LEA can issue waivers requested by the solid waste facilities owners/operators to adjust tonnage and operating hours to allow for the handling of additional materials.

The California Department of Toxic Substance Control (DTSC) or U.S. EPA (or other designated lead agency) will typically perform Phase 1 of the cleanup. Trained personnel will inspect the properties. Preliminary assessment by state or federal agency field teams will ensure that there are no radioactive or potentially explosive threats on the property. Then, the property will be inspected for asbestos by a California Division of Occupational Safety and Health (Cal OSHA) Certified Asbestos Consultant and any identified asbestos containing material will be removed as is feasible. Subsequently, a hazardous material specialist will identify and properly remove hazardous material and HHW from the site. The agency overseeing Phase 1 of the cleanup is responsible for ensuring that all individuals are properly trained, e.g., HAZWOPER, and don the appropriate level of personal protective equipment for the operations performed.

Phase 2: Debris Removal

Throughout this time, the local jurisdiction will conduct outreach to private property owners to educate them on the availability, eligibility and participation requirements of the public assistance cleanup program. Property owners interested in participating will need to sign a legal Right-of-Entry (ROE) agreement allowing access to the property for debris removal operations. The local jurisdiction is responsible for reviewing the ROE agreements for completeness and ensuring they are signed by a person legally authorized to agree to

participation in the program. It can be expected that property owners will need some assistance with the ROE process. Some jurisdictions provide such assistance at their Local Assistance Centers and others have offered it at their DROC.

Local jurisdictions are also responsible for establishing cleanup requirements for properties that do not enroll in the public assistance program and ensuring those properties are also properly cleaned. Properties that go through the nuisance abatement process are typically cleaned through the public assistance debris removal program once legal site access is established by the local jurisdiction. Private or local jurisdiction debris removal programs may also be utilized for the abatement of properties. Cost recovery for properties that are cleaned via the nuisance abatement process is typically met through the placement of a lien on the property for the cost of the debris removal.

The DIMT, working with the LEA and or CalRecycle, will identify potential landfills that meet requirements to accept debris and create debris disposal plans. The LEA will work with landfills and CalRecycle to process requests for the landfill owner/operators for emergency waivers to implement the plans, if needed. Waivers from the Regional Water Quality Control Board may also be required prior to debris disposal at landfills. The LEA may also choose to inspect debris removal and transport vehicles for dust control and proper debris containment. The DIMT may create transportation plans for and assign a Safety Officer to oversee truck movement to minimize impact and exposure to the public.

For each individual property, the agency leading debris removal, CalRecycle or the U.S. Army Corp of Engineers (USACE), will scope out and document the cleanup requirements and plan for the site. The DIMT will notify property owners of the debris removal schedule and dates planned for debris and ash removal. Some jurisdictions post signs at the property that indicate which debris removal activities have been completed. Protocols will need to be established regarding whether and when a property owner can access a property that has not yet been cleared.

Phase 2 cleanup, the actual removal of debris and ash, will be completed by contractors under the oversight of the lead agency (CalRecycle or USACE). Contracts from the lead agency will specify the debris cleanup process requirements including:

- Requirements for preparation and implementation of community safety plan that includes protective measures to contain the debris, dust, and ash, air quality management, and equipment safety evaluations.
- Contractor health and safety plans to ensure worker safety including provision and use of personal protective equipment.

- Site assessment to document the conditions and special circumstances of each individual site.
- The process for management of any personal items that are collected from the property during the cleanup, including storage and return to the property owner.
- The process for physical removal of the ash and debris, contaminated soil, metals, and fire damaged concrete.
- The process for physical removal of wastewater such as water in swimming pools and management of potential vectors.
- The process for additional testing, if needed, of construction or demolition waste prior to recycling.
- The process for segregating materials for recycling as well as information regarding where the recyclable materials will be sent.
- Debris disposal monitoring including protective wrapping of debris placed in transport vehicles and safe transport to disposal locations.
- Measures to control erosion during debris removal.
- Other mitigation measures to ensure safety of the public and workers taken by the contractors such as removal of hazardous trees.
- Contract compliance monitoring.

Cleanup Standards and Certification

In consultation with the Local Health Officer and Local Environmental Health Department, CalRecycle (or USACE) subject matter experts will examine the local geology and/or previous land uses of the affected area and perform testing as needed to determine background levels of contaminants of concern in the soil of the area. This information will be compared with existing health standards---U.S. EPA's regional screening levels, CalEPA's human health screening levels, and DTSC's human risk levels—to create cleanup goals for each geological area affected. The cleanup goals may be higher than existing health standards if the naturally occurring contaminant level is higher than the health standard.

After the property has been cleared of debris, CalRecycle (or USACE) will have contractors collect soil samples, according to a predetermined sampling methodology which ensures sampling is representative of the area of debris, from the area of debris removal to confirm if all hazardous material has been removed and cleanup goals have been met. If after debris removal and scraping, the property does not meet cleanup goals, CalRecycle (or USACE) will have contractors re-scrape, sample and test again, possibly including areas not impacted by

fire adjacent to the impacted areas on specific sites to test for background levels of contaminants. Discussions between the DIMT and the Local Health Officer or Local Environmental Health Department and the subject matter expert should address unusual situations of concern to determine what additional activities should be taken to best protect health while also avoiding over-excavating a property. State guidance should be provided to facilitate this decision-making and minimize situations of concern.

The lead agency (CalRecycle or USACE) will document all activities that occurred on the property including clearance soil sample testing and whether the property meets cleanup goals.

Financial Management

Many property owners enrolled in the Public Assistance Program for private property debris removal will have homeowners insurance coverage for debris removal. There should be an effort to recover debris removal costs, at least in part, from these insurance policies. Property owners should be informed that they will be expected to remit the debris removal portion of their policy coverage to the local jurisdiction. The local jurisdiction will work with owners and private insurance companies to recoup the costs of debris cleanup covered by insurance as included in the ROE agreements. The local jurisdiction will keep the funds in a separate account to be transferred to the lead debris removal agency.

The lead debris removal agency will provide per lot costs to the local jurisdiction to assist with recouping debris removal costs from property owners with insurance coverage. Due to indirect costs and the contractor invoicing cycles and approval process, final costs for all properties are typically provided 90 to 120 days after the last property is cleaned.

For properties that go through the nuisance abatement process, cost recovery requirements are typically met through the placement of a lien on the property by the local jurisdiction for the cost of the debris removal.

Agency Roles and Responsibilities

The following roles and responsibilities may vary:

Agency	Role
Assessor's Office	Assists with identification of owners of damaged properties and contact information; assists with mapping efforts.
California Air Resources Board (CARB) and Local Air Quality Control Boards	Provides air quality monitoring; may provide portable air monitoring equipment and technical resources to evaluate air quality impacts; coordinates with public health officials on public messaging.
California Department of Public Health (CDPH)	Provides technical support for the assessment, containment, and mitigation of radiological hazards. Provides environmental toxicologists for technical issues and risk communication. Provides subject matter experts, such as toxicologists, epidemiologists, environmental scientists, and industrial hygienists, as needed.
California Department of Resources, Recycling and Recovery (CalRecycle)	Acts as the Solid Waste Local Enforcement Agency (LEA) (in some counties) or provides technical support to LEA; assists the LEA with Emergency Waiver requests; evaluates impacts on solid waste facilities; provides assistance to local jurisdictions in developing debris management plans to dispose, recycle, reuse or divert disaster debris; if mission tasked, can manage and implement a coordinated disaster debris removal program which includes the hiring of contractors and consultants.
California Department of Toxic Substances Control (DTSC)	Provides technical assistance to local jurisdictions and agencies; deploys hazardous material trained staff for assessments and response during declared emergencies when mission tasked by Cal OES.
California Division of Occupational Safety and Health (Cal OSHA)	Provides standards, guidance and enforcement of regulations for worker safety.

Agency	Role
California Environmental Protection Agency (CalEPA) – includes DTSC, CalRecycle, OEHHA, CARB, SWRCB	Lead agency for coordinating emergency activities related to hazardous materials; oversees unified hazardous waste and hazardous materials management regulatory program administered by Certified Unified Program Agencies (CUPAs).
California Governor's Office of Emergency Services (Cal OES)	Provides state-level emergency response management; receives and processes requests from local jurisdictions for debris-removal assistance; tasks state agencies with specific missions.
California Office of Environmental Health Hazard Assessment (OEHHA)	Provides subject matter expertise to characterize risk and provide toxicological information.
California State Water Resources Control Board (SWRCB)	May issue administrative orders requiring investigation or cleanup and abatement of public health/environmental threats to responsible parties or suspected responsible parties. Provides technical environmental staff to evaluate potential impact to water quality from emergencies. Assists public water systems in the provision of clean, safe, and wholesome potable water. Assists the California Department of Public Health (CDPH) in advising water users of an emergency situation and provides critical information on water uses in areas that might be affected by hazardous releases. Issue waivers for disposal of debris at landfills.
County Board of Supervisors or City Council	Provides local governmental leadership and decision-making for the debris cleanup process including issuing emergency proclamations, sending formal request for cleanup assistance to Cal OES, and passing ordinances and regulations as necessary to enable cleanup.

