

Town of Danville
Disaster Debris Management
Plan

April 2021

PROMULGATION

Town of Danville Disaster Debris Management Plan

PROMULGATION

The Town of Danville (Danville) Disaster Debris Management Plan (DDMP) provides a comprehensive framework for management of debris following a disaster. It addresses the roles and responsibilities of government organizations as well as private firms and non-governmental organizations that might have a role in debris operations.

The Danville DDMP ensures consistency with current policy guidance and describes the interrelationship with other levels of government. The plan will continue to evolve, responding to lessons learned from actual disaster and emergency experiences, ongoing planning efforts, training and exercise activities, and federal guidance.

Therefore, in recognition of the role of the Town of Danville in debris management following a disaster and with the authority vested in me as the Public Works Director.

(Name)

Public Works Director, Town of Danville

RECORD OF CHANGES

RECORDS OF CHANGES

The following table documents the revisions made to this plan. This plan should be reviewed and updated annually.

Revision Date	Summary of Major Changes	Revised Sections	Revised By (Name and Organization)
March 2021	Refer to Section 1.5		Brian Rutherford, Tetra Tech, Inc.

RECORD OF DISTRIBUTION

RECORDS OF DISTRIBUTION

The following table documents when and to whom copies of the plan have been distributed.

Date of Distribution	Plan Version (Date of Plan)	Method of Distribution (Email, Post on Server, Provide Hard Copy, etc.)	Distributed To (Name and Department/Organization)
July 15, 2021		Email	Rich Payne, Public Works Walnut Creek
		Email	Larry Theis, Orinda Public Works
		Email	Shawn Knapp, Moraga Public Works
		Email	Mike Moran, Lafayette Public Works
		Email	Marcelle Indelicato, Danville Office of Emergency Services
		Email	Joe Yee, Contra Costa County Public Works

Central Contra Costa County Solid Waste Authority
Disaster Debris Management Plan Update

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1.0 INTRODUCTION

1.1 Debris Management Overview

For the protection of the public health, safety and welfare of residents and visitors, the member agencies of the Central Contra Costa Solid Waste Authority (CCCSWA), otherwise known as RecycleSmart, recognize the responsibility to be prepared for a debris-generating incident.

Disasters can produce substantial volumes of debris, creating hazardous conditions that endanger the public and disrupt the essential daily lifestyle and economy of the community.

Disasters will result in large expenditures of labor, equipment, materials, and supplies at substantial cost. It is imperative that the CCCSWA member agencies are prepared to provide an early, safe, and quick response to restoring environmentally safe and economically viable conditions to the disaster-affected areas. It is to this end that the CCCSWA and its member agencies developed their multijurisdictional Disaster Debris Management Plan (DDMP) as well as jurisdiction specific DDMPs. This is the jurisdiction specific Plan for the Town of Danville (Danville).

The DDMPs address how response to a debris-generating incident will be coordinated at a regional and local level. The DDMP does not address routine debris incidents that local agencies can manage; the operational concepts reflected in this plan focus on potential large-scale disasters that can generate significant volumes of debris requiring an unusual or extraordinary response.

1.2 Purpose

The purpose of this plan is to provide a framework for how disaster debris operations will be managed by Danville. The intent of this plan is to:

- Establish coordinated debris management operations within each jurisdiction including debris removal, reduction, recycling, haul-out, final disposal and documentation.
- Provide a debris management organization for each jurisdiction.
- Identify the roles and responsibilities of agencies with a role in response.
- Describe the resource management strategy for debris operations in each jurisdiction.

1.3 Plan Goal and Objectives

The goal of this plan is to provide a concept of operations to conduct debris operations in member jurisdictions with the following priorities:

- Saving lives.
- Preserving the health and safety of responders and the public.
- Protecting property and the environment.

The plan objectives describe the end result for successful debris operations within Danville. These are the broad concepts that must be achieved in order to meet the purpose of this plan. The objectives for each jurisdiction are as follows:

- Conduct pre-disaster preparedness.
- Facilitate debris removal operations to ensure public health and safety.

- Consider those with disabilities and access and functional needs throughout debris operations.
- Maximize diversion to the greatest extent possible to preserve remaining landfill capacity.
- Organize to manage debris operations during widespread events across multiple jurisdictions.
- Establish mechanisms to coordinate with stakeholders to manage debris operations.
- Coordinate public information regarding debris.
- Utilize internal and private sector networks to manage debris operations.
- Request additional resources, if necessary, through established channels.
- Comply with applicable local, state, and federal requirements throughout debris operations.
- Forecast debris and resource requirements.

The specific activities required to achieve these objectives are included in section 2, Mass Debris Management Strategy.

1.4 Background

The mission of CCCSWA is to develop and deliver high quality, cost-effective solid waste reduction, recycling, and refuse programs that provide and promote sustainability in member agency communities. CCCSWA initiated disaster debris planning in 2015 with representatives from member jurisdictions to form the Disaster Debris Planning Team (DDPT). A multijurisdictional DDMP as well as jurisdiction specific DDMPs for each member agency were completed and approved by the State of California and FEMA in 2016. Since that time, several changes have occurred in debris management guidance and in the Public Assistance (PA) program which necessitated an update to the DDMP. CCCSWA contracted with Tetra Tech, Inc. to assist in updating the DDMP. A data request was compiled and sent to CCCSWA by Tetra Tech. In turn, CCCSWA contacted its member agencies for the data they needed to provide and forwarded it to Tetra Tech for inclusion of the DDMP. Follow up calls were conducted in lieu of onsite visits in accordance with social distancing protocols initiated as a result of the COVID-19 pandemic.

1.5 Updates to the DDMP

As part of the update process, the following changes were made to the DDMP:

- Updated data and demographic information.
- Revised background information
- Updated earthquake history.
- Updated severe weather incident history.
- Updated severe weather damage estimates.
- Updated wildfire hazard severity zone map.
- Updated wildfire debris estimates.

- Added flood debris estimate information.
- Updated authorities and references.
- Removed reference to the H-GAC Buy Program.
- Added responsibilities for regional agencies including the Bay Area Quality Management District and the San Francisco Bay Area Conservation and Development Commission.
- Expanded the list of State and Federal agencies with a role in debris management.
- Revised responsibilities list for debris hauler and debris monitoring contractors.
- Removed most references to the “70-hour push.”
- Revised the Finance Section and updated references to the Alternate Procedures Program.
- Revised the list of potential Debris Management Sites (DMS).
- Added information about the Disaster Recovery Reform Act (DRRA) of 2018.
- Updated the Public Assistance (PA) process flow chart.
- Updated the list of training classes.
- Updated the list of critical facilities and roads.
- Added social media references to the sample public information messages.
- Updated the list of potential disposal sites.
- Updated the stump removal form.
- Updated the Federal policies information and links.
- Updated the health and safety guidance.
- Updated and added additional forms to the load ticket attachment.
- Revised the debris hauler scope of work to include performance bond information.
- Provided Word version of the interlocal agreement (Attachment V)

A copy of the draft revised DDMP was provided to CCCSWA and a call was conducted between CCCSWA and Tetra Tech to discuss the revisions made to the DDMP. Finishing revisions were made to the DDMP and it was finalized. CCCSWA then tailored the DDMP for each Member Agency.

1.5.1 Plan Scope

The scope of this plan pertains to disaster debris operations for an incident that causes widespread damage in Danville.

This plan complies with the principles and requirements found in federal and state laws, regulations and guidelines. This plan complies with the National Incident Management System (NIMS), National Response Framework, National Disaster Recovery Framework and the Standardized Emergency Management System (SEMS).

1.5.1.1 Member Jurisdictions

For the purpose of this plan, the term “member jurisdictions” or “member agencies” refers to the following jurisdictions within CCCSWA:

- Town of Danville
- City of Lafayette
- Town of Moraga
- City of Orinda
- City of Walnut Creek
- Specified areas of Unincorporated Contra Costa County including:
 - Alamo
 - Blackhawk
 - Diablo

1.5.1.2 Population, Demographics and Physical Characteristics¹

The following information was retrieved from the U.S. Census Bureau and the 2018 Contra Costa County Hazards Mitigation Plan Update. The County’s hazard mitigation plan provides a complete community profile of the population, demographics, and physical characteristics. The hazard mitigation plan can be found on the Contra Costa County website at <https://www.contracosta.ca.gov/6842/Draft-Local-Hazard-Mitigation-Plan-Update>.

Population

The multi-jurisdiction area of central Contra Costa County served by CCCSWA has a population of approximately 232,789 people, including municipalities and unincorporated County areas.

The population density in the combined jurisdictions is approximately 1,465 persons per square mile. The average population density for the State of California is 239.1 persons per square mile.²

Demographics

During disasters, populations with functional and access needs and socio-economic barriers often have less access to resources and support. The CCCSWA jurisdictions have unique and diverse populations. Some characteristics of the demographics might impact debris operations. This means that public information regarding set out procedures and the safe handling of debris will need to be accessible in multiple formats. Sample public information messages can be found in Attachment D.

¹ U.S. Census Bureau and the County of Contra Costa Hazard Mitigation Plan Update, 2011

² U.S. Census QuickFacts, Contra Costa County and California, <https://www.census.gov/quickfacts/fact/table/CA.contracostacountycalifornia/PST045219>

According to the U.S. Census Bureau, approximately 16.3% of the population, or approximately 37,944 people, are elderly and 11.2% or approximately 26,072 people have some type of disability. 7.8% of the population is living below the poverty level.

Debris managers must be cognizant of how disaster debris can further impact individuals with disabilities and access and functional needs. Section 2.2.7 of this plan provides a more detailed description of best practices during debris operations to support this population.

Physical Characteristics

The majority of the area of central Contra Costa County consists of mountains and valleys formed by tectonic plate movement. In the east side of the County there is an area that spills into the San Joaquin Valley. Included in the area are active and potentially active faults. There are a number of lakes and rivers that lace the region.

The soil in the mountainous areas consists of alluvial soils and terrace deposits. In the far east side of the County, the soils consist mainly of bay muds.

1.5.1.3 Debris Management Constraints

The debris planning team identified several characteristics of the Danville area that will present challenges during debris management. This plan aims to provide best management practices to address these challenges.

- Hilly terrain in the region may make it difficult to locate suitable space for temporary debris management site (TDMS) locations
- Lack of local jurisdictional resources
- Many jurisdictions have not had experience with debris-generating incidents and therefore are not familiar with the processes and resources needed to respond
- Multiple municipalities using limited resources:
 - Municipal and County-owned equipment
 - Debris haulers
 - Disposal facilities
 - Staging areas
- Communications protocols are not well established in the region
- State regulatory requirements:
 - Environmental regulations
 - Zero waste initiative
- Citizenry expectations
- Populations with disabilities and functional and access needs

1.6 Incidents and Assumptions

1.6.1 Debris Scenarios

The intent of this plan is to provide guidance for a large-scale disaster that generates significant volumes of debris that will overwhelm local agencies and require multijurisdictional coordination and support. Danville is vulnerable to many disasters that have the potential to generate large volumes of debris including natural and human-caused disasters.

The Contra Costa County Hazard Mitigation Plan provides a comprehensive disaster profile that provides detailed information on the disasters that have the potential to impact jurisdictions within the County. For the purposes of this plan, the debris planning team chose two disaster scenarios to conduct an analysis based on likelihood to occur and potential to generate disaster debris. The analysis uses two methods to estimate potential debris type and volume.

First, an estimation model is used based on a debris equation developed by the U.S. Army Corp of Engineers. The model considers population and parcel data as factors to determine the estimated volume of debris for a widespread disaster.

Second, a historical analysis is conducted based on real data from similar incidents in an area that is geographically similar to the Danville area.

The following section provides the findings of the two debris estimation approaches, which is intended to establish a baseline for planning purposes. During a real disaster, many factors impact the actual amount of debris that is generated. The information in this section is intended for the purposes of planning only and will likely be different from an actual event.

1.6.1.1 Earthquake³

Earthquakes are considered a major threat to Danville due to the proximity of several fault zones, notably including the San Andreas Fault, the Calaveras Fault, the Mt. Diablo/Greenville Fault, the West Napa Fault, the Hayward Fault, and the Rodgers Creek Fault. Since 1836, there have been five earthquakes in the San Francisco Bay Area with a magnitude of 6.75 or higher. The U.S. Geological Survey (USGS) Working Group on California Earthquake Probabilities has evaluated the probability of one or more earthquakes of Richter magnitude 6.7 or higher occurring in the San Francisco Bay Area within the next 30 years. The result of the evaluation indicated a 70-percent likelihood for such an earthquake event.⁴ The chart below shows the locations of earthquakes with a magnitude of 4.5 or greater that have occurred in Contra Costa County from 1970 to 2020⁵.

³ County of Contra Costa Hazard Mitigation Plan Update, 2011

⁴ County of Contra Costa Hazard Mitigation Plan Update, 2011, Section 9.3.3 Seismic Features

⁵ U.S. Geological Survey Earthquake Archives website, <http://earthquake.usgs.gov/earthquakes/search/>

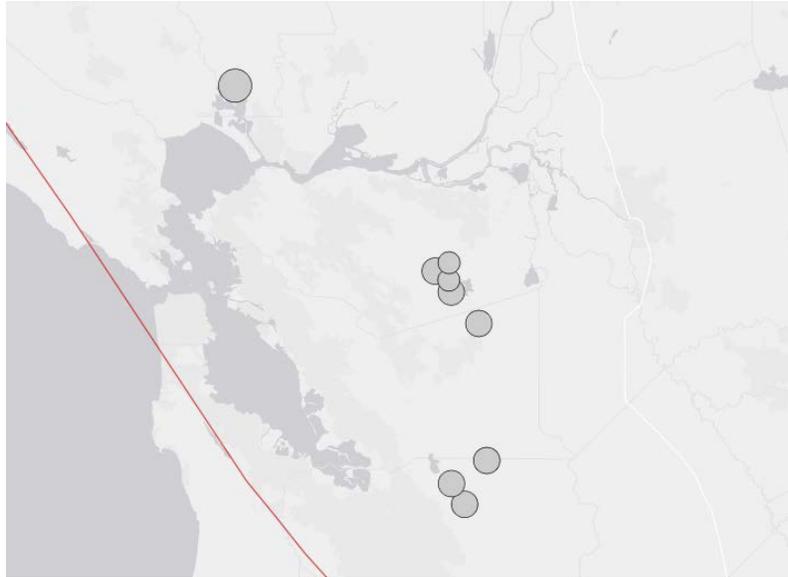


Figure 1-1: Locations of Earthquakes 4.5 Magnitude and Greater From 1970 to 2020

A significant earthquake along one of the faults could cause substantial casualties; extensive damage to buildings, roads, and bridges; fires; and other threats to life and property. The effects could be aggravated by aftershocks and by secondary effects such as fire, landslides, and dam failure. A major earthquake could be catastrophic in its effect on the population and could exceed local and state response capabilities.

Earthquake losses typically include structural damage to private and public structures, such as homes, businesses, roads, and bridges. Structural damage can cause thousands of dollars in losses for residents, business owners, and the County. Additionally, earthquakes can create secondary impacts including mudslides, fires and hazardous materials incidents.

1.6.1.2 Severe Weather Incident

Severe weather can also impact Contra Costa County jurisdictions. The four types of severe weather that impact Contra Costa County are thunderstorms, damaging winds, hail storms and flash flooding. Tornadoes can be a threat but there have only been two F0 rated tornadoes recorded in the County since 1950.⁶ In neither case was there enough damage caused to warrant a state or federal emergency declaration. The chart below summarizes some of the severe weather events in Contra Costa County since 1970, as recorded by the National Oceanic and Atmospheric Administration (NOAA).

⁶ Contra Costa County Hazard Mitigation Plan, 2011, Section 15, Severe Weather

Locations	Type of Incident	Date	Property Damage	Description
Contra Costa County	Hail	4-29-1983	0	Heavy rain and three-quarter inch hail fell for about 15 minutes. A few windows were broken or cracked. Rice crops sustained light damage.
Contra Costa County	Tornado	9-18-1989	0	An F0 tornado .2 miles long and 10 yards wide was reported in Contra Costa County.
48 Counties in Northern California	Severe Storms	1-4-1997	\$2 billion	Severe storms resulting in flooding and landslides.
Danville	Flooding - Storm related	12-31-2002	\$5 million	Damage to San Ramon Valley Unified School District.
Walnut Creek, Martinez, Orinda	Flood	12-31-2005	\$22 million	Widespread County flooding occurred after 2 to 4 inches of rain fell on the area in about 24 hours. Urban flooding initiated landslides that contributed to the damage.
Brentwood	Tornado	1-23-2010	\$25,000	A low-topped super cell produced an EF0 tornado near Brentwood. The tornado crossed power lines and destroyed a utility pole.
Throughout Contra Costa County	Severe Storms and Debris Flows	3-24-2011	\$16 million	Throughout Contra Costa County, nearly \$16 million worth of damage occurred due to March storms.
Throughout Contra Costa County	Heavy Rain	3-13-2012	\$50,000	A series of severe storms resulted in a series of traffic accidents in the County.
Orinda	Flood	12-02-2012	\$250,000	During heavy rainfall, a 24-inch culvert failed and collapsed, opening up a 20-foot sinkhole on Tarabrook Drive.
Contra Costa County	Severe Storms, Flooding, and Mudslides	02/14/2014	\$1,000	Heavy rains and gusty winds from a pacific storm system resulted in flooding to some urban areas, small streams and creeks, and damage to power lines and trees as well as a few localized mud and rockslides.
Contra Costa County	Severe Winter Storms, Flooding, Mudslides	03/16/2017	\$1,000	An atmospheric river swept through the Bay Area beginning on the night of Feb 6. This system produced widespread roadway flooding, debris flows, and strong winds.
Contra Costa County	Severe Winter Storms, Flooding, Mudslides	04/01/2017	0	A potent upper level trough with associated cold front caused roadway flooding, landslides and gusty winds.