Agency	Role
County or City Administrator	Participates in the preparation, review, and update of local debris management plan. Provides guidance for compliance with federal and state assistance programs for debris removal. Coordinates with FEMA and Cal OES regarding federal and state disaster assistance for debris management operations. Provides the communication link with other agencies and jurisdictions, state and federal government agencies, private sector partners, and other stakeholders. Manages documentation for state and federal reimbursement for debris operations.
County or City Counsel or Legal Team	Reviews ROE process, debris operations procedures and ordinances for compliance with applicable local, state, and federal regulations. Supports the jurisdiction with regulatory components and enforcement of debris removal program violations including nuisance abatement issues. Works with local code enforcement division for nuisance abatement process.
Federal Emergency Management Agency (FEMA)	Provides federal emergency response management; receives and process requests from Cal OES for debris-removal assistance Supports state agencies with specific missions.
Local Certified Unified Program Agency (CUPA)	Provides local oversight of and guidance to hazardous materials/waste management aspects of the debris cleanup including providing personnel for Phase 1 and 2 cleanup.
Local Enforcement Agency (LEA)	Reviews requests from owner/operator and approve Emergency Waivers for landfills and other solid waste facilities; evaluates impacts on solid waste facilities; assist in developing debris management plans to recycle, reuse or divert disaster debris; continues to monitor and oversee solid waste activities throughout the jurisdiction to ensure safety and health standards are being met.
Local Environmental Health Departments	May serve as lead for the Debris Incident Management Team. Provides local oversight of and guidance to aspects of the debris cleanup. May serve as local CUPA and/or LEA. Provides guidance on debris removal issues of potential public health impact including debris removal community safety operations, air quality monitoring, and soil cleanup target.
Local Public Health Departments	Provides local oversight of and guidance to public health aspects of the debris cleanup including air quality and worker health and safety concerns.

Agency	Role
Local Public Works Department	May serve as lead for the Debris Management Taskforce. May serve as the LEA.
Planning and Building Department	Oversees identification of damaged properties within the county including preliminary safety inspections; permitting and planning functions for the rebuilding efforts.
United States Army Corp of Engineers (USACE)	Similar to role of CalRecycle, may act as lead debris removal agency and hire/oversee contractors.
United States Environmental Protection Agency (US EPA)	Similar to role of CalEPA and DTSC, may act as lead agency for Phase 1 cleanup of hazardous materials and asbestos.
Sheriff's Department	Inspects and documents destroyed vehicles prior to removal from debris sites.

"Local Health Emergency" Declaration for the Public Assistance Program

Debris management operations are the responsibility of the affected jurisdiction. However, should the need to provide debris management operations exceed the affected jurisdiction's ability, under certain circumstances both the federal government, under the Federal Robert T. Stafford Disaster Relief and Emergency Assistance Act, and California government, under the California Disaster Assistance Act, have mechanisms to include debris removal operations in their Public Assistance Programs. The requirements for both federal and state assistance are similar. Debris removal from publicly or privately owned land is only eligible for inclusion in the Public Assistance Programs if it is "in the public interest"[39] meaning there is "an immediate threat to life, public health and safety."[40] According to Federal Code of

[39] 44 CFR § 206.224 Available at https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=8e406d4415199bd5cbb2a39dad00572b&mc=true&r=SECTION&n=se44.1.206_1224

[40] 19 CCR § 2925 and 44 CFR § 206.224 Available at https://govt.westlaw.com/calregs/Document/I9D94C20C88E643A7A65B460B95F6243D?originationContext=document&transitionType=StatuteNavigator&needToInjectTerms=False&viewType=FullText&contextData=(sc.Default) and https://www.ecfr.gov/cgi-in/retrieveECFR?gp=&SID=8e406d4415199bd5cbb2a39dad00572b&mc=true&r=SECTION&n=se44.1.206_1224

Regulations, "immediate threat" means the threat of additional damage or destruction from an event which can reasonably be expected to occur within five years.[41]

Federal guidance states debris removal from improved public property and public rights-of-way is typically classified as eligible emergency work.[42] However, to authorize debris removal from private property, the FEMA specifically requires the determination that removal of debris from private property is in the public interest be made by the "State, Territorial, Tribal, county, or municipal government's public health authority or other public entity that has legal authority to make a determination that disaster-generated debris on private property in the designated area constitutes an immediate threat to life, public health, or safety, or to the economic recovery of the community at large."[43] In addition, FEMA requires the jurisdiction requesting the public assistance "must provide documentation to confirm its legal authority and responsibility to enter private property and remove disaster-related debris. This includes: citation of the law, ordinance, code, or emergency powers for which it is exercising its legal authority to remove debris from private proper…[and]… confirmation that a legally authorized official…has ordered the exercise of public emergency powers or other appropriate authority to enter onto private property in the designated area to remove debris to address immediate threats to life, public health, and safety."[44]

Although California does not have a written policy that parallels the FEMA process for determination of whether debris removal on private property is in public interest, the state requires a jurisdiction demonstrate an immediate threat to public health and safety. Further, for recent disasters, the California Governor's Office of Emergency Services' (Cal OES) Office of Legal Affairs has stated documentation of a declared "local health emergency" under California Health and Safety Code[45] has always been utilized for the determination that disaster-generated debris on private property is an immediate threat to public health. In rare

[41] 44 CFR § 206.221(c) Available at https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=8e406d4415199bd5cbb2a39dad00572b&mc=true&r=SECTION&n=se44.1.206_1221

[42] United States Government. FEMA. Public Assistance Program and Policy Guide. FP104-009-02. Version 3.1 April 2018. Page 44 (page 55 in pdf version). Available at https://www.fema.gov/media-library/assets/documents/111781

[43] United States Government. FEMA. Public Assistance Program and Policy Guide. FP104-009-02. Version 3.1 April 2018. Page 54 (page 65 in pdf version). Available at https://www.fema.gov/media-library/assets/documents/111781

[44] United States Government. FEMA. Public Assistance Program and Policy Guide. FP104-009-02. Version 3.1 April 2018. Page 55 (page 66 in pdf version). Available at https://www.fema.gov/media-library/assets/documents/111781

[45] HSC 101080 available at https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=HSC&division=101.&title=&part=3.&chapter=2.&article=2.

past disasters, the State Health Officer issued a "local health emergency" on behalf of a local jurisdiction, which sufficed for FEMA requirements regarding demonstration of private property debris removal being in the public interest.

Since documentation of a "local health emergency" declaration under HSC 101080 is not a written requirement in federal or California statute, regulation, or formal program policy guide, it is possible in a given situation, Cal OES may consider alternate formats for local jurisdictions to demonstrate accordance with the federal requirements. The local governing body requesting public assistance and Cal OES must agree on the proposed alternative mechanism for demonstrating the local jurisdiction has both legal authority and the subject matter expertise to determine the disaster-generated debris on private property constitutes an immediate threat to public health.

APPENDIX A. ACRONYMS

ACM	Asbestos containing material
CARB	California Air Resources Control Board
CDPH	California Department of Public Health
CalRecycle	California Department of Resources, Recycling and Recovery
Cal/OSHA	California Division of Occupational Safety and Health
Cal EPA	California Environmental Protection Agency
Cal OES	California Governor's Office of Emergency Services
CHHSL	California Human Health Screening Levels
CUPA	Certified Unified Program Agency
DIMT	Debris Incident Management Team
DTSC	California Department of Toxic Substance Control
DROC	Debris Removal Operations Center
FEMA	Federal Emergency Management Agency
HHW	Household hazardous waste
LEA	Local Enforcement Agency
LHO	Local Health Officer
NIOSH	National Institute of Occupational Safety and Health
OEHHA	California Office of Environmental Health Hazard Assessment
PAHs	Polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
POPs	Persistent organic pollutants
ROE	Right-of-Entry
RSL	Regional Screening Levels for residential and commercial property (U.S. EPA)
SWRCB	California State Water Resources Control Board
USACE	United States Army Corp of Engineers
US EPA	United States Environmental Protection Agency

APPENDIX B: EXAMPLE ORDINANCES AND TEMPLATES

This Appendix features documents from Local Health Departments that were used previously wildfires burned in their jurisdiction as references for debris management planning.

1) Ventura County Emergency Ordinance Establishing Local Standards and Procedures for Cleanup of Debris Generated by the Thomas Fire
2) Shasta County Alternative Fire Debris Removal Program Application
3) Sonoma County Exemption from Alternative Program Requirements for Minor Burn Debris Removal and Cleanup

ORDINANCE NO. 4515

AN EMERGENCY ORDINANCE OF THE COUNTY OF VENTURA ESTABLISHING LOCAL STANDARDS AND PROCEDURES FOR CLEANUP OF DEBRIS GENERATED BY THE THOMAS FIRE

The Board of Supervisors of the County of Ventura hereby ordains as follows:

Section 1. This ordinance shall be known as the Thomas Fire Debris Removal Emergency Ordinance.

Section 2. Emergency Findings. This urgency ordinance is adopted pursuant to California Government Code sections 25123(d) and 25131 and shall take effect immediately upon its approval by at least a four-fifths vote of the Board of Supervisors. The Board of Supervisors finds that this ordinance is necessary for the immediate preservation of the public peace, health and safety, based upon the following facts:

1. A large number of residential structures have burned in the Thomas Fire.

2. The potential for widespread toxic exposures and threats to public health and the environment exists in the aftermath of a major wildfire disaster. Debris and ash from residential and commercial structure fires can contain hazardous substances and the detrimental health effects of hazardous substances releases after a wildfire are well-documented.

3. The combustion of building materials such as siding, roofing tiles, and insulation can result in dangerous ash that contains asbestos, heavy metals, and other hazardous materials. Household hazardous waste such as paint, gasoline, cleaning products, pesticides, compressed gas cylinders, and chemicals may have been stored in homes, garages, or sheds that may have also burned in the fire, also producing hazardous materials.

4. Exposure to hazardous substances may lead to acute and chronic detrimental health effects, and may potentially cause long-term detrimental 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. Improper handling can expose workers to toxic materials, and improper transport and disposal of fire debris can spread hazardous substances throughout the community.