El Niño-Southern Oscillation⁷

El Niño-Southern Oscillation (El Niño or ENSO) is a naturally occurring weather pattern that causes changes in the world climate, specifically for areas around the equator. El Niño refers to a

⁷ California Department of Fish and Wildlife, El Nino Information Page, 2015

group of complex sea surface temperature changes. Southern Oscillation is a varying shift in surface air pressure between the eastern and western halves of the Pacific. El Niños occur irregularly every two to seven years.

El Niño is significant because it creates conditions that make California more susceptible to severe weather like heavy rain and mudslides.

Mud Flow⁸

A mud flow is a mass of rock, earth or debris moving down a slope. The geologic setting of the County is conducive to mud flows that can threaten life and property. Mud flows, rivers of rock, earth, organic matter and other soil materials saturated with water, develop when water rapidly accumulates in the ground as occurs during periods of heavy rainfall. As the water pressure in the soil increases, the strength of the soil decreases and gravity is able to pull the soil, rocks, and other debris downhill. A mud flow can be very destructive and can occur with no warning.

There have been two recorded mud flow incidents in Contra Costa County in recent years. One occurred in January 1997, the other in April 2006. In both instances, the mud flows occurred after periods of heavy rains and flooding that resulted in presidential disaster declarations. Fortunately, no deaths were reported in either of these incidents but damage estimated for the combined incidents exceeded \$20 million.

1.6.1.3 Wildfire

A wildfire is an uncontrolled fire occurring on undeveloped land that requires fire suppression. Wildfire presents a risk to the County, particularly during the late summer and early fall seasons when natural vegetation and dry farmed areas are very dry. Since the 1950s, Contra Costa County has 51 recorded wildfires; however, none of the wildfires caused enough damage to solicit a state or federal disaster declaration.

Figure 1.2 below illustrates data from the California Department of Forestry and Fire's Fire and Resource Assessment Program (FRAP) showing the areas of central Contra Costa County at highest risk of wildfire.

⁸ Contra Costa County Hazard Mitigation Plan, 2011, Section 14, Landslides and Other Mass Movements

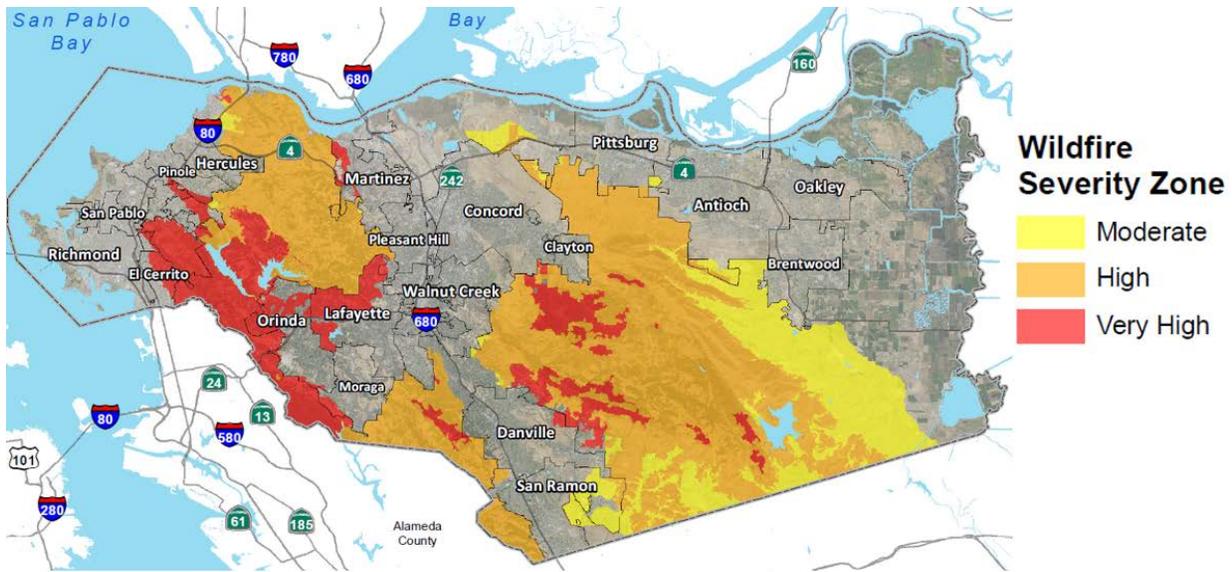


Figure 1.2: Location of Fire Hazard Severity Zones

1.6.2 Debris Estimates

Estimating the quantities of debris that may be generated by various natural or man-made disasters is a complex analysis. There are endless variables (type of incident, severity, etc.) that can dramatically impact the quantities of debris that may be generated by a disaster and virtually no models that can accurately estimate debris volumes. Planning for a disaster should include estimating its debris generation potential.

Debris Estimation Models

Debris estimates are based on a series of assumptions and should not be considered as the actual volumes following a disaster event. The debris estimate models use factors such as household population and parcel data to forecast the volume and type of potential debris in each disaster management area. The assumptions used in each debris estimation model are provided below along with the estimated debris volumes and resource requirements.

Assumptions for all models:

- Average debris collection truck capacity: 35 cubic yards (CY)
- Average number of trips per day for each collection truck: 6
- Average truck to loading equipment ratio: 2:1
- Debris Management Sites per jurisdiction: 1 (*This could potentially be reduced by jurisdictions with smaller acreage requirements sharing sites.*)
- Volume of debris that can be staged per acre based on a 10-foot stack height: 16,117 CY/acre
- Estimated collection period: 30 days (unless otherwise stated)

Earthquake Scenario Assumptions and Debris Estimate

For the earthquake scenario, Hazus, a program developed by FEMA to aid jurisdictions in estimating damage and debris, was used to run three earthquake scenarios. The scenarios include magnitude 7.0 earthquakes on the Calaveras North Central Fault, the Hayward-Rodgers Creek Fault, and the Concord-Green Valley Fault. These fault lines were chosen for the scenarios from the U.S. Geological Survey data because of their locations in or very near to the CCCSWA service area.

Table 1.4 – Concord-Green Valley Fault Earthquake Debris Estimate

Jurisdiction within CCCSWA	Type 1 debris (brick, wood, and other debris (CY))	Type 2 debris (wrecked reinforced concrete and steel members (CY))	Total (CY)	DMS Acres Needed	Trucks Needed	Personnel (Debris Monitors)
Town of Danville	10,131.62	2,905.08	13,036.70	1	3	1
City of Lafayette	8,867.13	3,768.46	12,635.59	1	3	1
Town of Moraga	2,033.85	613.81	2,647.65	1	1	1
City of Orinda	2,192.51	558.90	2,751.41	1	1	1
City of Walnut Creek	90,920.40	68,880.41	159,800.81	7	33	17
Unincorporated Contra Costa County	35,677.73	20,758.70	56,436.43	2	12	6
TOTAL	149,823.24	97,485.36	247,308.59	13	53	27

Table 1.5 – Hayward-Rodgers Creek Fault Earthquake Debris Estimate

Jurisdiction within CCCSWA	Type 1 debris (brick, wood, and other debris (CY))	Type 2 debris (wrecked reinforced concrete and steel members (CY))	Total (CY)	DMS Acres Needed	Trucks Needed	Personnel (Debris Monitors)
Town of Danville	5,843.62	1,654.76	7,498.37	1	2	1
City of Lafayette	10,156.51	4,565.71	14,722.23	1	3	2
Town of Moraga	5,167.13	2,285.62	7,452.75	1	2	1
City of Orinda	10,267.51	3,933.69	14,201.19	1	3	1
City of Walnut Creek	12,471.90	5,006.90	17,478.81	1	4	2
Unincorporated Contra Costa County	10,557.56	3,511.04	14,068.60	1	3	1
TOTAL	54,464.23	20,957.72	75,421.95	6	17	8

Table 1.6 – Calaveras North Fault Earthquake Debris Estimate

Jurisdiction within CCCSWA	Type 1 debris (brick, wood, and other debris (CY))	Type 2 debris (wrecked reinforced concrete and steel members (CY))	Total (CY)	DMS Acres Needed	Trucks Needed	Personnel (Debris Monitors)
Town of Danville	59,709.31	41,284.19	100,993.50	4	21	11
City of Lafayette	7,464.85	2,930.00	10,394.85	1	2	1
Town of Moraga	3,044.24	1,081.67	4,125.91	1	1	1
City of Orinda	2,356.13	634.27	2,990.40	1	1	1
City of Walnut Creek	27,827.52	13,636.49	41,464.01	2	9	4
Unincorporated Contra Costa County	42,211.99	26,687.60	68,899.59	3	14	7
TOTAL	142,614.05	86,254.22	228,868.27	12	48	25

Flooding Scenario Assumptions and Debris Estimate

Three flooding scenarios are listed below. The scenarios include a 10 percent annual flooding chance, a 1 percent of chance of flooding (100-year flood), and a 0.2 percent chance of flooding (500-year flood).⁹

Table 1-7 – 10% Flooding Debris Estimate

Jurisdiction within CCCSWA	10% Annual Flood in Cubic Yards	DMS Acres Needed	Trucks Needed	Personnel (Debris Monitors)
Town of Danville	180	5	1	1
City of Lafayette	2,158	5	1	1
Town of Moraga	678	5	1	1
City of Orinda	574	5	1	1
City of Walnut Creek	6,932	5	2	1
Unincorporated Contra Costa County	8,654	5	2	1

⁹ Contra Costa County Local Hazard Mitigation Plan Final Volume 1, Section 9.5

Table 1-8 – 1% Flooding Debris Estimate (100-Year Flood)

Jurisdiction within CCCSWA	1% Annual Flood	DMS Acres Needed	Trucks Needed	Personnel (Debris Monitors)
Town of Danville	3,546	5	1	1
City of Lafayette	5,494	5	1	1
Town of Moraga	1,420	5	1	1
City of Orinda	1,510	5	1	1
City of Walnut Creek	8532	5	1	1
Unincorporated Contra Costa County	257,518	16	14	7

Table 1-9 – 0.2% Flooding Debris Estimate (500-Year Flood)

Jurisdiction within CCCSWA	0.2% Annual Chance Flood	DMS Acres Needed	Trucks Needed	Personnel (Debris Monitors)
Town of Danville	4,788	5	1	1
City of Lafayette	10,582	5	1	1
Town of Moraga	2,444	5	1	1
City of Orinda	2,394	5	1	11
City of Walnut Creek	10,008	5	1	1
Unincorporated Contra Costa County	660,484	41	18	9

Severe Weather Event Scenario Assumptions and Debris Estimate

Danville is susceptible to severe weather including flooding and strong winds. For this reason, the U.S. Army Corps of Engineers (USACE) hurricane debris estimation model was used to determine the type and volume of debris for each jurisdiction. Though it is unlikely that Danville will experience a hurricane, a category 1 hurricane was used because it most closely resembled the type of conditions related to wind speed and flooding Danville could experience in a severe weather incident.

- USACE formula:

$$Q=H(C)(V)(B)(S)$$

Where:

$$Q = \text{Cubic Yard (CY) of debris}$$

H = Number of households in the community

C = Storm category factor (Storm category 1, multiplier = 2)

V = Vegetative multiplier (Medium vegetative cover, multiplier =1.3)

B = Commercial multiplier (Medium commercial multiplier = 1.2)

S = Precipitation multiplier (medium to heavy rains multiplier = 1.2)

- Estimated allocation of construction and demolition (C&D) to vegetative debris:
 - C&D debris 30%
 - Vegetative debris 70%

Table 1.10 – Severe Weather Debris Estimates

Jurisdiction	Households	Debris Estimate (CY)	C&D (CY)	Vegetative (CY)	DMS Acres Needed	Trucks Needed	Personnel (Collection Monitors)
Town of Danville	15,959	59,750	17,925	41,825	5	10	5
City of Lafayette	9,407	35,219	10,566	24,653	5	6	3
Town of Moraga	5,909	22,123	6,636	15,486	5	4	2
City of Orinda	7,093	26,556	7,967	18,589	5	4	2
City of Walnut Creek	31,105	116,457	34,937	81,519	7	18	9
Unincorporated Contra Costa County	392,277	1,468,685	440,605	1,028,079	91	38 (180-day collection period)	19

Wildfire Scenario Assumptions and Debris Estimate

Portions of Central Contra Costa County are susceptible to a wildfire incident. Using data from past California wildfire incidents, staff from Tetra Tech have assembled a formula that takes into consideration the number of parcels damaged by fire, average tree density in the area, the average size of the trees, as well as the types of housing structures that might be in the path of the fire.

Table 1.11 – Wildfire Debris Estimates

Jurisdiction	Parcels at Risk	Debris Estimate (CY)	DMS Acres Needed	Trucks Needed	Personnel (Collection Monitors)
Danville	322	80,135	5	12	6
Lafayette	2,994	1,188,293	74	31 (180-day collection period)	15
Moraga	59	26,659	5	4	2
Orinda	2,106	769,315	48	20 (180-day collection period)	10
Walnut Creek	66	9,586	5	2	1
Unincorporated Contra Costa County	16,566	6,809,280	422	180 (180-day collection period)	90

1.6.3 Debris Planning Assumptions

For the purposes of this plan, the following assumptions are considered to be facts in order to execute this plan:

- Debris will be managed at the most local level.
- Member jurisdictions have or will develop existing procedures to use local resources to the maximum extent possible to manage debris.
- Member jurisdictions have diverse populations that will have unique needs during debris operations.
- In a catastrophic disaster, communication networks might be inoperable, transportation infrastructure might be severely debilitated and resources will be limited.
- Member jurisdictions may use private sector resources to support debris operations following a catastrophic disaster.
- Member jurisdictions may request additional resources as necessary through established channels (SEMS).
- Catastrophic disasters will require prolonged, sustained debris operations and support activities.

1.7 Authorities and References

1.7.1 Authorities

Local

- Central Contra Costa Solid Waste Authority Joint Exercise of Powers Agreement
- Central Contra Costa Solid Waste Authority Ordinance No. 97-01 Regulating Solid Waste, Green Waste And Recyclable Material Collection, Processing, Disposal And Litter¹⁰
- Town of Danville Maintenance Agreements with the California Transportation Department (CalTrans) for the Intersection at Sycamore Valley Road and Camino Ramon and the 680 Auxiliary Lane Widening Project
- Central Contra Costa Solid Waste Authority Ordinance No. 19-1, An ordinance for the CCCSWA amending the construction and demolition debris program ordinance.¹¹

State

- Joint Exercise of Powers Act: Government Code § 6500 et seq.
- California Disaster Assistance Act (CDAA), Title 19, California Code of Regulations

¹⁰ Link to Ordinance 97091, <https://www.recyclesmart.org/filebrowser/download/2620>

¹¹ Link to Ordinance 19-1, <https://www.recyclesmart.org/filebrowser/download/4900312>

- Section 2920 – Emergency Work
- Section 2930 – Emergency Protective Measures
- Section 2925 – Debris Removal
- California Health & Safety Code §§ 41800-41815
- California Integrated Waste Management Act of 1989, California Public Resources Code §§ 40000-49620
- California Hazardous Waste Control, California Health and Safety Code § 25100 et seq.
- California Carpenter-Presley-Tanner Hazardous Substance Account Act, California Health and Safety Code § 25300 et seq.
- Porter-Cologne Water Quality Control Act, California Water Code § 13000 et seq.
- Safe Drinking Water And Toxic Enforcement Act, California Health and Safety Code §25249.5 et seq.
- California Health and Safety Code §§ 25115-25117, 25249.8, 25281, and 25316

Federal

- Clean Air Act, 42 U.S.C. § 7401 et seq.
- Sandy Recovery Improvement Act (SRIA), included as Division B of the Disaster Relief Appropriations Act, PL 113-2, signed into law January 29, 2013
- Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. § 5121 et seq., including the Sandy Recovery Improvement Act (SRIA), which amended Title IV of the Stafford Act, PL 113-2
- 23 U.S.C., § 125 – Emergency Relief, part of Moving Ahead for Progress in the 21st Century Act (MAP-21), signed into law July 6, 2012
- Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 C.F.R. § 200 et seq.
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601 et seq.
- Emergency Planning and Community Right-to-Know Act, 42 U.S.C. § 11001 et seq.
- Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq.
- Federal Clean Water Act, 33 U.S.C. § 1251 et seq.
- Toxic Substances Control Act, 15 U.S.C. § 2601 et seq.
- Occupational Safety and Health Act, 29 U.S.C. § 651 et seq.
- Hazardous Materials Transportation, 49 U.S.C. § 5101, et seq.