5. Standards and removal procedures are needed immediately to protect the environment and public health, and to facilitate coordinated and effective mitigation of the risks to the environment and public health from the health hazards generated in the Thomas Fire disaster.

6. On December 8, 2017, pursuant to California Health and Safety Code sections 101040 and 101080, the County Health Officer issued a Declaration of a Local Emergency and Order Prohibiting the Endangerment of the Community through the Unsafe Removal, Transport and Disposal of Fire Debris (the "Declaration").

7. The Declaration prohibits removal of fire debris from residential properties without first obtaining a hazardous materials inspection from the United States Environmental Protection Agency or the California Department of Toxic Substances Control. Pending the enactment of additional requirements to address the Thomas Fire clean up, the Declaration requires authorization from the County of Ventura Environmental Health Division before removing fire debris and providing debris bins to property owners for the purposes of the removal of fire debris.

8. It is essential that this ordinance become immediately effective in order to mitigate the harm that could be caused to the public health and safety and to the environment from improper disturbance, removal and/or disposal of debris containing hazardous materials, and to facilitate the orderly response to the Thomas Fire.

Section 3. Removal of Fire Damaged Debris from Private Property.

1. Definitions. For purposes of this ordinance:

   a. Board shall mean the Board of Supervisors of the County of Ventura.

   b. Director shall mean the Director of the County of Ventura Environmental Health Division or his or her designee.

   c. OES Program shall mean the fire damage debris clearance program operated by the California Office of Emergency Services for the Thomas Fire in conjunction with other state and federal agencies.

   d. Local Fire Debris Removal Program (Program) shall mean the requirements for inspections and clean up established by the County of Ventura for structures within the unincorporated area of Ventura County damaged or destroyed by the Thomas Fire.

e. Removal of fire debris shall mean and include all cleanup of fire debris resulting from the damage to or destruction of structures in the Thomas Fire, including removal, transport and disposal of fire debris, but it shall not include the removal of personal property from residential sites unless such removal of personal property involves cleanup and the removal of ash from the property.

2. Term of this Ordinance.

This ordinance shall take effect immediately upon adoption and shall remain in effect until the cleanup of fire debris has been completed on all properties in the unincorporated areas damaged by the Thomas Fire.

3. Prohibition on Removal of Fire Debris from Private Property.

No fire debris from damaged or destroyed structures shall be removed from private property unless and until a hazardous materials inspection has been conducted either by the U.S. Environmental Protection Agency or California Department of Toxic Substance Control through the California Office of Emergency Services' fire debris clearance program, or by an entity approved by the Local Fire Debris Removal Program.

4. Removal of Fire Debris through the Local Fire Debris Removal Program.

(a) The Director shall administer the Program in the unincorporated areas of Ventura County under the supervision of the County Executive Officer. The Director shall utilize the state and federal standards and cleanup goals of the OES Program as the standards for the Local Removal Program. Under the supervision of the County Executive Office, the Director may administratively update these standards as necessary to address ongoing changes to efficiently remove hazardous fire debris from the community.

(b) The Local Program shall require an application that identifies the appropriate licensed contractors that will perform the work and the submission of plans that demonstrate that the standards established in the Program will be met. Work shall not begin until the County of Ventura approves the application.

(c) Upon completion of the work described in the approved plans, the property owner shall submit a Property Clean-up Completion Certification to the Director.

(d) Notwithstanding any contrary provision in the Ventura County Building Code, a County of Ventura demolition permit may be required for ash debris removal work for which the Director has issued an approval allowing such work to proceed.

(e) The City of San Buenaventura shall administer its own alternative program within its jurisdictional boundaries. Pursuant to the Declaration, the Director shall be notified of applications within the City's Debris Removal Program, and compliance with the City's program is sufficient for the Declaration.

6. Hold on Building Permits.

(a) No County of Ventura building permit to repair or reconstruct a fire damaged structure or private infrastructure damaged or destroyed by the Thomas Fire shall be issued until fire debris cleanup is completed on the affected property and a Property Clean-up Certification required by the Program is approved and submitted to the County of Ventura Building Official.

7. Deadlines and Enforcement.

(a) Owners of properties on which there is fire ash and debris from structures damaged or destroyed in the Thomas Fire must submit a Local Fire Debris Removal application to the County no later than February 8, 2018. Properties that have fire ash and debris from structures damaged or destroyed in the Thomas Fire that have not submitted an application for the Program by that date are hereby declared a public nuisance and health hazard.

(b) Clean-up of properties enrolled in the Program must be completed no later than June 1, 2018. Properties enrolled in the Program that have fire ash and debris from the Thomas Fire after that deadline are hereby declared a public nuisance and health hazard.

(c) The Director may change the deadlines set in subsections 7(a) and (b), above, in exigent circumstances or as necessary and appropriate to facilitate the cleanup, avoid undue hardship and protect public health and safety.

(d) The Board's intent is to facilitate orderly remediation of a large-scale disaster. Nothing in these deadlines shall limit the authority of the County of Ventura or any County of Ventura official to abate hazards more quickly where required by exigent circumstances. Nothing in this ordinance shall limit the authority of the County of Ventura or any County of Ventura official to take any enforcement action or pursue any available remedies, including, without limitation, requiring preventive measures as defined in Health and Safety Code section 101040.

(e) Enforcement and Abatement

(1) Authority to Summarily Abate. The Director is authorized to enter property and summarily abate any public nuisance under this ordinance.

(2) Emergency Abatement Authorized. If a nuisance under this ordinance constitutes an immediate and serious threat of harm to public health or safety, the Director may enter the property and summarily abate the nuisance without compliance with the procedures prescribed elsewhere in this ordinance, except that the Director shall give the owner of the subject property such notice and opportunity to be heard as are feasible and appropriate under the circumstances. Immediately following summary abatement, the Director shall notify the owner of the subject property of the abatement.

(3) Summary Abatement Procedures.

(i) Pre-Abatement Notice. Prior to commencing abatement, the Director shall issue a Summary Abatement Notice and Order with reasonable notice. The Notice and Order shall be given to the property owner(s) as listed on the last equalized tax roll. A summary of the Notice and Order shall be posted in a conspicuous location on the property to be abated at least 10 days prior to the summary abatement action.

(ii) Appeal and Waiver. The property owner(s) or any person or entity having a legal interest in the property may submit a written appeal of the Director's Order to the Director no later than 10 days from the date of mailing of the Notice and Order. The written appeal shall state the basis for the appeal. The Director shall review the appeal and shall issue a written decision no later than 10 days after receipt. The Director's decision shall uphold, rescind or modify the determination of the Notice and Order. Failure to appeal within the time prescribed shall constitute a waiver of the right to contest the summary abatement.

(iii)Post Abatement Notice. After the summary abatement is completed, the Director shall serve the property owner(s) with a post abatement notice that sets forth: (a) The actions taken by the County; (b) the reasons for the actions; (c) a report of the costs of abatement with a demand that the costs of abatement be paid within sixty (60) days; and (d) that a lien against the property will be recorded for failure to pay within the prescribed time frame in (c).

(4) Judicial Enforcement Action. County Counsel is authorized to initiate suits to abate public nuisances as defined in this ordinance without further Board approval.

(5) Remedies not exclusive. The remedies identified in this ordinance are in addition to and do not supersede or limit any and all other remedies, civil or criminal, available at law or in equity.

Section 4. Adoption of this Ordinance is exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to California Public Resources Code Section 21080(b)(3) regarding projects to maintain, repair, restore, or replace property or facilities damaged or destroyed as a result of a declared disaster and section 21080(b)(4) regarding actions to mitigate or prevent an emergency, and CEQA Guidelines section 15269(a) regarding maintaining, repairing, restoring, demolishing, or replacing property or facilities damaged or destroyed as a result of a disaster stricken area in which a state of emergency has been proclaimed by the Governor pursuant to the California Emergency Services Act, commencing with Section 8550 of the California Government Code.

Section 5. If any section, subsection, sentence, clause, or phrase of this Ordinance is for any reason held to be unconstitutional or invalid by a court of competent jurisdiction, such decision shall not affect the validity of the remaining portion of this Ordinance. The Board of Supervisors hereby declares that it would have passed this Ordinance and every section, subsection, sentence, clause or phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared unconstitutional or invalid.

Section 6. This Ordinance shall be and the same is hereby declared to be in full force and effect immediately upon its passage by a four-fifths or greater vote. A fair and accurate summary of this ordinance shall be published once before the expiration of 15 days after said passage, with the names of the Supervisors voting for or against the same, in a newspaper of general circulation published in the County of Ventura, State of California.

PASSED AND ADOPTED this 26 day of December, 2017, by the following vote:

AYES: Supervisors Bennett, Parks, Long, Foy

NOES: Supervisors 0

ABSENT: Supervisors Zaragoza

Vice Chair, Board of Supervisors
County of Ventura

ATTEST:

Michael Powers,
Clerk of the Board of Supervisors

By: Lori Haines
Deputy Clerk of the Board

Shasta County Environmental Health Division
1855 Placer Street, Suite 201, Redding, CA 96001
Phone: 530/225-5787 ● Fax: 530/225-5413
EHD@co.shasta.ca.us

ALTERNATIVE FIRE DEBRIS REMOVAL PROGRAM APPLICATION

UNINCORPORATED AREA OF SHASTA COUNTY

Who needs to complete this form? Property owners who elect ***not*** to participate in the State-sponsored debris removal program and choose to clean up their property on their own, or with a qualified contractor OR properties that do not qualify for the state debris removal program. The work must be done to standards established in ordinances and regulations so that health and safety risks are adequately addressed for the community and the environment. Documentation on adequate cleanup and proper disposal will be required to final demolition permit. State disaster assistance funding will not reimburse for work completed by the property owner or hired contractor.

Where do I submit this form? Submit this form to the Shasta County Building Division as applicable, with Demolition Permit Application.

Property Owner Name: _____ **Phone(s)**:_____

Property Address:_____ **City:**_____

Assessor's Parcel Number (APN): _____ **Email:**_____

Mailing Address: _____ **City**: _____ **State:** _____ **ZIP:**_____

Description of Debris Being Removed (how many and types of structures, types of waste, etc.)

_____

_____

A. Program Participation

Who will perform the debris removal? ☐ Owner ☐ Licensed Contractor

If hiring a contractor, please provide the following:

Name of Contractor: _____

License Number: _____

Proposed Start Date: _____

Required: A work plan approval by Environmental Health is required prior to starting debris cleanup.

B. Property Owner Acceptance

I have read and will fully comply, as will any contractor working on my property, with the conditions described in the document "**Management of Carr Fire Debris**" and approved work plan. I understand the ash and debris contain hazardous substances and can be a health hazard. I understand the ash and debris shall be wetted down prior to removal and dust shall be controlled. The ash and debris shall also be completely encapsulated with a tarp ("burrito wrap" method) prior to transportation for proper disposal. I understand that soil samples shall be collected and submitted along with the Debris Removal Clean-up Certification in order to self-certify the project was completed.

Property Owner Signature (Required) _____ Date:_____

Contractor Signature _____ Date:_____

Shasta County Receipt _____ Date:_____

DEMO PERMIT # _____ **Issue Date:** _____ **Final Date:**_____

MANAGEMENT OF CARR FIRE DEBRIS

To ensure safety to workers, the public, and the environment, certain protocols must be followed during a wildfire disaster when removing structural ash and debris from a fire. There are **two ways** to manage the debris and ash resulting from the wildfire disaster. A residential property owner may elect to participate in the Cal OES Consolidated Debris Removal Program or may elect to complete the property remediation and debris removal themselves.

Owners Who Choose Not to Participate in the State Sponsored Consolidated Debris Removal Program

If property owners elect not participate in the Consolidated Debris Removal Program, the property owners are still required to remediate the property and remove the burn debris at their own expense, comply with all applicable requirements, and do so in a timely manner. The property owners will not be reimbursed with public funds for the remediation and debris removal. The property owners may complete the remediation and debris removal themselves or through a qualified contractor. Due to the Proclamation of a Local Health Emergency by the County Health Officer, the work must be completed in a manner that ensures the protection of public health and safety. Even if you choose to not participate in the Consolidated Debris Removal Program the California Department of Toxic Substances Control (DTSC) and its contractors are still authorized and required to access your property to remove hazardous wastes as part of Phase 1 of the Cal OES Program (for more information go to shastareddingrecovers.org and the Debris Removal tab).

Property owners opting out of the Consolidated Debris Removal Program must submit the Alternative Fire Debris Removal Program Application and work plan to the County or City for approval at least two weeks prior to commencing debris removal, though debris removal may begin as soon as the application and work plan have been approved and a demolition permit has been issued. The governing boards of the County and City will issue a deadline for submittal of the Alternative Fire Debris Removal Program Application and work plan. After implementation of the approved work plan, the owner must submit a certification showing that all work has been completed as specified. The work must be completed pursuant to standards set forth by the County, City and State. These standards are established to ensure protection of public health and are the same standards applicable to the Consolidated Debris Removal Program. Documentation of adequate clean-up and proper disposal will be required. Property owners shall review all requirements thoroughly before planning or pursuing their own debris removal. Property owners will not be allowed to build on their property until there is a certification of completion of the property cleanup and removal of all hazardous waste has been completed in accordance with applicable standards.

A summary of the protocols and requirements is below:

Clean-Up Operations	Clean-Up Protocols
Work Plan	• Create a work plan that provides for site protocols listed below including (but not limited to) testing and analysis, hazardous waste and asbestos removal, debris removal, erosion control, soil grading, and confirmation sampling.
Site preparation/documentation	• Measure and record foundation and clean-up area (square footage of ash footprint) • Notify appropriate entities of clean-up, such as local utilities and USA Underground.
Application Process	• Owner or contractor must submit a demolition permit application and the Alternative Fire Debris Removal Program Application and work plan to the County or City. • The demolition permit cannot be issued until DTSC and its contractors have completed the hazardous waste and asbestos assessment and removal and the Alternative Fire Debris Removal Program Application and work plan have been approved.
Asbestos Assessment and Removal	• The property owner shall hire a Certified Asbestos Consultant to do additional testing at the property and properly remove and dispose of any remaining asbestos. The DTSC and its contractor may not remove all asbestos from the property. They will remove asbestos-containing materials which are easily identifiable and removable. Materials that are believed to be asbestos-containing which are not removed will be

	marked by DTSC and its contractor. Asbestos-containing materials shall be properly assessed and removed by a Certified Asbestos Contractor.
Hazardous Waste Removal	• All Hazardous Waste and Household Hazardous Waste shall be identified and either taken to the City of Redding Household Hazardous Waste Collection Facility or removed by a Certified Hazardous Materials Contractor. DTSC and its contractor will remove any hazardous materials and hazardous wastes that they find during their assessment but may not find all hazardous materials that may be present.
Debris Removal	• Remove ash and debris, metals and concrete from site and dispose of properly. • Recycle metals and concrete if possible. • Waste shall be disposed of at an approved location.
Air Monitoring	• Fugitive Dust – Dust is a significant concern and adequate dust control measures shall be taken at all times, such as water applied to burn ash materials, most importantly during owner or contractor disturbance and loading. Fire debris and ash shall be properly contained during transport to prevent escape. **Shasta County Air Quality Management District is requiring a "zero-dust" policy for all contractors performing fire debris removal.** • Site must be visually monitored for fugitive dust. • If recommended by a Certified Asbestos Consultant (CAC), a site shall be air monitored for asbestos during debris removal activities. • Provide air monitoring results at final certification, if it was required.
Foundations	• Completely remove and dispose of foundation; **or** • Submit a letter from a Licensed Civil or Structural Engineer certifying the foundation is acceptable for rebuild. The letter shall certify structural reasons for their decision and include process and procedure used to reach the conclusion.
Soil Grading	• Because of the potential for contamination of the soil from the fire debris and ash it is recommended that 3 to 6 inches of soil be removed from the impacted area after the burn ash and debris is removed to a level of visually clean. This soil can be taken to the landfill. Care shall be taken during transport of the material, as with the fire debris and ash, to prevent this material from blowing out of transport vessel during transport.
Confirmation Sampling	• Soil sampling is to be completed by a qualified individual and samples shall be collected from 0-3 inches for confirmation sampling. Results must be at or below clean-up goals as established. See additional information below regarding soil sampling.
Appliance and Vehicle Recycling	• Appliances and vehicles shall be handled properly to meet the requirements of metals recycling facilities. Any remaining hazardous materials shall be managed properly, such as car batteries. Vehicle Identification numbers shall be documented.
Erosion Control	• Adequate erosion control measures shall be put in place at the end of the debris removal process. The City of County may inspect the site to ensure that this has been completed properly.

Owners Who Fail to Adequately Remove Debris from Their Property

Due to the public health dangers to the community, owners who choose not to participate in the Consolidated Debris Removal Program and who do not accomplish an adequate clean-up through the Alternative Fire Debris Removal Program will have the wildfire debris inspected by the County or City, and be subject to the County or City taking remedial action that may include, but not be limited to, hazard removal and/or relocation, clean-up, site evaluation, soil testing, and/or chemical analysis. All County and City expenses incurred for such inspection and mitigation, including but not limited to, contract work, staff time, and administration, are subject to full cost recovery from the owner with a lien recorded on the property. A deadline for completing an adequate clean-up through the Alternative Fire Debris Removal Program has yet to be determined.

Confirmation Sampling

Confirmation sampling shall be conducted by a qualified environmental consultant, professional engineer, or registered geologist with experience in soil sampling, and is to be conducted after fire-related debris has been removed from a property.

Representative soil samples shall be collected and analyzed to determine compliance with established clean-up goals. Sampling shall be per CalRecycle's typical operations plan sampling frequencies included below. The total number of samples to be collected is based on estimated square footage of ash footprint as follows:

Estimated Square Footage of Ash Footprint (Decision Unit)	**Number of 5-Point Composite samples** (ft2 of each area sampled is total ft2 of ash footprint / the number of required samples)
0-100 square feet	1
101-1,000 square feet	2
1,001-1,500 square feet	3
1,501-2,000 square feet	4
2,001-5,000 square feet	5
>5,000 square feet	Must consult with local environmental health officials

All confirmation samples should be collected from a depth of 0-3 inches using a dedicated 4-ounce plastic scoop and be mixed (homogenized) in a one gallon plastic bag before being placed in 8-ounce jars. Samples should be shipped using chain of custody to an approved laboratory for analysis by Title 22 Metals for antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc by EPA Method 6020. The consultant shall also collect three background samples at a depth of 3-9 inches outside the ash footprint (min 20 ft) to determine if naturally occurring levels of any metals tested are above the cleanup goals. If samples from the ash footprint are below the cleanup goals then the lab will not need to test the background samples. If sample results for any metals are above the cleanup goals but are at or below the background sample results this must be explained by your soil consultant in the final testing report. Should the confirmation results exceed the cleanup goals and are also above the site specific background a rescrape and retesting will be required.

Guidelines, Templates and Resource List for Property Owners, Contractors and Consultants

The following guidelines, templates, and resource list have been created to assist property owners, contractors and consultants through the clean-up process. While the templates presented here are optional, it is highly encouraged that the organizational processes outlined are followed to facilitate an expedient review and approval of work plans and reports such that a Property Clean-Up Completion Certification can be issued to start the rebuilding process.