1.7.2 References

Local

- Contra Costa County Emergency Operations Plan, 2015
- Contra Costa County Hazard Mitigation Plan Update, 2018

State

- California Office of Emergency Services Debris Management Plan
- California Environmental Protection Agency (CalEPA) Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions Pursuant to a State and Local Emergency Proclamation, October 2011

Federal

- FEMA Comprehensive Planning Guide 102 Version 2
- FEMA Publication FP 104-009-2 – Public Assistance Program and Policy Guide 2020
- FEMA 329 Debris Estimating Field Guide, September 2010
- FEMA Public Assistance Alternative Procedures Debris Management Plan Job Aid
- FEMA Public Assistance Alternative Procedures EMMIE Cost Codes for Debris Removal
- FEMA Public Assistance Alternative Procedures FAQ for Debris Removal
- National Response Framework, Department of Homeland Security, October 2019
- National Disaster Recovery Framework, Department of Homeland Security, June 2016

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2.0 ORGANIZATION AND ROLES AND RESPONSIBILITIES

2.1 Organizational Structure for Debris Operations

To mount an effective response to a debris-generating incident, roles and responsibilities must be clearly delineated between the affected jurisdictions, contractors, state and federal agencies, as well as non-governmental organizations with a role in response. In addition, all of the responding agencies must respond in a coordinated manner to ensure disaster debris operations are conducted as efficiently and as safely as possible.

Achieving an organized and efficient approach is facilitated through utilization of the Incident Command System (ICS). ICS was developed in the 1970s in California to help organize response to devastating wildfires in the state. ICS provides a standardized approach to incident management and helps to organize response agencies under a top-down modular organization that is flexible based on the scope of the incident. In addition, under ICS there is a well-defined process for setting response objectives and communicating those objectives throughout the response organization.

Each of the responding agencies assisting impacted jurisdictions will collaborate under ICS to effect an organized and timely response to debris operations. In addition, residents and businesses in affected areas will also have an important role to fill in ensuring the success of disaster debris operations. The specific roles and responsibilities of response agencies and those affected by a debris-generating incident are described below.

2.2 Roles and Responsibilities

Many stakeholders will be involved in disaster debris operations. Roles and responsibilities must be clearly delineated between departments within affected jurisdictions and the OA. State and federal agencies will also have a role in debris operations as well as private nonprofit organizations, volunteer organizations and private sector business enterprise. These roles and responsibilities are described below.

2.2.1 Jurisdictions

Jurisdictions are responsible for conducting debris operations within their area of control to the greatest extent possible. In widespread events, some jurisdictions will not have the capability to conduct their own debris operations. In these situations, jurisdictions can request support from the Operational Area (OA) through appropriate channels.

The following list provides general roles and responsibilities during debris operations. This list provides a general guide for jurisdictions to assign roles and responsibilities within their organizations related to debris operations.

Public Works Departments

- Serve as the debris manager for the jurisdiction.
- Activate and implement the jurisdiction's Debris Management Plan.
- Conduct damage assessments and estimate debris totals.
- Oversee debris operations including internal resources and contracted services.
- Coordinate with local, state, and federal agencies regarding regulatory requirements for debris operations.

- Coordinate with the OA for support for debris operations.
- Obtain approval from regulatory agencies for TDMS.
- Provide situational updates on debris operations to the local EOC and the OA.
- Maintain documentation for federal disaster assistance for debris operations.
- Ensure compliance with federal disaster assistance programs for debris removal.
- Review the Debris Management Plan annually.

Jurisdiction Administration

- Make policy-level decisions related to debris operations.
- Provide signature authority for legal documents, including mutual aid agreements with neighboring jurisdictions, inter-local agreements, and notices to proceed with contracted service providers.

Emergency Management

- Coordinate the preparation, review, and update of the jurisdiction's Debris Management Plan.
- Ensure compliance with federal assistance programs for debris removal.

Finance and Administration

- Understand current federal disaster assistance program guidance and regulations related to debris operations.
- Manage documentation for federal reimbursement for debris operations.
- Coordinate with Public Works and Purchasing to obtain force account labor, equipment, and overtime documentation related to debris removal operations for potential federal reimbursement.
- Audit purchase orders and documents, general ledger entries, cash receipts, and payroll documents related to debris removal operations.
- Manage and audit contractor invoices for payment.

Code Enforcement

- Enforce nuisance abatement codes.
- Document nuisance abatement cases to support private property debris removal.
- Maintain awareness of TDMS and operations.

Fire Department

- Provide emergency services at TDMS in the event of a fire.

Geographic Information System (GIS) Department

- Provide GIS data to appropriate agencies and vendors for debris removal operations, which may include road lists, data on historical properties, and publicly-owned and privately owned lands.

Health Services

- Determine debris that poses an imminent threat to public health and safety.
- Provide documentation regarding health and safety issues to support debris operations.

Law Enforcement

- Provide security for debris management sites and other debris removal operations when necessary.
- Lead debris operations resulting from a crime scene or terrorism incident.

Legal Services

- Review debris operations procedures for compliance with applicable local, state, and federal regulations.
- Support the jurisdiction with regulatory reviews, audits, and appeals regarding disaster assistance for debris operations.

Public Information Officer

- Coordinate with Public Works and Emergency Management to develop public information messages related to debris operations. See sample public information messages in Attachment D.
- Provide press releases related to debris removal operations, set out procedures and citizen debris drop-off locations.
- Provide timely information regarding debris operations in accessible formats.

Purchasing Department

- Provide support to procure goods and services for debris removal operations.
- Coordinate with finance and administration to ensure disaster debris services are procured following local, state, and federal procurement regulations.
- Review and update emergency procurement policies as necessary following an emergency.
- Assist with the documentation of debris operations for potential federal reimbursement.
- Support audit and closeout of debris projects.

Risk Management

- Provide recommendations for health and safety procedures for debris operations.
- Coordinate with health services and public works to review solid waste management sites including administration buildings, recycling centers, landfills, and transfer stations for damage, safety, and health issues.

2.2.2 Operational Area

An Operational Area means an intermediate level of the state emergency services organization, consisting of a county and all political subdivisions within the county area.¹² The OA has the following responsibilities during an emergency:

- Implement OA Emergency Response Plan.
- Establish and maintain the Operational Area Emergency Operations Center (OAEOC) to serve the OA.
- Coordinate the utilization of County, other local government, state and federal resources within the OA.
- Support operations conducted by local governments within the County in accordance with SEMS and approved mutual aid and operations plans.

In alignment with these overarching responsibilities, the OA is also responsible for the following tasks during a catastrophic debris-generating event:

- Implement the OA DDMP.
- Establish a debris operations task force in the OAEOC to serve the OA.
- Coordinate the utilization of County, other local government, state and federal resources and private sector business enterprise including solid waste facility operators for debris operations within the OA.

Support public entities within the OA to conduct debris operations in accordance with SEMS and approved mutual aid and operations plans.

2.2.3 State Agencies

State agencies provide regulatory guidance and technical assistance for debris operations. The following section provides an overview of the roles and responsibilities of State agencies involved in debris operations.

CalEPA

- Provide guidance on environmental regulations regarding debris operations.
- Provide technical assistance for debris removal of HAZMAT (Department of Toxic Substances Control).
- Provide support and guidance for debris removal operations (CalRecycle) including potential provision of resources.
- Provide approvals for TDMS and emergency waivers of standards such as permitted capacity, throughput and acreage for permitted solid waste facilities (CalRecycle).

¹² 19 C.C.R. ,§ 2409

CalOES

- Serve as a liaison between state and federal agencies.
- Provide industry standards and best practices for debris operations.
- Serve as the administrator of disaster grants for debris operations.
- Provide guidance on documentation requirements for disaster assistance for debris operations.

2.2.4 Federal Agencies

Federal agencies support debris operations by providing disaster assistance funding, regulatory oversight and technical assistance. The following section provides an overview of the roles and responsibilities of federal agencies involved in debris operations.

FEMA

- Provide technical assistance for debris operations.
 - Environmental and historical preservation review process.
 - Public Assistance grant program reimbursement process.
 - Procurement assistance.
- Assign federal mission assignments as requested.
 - Emergency Support Function #3, Public Works and Engineering.
 - Emergency Support Function #10, Oil and HAZMAT Response.
- Administer the FEMA Public Assistance Program for Category A Debris Removal.
 - Ensure safety, eligibility, and compliance are maintained.

U.S. Army Corps of Engineers

- Primary federal entity for Emergency Support Function (ESF) #3 - Public Works and Engineering.
- Provide debris operations for mission assignments.
- Remove sunken vessels from navigable waterways under emergency conditions.
- Provide strong technical assistance and training support to State and local agencies.
- Enable State and local operations to the greatest extent possible.

Natural Resources Conservation Service

- Provide technical assistance for debris removal from natural streams and creeks.
- Provide funding for debris operations through the Emergency Watershed Protection Program.

Federal Highway Administration

- Support repair and reconstruction of federal aid highways and roads on federal lands.
- Provide funding for debris operations through the Federal Highway Administration's Emergency Relief Program.

2.2.5 Private Sector Business Enterprise, Commercial Sector

Private businesses will have a very large role in managing mass debris operations. Jurisdictions do not have enough internal resources to conduct debris operations during a widespread event without the use of contracted service providers. The following provides the roles and responsibilities of private sector business and the commercial sector for debris operations.

Republic Services (Franchised Hauler)

- Collect, transfer, transport, process, and divert franchised organic materials within Danville.
- Collect, transfer, transport, and dispose of franchised solid waste generated within Danville.
- Collect, transport, and transfer franchised recyclable materials generated within Danville.
- Coordinate with contract debris haulers in the collection and transport of solid waste and debris following a debris generating disaster in Danville.

Mt. Diablo Resource Recovery

- Accept and transfer recyclable materials at the approved trans-load facility and transport recyclable materials from the approved trans-load facility to the approved recyclable materials processing facility or any other facility designated by the contractor and approved by CCCSWA on behalf of Danville.
- Process and market recyclable materials collected in the service area.
- Dispose or arrange for disposal of residue at the designated disposal facility.

Debris Hauling Firm

In the event the scope of debris collection operations is beyond the capabilities of local force account resources (work performed by municipal or county employees and equipment), state, and mutual aid resources, it may be necessary to contract for labor and equipment. A number of debris hauling firms have been identified and are listed in Attachment H of this plan. Danville will use its purchasing policies in coordination with federal contracting guidance, found in Attachment K of this plan, to establish a contract with one or more debris hauling firms to assist with debris collection and disposal. A contracting checklist has been compiled and can be found in Attachment L of this plan. Responsibilities of a debris hauling firm will include the following:

- Clear and remove debris from jurisdiction roadways and waterways to make them passable immediately following a declared disaster.
- Conduct debris removal from the right-of-way.
- Decommission, demolish, and dispose of eligible non-regulated asbestos-containing material (non-RACM) structures on private property.
- Manage and operate TDMS locations.
- Conduct debris reduction.
- Haul-out reduced materials to a final disposal site.
- Remove hazardous leaning trees and hanging limbs.
- Removal of hazardous stumps.
- Remove white goods debris from the right-of-way.
- Coordinate the removal of household hazardous waste from the right-of-way.

- Remove animal carcasses from areas designated by the jurisdiction.
- Build relationships with community emergency managers and other officials to have an active voice in the debris operations.
- Develop, test, and implement debris operations plans. Take into account worker safety and health and potential employee unavailability or attrition due to a disaster.
- Educate and train employees to implement debris operations plans.
- Ensure contracts comply with state and/or federal procurement requirements.
- Communicate status of operations and supply chains as well as challenges and time lines to local officials.
- Research available funding sources and types of funding for debris operations.
- Know, understand, and comply with state and/or federal regulations for disaster assistance programs.

Monitoring Firm

- Perform truck certifications.
- Perform on-site, street-level debris monitoring at all collection sites to verify debris eligibility based on contract requirements, and initiate debris removal documentation using load tickets.
- Conduct disposal monitoring to document the disposal of disaster debris at approved TDMSs and at final disposal or end use locations.

2.2.6 Nonprofit Sector

Danville will partner with jurisdictions and nonprofit and volunteer organizations (see Appendix H) to provide assistance to individuals with disabilities and/or access and functional needs. Danville will ask that non-profit sector entities coordinate with jurisdictions to ensure their efforts are conducted in coordination with jurisdiction objectives. In addition, Danville will coordinate with non-profit sector entities to ensure response efforts are conducted in a safe manner to minimize the risk of injuries in keeping with the Health and Safety Policy (see Attachment R). These entities will not be asked to conduct tasks that are beyond their member's training or capabilities. The roles and responsibilities for nonprofit organizations in debris operations are listed below.

- Coordinate with jurisdictions to identify vulnerable populations and incorporate strategies to assist these populations in local DDMPs.
- Coordinate with jurisdictions and volunteer organizations post-disaster to assist individuals with disabilities and access and functional needs with bringing debris to the public ROW.
- Coordinate with jurisdictions to provide public information regarding debris operations to populations with communication barriers.
- Provide debris services to vulnerable and underserved groups, individuals, and communities as necessary.

2.2.7 Residents

To coordinate effective debris operations, residents play an important role in maximizing the potential for recycling and reuse of disaster-generated debris. The following provides the roles and responsibilities for residents in debris operations.

- Follow instructions from local officials on set out procedures for disaster-related debris.
- Segregate disaster debris from regular household waste.
- Safely bring debris to the public ROW.
- Bring HHW to citizen drop-off locations.
- Use caution when operating equipment and dangerous machinery.
- Help others who may need assistance with debris removal.

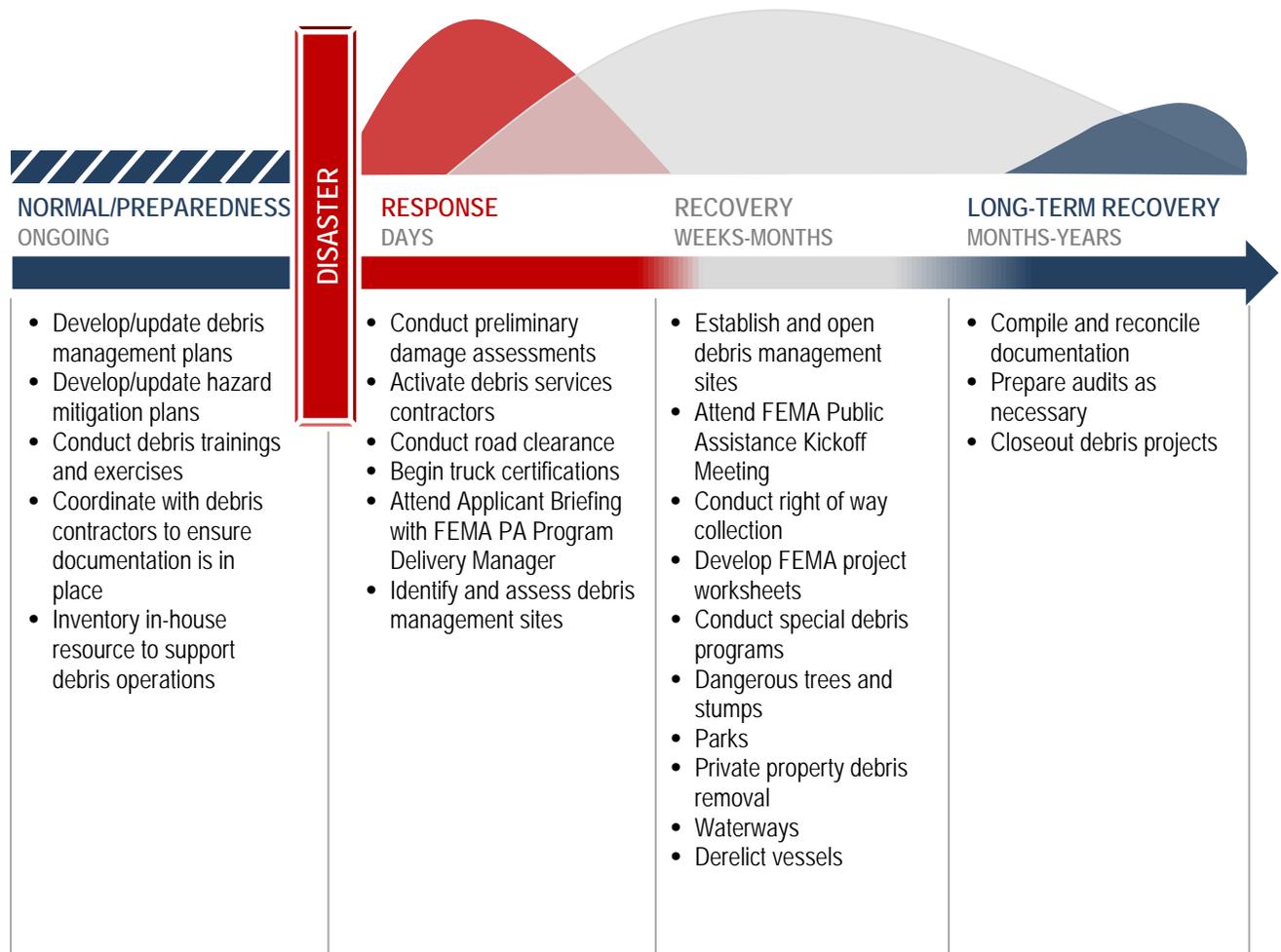
3.0 MASS DEBRIS MANAGEMENT STRATEGY

3.1 Overview

The National Response Framework establishes a set of core capabilities that must be achieved during disasters to save lives, protect property and the environment, and preserve the social, economic, cultural, and political structure. Debris management operations support several core capabilities including Critical Transportation, Environmental Response/Health and Safety, Infrastructure Systems, and Public and Private Services and Resources. Depending on the size, scope, and magnitude of the disaster, public entities will be required to conduct debris operations. In cases where the magnitude of the disaster stretches local resources beyond their capability to respond, CCCSWA member jurisdictions may have to reach out to contract support or to the County, as the lead agency of the operational area (OA), for additional support. In some cases, the OA may request additional support from the State.

3.1.1 Concept of Operations

The concept of operations describes how to achieve the objectives of the plan. This section is organized chronologically to demonstrate the activities that will take place during each phase of debris operations.



3.1.1.1 Normal

Establish Partnerships

Debris management requires collaboration across many departments, sectors, and levels of government. Building partnerships and collaboration during normal operations promotes more successful debris operations during an actual disaster to ensure all of these regulations and best management practices are implemented. The purpose of this plan is to establish coordinated debris management operations among member jurisdictions through debris removal, reduction, recycling, haul-out, final disposal and documentation. Partnerships must be built to successfully achieve this purpose.

Section 2 of this plan provides a list of the organizations involved in debris operations from local volunteer organizations to federal regulatory agencies. Jurisdictions must continue to build relationships and establish partnerships during preparedness to foster coordination and collaboration during debris response operations.

Debris Operations Organizational Structure

Public entities should identify a debris operations organizational structure that includes a debris task force and a debris liaison in their emergency operations center (EOC). The debris liaison should coordinate with local, state, and federal authorities to prioritize and coordinate debris operations. Many jurisdictions and special districts overlap and share resources. It is important for public entities to coordinate with each other to effectively and efficiently manage debris operations.

The debris operations organizational structure should have the capability to expand and contract as needed by the situation. Maintaining a cohesive and flexible organizational structure with a clear leader will ensure a coordinated and comprehensive response strategy.

3.1.1.2 Response

Emergency Roadway Clearance Priorities

Emergency roadway clearance is the process to clear priority roadways of scattered debris, leaning trees, and other obstructions in order to allow access for emergency vehicles. Road clearance priorities are pre-established to allow access to critical public facilities such as fire stations, police stations, hospitals, shelters, and emergency supply centers.

Debris Damage Assessment

Damage assessments are necessary to determine the extent and the location of the debris. An initial windshield survey of the impacted area should be conducted to identify critically damaged areas and to assist in prioritizing emergency roadway clearance. If possible, aerial surveys should be conducted to obtain an overview of damaged areas.

Each member jurisdiction will be responsible for conducting its own damage assessment. Damage assessment teams should be trained prior to the incident and should coordinate with utility crews to ensure safety. Typically, public works departments coordinate damage assessment teams. Public entities can also use their debris service contractors to conduct damage assessments.

Damage assessments should be conducted with consistency throughout each jurisdiction to the greatest extent possible. Each jurisdiction will compile the damage assessments for submittal to

the County. The County will compile this information to submit to the State. A thorough and accurate damage assessment must be implemented to maximize the potential for state and federal disaster assistance.

The Debris Estimating Field Guide FEMA 329 provides specific guidance on how to conduct damage assessments and estimate debris volumes. This field guide can be found in Attachment J of this plan.

TDMS Identification and Preparation

Concurrent to emergency roadway clearance and damage assessments, affected jurisdictions need to identify and prepare TDMS locations.

The purpose of the TDMS is to temporarily store debris and conduct some form of debris reduction method before the debris is transported to a final disposal facility. Parks and jurisdiction owned properties can be used as possible TDMS locations. In addition, land within transfer stations or solid waste facilities can be utilized as TDMSs. This can be desirable because of their ability to immediately accept debris. There are three such sites adjacent to Danville. They are:

- Contra Costa Transfer and Recovery Station located at 951 Waterbird Way, Martinez CA
- Keller Canyon Landfill located at 901 Bailey Road, Pittsburg, CA
- Contra Costa Waste Service Recycling Center and Transfer Station located at 1300 Loveridge Rd., Pittsburg, CA

Debris brought to a TDMS is sorted to remove recyclable materials and materials not suitable for reuse. The materials not suitable for reuse are taken to a landfill. Ideally, all concrete rubble would be processed at the TDMS into reusable aggregate. This option may be considered if space, site characteristics, and available resources allow.

The size of the site is dependent on the quantity of debris that needs to be stored and processed. The site should be large enough to safely accommodate processing of various debris materials, storing heavy equipment, and maneuvering trucks and large processing equipment.

The TDMS should be established in an area that does not impede the flow of traffic along major transportation corridors, disrupt local business operations, or cause dangerous conditions in residential neighborhoods or schools. Whenever possible, avoid locating a TDMS near residential areas, schools, churches, hospitals, and other such sensitive areas.

Danville needs to consider community acceptability when selecting a potential TDMS. The community's acceptance of the TDMS location usually depends on the debris reduction methods that will be conducted at the site. Smoke from burning, around-the-clock light and noise from equipment operation, dust, and traffic are generally tolerated early in a disaster recovery operation, but may have to be curtailed later in the recovery phase.

The following factors should be taken into consideration when identifying a debris management site:

- Current availability
- Duration of availability
- Site ingress/egress
- Geographic location within the jurisdiction

- A minimum of 10 acres of usable land
- Well drained site with soils suitable for supporting heavy vehicles and equipment
- Easy access to transportation routes
- Strategic placement to minimize debris transportation requirements and travel time to and from loading points; TDMS should be located as close as possible to the concentrations of disaster debris
- Access to electrical and water utilities for site operations
- Minimum potential for disruption of critical services

Potential locations for a TDMS may include the following:

- Recycling facility
- Landfill
- Transfer station
- Vacant lot
- Corporation yard
- Parks
- Large parking lot
- Right of way
- Jurisdiction owned property
- Private property

Site approval – TDMS locations will require approval from Contra Costa Environmental Health (CCEH), CalRecycle as well as permits from the agencies listed below. An Emergency Waiver of Standards grants a landfill operator temporary relief from specific standards such as permitted capacity, throughput, and acreage. Existing operations may pursue such a waiver with the LEA for CalRecycle in accordance with the California Code of Regulations, Title 14, Section 17210. The use of closed landfills and planned solid waste facilities will require permission from CCEH and appropriate local land use and other jurisdictional agencies. Environmental permits and land-use variances may be required during removal operations for TDMS(s). Several agencies may be involved in issuing permits and granting land-use approvals.

Permits may include:

- Waste processing and recycling operations permit
- Temporary land use permits
- Land use variances
- Traffic circulation strategies
- Air quality permits
- Water quality permits

- Coastal commission land use permits
- Household hazardous waste permits
- Fire department permits

After a review of the availability and suitability of a TDMS, site preparation can begin. As part of the preparation, baseline data should be gathered from the site to document the state of the land before debris is deposited. The following action items are recommended to compile baseline information:

- Photograph the site – Digital photos should be taken to capture the state of the site before debris reduction activities begin. Photos should be updated periodically throughout the project to document the progression of the site.
- Record physical features – Records should be kept detailing the physical layout and features of the site. Items such as existing structures, fences, landscaping, etc., should be documented in detail.
- Historical evaluation – The past use of the site area should be researched and documented. Issues relating to historical or archeological significance of the site should be cleared with the state historical preservation agency.

Sample soil and water – If possible and deemed necessary, soil and groundwater samples will be taken before debris reduction activities commence. Samples will help ensure the site is returned to its original state. Typically, soil and groundwater samples should be analyzed for total Resource Conservation and Recovery Act (RCRA) metals, volatile organic compounds, and semi-volatile organic compounds using approved U.S. Environmental Protection Agency (EPA) methods.

Debris Reduction Methods

Once debris is collected from the public ROW, it is transported to a TDMS where it is segregated and reduced. Reduction methods include:

Chipping and Grinding – Using this method, vegetative debris is chipped or ground and typically results in a reduction ratio of up to 4:1. Factors such as debris composition, weather, site conditions, and other factors may impact the reduction ratio. The leftover mulch is either hauled to a final disposal facility or recycled.

Incineration – Although incineration is rarely authorized, there are circumstances where a public entity can request to reduce debris through burning. The burning of vegetative debris typically results in a reduction ratio of up to 20:1. Factors such as debris composition, weather, site conditions and other factors may impact the reduction ratio. The leftover ash may be hauled to a final disposal facility or be incorporated in a land application.

Crushing – The crushing of vegetative debris is the least effective reduction method and results in a reduction ratio of up to 2:1. Crushing is an appropriate reduction method for C&D debris that cannot be recycled. However, if crushing is used to reduce C&D debris, the residual debris must show a reduction in volume.

Truck Certification

Truck certification is a critical component of debris management operations. Truck certification is the process to document the capacity of debris removal trucks. All debris removal trucks hauling

debris on a volumetric basis must have their capacity and dimensions measured, sketched, photographed, and documented on a truck certification form. Each debris removal truck must be assigned a unique number for debris tracking and invoice reconciliation purposes. Truck certifications should contain:

- Unique truck number
- Driver name
- Driver phone number
- License number, state issued, and expiration date
- Tag number, state issued, and expiration date
- Vehicle measurements
- Sketch of the vehicle

3.1.1.3 Recovery

For debris operations, the recovery phase begins with debris removal from the public ROW and ends when debris operations are complete and all documentation is closed out.

During this phase, jurisdictions should determine their capacity to conduct debris removal operations internally using force account equipment and labor, using mutual aid or by using contracted services. Jurisdictions should also assess their capacity to conduct special debris programs as necessary.

Short-Term Recovery

Once the emergency roadway clearance has been completed, jurisdictions can begin debris removal operations. This includes the following tasks.

- Open TDMS locations.
- Prioritize roads/areas.
- Issue press release regarding segregation of debris.
- Begin ROW debris removal.
- Begin environmental monitoring program of TDMS.
- Coordinate with external agencies.
- Initiate discussions with state and/or FEMA.
- Obtain FEMA guidance for procurement and special debris programs.

It is important for jurisdictions to maintain coordination with CalOES throughout debris operations. During short-term recovery, CalOES will provide guidance to jurisdictions on any disaster-specific guidance from state and federal agencies. Danville will utilize the CalOES as the liaison between the local level and the state level for direction on policies and regulations.

Intermediate Recovery

Intermediate recovery includes activities that take place after immediate debris needs have been addressed. Intermediate recovery typically occurs two weeks to several months post-disaster. These activities include:

- Maintain and evaluate ROW cleanup.
- Begin ROW stump removal as necessary.
- Open additional TDMS locations as necessary.
- Conduct daily meetings with the state and/or FEMA.
- Begin special debris programs.
- Communicate ROW debris removal program closeout to residents via press release.

Long-Term Recovery

Long-term recovery includes activities to closeout debris programs and reconcile documentation. Long-term recovery can take several years depending on the severity of the disaster and the audit processes from regulatory agencies. Long-term activities include:

- Complete all debris recovery activities.
- Identify ineligible debris on ROW.
- Complete the disposal of reduced debris.
- Close out and remediate TDMS locations.
- Conduct project closeout meetings with FEMA and external agencies.

3.2 Collection and Removal Strategy

The collection and removal strategy provides details on how jurisdictions should conduct debris operations to collect and remove debris.

3.2.1 Emergency Roadway Clearance

Danville should coordinate resources to conduct emergency roadway clearance through internal sources, mutual aid or contracted services. If necessary, public entities may request additional resources for emergency road clearance from the OA.

Emergency roadway clearance should be coordinated with utility crews to ensure safety while conducting debris operations near damaged infrastructure.

Each jurisdiction has identified major transportation routes within their area. These routes will be considered priority during their emergency roadway clearance activities. Maps of these routes can be found in each DDMP.

Each jurisdiction has also identified the critical facilities in its area. These are facilities that are critical to government response activities including fire stations, hospitals, and 9-1-1 communication centers. Following a disaster, routes to these critical facilities will need to be cleared in order to allow emergency response vehicles to pass. A list of these facilities and their locations are listed each jurisdiction's DDMP.

The purpose of emergency roadway clearance is to expedite the clearing of debris from critical pathways to ensure public health and safety. During this time period, it is critical that all types of equipment and the amount of time the equipment is used are documented with detail and accuracy.

3.2.2 ROW Collection

Jurisdictions have established debris collection zones and priority areas to conduct an organized and efficient ROW debris collection program. Having a debris zone system in place will make it easier to organize and monitor the progress of ROW collection activities.

ROW debris collection entails residents piling their disaster-related debris along the curbside. It is critical that residents segregate their debris into categories such as vegetative, C&D, household hazardous waste, and white goods. This will help prevent the contamination of debris loads and expedite the cleanup process. An effective public information campaign is essential to getting the message out to residents regarding the importance of segregating their debris. Sample public information messages can be found in Attachment D.

Vegetative Debris

Vegetative debris consists of whole trees, tree stumps, tree branches, tree trunks, and other leafy material. Depending on the size of the debris, the collection of vegetative debris may require the use of flatbed trucks, dump trucks, and grapple loaders.

Often vegetative debris is piled on the public ROW by the residents. Jurisdictions will determine the number of times debris is collected before normal collection activities are resumed.

Vegetative debris is bulky and consumes a significant volume of landfill space if buried. To minimize the use of landfill space, it is prudent to transport the vegetative debris to a compost or mulching facility, or reduce the volume of vegetative debris before burying. Vegetative debris may be reduced by as much as 75 percent of its volume by mulching or grinding and as much as 90 percent of its volume through burning.

A hazardous tree or stump may be collected individually, while downed or fallen debris is collected from rights-of-way or at a designated collection center. Tree and stump collection prices are typically based on the size of the tree or stump and charged by unit. Other fallen or downed material is usually billed by weight (tons) or volume (cubic yards or CYs).

Household Hazardous Waste Debris Removal

Household hazardous waste includes gasoline cans, aerosol spray cans, paint, lawn chemicals, batteries, fire extinguishers, fluorescent lamps, household electronics, etc.

Household hazardous waste must be collected separately and disposed of or recycled at a properly permitted facility. Collection of household hazardous waste can be conducted internally or contracted using a unit rate basis. The following action items are recommended when conducting household hazardous waste removal:

- Communicate to residents the procedures for household hazardous waste following a debris-generating incident. It is important that residents separate debris to ensure that household hazardous waste does not enter the debris stream at TDMS locations.
- Decide whether to contract with an established household hazardous waste collection firm to augment or replace household hazardous waste drop-off sites. This helps ensure that household

hazardous waste is properly disposed. Measures should be taken to identify, segregate, and dispose of intermingled household hazardous waste at TDMS locations.

- A list of the entities accepting debris and household hazardous waste are listed in Attachment O. In addition, local jurisdictions should communicate with the OA regarding household hazardous waste collection.
- Communicate with the California Department of Toxic Substances Control (DTSC), CCEH and CalEPA. Describe the HHW collection program and permitted facilities to be used for disposal or recycling.

Electronic Waste

Electronic waste, or e-waste, refers to electronics that contain hazardous materials such as cathode ray tubes. Examples include computer monitors and televisions. Electronic waste is considered household hazardous waste and would follow the CalEPA guidelines for disposal listed in Section 3.2.6.

White Goods Debris Removal

White goods include refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, etc.

White goods debris that contains ozone-depleting refrigerants, mercury, or compressor oils need to have such materials removed by a certified technician before recycling. All state and federal laws should be followed regarding the final disposal of removed refrigerants, mercury, or compressor oils. Collection of white goods can be conducted internally or using contracted services on a unit rate basis. The following action items are recommended to conduct white goods removal:

- Communicate the procedures for white goods to residents in affected areas. It is important that residents separate white goods from other debris to ensure white goods are not mixed with other debris during collection.
- Communicate with CalEPA and the OA. Describe the white goods collection program and permitted facilities to be used for disposal of recovered refrigerants, mercury, or compressor oils.

C&D Debris

C&D debris can be defined as damaged components of buildings and structures such as lumber and wood, gypsum wallboard, glass, metal, roofing material, tile, carpeting, and floor coverings, window coverings, pipe, concrete, fully cured asphalt, equipment, furnishings, and fixtures.

Certain types of C&D debris are reusable or recyclable. To conserve landfill space, it is prudent to separate materials for reuse or recycling.