Guidelines/Templates/Resource Summary

Appendix A	Work Plan Outline/Contents
Appendix B	Final Report Checklist/Contents
Appendix C	Solid Waste Disposal Site List/Recycling Resource List
Appendix D	Certified Asbestos Contractor List
Appendix E	Template Work Plan
Appendix F	Clean-up Completion Certification

Work Plans and Reports Outline/Contents

Please be advised it is the intent of Work Plans and Reports to provide working guidance such that no steps are missed in the clean-up process that might unduly burden property owners in having to perform additional or unnecessary work that may have been identified at the early stages of the project clean-up.

Included as **Appendix A and B** to this document please find general work plan and report format outlines that will assist in the timely review of submitted documents. **Appendix E** includes a standard work plan template that can be used to ensure that a comprehensive work plan is submitted, although site-specific details are required.

Debris Removal Requirements to Solid Waste Disposal Facilities

As a general note, sites that the California Department of Toxic Substances Control (DTSC) has flagged as potentially not cleared of household hazardous waste (HHW) shall be appropriately addressed within the work plan for debris characterization, removal and disposal. Fire debris/ash at a minimum shall be disposed of at a Class III disposal facility with a liner approved by the Regional Water Control Board to accept the waste. Any debris characterization requirements of the disposal site shall be met before transportation to such site. An approved hauler appropriately licensed for the material transported will need to perform such work, and the material must be wetted and "burrito wrapped" (CalRecycle protocol) and tarped for transport and ultimate disposal. Contractors/haulers failing to adhere to this standard may have their material rejected at the disposal facility and/or a fine imposed.

Asbestos transport and disposal shall be disposed of at a facility permitted to accept such waste. Best management practices shall be established in such handling and disposal (work plan should have provisions outlined where asbestos is encountered), and a hauler appropriately licensed for the material transported will need to perform such work.

Transport and Disposal documentation for generated debris removal shall be retained and included with your Alternative Fire Debris Removal Program Clean-up Completion Certification submittal. Included as **Appendix C**, is a preliminary list of disposal and recycling facilities.

Dust Control

- Property owners or their contractors must provide water or an approved dust palliative, or both, to prevent dust nuisance at each site. Dust resulting from performance of the work shall be controlled at all times. **Shasta County Air Quality Management District is requiring a "zero-dust" policy for all contractors performing fire debris removal.**
- Each area of ash and debris to be removed must be pre-watered 48 to 72 hours in advance of the removal. Hoses with a fine spray nozzle are recommended. The water must be applied in a manner that does not generate runoff. Engineering controls for storm water discharges must be in place prior to dust control operations.
- All loads shall be covered with a tarp; this includes metal debris. Ash and debris loads shall be fully encapsulated with 10-millimeter plastic ("burrito wrap" method). Concrete loads are exempt from a tarp, provided the loads are wetted prior to leaving. If concrete loads generate dust, then the loads must be wetted and covered.
- All waste material that is not unloaded at the end of each workday should be consolidated, sufficiently wetted, and/or covered to prevent the offsite migration of contaminants.
- All visibly dry disturbed soil surface areas of operation should be watered to minimize dust emissions during performance of work.
- Speeds must be reduced when driving on unpaved roadways.
- Procedures must be implemented to prevent or minimize dirt, soil, or ash contaminating roadways, neighboring parcels, or creating an airborne health hazard. The use of blower devices, dry rotary brushes, or brooms for removal of carryout and track out on public roads is strictly prohibited.

Vehicle and Road Safety

If removal activities on property owners' parcels will create a roadway blockage or hinder traffic patterns, property owners or their contractors are responsible for obtaining any required local permits and shall post all warning signs, as required by local ordinances. As there may be many contractors actively working on remediation efforts in the burn area, it is in property owners' best interests to identify removal and remediation efforts in adjacent areas that could impact the ability to locate, park, or transport equipment and materials.

Soil Testing and Screening Criteria for Work Plans and subsequent Report of Findings

Initial Screening Criteria have been established in consultation with CalRecycle for soil confirmation sampling after completion of visible clean-up of properties. Please note, that these are initial health screening criteria in the absence of background data. If cleanup is completed before CalRecycle completes its background sampling then background samples on your property, outside the ash footprint (min 20 ft), must be taken to determine if naturally occurring levels of any metals tested are above the cleanup goals. If samples from the ash footprint

are below the cleanup goals then the lab will not need to test the background samples. If sample results for any metals are above the cleanup goals but are at or below the background sample results this shall be explained by your soil consultant in the final testing report.

Testing of metals must be performed by EPA Lab Method 6020.

Initial Health Screening Criteria for Soil		
Analyte	Health Screening Level mg/Kg	Cleanup Level
Antimony	30	Health Screen
Arsenic	0.07	Health Screen
Barium	5,200	Health Screen
Beryllium	15	Health Screen
Cadmium	1.7	Health Screen
Chromium	36,000	Health Screen
Cobalt	23	Health Screen
Copper	3,000	Health Screen
Lead	80	Health Screen
Mercury	5.1	Health Screen
Molybdenum	380	Health Screen
Nickel	490	Health Screen
Selenium	380	Health Screen
Silver	380	Health Screen
Thallium	5	Health Screen
Vanadium	390	Health Screen
Zinc	23,000	Health Screen

General Recycling and Testing Guidelines

Included as **Appendix C** is a resource list for general recycling of concrete and metals. Please note, this list is provided as a courtesy and information contained herein should be verified by the property owner/ contractor / consultant before taking material to the vendors listed. This list is not complete. Additionally, for concrete transport and disposal, disposal may be limited due to the potential presence of asbestos. As such testing is recommended before transport and disposal and acceptance criteria should be verified with potential processors.

Well and Septic Guidelines

Well Safety

- Contact Shasta County Environmental Health Division at 530-225-5787 for water safety questions, well location, and to obtain information on well repair permits. Contact your water service provider if you are not on a well. If you will be rewiring electrical lines to your well a permit from Building Division may be required.
- Identify wells and water tanks on the property and take steps to protect them during debris removal

Septic Systems

- Contact the Shasta County Environmental Health Division at 530-225-5787 for questions regarding your system location.
- Identify septic tank and leach field locations and take steps to protect them during debris removal.

Any immediate hazard involving the septic tank or septic system shall be mitigated prior to debris removal.

Grading and Erosion Control

Once grading has been completed, best management practices (BMPs) shall be implemented to establish erosion control at the disturbed site.

- Follow best management erosion and sediment control practices (BMPs) to prevent ash, soil, and other pollutants from washing into the street, drainage courses and culverts, or onto neighboring properties.
- Stockpiled materials that are not immediately loaded for transport shall be handled and stored on site in such a manner as to avoid offsite migration. This may include wetting and covering the waste until it is loaded and transported. Locate stockpiles away from drainage courses, drain inlets or concentrated flows of storm water.
- Stockpiled material may not be stored or placed in a public roadway.
- During the project and in the rainy season, cover non-active soil stockpiles and contain them within temporary perimeter sediment barriers, such as berms, dikes, silt fences, or sandbag barriers. A soil stabilization measure may be used in lieu of cover.
- Implement appropriate erosion control measures during debris removal and provide final site stabilization after debris removal is completed.

Foundations, Slabs, and Foundation systems

Foundations and slabs are required to be included as part of the fire debris removed from a site. In general, the structural integrity of concrete and masonry (CMU) can adversely be affected in fire situations, especially when the structure is completely consumed by the fire. The properties of the material may be irreversibly altered rendering it unsatisfactory for reuse in supporting a rebuilt structure. There are a number of test and standards for evaluating the compressive strength of the concrete or masonry, including ASTM C39 and ASTM C140, which involve taking core samples from foundations and doing a compressive test in a certified lab. Homeowners interested in pursuing an exception and retaining their foundation shall submit a letter from a Licensed Civil or Structural Engineer certifying the foundation is acceptable for rebuild. The letter shall state reasons for their decision. Approval for reuse of the foundation is required by the Shasta County or City of Redding Building Division. Homeowners and contractors shall follow the CalRecycle Operational Guidance: Damaged Concrete at Wildland Urban Interface Fires. Visit www.ehd.co.shasta.ca.us for a copy.