Some C&D debris may be hazardous, such as asbestos roofing and floor tile, and lead pipes. Section 3.2.6 of this plan provides information from CalEPA on how to manage hazardous debris including asbestos containing materials. Documentation of the debris origin, any processing (reduction or recycling), and the final disposition is required for state and/or federal funding.

Typically, removal of construction by-products generated by repairs or rebuilding is covered by insurance policies or included in the overall cost for reconstruction projects; therefore, these materials are not considered disaster-related debris.

3.2.3 Use and Procurement of Contracted Services

If contracted services are to be used for debris management including removal and monitoring, these contracts must meet federal procurement requirements to be eligible for potential federal disaster assistance. Guidance for using contracted services can be found in Attachment K of this plan. For additional information see FEMA Publication FP 104-009-2 – Public Assistance Program and Policy Guide, Version 4, June 1, 2020. The guide provides a description and sample language for debris services contracts.

The debris contracting guide found in Attachment K of this plan lists certain applicable provisions of *Uniform Administrative Requirements, Cost principles, and Audit Requirements for Federal Awards* (Title 2, Code of Federal Regulations (CFR) Section 200).

A debris contracting checklist can be found in Attachment L of this plan. The checklist provides the steps to prequalify disaster debris contractors in accordance with FEMA debris contracting guidance.

In recent years, millions of dollars in disaster assistance have been de-obligated to grant applicants following audits because their procurement procedures did not meet federal contracting requirements. De-obligation of disaster assistance funding has caused economic hardships for many jurisdictions. To remedy this situation, FEMA has established a new Procurement Disaster Assistance Team to provide assistance to applicants before they award contracts. This is an effort to reduce procurement violations and help ensure applicants spend federal funds efficiently, effectively and in compliance with applicable federal procurement standards.¹³ CalOES will serve as a liaison with the FEMA Disaster Procurement Assistance Team to ensure public entities receive the most accurate information from federal representatives.

3.2.4 Monitoring of Debris Operations¹⁴

Danville will monitor its debris removal operations and document disaster-related quantities and reasonable expenses to ensure that the work is eligible for federal disaster assistance. These are best practices that should be implemented regardless of whether the public entity receives a federal disaster declaration or not.

Monitoring debris removal operations requires that Danville employ comprehensive observation and documentation of debris removal work performed from the point of debris collection to final disposal. Monitoring debris removal work involves constant observation of crews to ensure that workers are performing eligible work in accordance with state and/or federal guidelines and all

¹³ Department of Homeland Security Office of Inspector General Capping Report: FY 2013 FEMA Public Assistance and Hazard Mitigation Grant and Subgrant Audits.

¹⁴ FEMA Publication FP 104-009-2 – Public Assistance Program and Policy Guide, Version 4, June 1, 2020.

applicable federal, state, and local regulations. Failure to properly monitor debris removal operations may jeopardize federal disaster assistance.

Accurate documentation of debris removal and disposal operations and eligible associated costs is the outcome of a good debris monitoring program. This documentation serves as the basis for FEMA Public Assistance Project Worksheets (PWs)—the documents that authorize grant reimbursements from FEMA. Debris monitoring documentation is critical to verify that debris operations are eligible for reimbursement, costs are reasonable, contract and procurement processes are appropriate, quantification of the debris is accurate, and the tracking of the debris to its final disposition is recorded and in compliance with all regulatory requirements.

3.2.4.1 Load Site Monitoring

The loading site monitors will perform on-site, street-level debris monitoring at all loading sites to verify debris eligibility based on contract requirements, and initiate debris removal documentation using load tickets. Loading site debris monitors' primary job is to maintain documentation of work performed at the point of debris collection.

3.2.4.2 Disposal Monitoring

The primary function of disposal monitoring is to document the disposal of disaster debris at approved TDMS locations and final disposal or end use locations. Monitors perform quality assurance/quality control checks on all load documentation and haul-out documentation to ensure that information captured by loading site monitors is complete. This process includes the following tasks:

- Inspection of truck placards for authenticity and signs of tampering.
- Verification that placard information is documented properly.
- Verification that all required fields on the load ticket have been completed.

The disposal monitor will document the amount of debris collected by making a judgment call on vehicle fullness (typically on a percentage basis). The percentage documented for each debris removal vehicle is later applied to the calculated capacity of the vehicle to determine the amount of debris collected. The disposal monitor's responsibilities include the following:

- Completing and physically controlling load tickets.
- Ensuring debris removal trucks are accurately credited for their loads.
- Ensuring trucks are not artificially loaded.
- Ensuring hazardous waste is not mixed in with loads.
- Ensuring all debris is removed from the debris removal trucks before exiting the TDMS or final disposal site.
- Ensuring only debris specified within the scope of work is collected.

In addition to the responsibilities listed above, final disposal site monitors are also tasked with the following:

- Ensuring all debris is disposed at a properly permitted landfill.
- Matching landfill or compost facility receipts and/or scale house records to haul-out documentation.

3.2.5 Use of Force Account Resources

It is important for public entities to understand the type and quantity of resources required to manage large volumes of debris. Disasters can quickly exhaust internal resources and resources are often shared by multiple entities. During the development of this plan, the debris planning team determined that one of the challenges for Danville is that several municipalities will rely on a single source for debris services, specifically waste management contractors, TDMS locations, and disposal facilities.

During normal operations, waste service providers and disposal facilities can meet the needs of multiple entities. Disasters can generate millions of cubic yards of debris that will enter the waste stream. Service providers might not have the capacity to meet these demands during an emergency.

To facilitate this critical function, jurisdictions need to assess their capability to manage large volumes of debris and identify gaps in available resources from the following sources:

- Internal personnel and equipment (force account labor and equipment)
- Contracted services
- Mutual Aid

During a widespread event, public entities need to be prepared for mutual aid resources not being available and contracted services not being adequate. Jurisdictions need to identify backup capabilities in the event that primary sources are not available.

Jurisdictions should use internal resources to the greatest extent possible during debris operations. Prior to a disaster, jurisdiction should identify the personnel, equipment, and systems that can be used to conduct debris operations.

Force account resources must be accurately documented during the response and recovery operations. Often, the use of force account labor and equipment can apply to the public entity's share for disaster-related costs. Labor and equipment expenses may be eligible for state and/or federal reimbursement if documented properly.

Jurisdictions should provide training to personnel that will be involved in debris operations. Personnel should understand their roles and responsibilities during a disaster and how to document their time and equipment properly.

Jurisdictions should document the pre-existing condition for any equipment used for debris operations and determine if equipment is appropriate for debris operations. Debris resources should also be categorized using the NIMS Typing Criteria.

The NIMS Resource Typing Library identifies the following positions and job descriptions for debris operations:

Debris Operations Officer NIMS ID 7-509-1347

- Activates the debris management plan
- Oversees the following matters related to debris removal:
 - Quantities and types of equipment necessary
 - Temporary debris collection sites
 - Methods for tracking debris types and quantities

- Methods for tracking force account and related costs
- Final debris disposal
- Relevant public information
- Reimbursement

Debris Planning Officer NIMS ID 7-509-1348

- The Debris Planning Officer establishes the debris management plan, which includes:
 - Quantities and types of equipment necessary
 - Temporary debris collection sites
 - Methods for tracking debris types and quantities
 - Methods for tracking force account and related costs
 - Final debris disposal
 - Relevant public information
 - Reimbursement
 - Debris forecasting

Debris Supervisor NIMS ID 7-509-1098

- Coordinates the routing of equipment, personnel and other resources involved in debris removal
- Collects and maintains appropriate field documentation
- Ensures that equipment operators/haulers complete debris clearance, removal and disposal in accordance with applicable regulations and requirements
- Schedules and deploys debris monitors
- Reports debris field/monitoring progress and issues to the Debris Operations Officer

Debris Technical Specialist NIMS ID 7-509-1460

- Evaluates types and quantities of disaster-generated debris
- Provides an estimate of debris types and quantities
- Supports the Authority Having Jurisdiction's (AHJ) debris removal operation in the field

In the event that jurisdictions do not have the internal resources to use force account labor and equipment for debris operations, they must find external support from mutual aid, contracted resources, or requesting assistance from the OA.

3.2.6 Environmental Considerations and Other Regulatory Requirements

CalEPA provides guidance for local and state agencies to conduct disaster debris, waste and hazardous material removal activities. The following section includes best management practices

from CalEPA to be considered to address the removal of hazardous materials, household hazardous waste (HHW), debris, asbestos containing materials (ACM), and air monitoring and sampling from the disaster or incident site.

Health and Safety

- Given that ash may contain elevated levels of heavy metals and/or asbestos, an exclusion zone will be established around each site during debris removal operations. All personnel entering this area will be required to wear level C protective attire.
- It is recommended that all on-site cleanup personnel entering the exclusion zone must be 40-hour HAZWOPER trained Under 29 CFR 1910.120, and CCR Title 8, Section 5192, and will be required to wear Level C personal protective equipment (PPE).
- A full-time health and safety officer will be assigned to the project. It is recommended that the health and safety officer be a certified industrial hygienist (CIH).
- Depending on the task and activity, all cleanup contractors working on-site must have the following certifications and licenses:
 - State Contractor's License – Must include an asbestos certification component (if conducting ACM removal), and general engineering, demolition and hazardous substance certifications depending on the task performed.
 - Department of Occupational Safety & Health Asbestos Registration Number (if conducting ACM removal)
 - Hazardous Waste Transporter Registration Number – Issued by California Department of Toxic Substances Control RCRA EPA ID Number – Issued by US Environmental Protection Agency, Region 9
 - US Department of Transportation, Pipeline and Hazardous Materials Safety Administration – Hazardous Material Certificate of Registration
 - California Highway Patrol – Hazardous Materials Transportation License
 - US Department of Transportation, Federal Motor Carrier Safety Administration – US Department of Transportation Identification Number
 - California Department of Motor Vehicles – Motor carrier permit

Hazardous Materials and Household Hazardous Waste

Standard operating procedures for conducting hazardous material (HAZMAT) assessment activities should be followed pursuant to Cal/OSHA and OSHA HAZWOPER requirements.

Prior to commencing debris removal activities, all areas are to be cleared of HAZMAT, including the removal of easily identifiable (visible) gross asbestos, radioactive, and explosive materials.

Explosive material includes firearms and ammunition, black powder, blasting caps, some fireworks, and military ordinance. If explosive materials are identified on-site, they should be handled by trained personnel and removed immediately to ensure safety of the public. If local agencies are unable to address explosive materials through their cleanup contract resources, contact the local law enforcement authority to provide assistance.

Prior to the removal of HAZMAT and HHW, a California Division of Occupational Safety and Health (Cal/OSHA) Certified Asbestos Consultant (CAC) should assess and sample all residential areas, and other affected areas of the site, to identify and remove gross asbestos. This is to ensure that any areas identified as containing gross asbestos material will not be disturbed by HAZMAT cleanup personnel. Any ACM that is not found on the ground due to natural forces may be subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements.

Once the removal of easily identifiable gross asbestos has been completed, HAZMAT and HHW may be identified, segregated, classified, and properly removed from the site.

Initial hazmat assessment activities must include screening for radioactivity and ensuring that a flammable atmosphere does not exist. Typical HAZMAT includes HHW such as:

- Automotive/marine batteries
- Automotive oils and fuel
- Compressed gas cylinders
- Propane tanks
- Herbicides and pesticides
- Solvents
- Paint thinners and strippers
- Oil and latex-based paints
- Pool chemicals

The following standard procedures are recommended by CalEPA¹⁵:

- The property, site, or affected area of the disaster should be assessed for HAZMAT and HHW.
- A Cal/OSHA CAC will be utilized to assess the area or each residential or commercial property for easily identifiable and removable pieces of ACM. After assessing each property or area, the CAC will consult with a licensed asbestos removal contractor to identify the location and area of ACM to be removed.
- A Cal/OSHA certified Asbestos Removal Contractor will be responsible for overseeing the safe removal of ACM identified on-site by the CAC.
- All on-site personnel working to remove ACM must have received the necessary health and safety training for conducting asbestos removal activities pursuant to OSHA regulations (29 CFR 1910.1001), and CCR Title 8, Section 5192, and will be required to wear Level C PPE when working in the exclusion zone.
- All gross ACM that can easily be removed from the site will be adequately wetted prior to being bagged or bulked for removal. The easily identifiable gross ACM can be double-bagged

¹⁵ <https://calepa.ca.gov/wp-content/uploads/sites/6/2019/06/Disaster-Documents-2011yr-GuideRemoval.pdf>

and appropriately labeled as ACM. (At a minimum, the plastic bags must be of at least 6-mil thickness.)

- If bulk loading of ACM is utilized, the bin or container used for transport (e.g., end-dump trailer or roll-off box) shall be double-lined with 10-mil poly in such a way that once loaded both layers can be sealed up independently.
- HHW and HAZMAT identified on-site will be characterized, segregated, staged, consolidated, and packaged for transport and disposal by a licensed environmental contractor.
- All on-site cleanup personnel must be 40-hour HAZWOPER trained under 29 CFR 1910.120, and CCR Title 8, Section 5192.
- All hazardous waste and HHW removed from the site will be manifested and transported to a permitted treatment, storage, and disposal facility in good standing with local, state, and federal agencies.
- Disposal facility emergency waivers and suspension of regulations for disposing of hazardous wastes generated from a disaster or large-scale event must be coordinated with the CalRecycle local enforcement agency (LEA) and the Regional Water Quality Control Board.

Debris and Asbestos Containing Material

If burn ash or building material on the ground is from structures completely destroyed by natural forces (as opposed to structures demolished in whole or in part by human activity), this material is not subject to the Asbestos NESHAP as it relates to the demolition and renovation, transport and disposal requirements.

If the building material and debris is not completely destroyed and requires further demolition, it may be subject to the Asbestos NESHAP.

At a minimum, the following best management practices should be used for undertaking debris and asbestos containing debris removal activities:

- California Cal/OSHA CAC will be utilized to assess the area or each residential or commercial property for easily identifiable and removable pieces of ACM. After assessing each property or area, the CAC will consult with a licensed asbestos removal contractor to identify the location and area of ACM to be removed.
- A Cal/OSHA registered Asbestos Removal Contractor will be responsible for overseeing the safe removal of ACM identified on-site by the CAC.
- All on-site personnel working to remove ACM must have received the necessary health and safety training for conducting asbestos removal activities pursuant to OSHA 1910.100, and CCR Title 8, Section 5192, and will be required to wear Level C PPE when working in the exclusion zone.
- As noted in Sub-Section a. Health and Safety (above), all on-site cleanup personnel must be 40-hour HAZWOPER trained Under 29 CFR 1910.120, and CCR Title 8, Section 5192.
- The affected disaster or incident area (commercial, residential, or rural properties) will be screened by a CAC to identify all gross ACM that can be easily removed from the ground or structure prior to debris removal activities.

- Request an asbestos consultation from the state or local Air Quality Management District (AQMD) for any structure that is not completely destroyed or for any structure with vermiculite insulation, for large-facility components or material that will be broken up upon movement, or for other asbestos issues as identified by the CAC. Note: Current field definition of destroyed means the structure does not have a roof or any load bearing walls.
- During asbestos screening process, it is recommended that bulk samples be collected from 10 to 20 percent of the representative structures that have not been destroyed to determine the presence of ACM above NESHAP regulations, and to ensure residual building materials do not contain asbestos that may change the overall waste classification.
- All gross ACM that can be safely and easily removed from the site will be adequately wetted prior to being bagged or burrito wrapped to meet the NESHAP leak-tight requirement for removal. The easily identifiable gross ACM can be double-bagged and appropriately labeled as ACM. (At a minimum, the plastic bags must be of at least 6-mil thickness, and the contents must remain wet.)
- If bulk loading of ACM is utilized, the bin or container used for transport (e.g. end-dump trailer or roll-off box) shall be double-lined with 10-mil poly in such a way that once loaded both layers can be sealed up independently.
- Conduct on-site and off-site air monitoring and sampling for asbestos and heavy metals during all ACM and debris removal operations to demonstrate the effectiveness of engineering controls to protect cleanup personnel and the surrounding community.
- Engineering controls must be utilized to maintain dust and fiber control during removal activities. A water fog must be used during debris handling, bulking/bagging, and waste loading operations. It is recommended that cleanup contractors will use fire grade firefighting nozzles with shut off valves for dust control. The fire nozzle shall have sufficient water pressure to generate a high mist fog stream. The fire nozzle should have an adjustable flow rate, preferably 20 to 60 gallons per minute, and constructed of hard coated aluminum with brass and stainless steel internal components. Plastic nozzles should not be used. While the costs of metal firefighting nozzles are significantly more than plastic nozzles, only metal nozzles are able to generate a sufficient fog to control dust.
- All burn ash and debris must be sufficiently wetted 48 to 72 hours in advance of initiating removal of the material. The water shall be applied in a manner so not to generate significant runoff. Engineering controls for storm water discharges must be in place prior to dust control operations.
- All waste material that is not loaded out at the end of each workday should be stockpiled, sufficiently wetted, and/or covered to prevent the off-site migration of contaminants.
- All waste haulers who observe loading operations outside of the vehicle cab, and/or covering (e.g., tarping) the trailer or container must wear Level C PPE.
- All approved landfill operators that may come in contact with the waste during off-loading operations should follow their facilities protocols for wearing PPE and respiratory protection.

- All ACM and debris removed from the property, site or area must be manifested and transported for disposal to a permitted treatment, storage, and disposal facility in good standing with local, state, and federal agencies.
- Cal/OSHA may require procedures for the receiving landfill facility to establish an appropriate site safety plan for the protection of the facility employees to potential ACM in the waste stream.
- Disposal facility emergency waivers, and suspension of regulations for disposing of wastes generated from a disaster or large-scale event, must be coordinated with the CalRecycle local enforcement agency (LEA) and the Regional Water Quality Control Board.

Air Monitoring and Sampling

To demonstrate the effectiveness of best management practices and the engineering controls used during emergency debris removal actions, air monitoring and sampling activities should be conducted in the exclusion zone (on-site) and along the perimeter of the site (community-based) during removal activities, as well as non-work hours to establish relevant background air pollution levels.

On-Site Air Monitoring

An on-site (industrial hygiene) air monitoring program is defined as one conducted within the immediate debris removal area with the objective of protecting occupational health and quantifying dust mitigation practices.

- Document on-site air monitoring activities in a site-specific Health and Safety Plan (HASP).
- All personnel entering the immediate removal area should be required to wear Level C PPE, as defined in CCR Title 8 Section 5192; this level of PPE may be downgraded based on results of industrial hygiene air sampling.
- Sample/monitor for dust, heavy metals, and asbestos. Particulate matter monitoring shall be done by direct reading instruments for real-time analysis. Heavy metal sampling can be conducted via cartridge or filter analysis using National Institute for Occupational Safety and Health (NIOSH) Method 7300 (metal scan). Asbestos samples should be collected with a 50mm antistatic cowl on a 25mm Mixed Cellulose Ester filter (MCEF) cassette and analyzed by transmission electron microscopy (TEM) NIOSH Method 7402 (high volume).
- Collect at least one upwind and two downwind dust samples from the immediate debris removal area in a triangular configuration.
- Personal air sampling collected in the breathing zone of site cleanup workers should be conducted for dust, heavy metals, and asbestos; Sampling can be representative rather than comprehensive so long as monitored personnel represent of various on-site operators, laborers, and supervisors.
- The on-site air monitoring program shall include steps to modify debris removal operations to reduce the potential for exposures above the NIOSH Recommended Exposure Limits, the Threshold Limit Values published by the American Conference of Governmental Industrial Hygienists (ACGIH), or other protective occupational health guidance used in the site-specific HASP.

- It is recommended that a full-time safety officer be assigned to the removal operations, preferably a CIH.
- At the conclusion of the debris removal project, a summary of air monitoring activities and any resulting health and safety issues should be provided to the project manager or Operations Chief.

Off-site Air Monitoring

No off-site migration and/or emission of dust or airborne contaminants is expected from disaster debris removal operations when appropriate dust mitigation controls are in place. However, a community-based air monitoring program may be established to monitor off-site migration of airborne contaminants, especially if adjacent neighborhoods are reoccupied.

Sampling or monitoring can also target sensitive population centers or locations such as schools and hospitals. While community monitoring is not required during disaster recovery efforts, increased community sensitivity following a disaster may justify a monitoring program.

- Coordinate any monitoring and sampling efforts with County environmental health departments and local AQMDs. Additional state and federal resources are available if local resources are unavailable or exhausted. The favored approach is an interagency effort with either the Air District or local health department as the lead agency.
- Develop a Sampling Plan and document community monitoring activities in a Community HASP.
- Monitoring may be for particulate matter alone or in combination with asbestos or other suspected contaminants. Particulate matter can serve as a proxy for the migration of other particulate-type airborne contaminants, but not gases and aerosols, which need separate monitoring.
- Direct read or near real-time dust measurement instrumentation such as a data ram is preferred and allows immediate feedback to removal operations and to impacted communities.
- If instituted, community monitoring should be conducted in both upwind and downwind locations relative to debris removal operations and/or the immediate impacted area.
- Occupational health recommendations cannot be used in determining risk to public health. Only public health guidance values can be used to interpret community monitoring data.
- Twenty-four-hour average particulate matter concentrations (PM_{2.5} or PM₁₀) should be equal to or less than 35 µg/m³; 8-hr averages should be equal to or less than 50 µg/m³; and, 3hr averages should be equal to or less than 88 µg/m.

Public health guidance values for other airborne contaminants are available from the Office of Environmental Health Hazard Assessment (<http://oehha.ca.gov/air/allrels.html>).

Storm Water Controls

One of the most prevalent water pollution threats from burn sites is the discharge of ash and other burn related debris into storm drains or natural receiving waters. Sites where debris and ash have been removed are often graded and have soils prepared similar to those of construction projects.

Debris removal and site clearing activities increase the exposure of soils to wind, rain, and concentrated flows that cause erosion and adversely impact storm water quality with high levels of total suspended solids and many other pollutants, which subsequently impacts surface waters.

The main objective is to provide best management practices that stabilize disturbed soil and reduce sediment transport caused by erosion from entering a storm drain system or receiving water body during debris removal after a disaster. Best management practices for storm water controls may include the use of fiber rolls, silt fences, erosion control blankets, hydro seeding, soil binders, and other devices to reduce sediments.

Effort should be made to preserve existing vegetation, if practicable. Once the removal has been completed, operation and maintenance of storm water control measures must be maintained by the property owner or the local government.

Reduction of Disaster Debris by Burning

The California Health & Safety Code (HSC) § 41800 prohibits individual persons from using fire to dispose of waste. This applies to individual property owners and tenants.

HSC § 41800 has rarely been waived by a Governor's Proclamation of Emergency. However, HSC § 41801 does establish specific authority for any public officer, including the Governor, to set or permit fires for the following purposes

- The prevention of a fire hazard that cannot be abated by any other means.
- The instruction of public employees in the methods of fighting fire.
- The instruction of employees in methods of fighting fire, when such fire is set, pursuant to permit, on property used for industrial purposes.
- The setting of backfires necessary to save life or valuable property pursuant to Section 4426 of the Public Resources Code.
- The abatement of fire hazards pursuant to HSC Section 13055.
- Disease or pest prevention, where there is an immediate need for and no reasonable alternative to burning.
- The remediation of an oil spill pursuant to Section 8670.7 of the Government Code.

Burning debris should be coordinated with the Bay Area Air Quality Management District. Guidance for burning disaster debris can be found on the Bay Area Air Quality Management District web page at <https://www.baaqmd.gov/permits/open-burn>.

Historical Considerations

There are a number of historical properties in Contra Costa County. The county will ensure that guidelines in accordance with the California Environmental Quality Act (CEQA) are adhered to regarding those properties. In addition, in the event a project funded by FEMA has the potential to affect one of these historical properties, FEMA is required to conduct a Section 106 consultation.

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to enter a four-step consultation process if historic properties may be affected by a federal “undertaking” as defined in the Act. The four steps are listed below:

- FEMA initiates the Section 106 consultation process
- Historic properties are identified and evaluated – FEMA will assess the significance of the properties and consult with the State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO)
- Adverse effects are assessed – FEMA will consult with the SHPO and THPO to determine if there will be any adverse effects to the properties. If it is determined there will be no adverse effects, the project may proceed.

Adverse effects are resolved – If it is determined there would be adverse effects, FEMA will consult with affected parties to determine ways to minimize the adverse effects on the properties.

3.2.7 Individuals with Disabilities and Access and Functional Needs

3.2.7.1 Description¹⁶

Legal requirements for inclusion, integration, and equal opportunity are not waived during disaster or emergency situations, and certain individuals may have access and functional needs before, during, and after an incident. Individuals with additional response assistance may include those who:

- Live in institutionalized settings
- Are elderly
- Are unaccompanied children
- Are from diverse cultures
- Have limited English proficiency or are non-English speaking
- Are transportation disadvantaged
- Have no access to any communications devices
- Have no access to a shelter and/or may need to be assigned a Functional Access Service Team (FAST) member
- Have disabilities – temporary and/or lifelong
- Have sight or hearing impairments
- May require medical care
- May require supervision
- Other situations that would ensure maintaining independence

Debris management strategies will need to include actions to meet the needs of access and functional needs individuals. This might include linking them with organizations to assist them in getting debris to the ROW, ensuring public information messages can be received and be

¹⁶ Contra Costa County Emergency Operations Plan 2015, Section VI – Supporting Elements, A

understood, and making sure individuals with disabilities and others with access and functional needs can access sidewalks and public transportation resources.

Debris Planning Considerations

Disasters create new physical barriers and eliminate and/or lessen services available to everyone. For people with access and functional needs, this may take away their ability to perform certain functions that were previously possible, and/or their capacity to live independently, and/or navigate the available response and recovery systems effectively. To the greatest extent possible, populations with disabilities and functional and access must be identified and prioritized during debris operations. Additional guidance and resources for helping people with disabilities before, during, and after disasters can be found at the FEMA Office of Disability Integration and Coordination website at <https://www.fema.gov/about/offices/disability>.

Public Information

Information before, during, and after an emergency allow individuals with disabilities and access and functional needs better respond to disasters. Ensuring that preparedness and emergency information is accessible and available in multiple formats and provides content that addresses access and functional needs is critical.

Emergency Roadway Clearance

Emergency roadway clearance creates challenges for individuals with limited mobility. During the emergency roadway clearance, debris is pushed out of the road onto the ROW. This allows emergency response vehicles to pass but it obstructs sidewalks. Public entities can coordinate with volunteer organization to identify vulnerable populations and prioritize those areas for ROW debris removal. This will expedite removal from sidewalks and other critical pathways for individuals with mobility challenges.

ROW Collection

ROW collection can create challenges for individuals with disabilities and access and functional needs. Bringing debris to the ROW will be difficult for individuals with mobility challenges. Danville can coordinate with volunteer organizations active in disasters to identify potential vulnerable populations and coordinate services to assist with debris removal services.

Debris Reduction by Incineration

In rare cases, debris may be reduced at TDMS locations by open burning or using an air curtain incinerator. In these cases, debris managers need to be cognizant of nearby residents and mitigate situations for individuals with health and respiratory challenges that might be exacerbated by this reduction process.

3.2.8 Public Information

Public information following a disaster will be a coordinated effort in accordance with the principles of the NIMS. Public information messages will be needed to get the public's support and cooperation in debris management operations. Public information messages might be developed to communicate the following information:

- The status of debris operations
- What the jurisdiction is doing to manage debris

- The importance of getting debris to the ROW
- The importance of segregating debris in the ROW
- Clarification as to what constitutes the ROW
- What to do if assistance is needed in moving debris to the ROW
- The status of garbage pickup

It is vital that public information messages shared are consistent within and across Danville and that information is accurate and issued in a timely manner. In addition, Danville should monitor public and media comments and correct any incorrect information that could result in confusion among the general public and hinder debris operations. The use of social media platforms must also be utilized to disseminate public information messages, monitor the public's response, and correct any misinformation. Public information templates have been developed and included in Attachment D of this plan. The templates can be easily adapted for jurisdiction's use in developing and disseminating public information messages.

3.2.8.1 Health and Safety Information

Disaster-related accidents and deaths are frequently attributed to mishandling of debris and debris equipment by residents. It is critical that public information officers provide consistent messaging on health and safety when handling debris. Sample health and safety public information messages are provided below.

- **Lead in Damaged Materials or Debris** - Homes built before 1978 are likely to contain lead-based paint, which may flake after being soaked by flood water. Lead is a toxic metal that causes many negative health effects, especially in children. Disturbing materials containing lead-based paint may release lead dust into the air. If you suspect that debris in your home is contaminated with such paint, seek help from public health authorities or specially trained contractors.
- **Contaminant Sediment** - The sediment left behind by receding flood water often contains a wide variety of pollutants. They can include fuel oils, gasoline, human and animal waste, metals, and other material. Health officials caution against contact with sediment, if possible. If you do come in contact with it, wash any exposed skin with soap and water and change into clean clothing.
- **Asbestos in Debris** - Older buildings may contain asbestos. Pipe or other insulation, ceiling tiles, exterior siding, roof shingles, and sprayed-on soundproofing may contain asbestos. If your home contains asbestos and may have been damaged or will be disturbed during cleanup, contact public health authorities.
- **HHW** - When returning to flood-damaged homes and buildings, be alert for leaking containers and household chemicals, such as caustic drain cleaners and chlorine bleach. Keep children and pets away from leaking or spilled chemicals. Do not combine chemicals to avoid dangerous or violent reactions. Do not dump chemicals down storm sewers, drains, or toilets. Mark and set aside unbroken containers until they can be properly disposed of.
- **Use of Chainsaw to Clear Debris** - Over 35,000 people are injured by chainsaws yearly in the United States. Understand how to use the equipment and follow the instructions while using these tools for debris operations.
 - Read your owner's manual.

- Wear proper safety gear, including eye and hearing protection, heavy work gloves, and work boots.
- Check controls, chain tension, and all bolts and handles to ensure they are functioning properly.
- Fuel your saw at least 10 feet from sources of ignition.
- Clear debris that may interfere with cutting.
- Keep hands on the handles, and secure footing.
- Do not cut directly overhead or overreach with the saw.
- Be prepared for kickback.
- Make sure someone is nearby to help you in case of an emergency. Understand that emergency responders are addressing issues related to the disaster so response times might be delayed.

3.2.9 Landfill and End Use Options Assessment

Disaster debris should be diverted from landfills to the greatest extent possible through reduction, recycling and reuse.

Common recyclable materials that are a result of a debris-generating event include wood waste, metals, and concrete. The following are potential uses for each of these materials:

Wood Waste – Vegetative debris that is reduced through chipping or grinding results in leftover mulch. The remaining mulch can be used for agricultural purposes or fuel for industrial heating. For the mulch to be viable in agricultural purposes, the end user typically has a size requirement and quality requirements that the mulch be as clean as possible of plastics and dirt.

Metals – Metal debris such as white goods, aluminum screened porches, etc., that may result from a debris-generating event can be recycled. Certain metals, such as aluminum and copper, are highly valuable to scrap metal dealers.

Concrete – Concrete, asphalt, and other masonry products that may become debris as a result of a debris-generating event can be crushed and potentially used for road construction projects or as trench backfill.

In Contra Costa County, there are facilities that conduct composting operations, transfer/processing operations and disposal operations that can serve as landfill and end use options for managing disaster debris. Attachment O provides maps and a list of landfill and end use facilities in the County. The OA is responsible for maintaining situational awareness of the debris operations for shared resources like landfill and end use facilities. If these resources become overwhelmed by the demand of a widespread disaster, the OA will coordinate with regional and State partners to identify additional resources.

3.3 Special Debris Programs¹⁷

3.3.1 Private Property Debris Removal

When large-scale disaster events cause mass destruction and generate large quantities of debris over vast areas, debris on private property may sometimes pose health and safety threats to the public-at-large. If private property owners are not available because they have evacuated, the public entities may need to enter private property to remove debris considered to be an immediate threat to the lives, health, and safety of its residents. In such situations, Cal OES and FEMA are authorized to approve the provision of Public Assistance for the removal of debris from private property when it is considered to be in the public interest.

A jurisdiction must get prior approval from the state and/or FEMA to determine eligibility for reimbursement. The following procedures are required for potential state and/or federal assistance and are best practices for conducting debris removal from private property regardless of potential reimbursement.

The jurisdiction must obtain documentation from the public health authority stating that disaster-generated debris on private property in the designated area constitutes an immediate threat to life, public health, and safety.

The jurisdiction may obtain documentation stating that the debris poses an immediate threat to improved property and that its removal is cost-effective. The cost to remove the debris should be less than the cost of the potential damage to the improved property.

The jurisdiction must demonstrate its authority and legal responsibility to enter private property to remove debris. The legal basis for this responsibility must be established by law, ordinance, or code at the time of the disaster and must be relevant to the post-disaster condition representing an immediate threat to life, public health, and safety, and not merely define the public entity's uniform level of services. Typically, solid waste disposal ordinances are considered part of an applicant's uniform level of services.

3.3.2 Dangerous Trees

Determining removal of hazardous trees and stumps is challenging. FEMA has established criteria to assist in making these determinations, using objective information that can be collected in the field. The following procedures align with the FEMA Public Assistance Program eligibility requirements for potential federal reimbursement.

Hazardous Trees

Removing a hazardous tree may be eligible for Public Assistance grant funding. A tree is considered hazardous if its condition was caused by the disaster; it is an immediate threat to lives, public health and safety, or improved property; it has a diameter at breast height (DBH) (4.5 feet from the ground on the high side) of six inches or greater; and the tree:

¹⁷ FEMA Public Assistance Program and Policy Guide, FP 104-009-2, January 2020, Chapter 7, Section I, G

- Has a split trunk;
- Has a broken canopy; or
- Is leaning at an angle greater than 30 degrees.