Appendix A
Work Plan Outline/Contents

1.0 Project Overview

1.1 Property and Property Owner(s) information

- ☐ Name and contact information
- ☐ Site address/APN

1.2 List of Contractors (name, license, contact information)

1.3 Scope of Work

1.3.1 Description of property and proposed activities

1.3.1.1 **Identify equipment and material staging area**

1.3.1.2 **Site Health and Safety**
Traffic Control

1.3.2 Footprint Measurements

1.3.2.1 **Sketch footprint and describe type of foundation(s) and other hardscape**

1.3.2.2 **Photograph each site from all sides** to document all aspects of the property

1.3.2.3 **Sketch and record ash footprints**

1.3.2.4 **Identify and photograph other property-specific hazards** (i.e. swimming pools, large vehicles)

1.3.3 Water Lines / Wells (If applicable)

1.3.3.1 **Identify water wells on properties**

1.3.3.2 **Identify water and electrical sources**

1.3.4 Septic Systems / Sewer Lines (If applicable)

1.3.4.1 **Identify septic tank and leach field locations** on each property

1.4 Statement of intent to notify and/or obtain required permits and to work within acceptable hours of operation

1.4.1 Underground Service Alert (USA)

1.4.1.1 **Check for underground utilities** by alerting Underground Service Alert (USA) for public right of way

1.4.1.2 **Check for underground utilities** by using an independent private utility locator service for private right-of-way, if necessary

1.4.2 City/County Building Division – Demolition Permit

1.4.3 Shasta County Environmental Health Division or City of Redding Building– Alternative Fire Debris Removal Program Application and Work Plan approval

1.4.4 Acceptable hours of operation: 7:00 am to 7:00 pm Monday-Friday, 8:00 am to 6:00 pm Saturday, No Operations on Sunday and Holidays

2.0 Background Site Assessment

2.1 Site Testing and Analysis Plan (Asbestos and Soil)

- ☐ **Conduct surveys to identify, sample, and analyze results for suspected gross asbestos containing**

materials (ACM) including concrete foundations and mortar

2.2 Foundation Analysis and Plan (if foundation is to remain in place testing, certification and approval is required)

3.0 Hazardous Waste and Asbestos Removal

3.1 Hazardous Waste and Household Hazardous Waste Removal

3.2 Asbestos Removal

- ☐ **Initiate air monitoring protocol and fugitive dust controls**

3.3 Air Monitoring Protocols for Fugitive Dust Control

4.0 Debris Removal and Disposal / Recycling

4.1 Ash, Fire Debris and Soil

- ☐ **Collect, consolidate, and remove ash, debris and soil for disposal**
  - ☐ Name of Disposal Facility

4.2 Metals Including Vehicles and Appliances

- ☐ **Remove vehicles for recycling or disposal**
  - ☐ Name of Recycling Facility
  - ☐ Provide VIN
- ☐ **Collect, and remove metals for recycling**
  - ☐ Name of Recycling Facility
  - ☐ Disposal Site

4.3 Concrete, Brick & Masonry

- ☐ **Collect and remove concrete for recycling or disposal**
- ☐ **Track and log quantities and types of materials transported to landfill or recycling facility**

❖ All disposal-related documents and receipts shall be retained for final report

5.0 Soil Grading and Erosion Control

5.1 Description of Grading Activities

- ☐ **Finish grading/smoothing ground surface**

5.2 Description of Erosion Controls

- ☐ **Once cleanup goals have been met**, the site will be prepared for final erosion control and certification
- ☐ **Implement storm water best management practices** to control sediment runoff from each remediated property

6.0 Confirmation Sampling

- ☐ **Prepare a site diagram or sketch that includes the anticipated soil sample locations**
- ☐ **Sample and analyze soil**
- ☐ **Compare soil analytical results to State clean-up goals**
- ☐ **If results exceed State clean-up goals, another layer of soil must be removed**, **and confirmation samples must be collected.**
- ☐ **Acknowledge preparation of a site-specific final report per Appendix B** for delivery to the City/County with the Alternative Fire Debris Removal Program Clean-Up Completion Certification Form

7.0 Attachments (If applicable):

- ☐ Vicinity Map
- ☐ Plan Maps including former structure and burn debris footprint
- ☐ Photographs
- ☐ Laboratory Test Results
- ☐ Auto VIN Identification Verification.

Appendix B
Final Report Outline/Contents

Index of Final Report Contents:

Section 1: Property Information (Assessor's Parcel Number, Contacts for Owner/Contractor(s)/Consultants)

Section 2: Description of work performed:

- 2A Site Testing and Analyses, description and summary of results (Asbestos and Soil)
- 2B Air Monitoring Protocols for Fugitive Dust Implementation
- 2C Hazardous Waste and Asbestos Removal Documentation, including disposal receipts
- 2D Debris Removal Documentation, including disposal receipts
- 2E Soil Grading / Removal to level of visually clean
- 2F Foundations (Removal or Engineer's Certification for Potential Reuse)
- 2G Confirmation Sampling Results Discussion
- 2H Documentation of Appliance and Vehicle Recycling or Disposal
- 2I Documentation of work related to Well and Septic

Section 3: Vicinity Map, Plot Plan and Drawings

Section 4: Analytical Table with results compared with State Health Screening Criteria

Section 5: Certified Laboratory Reports

Appendix C
Solid Waste Disposal & Recycling Facilities

DISPOSAL SITES WITHIN 50 MILE RADIUS FROM CITY OF REDDING				
Facility Site Name	**Address**	**City**	**Phone**	**Accepts Asbestos***
Anderson Landfill	18703 Cambridge Rd	Anderson	(530) 347-5236	Non-Friable
West Central Landfill	14095 Clear Creek Rd	Igo	(530) 396-2555	Non-Friable

MATERIAL RECOVERY FACILITY / TRANSFER STATIONS				
Facility Site Name	**Address**	**City**	**Phone**	**Types**
Northstate Recycling	2041 Girvan Rd	Redding	(530) 243-4780	Scrap metal/Appliances
City of Redding Materials Recovery/Household Hazardous Waste (HHW) Facility	2255 Abernathy Ln.	Redding	(530) 224-6209	Scrap Metal/ Appliances/HHW from homeowners

*Note: Hay Road Landfill at 6426 Hay Rd, in Vacaville accepts friable asbestos. (707) 678-4718

Concrete/Asphalt

This list in not complete and other companies in the area may take concrete/asphalt waste

Facility Name	Facility Address/Phone	Materials Accepted
Northstate Asphalt	16939 Clear Creek Rd, Redding/ 530-241-5983	Concrete/Asphalt
West Central Landfill	14095 Clear Creek Rd, Igo/ (530) 396-2555	Concrete/Asphalt
Eddie Axner Construction	17091 Clear Creek Rd, Redding/ (530) 221-2103	Concrete/Asphalt
Anderson Landfill	18703 Cambridge Rd, Anderson/ (530) 347-5236	Concrete/Asphalt
J.F. Shea dba Aggregate Products	17400 Clear Creek Rd, Redding/ (530) 246-4292	Concrete/Asphalt

Appendix D
Asbestos and Hazardous Waste Service Providers

The following information regarding companies that provide asbestos and hazardous waste services is provided to assist victims of recent wildfires to clean up their properties. Shasta County Environmental Health Division does not recommend or endorse individual service providers, and cannot guarantee their services.

Burn sites should be evaluated for asbestos and hazardous waste; identified asbestos and hazardous waste shall be properly disposed of prior to commencement of demolition work and debris removal. Some of the listed consultants can perform all of these services, while others can only perform some of the services. Companies listed with (A) can perform asbestos work, while companies listed (HW) can perform hazardous waste work.

NRC Environmental Services, Inc. (A) (HW) Chris Neal 1111 Marauder Chico, CA 95973 (530) 343-5488	ACE Environmental Management, Inc. (A) (HW) Major Geiger P.O. Box 3214 Yuba City, CA 95992 (530) 701-3182
Asbestos Science Technology (A) John Warren P.O. Box 505 Bangor, CA 95914 (530) 518-0934	Health Science Associates (A) 10771 Noel Street Los Alamitos, California 90720 (855) 633-1366
Ben's Truck & Equipment, Inc. (HW) 2060 Montgomery Rd Red Bluff, CA 96080 (530) 527-5040 Info@BensTruck.org	Alliance Environmental Services (A) (HW) William Irwin 34 Glenshire Ln. Chico, CA 95973 (530) 345-8562
Entek, Inc. (A) Rick Beall 4200 Rocklin Rd. Suite. 7 Rocklin, CA 95677 (916) 632-6800	Warren Asbestos (A) 209 McCaton Dr, Bangor, CA 95914 (530) 679-1100
Wike Restoration, Inc. (A) 1282 Hassett Avenue, Suite 1 Yuba City, CA 95991 (530) 674-2693	Northstate Earth and Water Inc. (HW) Mike Fitzgerald P O Box 494130 Redding, CA 96049 (530) 351-3604
Clay Guzi, Guzi-West Inspection and Consulting (A) 19749 Sweetwater Trail Redding, CA 96003 (530) 515-0922 www.guziwest.com	

This list is a partial listing of California Certified Asbestos Consultants that work in the northern California area. A complete list of California Certified Asbestos Consultants is available at http://www.dir.ca.gov/databases/doshcaccsst/caccsst_query_1.html (see Search function at the bottom of the web page). Additional hazardous waste removal companies are listed in the Yellow Pages telephone directory under "Hazardous Material Control & Removal". Please check the California Contractor's License Board's website at www.cslb.ca.gov to verify that any contractor or company that you hire has the proper certifications to perform the type of work required on your property.

Appendix E
Template Work Plan

Alternative Fire Debris Removal Program
Standard Work Plan Template

To ensure safety to workers, the public, and the environment, certain protocols must be followed during a wildfire disaster when removing structural ash and debris left from the Carr Fire. The City and County are offering two ways for property owners to manage the fire debris and ash from the wildfire disaster, 1) participate in the State-sponsored Consolidated Debris Removal Program or 2) submit the Alternative Fire Debris Removal Program Application and Work Plan to the Shasta County Environmental Health Division or the City of Redding Building Division.

Property owners who choose not to participate in the State-sponsored Consolidated Debris Removal Program (or are not eligible) will need to submit the Alternative Fire Debris Removal Program Application, Work Plan and demolition permit application to the City or County for approval at least two weeks prior to commencing debris removal. Debris removal may begin when application and work plan are approved and demolition permit has been issued.

Debris removal must be completed as required by Shasta County Ordinance 743 or City of Redding Ordinance 2592 and adhere to the ash and fire debris removal protocols and standards set forth by the City, County and State. These standards are established to ensure protection of public health and are the same standards applicable to the State-sponsored Consolidated Debris Removal Program. This document is a standard work plan template for the Alternative Fire Debris Removal Program work plan.

Complete and submit both this standard work plan and the Alternative Fire Debris Removal Program Application to the Shasta County Environmental Health Division located at 1855 Placer St, Ste. 201, Redding, CA 96001 for properties in the county, and to the City of Redding Building Division at 777 Cypress Ave, Redding, CA 96002 for properties located in the City of Redding.

Contact Shasta County Environmental Health Division at (530) 225-5787 or City of Redding Building Division at (530) 225-4013 with any questions regarding the Alternative Fire Debris Removal Program.

1.0 Project Overview

1.1 Property Information and Property Owner Contacts		
Property Owner Name:		
Property Address:	City:	Zip:
Assessor's Parcel Number (APN):		
Phone(s):	Email:	
Mailing Address:	City:	Zip:

1.2 List of Contractor(s) and Consultants	
Name:	License No.:
Phone:	Email:
Name:	License No.:
Phone:	Email:
Name:	License No.:
Phone:	Email:

1.3 Scope of Work:
Provide a brief description of property and proposed activities (Footprint, description of structures and/or debris). Attach Photos /Sketches of ash footprint.
Identify/discuss proposed equipment material staging areas:

Identify/discuss Site Health and Safety Protocols and Traffic Control:
If applicable, damaged water wells and/or water lines on property will be addressed in the following manner:
If applicable, damaged septic systems and/or sewer lines on property will be addressed in the following manner:

1.4 REQUIRED Notifications / Permits / Hours of Operation	
<u>The following notifications will be made, permits obtained and hours of operation adhered to:</u>	
Underground Service Alert (USA) – Call 811 Dig Alert prior to digging.	
Shasta County Building Division 1855 Placer St, Redding CA 96001 (530) 225-5761 **Demolition Permit Required**	City of Redding Building Division 777 Cypress Ave, Redding, CA 96001 (530) 225-4013 **Demolition Permit Required**
Applicant Hours of Operation 7:00 AM to 7:00 PM Monday thru Friday 8:00 AM to 6:00 PM Saturday No Operations on Sunday and Holidays	

2.0 Background Site Assessment

2.1 Site Testing and Analysis Plan (Asbestos and Soil)

A certified asbestos consultant and soil consultant will be hired to test the site. Site testing and analysis for asbestos and soil will be addressed in the following manner:

2.2 Foundation Analysis and Plan

In general, the structural integrity of concrete and masonry can adversely be affected in fire situations, especially when the structure is completely consumed by the fire. The properties of the material may be irreversibly altered deeming it unsatisfactory for reuse in supporting a rebuilt structure. Property owners have two options:

1. Completely remove and dispose of foundation,
2. If foundation is to remain in place, testing, engineer's certification and approval from the City or County Building Division is required.

Structural foundations on the property will be addressed in the following manner:

3.0 Hazardous Waste and Asbestos Removal

During Phase One of Consolidated Fire Debris Removal, teams of County staff and experts from the California Department of Toxic Substances Control (DTSC) inspected the property and removed any identifiable and accessible household hazardous waste that may pose a threat to human health, animals, and the environment such as batteries, oil, propane tanks, visible bulk asbestos, and paints. However, some hazardous materials and/or asbestos or asbestos containing materials (ACM) may still be present on the property and pose a threat to public health and the environment. Proper protection should be worn when handling, sorting, and transporting these materials (sturdy footwear, gloves, respiratory protection).

3.1 Hazardous Waste and Household Hazardous Waste Removal

All remaining hazardous waste and household hazardous waste (HHW) shall be identified and disposed by a certified hazardous waste contractor. Homeowners may be allowed to transport HHW themselves to the local HHW collection facility if the waste will be accepted by that facility and transportation requirements are met. Contact the local HHW collection facility at (530) 224-6209 for more information. Household hazardous wastes (batteries, propane tanks, paint, gasoline cans, cleaning products, pesticides, fluorescent light bulbs, etc.) must be identified, segregated, and disposed of properly.

Hazardous Waste Handling and Removal Procedures
Certified Hazardous Materials/Waste Contractor
Name: License No.:
Disposal and/or Recycling Facility(s)

3.2 Asbestos Removal

Asbestos or ACM requires assessment by a Certified Asbestos Consultant. **This must be completed for all properties opting out of the State Debris Removal Program.** Asbestos and asbestos containing material must be removed by a licensed Asbestos Abatement Contractor. If bulk loading ACM, the bin or container used for transport shall be double-lined with 10-mil poly in such a way that once loaded both layers can be sealed up independently (“burrito-wrap method”).

Asbestos Handling and Removal Procedures
Certified Asbestos Consultant hired to test the site
Name: License No.:
Asbestos Removal Contractor
Name: License No.:
Disposal Facility(s)

3.3 Air Monitoring Protocols for Fugitive Dust Control

Property owners or their contractors must provide water or an approved dust palliative, or both, to prevent a dust nuisance at the site. **Shasta County Air Quality Management District is requiring a "zero-dust" policy for all contractors performing fire debris removal.** Dust resulting from performance of the work will be controlled at all times in a manner that does not generate runoff. Dust Control Methods include:

- **Control 1**- Water or an approved dust palliative, or both, will be used to prevent dust nuisance at each site. Each area where ash and debris are to be removed will be pre-watered with a fine spray nozzle in advance of initiating debris removal and as needed during the removal.
- **Control 2**- All loads shall be covered with a tarp; this includes metal debris. Ash and debris loads shall be fully encapsulated with 10-millimeter plastic ("burrito wrap" method). Concrete loads are exempt from a tarp provided the loads are wetted prior to leaving. If concrete loads generate dust, then the loads must be wetted and covered.
- **Control 3**- All waste material that is not unloaded at the end of each workday will be consolidated, sufficiently wetted, and/or covered to prevent the offsite migration of contaminants.
- **Control 4**- All visibly dry disturbed soil surface areas of operation should be watered to minimize dust emissions during performance of work.
- **Control 5**- Speeds must be reduced when driving on unpaved roadways.

- **Control 6**- Procedures will be implemented to prevent or minimize dirt, soil, or ash contaminating roadways, neighboring parcels, or creating an airborne health hazard.

In addition to the above listed methods, dust from debris removal activities on the property will be addressed in the following manner:

4.0 Ash, Debris and Soil Removal and Disposal / Recycling

Remove ash, debris, contaminated soil, metals, and concrete from the site and dispose of properly. Metals and concrete shall be recycled if possible. Appliances and vehicles shall be handled properly to meet the requirements of metals recycling facilities. Vehicle Identification Numbers shall be documented. All waste shall be disposed of at an approved location from the list provided, or at other locations authorized to accept such waste. (See Appendices C in Guidelines, Templates and Resource List for Property Owners, Contractors and Consultants). Debris shall be handled in the following manner:

4.1 Ash, Fire Debris and Soil
4.2 Metals Including Vehicles and Appliances
4.3 Concrete, Brick & Masonry

5.0 Soil Grading and Erosion Control

5.1 Description of Grading

Remove 3 to 6 inches of soil from the impacted area after burn ash and debris is removed to a level of visually clean. Soil shall be properly disposed of as described in 4.1 above.

5.2 Description of Erosion Controls

When active fire ends it leaves behind bare dirt or decreased vegetative cover. Because of the loss of vegetation, the top layer of soil becomes loosened, making it vulnerable to increased runoff, erosion and sedimentation. Erosion and sediment stabilization practices will be implemented to keep sediment and debris from impacting homes. Erosion and sediment stabilization techniques to be used are listed below and are consistent with recognized Best Management Practices and outlined in the *Guidelines, Templates, and Resource List* provided.

6.0 Confirmation Sampling

Initial Screening Criteria and protocols have been established in consultation with CalRecycle for soil confirmation sampling after completion of visible cleanup of properties. These are initial health screening criteria in the absence of background data. Testing of metals must be performed by EPA Lab Method 6020. A qualified soil consultant shall collect soil samples from a depth of 0-3 inches for confirmation sampling and compare results to clean-up goals. Three samples shall be taken at a depth of 3-9 inches outside the ash footprint (20 ft min) to act as background samples to determine if naturally occurring levels of any metals tested are above the cleanup goals. If samples from the ash footprint are below the cleanup goals then the lab will not need to test the background samples. If sample results for any metals are above the cleanup goals but are at or below the background sample results this must be explained by your soil consultant in the final testing report. **Attach a sketch showing the ash footprint and anticipated soil sample locations.**

Soil Consultant Collecting Samples
Name: License No.
State-certified Laboratory
Name: Phone:

Initial Health Screening Criteria for Soil		
Analyte	Health Screening Level mg/Kg	Cleanup Level
Antimony	30	Health Screen
Arsenic	0.07	Health Screen
Barium	5,200	Health Screen
Beryllium	15	Health Screen
Cadmium	1.7	Health Screen
Chromium	36,000	Health Screen
Cobalt	23	Health Screen
Copper	3,000	Health Screen
Lead	80	Health Screen
Mercury	5.1	Health Screen
Molybdenum	380	Health Screen
Nickel	490	Health Screen
Selenium	380	Health Screen
Silver	380	Health Screen
Thallium	5	Health Screen
Vanadium	390	Health Screen
Zinc	23,000	Health Screen

Final Report

After implementation of the approved work plan, the Alternative Fire Debris Removal Program Clean-up Completion Certification, along with a Final Report shall be submitted to either the Shasta County Environmental Health Division or City of Redding Building Division. Information and documentation included in the Final Report will follow the outline provided in Appendix B of the Guidelines, Templates and Resource List for Property Owners, Contractors and Consultants.

7.0 Attachments (Vicinity Map, Plan Maps, Photographs, Drawings, Laboratory Test Results, Etc.)

APPENDIX F

ALTERNATIVE FIRE DEBRIS REMOVAL PROGRAM
CLEAN-UP COMPLETION CERTIFICATION

What is the purpose of this form? The purpose of this form is to certify that your parcel has been properly cleaned up and the removal of hazardous wastes, ash, and debris has been completed. This form will be used to certify property owner or contractor cleanup completion so that the demolition permit can be finaled.