Trees determined to be hazardous and that have less than 50 percent of the root-ball exposed should be cut flush at the ground level. Grinding of the resulting stump after the tree has been cut flush at the ground level is not eligible work. The cut portion of the tree is included with regular vegetative debris. The public entity should make an effort to cut the tree trunk as close to the ground as possible.

The eligible scope of work for a hazardous tree may include removing the leaning portion and cutting the stump at ground level. An example of an ineligible costing method for such work would be removing the tree and stump for two separate unit costs.

The Public Assistance Program may reimburse straightening and bracing if they are less costly than removal and disposal. Straightening and bracing are emergency protective measures if they eliminate an immediate threat to lives, public health and safety, or improved property. If a public entity chooses to straighten and brace a tree in lieu of removal, the tree would not be eligible for removal if it dies.

Hazardous Limb Removal

Removal of broken limbs or branches that are two inches or larger in diameter (measured at the point of break) that pose an immediate threat are eligible for Public Assistance grant assistance.

FEMA does not fund removal of broken limbs or branches located on private property unless:

- The limbs or branches extend over the public ROW;
- The limbs or branches pose an immediate threat; and
- The Applicant removes the hazard from the public ROW (without entering private property).

Only the minimum amount of work necessary to remove the hazard is eligible. Pruning, maintenance, trimming, and landscaping are not eligible. Work should be executed in an efficient manner. For example, all hazardous limbs in a tree should be cut at the same time, not in passes for particular sizes. Work to remove hanging limbs from a tree that has been determined to be a hazard and is scheduled for removal is not eligible. If this work is contracted out, it is typically done on a per tree basis.

An eligible scope of work may be to cut the branch at the closest main branch junction. Removing the entire branch back to the trunk may not be eligible.

Hazardous Tree Stumps

A stump may be determined to be hazardous and eligible for Public Assistance grant funding as a per-unit cost for stump removal if it meets all of the following criteria:

- It has 50 percent or more of the root-ball exposed (less than 50 percent of the root-ball exposed should be flush cut);
- It is greater than 2 feet in diameter, as measured 2 feet above the ground;
- It is on improved public property or a public ROW; and
- It poses an immediate threat to life, and public health and safety.

If an uprooted stump must be removed prior to state and/or federal approval, the public entity must submit the following information for Public Assistance grant consideration:

- Photographs and GPS coordinates that establish the location on public property;
- Specifics of the threat;
- Diameter of the stump 2 feet up the trunk from the ground; and
- Quantity of material needed to fill the resultant hole.
- Equipment used to perform the work.

The State and/or FEMA may reimburse the reasonable cost to remove, transport, dispose of, and fill the hole from a stump of more than 2 feet in diameter if:

- The public entity and State agree the tree or stump is hazardous according to the above definition;
- Generally, if the removal was approved in advance; and
- A Hazardous Stump Worksheet is completed and submitted for FEMA approval.

A copy of the Hazardous Stump Worksheet may be found in FEMA FP 104-009-2, Appendix F, and is also included in Attachment I of this document.

In some instances, grinding of an uprooted stump and filling the resulting cavity may cost less than a complete extraction. In these cases, the public entity should present the cost comparison documentation to FEMA for consideration; however, the stump must have already been determined eligible for removal according to the above criteria.

Stumps measuring 2 feet in diameter or less do not require special equipment for removal; therefore, reimbursement will be based on the reasonable unit cost per CY, using the Stump Conversion Table copied from the FEMA Public Assistance Program & Policy Guide (FP 104-009-2), see Attachment I. The unit price for stump removal includes the extraction, transport, and disposal of the stump as well as filling the cavity that remains.

FEMA will reimburse the public entity at the unit cost rate (usually CYs) for normal debris removal for all stumps, regardless of size, placed on the public rights-of-way by others, i.e., contractors did not extract them from public property or property of eligible private nonprofit organizations. In such instances, public entities do not incur additional costs to remove these stumps; the same equipment used to pick up vegetative debris can be used to pick up these stumps.

See FEMA FP 104-009-2 for more information on hazardous stumps.

Documentation Requirements for Hazardous Limbs, Trees, and Stumps¹⁸

- Specifics of the immediate threat with the location (geographical coordinates in latitude, longitude) and photograph or video documentation that establishes the item is on public property (required, FEMA reviews a representative sample);

¹⁸ FEMA Public Assistance Program and Policy Guide, FP 104-009-2, Version 4, June 2020, Chapter 7, Section I.B.4

- Quantity removed (Note: If a contractor charged an individual price for each limb, tree, or stump removed, FEMA requires the diameter of each item removed. For stumps, the measurement must be 2 feet up the trunk from the ground. For trees, it must be 4.5 feet up from the ground.) (required);
- Quantity, location, and source of material to fill root-ball holes (required); and
- Equipment used to perform the work (required).

3.3.3 Human Remains

The California Office of Emergency Services DDMP provides a detailed approach to management of human remains. The following section mirrors the guidance provided in the State's plan and provides the responsibility of jurisdictions regarding recovery and disposition of human remains.

During catastrophic disasters, many individuals are unaccounted for and might be trapped in rubble. Human remains should be recovered at the incident site to the maximum extent possible. However, remains are sometimes discovered during debris management operations at collection, reduction, and final disposal.

There is no direct risk of contagion or infectious disease from being near human remains for people who are not directly involved in recovery or other efforts that require handling of dead bodies. If human remains are discovered during debris operations, the field supervisor should contact local law enforcement by calling 9-1-1 to report the situation. Local law enforcement will coordinate with the County Coroner's to investigate the situation. Until local law enforcement arrives, do not handle or move the body. Obstruct the view of the body from the public and employees, if possible and wait for local law enforcement to arrive.

3.3.4 Crime Scene Debris

The California Office of Emergency Services DDMP provides a detailed approach to debris removal from a crime scene. The following section mirrors the guidance provided in the State's plan and highlights the responsibility of jurisdictions regarding recovery and disposition of human remains.

3.3.4.1 Public and Responder Safety

Public safety and responder safety is prioritized before securing or collecting evidence. If debris poses an immediate threat to public or responder safety, mitigate the threat and then implement measures to manage evidence.

3.3.4.2 Weapons of Mass Destruction/Acts of Terrorism

Following a weapons-of-mass destruction (WMD) or terrorism incident, the lead law enforcement agency will likely assume the role of incident command. Typically, debris operations will run concurrently with rescue and recovery operations. Investigation of the debris and evidence collection will need to happen as quickly as possible. This type of incident will have many complex and competing priorities beyond debris operations. The incident commander is responsible for

managing these priorities and determining the response and recovery objectives. Debris management will be conducted as directed by the incident commander.

Debris operations for a WMD/terrorism incident will be much different than disaster debris management for a natural disaster. Law enforcement agencies will have a much larger role in debris operations from a WMD/terrorism incident. Debris is considered evidence until the lead law enforcement agency has declared it clear of evidentiary possibilities. As such, debris must be securely handled, monitored, transported, and processed.

Securing Debris as Evidence

Typically, local law enforcement agency responsibilities will include establishing and securing a perimeter, controlling access to the site, escorting transported debris and assisting in the collection, preservation, and documentation of evidence. The Federal Bureau of Investigation (FBI) may engage the services of internal response assets to assist in evidence collection and management including laboratory analysis of evidence collected from the debris.

Managing the Integrity of the Crime Scene

Initial site security is initiated by the local response. A perimeter is established in the course of protecting the public and giving adequate space for response workers, equipment, and vehicles. This original perimeter will be maintained or possibly expanded by local law enforcement with regard to protecting the outer limits of the crime scene. Planning must begin early to strengthen this perimeter with physically durable materials such as chain link or other fencing.

Perimeter Establishment and Enforcement

For a crime scene, an inner and outer perimeter must be established and secured by local law enforcement agencies. Some initial sites may have adequate space to allow for evidence (debris) processing sites within the inner perimeter. In most cases, this is not possible, and arrangements must be made to transport evidence (debris) to an off-site location for processing. In this event, both inner and outer perimeters must also be established for any remote work sites associated with evidence processing and recovery.

Inner Perimeter Security Requirements:

- Identify a Site Safety Officer on-scene
- Develop a site-specific health and safety plan
- Ensure all responders, including debris management personnel, are wearing appropriate PPE at all times
- Establish a control point for logging name, date, time of entry, and vehicle
- Establish an accountability system for inner perimeter responder safety

Site Access and Credentialing:

- Establish appropriate resources to provide for on-scene credentialing for all personnel.
- Establish a credentialing point outside of the outer perimeter.

- Ensure debris personnel have appropriate badging and credentials prior to arrival at the incident site.
- Establish secure points of ingress and egress for debris haulers and other vehicles.

Evidence Collection and Preservation

- Establish a process for chain of command of debris including
 - Removal from site
 - Transport
 - Arrival at site for processing
 - Transport to disposal
 - Arrival at disposal site
- Documentation of debris chain of command must include:
 - Name of equipment
 - Name of equipment operator
 - Date, time and work zone
- Debris that is transported should be accompanied by or monitored by a law enforcement officer until it has arrived to a remote secure site.
- Establish a receiving point to secure large quantities and varying sizes of debris such as an off-site warehouse or storage containers that can be secure by law enforcement continuously.

3.3.5 Wildland Fires, Drought and Other Special Debris Events

Danville is susceptible to the impacts of severe drought and wildland fires. Prolonged periods of drought can affect crops, water availability and quality, and increase potential for natural fuels. These affects combined with high winds increase the risk of wildland fire. While fires leave less debris than other types of disasters, they still generate waste including:

- Destroyed homes
- Burned cars and other metal objects
- Ash and charred wood waste
- Hazardous trees

There are strategies that public entities can implement to mitigate the impact of drought and wildland fires including:

- Implement Xeriscape and public education programs to conserve water.
- Conduct wildfire training for response and recovery staff.
- Develop a wildland urban interface plan.
- Educate homeowners on the importance of water conservation and the effects of wildfires.

- Create defensible space around structures through the removal of flammable vegetation.
- Use non-combustible building envelope assemblies, ignition resistant materials, and proper retrofit techniques of new and existing structures.
- Reduce hazardous fuels by vegetation management, vegetation thinning, or reduction of flammable materials to protect life and property beyond defensible space parameters, but proximate to at-risk structures.

A specific Health and Safety Plan (HASP) should be developed and daily health and safety briefings should be conducted when conducting debris operations following a fire.

4.0 FINANCE, ADMINISTRATION AND LOGISTICS

4.1 Finance

The federal government provides several assistance programs through various agencies to support debris operations. However, these programs have extensive documentation requirements that Danville needs to understand before a disaster occurs.

Additionally, the policy guidance for these assistance programs changes and adapts with lessons learned from each disaster across the United States. It is important for Danville to maintain awareness of current federal assistance program guidance and regulations related to disaster debris federal funding programs.

4.1.1 Funding Sources for Disaster Debris Operations

4.1.1.1 California Disaster Assistance Act

The State can provide assistance through the California Disaster Assistance Act (CDAA).¹⁹ The CDAA was created to assist the State to provide funding to local governments after a disaster and to manage regularity and administrative issues related to disasters. CDAA regulations govern the eligibility rules for disaster debris removal reimbursements within the State.²⁰ The CDAA provides regulatory guidance for three components of disaster finance and administration; emergency work, emergency protective measures, and debris removal.

California Disaster Assistance Act Eligibility Rules

Some key provisions regarding eligibility for reimbursement are listed below:

- CDAA Regulations, Section 2920 – Emergency Work. Emergency work to saves lives, protect public health and safety and to protect property in an area proclaimed to be in a state of emergency.
- CDAA Regulations, Section 2930 – Emergency Protective Measures. Actions taken to remove and/or reduce immediate threats to public property, or to private property when in the public interest.
- CDAA Regulations, Section 2925 – Debris Removal. General eligibility:
 - Debris removal from publicly and privately owned lands and waters, undertaken in response to a state of emergency proclamation by the Governor is eligible for State financial assistance; and;
 - For purposes of this program, the removal of debris from private property shall be reimbursed only when there is an immediate threat to public health and safety. In a case where reimbursement for debris removal from private property is authorized by the director, the following requirements shall apply, unless waived in part or full by the director:

¹⁹ Gov. Code sections 8680-8692

²⁰ 19 CCR 2900-2990

- The property owner must remove all disaster-related debris from the property to the curb or public ROW;
- The local agency must obtain a signed statement from the property owner to the effect that the property owner does not have insurance covering the removal of the disaster-related debris; and,
- The local agency must have a signed statement from the property owner giving the local agency the right of entry and absolving the local agency and the state of any liability relative to removal. A sample right of entry can be found in Attachment E..
- Criteria: Debris removal shall be considered necessary when removal will:
 - Eliminate immediate threats to life, public health, and safety;
 - Eliminate immediate threats of significant damage to improved public or private property, or,
 - Be necessary for the permanent repair, restoration, or reconstruction of damaged public facilities.
- Examples of Eligible Work:
 - Removing debris such as pieces of destroyed buildings, structures, signs, or broken utility poles;
 - Removing loose or broken sidewalks and driveways; or
 - Removing fallen trees.

4.1.1.2 FEMA Public Assistance Program

The mission of the FEMA Public Assistance (PA) Grant Program is to provide assistance to State and local governments and certain private nonprofit (PNP) organizations to quickly respond to and recover from disasters or emergencies declared by the President. FEMA provides supplemental federal disaster grant assistance for debris removal, emergency protective measures and repair, and replacement or restoration of disaster-damaged facilities through the PA Program. The PA Program also encourages protection of these damaged facilities from future events by providing assistance for hazard mitigation measures during the recovery process.

The FEMA PA Grant Program is a cost-sharing program. Cost share refers to the portion of disaster-related costs the federal government is responsible for funding. Per the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), the federal cost share of assistance is not less than 75% of the eligible cost for emergency measures and permanent restoration. The remaining 25% is the responsibility of the State and local governments. The State serves as the grant administrator or the grantee. The grantee determines how the non-federal share is funded.

Changes to the FEMA PA Program

The Stafford Act constitutes the statutory authority for most federal disaster response activities, especially as they pertain to FEMA and FEMA programs.

The Stafford Act was amended by the Sandy Recovery Improvement Act (SRIA). The President signed the SRIA into law in January 2013 to improve and streamline disaster assistance for

Hurricane Sandy and for future disasters. The amendments to the Stafford Act include alternative procedures for the FEMA PA Program.

The purpose of the SRIA is to:

- Reduce the cost of federal government assistance.
- Increase the administrative flexibility of the FEMA PA Program.
- Expedite the process of providing and using the assistance.
- Create incentives for applicants to complete projects in a timely and cost-effective manner.

The law authorizes several significant changes to the way FEMA may deliver disaster assistance under a variety of programs. This includes the following procedures:

- Permanent work alternative procedures
- Hazard mitigation
- Dispute resolution
- Federal assistance to individuals and households
- Unified federal review
- Small project threshold review
- Essential assistance
- Individual assistance factors
- Recommendations for reducing costs of future disasters

In addition to the SRIA, the Stafford Act was also amended by the Disaster Recovery Reform Act (DRRA) of 2018. The law contains more than 50 provisions that require FEMA policy or regulation changes for full implementation. Goals of the DRRA include:

- Increase mitigation spending
- Push more responsibility for post-disaster management to state and local governments
- Clarify policy

Some of the provisions of the DRRA include:

- Increases the amount of pre-disaster mitigation spending to 6% of the cost of disasters.
- Establishes management cost allowances for FEMA PA and the FEMA Hazard Mitigation Grant Program (HMGP).
- Authorizes FEMA to provide assistance under the HMGP and Pre-Disaster Mitigation Program (PDMP) for wildfire and windstorm disaster mitigation.
- Provides assistance to state and local governments for building code and floodplain management ordinance administration and enforcement.
- Requires development of guidance and training in the prioritization of power restoration for hospitals and nursing homes and the need to coordinate plans before outages occur.

- Authorizes FEMA to develop “incentives and penalties” to state, local, tribal and territorial governments to ensure timely closeout of disaster grants.
- Adds long term recovery groups, center-based childcare facilities, and domestic hunger relief organizations to the list of groups with which FEMA will coordinate.
- Prohibits FEMA from recovering funds from a local government that received PA if the Office of Inspector General (OIG) finds the local government relied on inaccurate information by a FEMA Technical Assistance Contractor.
- Grants a right of arbitration to any applicant disputing a FEMA decision regarding eligibility for or repayment of assistance where the amount is more than \$500K or more than \$100K for applicants in rural areas.

It is the responsibility of the applicant to understand the eligibility requirements and provisions of the Stafford Act, the SRIA and the DRRRA. FEMA will make every effort to provide reliable information through field personnel following a disaster. However, it is ultimately the responsibility of the applicant to understand what is allowed under the law.

It is critical that local officials and local managers implementing federal programs fully understand applicable local, State, and federal laws related to disaster assistance.

The consequence of non-compliance with these provisions is fraud and can result in the following:

- Temporarily withhold payment or take more severe enforcement action.
- Disallow all or part of the cost of the activity or action not in compliance.
- Wholly or partly suspend or terminate the applicant’s current award.
- Withhold future awards.
- Take other remedies that may be legally available.