Who needs to complete this form? Property owners who elect ***not*** to participate in the State-sponsored debris removal program and choose to clean-up their property on their own or with a qualified contractor.

Property Owner Name:_____ **Year Structure Built:** _____

Property Address:_____ City:_____

Assessor's Parcel Number (APN):_____ Email: _____

Mailing Address: _____

Mailing City:_____ State:_____ ZIP: _____

A. Program Participation

☐ Yes, I completed the **"Alternative Fire Debris Removal Program Application"**

B. Household Hazardous Waste and Asbestos Screening and Disposal

1. Household Hazardous Waste Removal

Description of found wastes onsite: _____

Provide disposal receipt documentation for all household hazardous waste identified and removed for proper disposal.

2. Asbestos Waste Screening

Contractor Name: _____ License Number: _____

Determination based on inspection:_____

Attach sample results, if applicable.

Consultant Name:_____ Certification Number:_____

Telephone:_____ **If Asbestos was present, attach asbestos waste disposal receipts.**

C. Ash, Debris and Soil Disposal

1. The ash, debris and soil was removed and disposed of by: ☐ Licensed contractor ☐ Hauler

Contractor/Hauler Name:_____ Phone(s):_____

Address:_____ City:_____

License Number:_____ License Type: _____

2. The ash, debris and soil from my property was disposed at the following facility(s):

Facility Name: _____

Date(s) of Delivery: _____

Date of Completion: _____ (attach disposal facility documentation)

Facility Name: _____

Date(s) of Delivery: _____

Date of Completion: _____ (attach disposal receipt documentation)

D. Metal Recycling

1. The metal was removed and disposed of by: ☐ Licensed contractor ☐ Hauler

Contractor/Hauler Name: _____ License Number: _____

Address: _____ Telephone: _____

2. The waste metal from my property was taken for recycling to the following facility(s): _____

_____

E. Inert Waste (Concrete and Masonry) Disposal

1. The inert waste was removed and disposed of by: ☐ Licensed contractor ☐ Hauler/Myself

If you checked "Hauler/Myself" go to Part E2 below. If you checked "Licensed Contractor," please provide the following information and Part E2:

Contractor Name: _____ License Number: _____

Address: _____ Telephone: _____

2. The inert waste from my property was disposed at the following facility(s):

Facility Name _____

Date(s) of Delivery _____

Date of Completion: _____ (attach disposal facility documentation)

F. Cleanup Confirmation Sampling Results

1. Consultant Name: _____ License Number: _____

Please attach a copy of the consultant's report containing the sampling locations, test results, analysis and conclusions.

G. Property Owner Certification and Indemnification

I hereby certify that all identifiable asbestos, household hazardous waste, burn ash and contaminated soil that may have been generated by the 2018 Carr Fire on my property and identified in this document have been identified, removed and properly disposed of or recycled. I understand that since clean-up of the property was performed under my direction, the County of Shasta (County) and City of Redding (City) cannot certify that clean-up was adequate until I submit proof of clean-up and soil testing.

I agree to accept all responsibility for loss or damage to any person or entity, including County of Shasta and the City of Redding, and to defend and indemnify, hold harmless, and release County and City, its elected representatives, officers, agents, and employees, from and against any actions, claims, damages, demands, losses, liabilities, disabilities or expenses, defense costs (including reasonable attorney fees), of any kind or nature, that may be asserted by any person or entity with respect to the removal of debris and any hazardous material from the above mentioned real estate property.

Property Owner Signature:_____ Date:_____

Contractor Signature:_____ Date:_____

City/County Receipt:_____ Date:_____

County of Sonoma Department of Health Services
Environmental Health
625 5th Street ❖ Santa Rosa, CA 95404
707-565-6565 ❖ Fax 707-565-6525
www.sonoma-county.org/eh

Exemption from Alternative Program Requirements for Minor Burn Debris Removal and Cleanup

Where the only burn debris on a parcel is from non-residential structures less than 120 SQFT, fences, and non-structural wood material, no work plan is required so long as the structures contained no paint, pesticides, herbicides, propane, or other similar hazardous substances, and so long as the requirements listed in this document are followed. This exemption does not apply to parcels with asbestos or parcels that the EPA has flagged as potentially not cleared of household hazardous waste (HHW).

Processing and Disposal of Wood Waste

There are numerous wood products that may be left after the fires that may need to be disposed of or processed on-site. For organic wood products (trees, brush, etc.) chipping and grinding may be a viable option provided that best management practices are followed.

Chipping and Grinding on Site

- Wood chips, waste wood, or bark mulch may last several seasons, depending on the material and its depth. Occasionally, these materials are combined with soil in an erosion control mix. Spread the material to a depth of 2–6 inches, primarily on slopes less than 4:1 (25%).

- Wood chips, waste wood, and bark mulch are not allowed in streams or where they may be subject to erosion.

- Fencing, particle board, preserved lumber are not appropriate for chip and grind on-site.

- Avoidance of Spontaneous Combustion – Precautions must be taken against spontaneous combustion, and storage and/or piling of mulch and wood chips should be avoided where possible.

Grading and Erosion Control Requirements

Once grading has been completed, best management practices (BMPs) must be implemented to establish erosion control at the disturbed site.

a. Follow best management erosion and sediment control practices (BMPs) to prevent ash, soil, and other pollutants from washing into the street, drainage courses and culverts, or onto neighboring properties. A copy of the County's storm water BMPs may be found at: http://www.sonoma-

county.org/prmd/docs/grdord/bmpguide.htm.

b. Stockpiled materials that are not immediately loaded for transport shall be handled and stored on site in such a manner as to avoid offsite migration. Stockpiles may be stored for up to 180 days. This may include wetting and covering the waste until it is loaded and transported. Locate stockpiles away from drainage courses, drain inlets or concentrated flows of storm water.
c. Stockpiled material may not be stored or placed in a public roadway.
d. If a stockpile is classified as hazardous, it must be transported to a hazardous landfill. Hazardous materials and refuse must be kept in closed containers that are covered and utilize secondary containment, not directly on soil. If the stockpile is non-hazardous, it can be sent to a Class Three (3) landfill.
e. During the project rainy season, cover non-active soil stockpiles and contain them within temporary perimeter sediment barriers, such as berms, dikes, silt fences, or sandbag barriers. A soil stabilization measure may be used in lieu of cover.
f. Implement appropriate erosion control measures during debris removal and provide final site stabilization after debris removal is completed.

Debris Removal Requirements to Solid Waste Disposal Facilities

Burn waste/ash must at a minimum be disposed of at a Class III disposal facility with a liner approved by the Regional Water Control Board to accept the waste, and any characterization requirements of the disposal site must be met before transportation to such site. An approved hauler appropriately licensed for the material transported will need to perform such work, and the material must be wetted and burrito wrapped (CalRecycle protocol) and tarped for transport and ultimate disposal. Contractors/haulers failing to adhere to this standard may have their material rejected at the disposal facility and/or a fine imposed. **Asbestos transport and disposal is not authorized by this exemption.**

Dust Control Guidelines:

- Property owners or their contractors should look to provide water or an approved dust palliative, or both, to prevent dust nuisance at each site. Dust resulting from performance of the work should be controlled at all times.
- Each area of ash and debris to be removed must be pre-watered 48 to 72 hours in advance of the removal. Hoses with a fine spray nozzle are recommended. The water must be applied in a manner that does not generate runoff. Engineering controls for storm water discharges must be in place prior to dust control operations.
- All loads shall be covered with a tarp; this includes metal debris. Ash and debris loads shall be fully encapsulated with a tarp ("burrito wrap" method). Concrete loads are exempt from a tarp provided the loads are wetted prior to leaving. If concrete loads generate dust, then the loads must be wetted and covered.
- All waste material that is not unloaded at the end of each workday should be consolidated, sufficiently wetted, and/or covered to prevent the offsite migration of contaminants.
- All visibly dry disturbed soil surface areas of operation should be watered to minimize dust emissions during performance of work.
- Speeds must be reduced when driving on unpaved roadways.
- Procedures must be implemented to prevent or minimize dirt, soil, or ash contaminating

roadways, neighboring parcels, or creating an airborne health hazard. The use of blower devices, dry rotary brushes, or brooms for removal of carryout and track out on public roads is strictly prohibited.

Vehicle and Road Safety

If removal activities on property owners' parcels will create a roadway blockage or hinder traffic patterns, property owners or their contractors are responsible for obtaining any required local permits and shall post all warning signs, as required by local ordinances. As there may be many contractors actively working on remediation efforts in the burn area, it is in property owners' best interests to identify removal and remediation efforts in adjacent areas that could impact the ability to locate, park, or transport equipment and materials.

Well and Septic Guidelines

Well Safety

- Contact Permit Sonoma at 707-565-1900 for water safety questions, well location, to obtain information on well repair permits or if you will be rewiring electrical lines to your well.
- Identify wells and water tanks on the property and take steps to protect them during debris removal.

Septic Systems

- Contact Permit Sonoma at 707-565-1900 for questions regarding your system location. Any electrical work will require a permit from Permit Sonoma.
- Identify septic tank and leach field locations and take steps to protect them during debris removal. Any immediate hazard involving the septic tank or septic system shall be mitigated prior to debris removal.

Soil Testing and Screening Criteria Guidelines

Soil testing and screening criteria are not required under this exemption, however, property owners must meet any waste characterization requirements of recipient disposal sites prior to transporting waste.

Resources for Disposal and Recycling:

Please see Appendix C and D of the alternative cleanup guidelines for a list of disposal and recycling facilities that may be available during your cleanup.