Attachment P includes a list of policy documents and program guides, their applicability to debris operations and links to where additional information can be found. Public entities and debris managers need to understand how these policies impact debris operations. The following is an overview of the FEMA PA Grant Program process with a flow chart at the end of the section.

FEMA PA Grant Program Process Overview²¹

Preliminary Damage Assessment

The preliminary damage assessment (PDA) is a joint assessment used to determine the magnitude and impact of an event's damage. A team of representatives from FEMA, the State and the local jurisdiction will visit local sites and view the damage first-hand to assess the scope of damage and estimate repair costs. The State uses the results of the PDA to determine if the situation is beyond the combined capabilities of the State and local resources and to verify the need for supplemental federal assistance. The PDA also identifies any unmet needs that may require immediate attention.

Governor’s Request

²¹ FEMA Public Assistance Program and Policy Guide, FP 104-009-2, Version 4, June 1, 2020

The Stafford Act requires that: "All requests for a declaration by the President that a major disaster exists shall be made by the Governor of the affected State."

The Governor's request is made through the regional FEMA office. State and federal officials conduct a PDA to estimate the extent of the disaster and its impact on individuals and public facilities. This information is included in the Governor's request to show that the disaster is of such severity and magnitude that effective response is beyond the capabilities of the State and the local governments and that federal assistance is necessary. Normally, the PDA is completed prior to the submission of the Governor's request. However, when an obviously severe or catastrophic event occurs, the Governor's request may be submitted prior to the PDA. Nonetheless, the Governor must still make the request.

As part of the request, the Governor must take appropriate action under State law and direct execution of the State's emergency plan. The Governor will provide the following information:

- Information on the nature and amount of State and local resources that have been or will be committed to alleviating the results of the disaster
- An estimate of the amount and severity of damage and the impact on the private and public sector
- An estimate of the type and amount of assistance needed under the Stafford Act

In addition, the Governor will need to certify that, for the current disaster, State and local government obligations and expenditures (of which State commitments must be a significant proportion) will comply with all applicable cost-sharing requirements.

Disaster Declaration and Initiation of Federal Programs

Based on the Governor's request, the President may declare that a major disaster or emergency exists, thus activating an array of federal programs to assist in the response and recovery effort. Not all programs, however, are activated for every disaster. The determination of which programs are activated is based on the needs found during damage assessment and any subsequent information that may be discovered.

Some declarations will provide only FEMA Individual Assistance or only PA Hazard mitigation opportunities are assessed in most situations.

Applicants' Briefing

The Applicants' Briefing is a meeting conducted by the State to inform prospective applicants of available assistance and eligibility requirements for obtaining federal assistance under the declared event. The meeting is held as soon as practicable following the President's declaration.

During the briefing, the State will present the incident period and a description of the declared event. Applicant, work, and cost eligibility will be reviewed and the project formulation process will be introduced. The State will also discuss funding options, record keeping and documentation requirements, and special consideration issues.

Typically, applicants will prepare and submit their Requests for PA form during the briefing.

Request for PA

The Request for PA is FEMA's official application form that public and PNP organizations use to apply for disaster assistance. It is a simple, short form with self-contained instructions. "The

Request" (FEMA Form 90-49) asks for general information that identifies the applicant, starts the grant process and opens the Case Management File, which contains general claim information as well as records of meetings, conversations, phone messages and any special issues or concerns that may affect funding.

The request must be submitted to the regional administrator within 30 days after designation of the area where the damage occurred. The form may be delivered in person at the Applicants' Briefing, sent by mail, or faxed.

Kickoff Meeting

The first meeting between the applicant, the State Public Assistance Coordinator (PAC) and State Applicant Liaison is called the kickoff meeting. A kickoff meeting is held with each applicant to assess the applicant's individual needs, discuss disaster-related damage, and set forth a plan of action for repair of the applicant's facilities. The liaison will provide the State specific details on documentation and reporting requirements. Both the PAC and Liaison help in identifying special considerations.

Project Formulation and Cost Estimating

Project formulation is the process of documenting the damage to a facility, identifying the eligible scope of work and estimating the costs associated with that scope of work for each of the applicant's projects.

Project formulation allows applicants to administratively consolidate multiple work items into single projects in order to expedite approval and funding, and to facilitate project management. A project is a logical method of performing work required as a result of the declared event. More than one damage site may be included in a project.

Project information is collected in a form called a PW, which is used to document the disaster damage and develop the scope of work for repair.

Project Review and Validation

The purpose of validation is to confirm the eligibility, compliance, accuracy, and reasonableness of small projects formulated by an applicant, and to ensure that the applicant receives the maximum amount of assistance available under the law.

The validation process reviews approximately 20% of the small projects formulated by the applicant. This 20% sampling applies to all small projects, including emergency work, permanent work, and small projects with special considerations. All aspects of the projects are reviewed including the sites, estimating methods, and documentation related to the project.

The process of approval, as outlined above, begins with the Public Assistance Coordinator's (PAC's) review of PWs for completeness. Once the PWs are reviewed and processed through validation and special considerations review as appropriate, the PWs are ready for approval and funding.

The PAC has the authority to approve projects up to \$100,000. Therefore, any project below this threshold will be approved by the PAC and forwarded for funding. Projects over this threshold will be forwarded by the PAC to the FEMA Public Assistance Officer (PAO) with a recommendation for approval. Once the PAO has approved the PW, it will then be forwarded for funding.

Obligation of Federal Funds and Disbursement to Subgrantees

FEMA and the grantee share responsibility for making PA Program funds available to the subgrantees. FEMA is responsible for approving projects and making the federal share of the approved amount available to the grantee through a process called obligation.

Through obligation, FEMA notifies the grantee that the federal funds are available but reside in a federal account until the grantee is ready to award grants to the appropriate subgrantees. The grantee is responsible for providing the grantee portion of the non-federal share of the grant amount and for notifying the subgrantee that funds are available.

Payment for small projects is made on the basis of the estimate prepared at the time of project approval. The grantee is required to make payment of the federal share to the subgrantee as soon as practicable after FEMA has obligated the funds.

Large projects are funded on documented actual costs. Because of the nature of most large projects, work typically is not complete at the time of project approval; therefore, FEMA will obligate grants based on an estimated cost. Such monies may not be immediately drawn down by the grantee. Instead, progress payments are made to the applicant as actual costs are documented.

Upon completion of a large project, an applicant must submit documentation to account for all incurred costs to the grantee. The grantee is responsible for ensuring that all incurred costs are associated with the approved scope of work and for certifying that work has been completed in accordance with FEMA standards and policies. The grantee then submits documentation of project costs to FEMA for review. FEMA may conduct a final inspection as part of this review. Once the review is complete, FEMA determines whether funds should be obligated or deobligated for the project.

Appeals and Closeout

The appeals process is the opportunity for applicants to request reconsideration of decisions regarding the provision of assistance. There are two levels of appeal. The first level appeal is to the FEMA Regional Director. The second level appeal is to the Assistant Director at FEMA Headquarters. The applicant must file an appeal with the grantee within 60 days of receipt of a notice of the action that is being appealed. The applicant must provide documentation to support the appeal. This documentation should explain why the applicant believes the original determination is wrong and the amount of adjustment being requested.

The purpose of closeout is to certify that all recovery work has been completed, appeals have been resolved, and all eligible costs have been reimbursed. Closeout is an important last step in the PA Program process. This step can take months or years to complete. It is important to keep well-organized records and documentation throughout the closeout process.

The following flow diagram provides a graphical representation of the FEMA PA Grant Program.

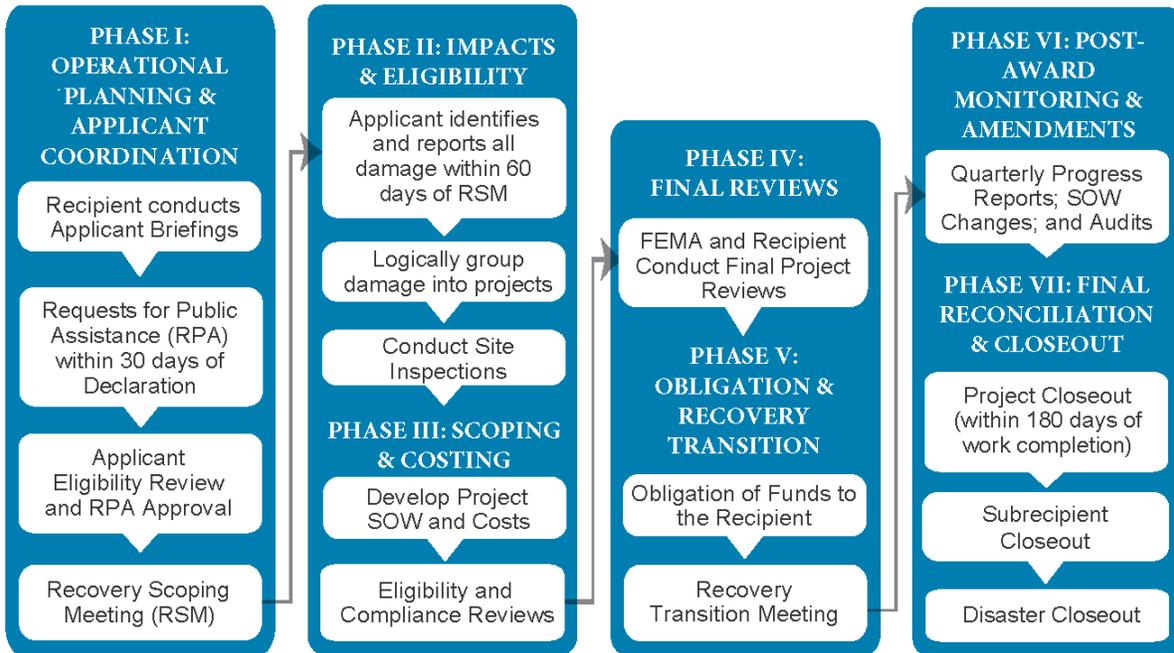


Figure 4.1 – FEMA PA Grant Program Process Flow

4.1.1.3 Other Funding Options

Public entities may be eligible for other federal assistance programs for disaster debris management including:

- Federal Highway Administration Emergency Relief Program
- USDA Natural Resources Conservation Service Emergency Watershed Protection Program
- USDA Farm Services Agency Emergency Programs

Each disaster assistance program has different documentation requirements. For additional information on cost tracking and documentation requirements, a complete list of federal disaster assistance programs with links to the program guidance can be found in Attachment P.

4.2 Documentation

Accurate and complete cost tracking is critical to obtain assistance for disaster-related costs. Emergency protective measures can be eligible for reimbursement. If the incident allows for warning, public entities should begin tracking costs once the threat has been identified. If there is no warning, public entities should begin tracking costs as soon as possible. Accounting best practices for tracking costs includes the following:

- Identify a person that will be responsible for compiling disaster-related costs for the jurisdiction.
- Establish a cost code for disaster-related costs.
- Establish a file structure for each site where recovery work has been or will be performed.

- Maintain accurate disbursement and accounting records to document the work performed and the cost incurred.
- Obtain and review applicable local, state, and federal policies and regulations.
- Document administrative costs.
- Begin compiling recovery project documentation, including:
 - Executed contracts, bids, periods of performance, and locations worked
 - Property insurance
 - Donated resources (labor, equipment and materials)
 - Mutual aid
 - Force account labor
 - Force account equipment
 - Equipment rental agreements
 - Fuel logs
 - Materials including meals and gas purchases
 - Description of damage
 - Scope of work to be completed
 - Photos of damage
 - Copies of estimates
 - Maintenance records
 - Site inspection records
 - Special considerations

Coordinate with state and federal agencies to obtain disaster-specific cost tracking spreadsheets and templates.

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5.0 OPERATIONAL COMMUNICATION AND COORDINATION

5.1 Situational Awareness

Danville will need to ensure they provide situational awareness to their internal stakeholders as well as to the debris task force leader in the OAEOC in regards to debris operations. Each jurisdiction should document the following information:

- Status of current conditions
- Damage assessments for debris
- Imminent threats to public health and safety
- Resource needs to provide the following:
 - Emergency road clearance
 - Assistance to individuals with disabilities and access and functional needs
 - ROW collection
 - Special debris programs
 - Reduction, transport, and disposal of debris
 - Public information
- TDMS status and critical needs
- Environmental and historical preservation concerns
- Reduction and disposal strategy
- Health and safety strategy

5.2 Communication

Danville will communicate internally and to other jurisdictions through the use of phone, email, and the East Bay Regional Communications System (EBRCS). The EBRCS is an interoperable radio communications system for public agencies within Alameda and Contra Costa counties. In addition, WebEOC, an internet-based system for sharing information during response to incidents, is used by jurisdictions in the County. Jurisdictions also have active HAM radio operator teams that can assist in providing communications support in an emergency.

Danville will communicate their debris management status to the OAEOC. The OA debris operations task force leader will communicate with state and federal agency representatives to obtain accurate information and guidance regarding debris operations. The OA debris task force leader will communicate this information to the jurisdictions.

Danville will communicate and coordinate directly with state and federal representatives regarding federal disaster assistance.

Danville also communicate directly with the OA to request resources to support debris operations.

5.3 Coordination of Resources

Danville is responsible for conducting debris operations within areas under their authority to the greatest extent possible using internal resources, mutual aid, or contracted services. The use of resources, including staff, equipment, and supplies, will be documented and tracked by the local jurisdictions to support reimbursement of eligible expenses. Forms to assist local jurisdictions in documenting force account labor and equipment use can be found in Attachment M of this plan.

In the event that Danville is unable to conduct their own debris operations, they can request assistance from the OA. The OA will provide support for debris operations to public entities within the OA in accordance with SEMS and approved mutual aid and operations plans.

The OA is responsible for prioritizing resources for debris operations in support of the following goals:

- Saving lives
- Preserving the health and safety of responders and the public
- Protecting property and the environment

The OA will monitor the status of debris operations throughout the County to assist in providing resources in support of these goals. The OA will prioritize resources based on critical need to the greatest extent possible to support a responsible distribution of resources.

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6.0 PLAN MAINTENANCE STRATEGY

6.1 Plan Maintenance

For this plan to maintain viability, the document should be updated annually and personnel should be trained on the content prior to a disaster. This section provides guidance on maintaining this plan to ensure it is current and relevant. FEMA updates debris operations program guidance throughout the year based on lessons learned from recent disasters. It is important for this plan to include the most current program guidance.

6.1.1 Plan Review

Danville will facilitate an annual review of their DDMP with the debris planning team. The plans will be updated based on organizational changes, new policies and guidance, and lessons learned from actual debris events. Changes made to the plan will be noted on a plan changes log as needed.

6.1.2 CalOES and/or FEMA Debris Plan Approval

On behalf of Danville, CCCSWA will submit the DDMP to CalOES for review and comment following any major plan revisions. It is not necessary to submit the plan to the State for approval each year.

6.2 Training for Personnel

Personnel must be trained on debris policies and procedures to maintain a viable plan. Each jurisdiction is responsible for maintaining a multiyear training and exercises program. This program should include debris operations training and exercises. The following list provides recommendations for debris operations training.

General

- Jurisdictions should train new personnel in their specific job duties related to debris operations.
- Personnel with response responsibilities must maintain competence in SEMS as prescribed in Government Code §8607(c).
- Personnel operating equipment must be trained to operate any equipment they are responsible for competently and safely.
- Personnel performing debris monitoring tasks will be trained by the jurisdiction or a qualified designee.
- Personnel with responsibility for preparing documentation for reimbursement should receive training on the FEMA PA Program.
- All personnel involved in response to a debris-generating incident should participate in a briefing on safety policies and procedures.

Debris Managers

- Individuals identified as debris managers should be trained in the regulatory requirements for debris operations including:
 - Health and safety

- Environmental and historical preservation
- Procurement
- Federal disaster grant programs
- Considerations for individuals with disabilities and access and functional needs
- Damage assessment for debris
- Training options include the following:
 - FEMA E0202: Debris Management Planning for State, Tribal and Local Officials. This is a 4-day class designed to provide an overview of issues and recommended actions necessary to plan for, respond to, and recover from a major debris-generating event with emphasis on state, local and tribal responsibilities.
 - FEMA IS – 1009 Conditions of the Public Assistance Grant. This is a 7-hour course that is designed to identify strategies to better enable Applicants to execute the Public Assistance Grant, describe the Federal requirements for receipt of Federal funds, and inform Applicants of actions that may jeopardize Public Assistance grant funding and potential remedies for non-compliance.
 - FEMA IS – 0632.a Introduction to Debris Operations. This is a 2-hour online course designed to familiarize participants with general debris removal operations and identify critical debris operations issues.
 - See the FEMA training website for additional information at <https://training.fema.gov/>.

Finance and Administration

- Finance and administration staff responsible for documenting and tracking costs and activities should be trained in regulatory requirements for debris operations including:
 - Procurement
 - Federal disaster grant programs
 - Documentation
- Training options include the following:
 - FEMA IS – 1000 Public Assistance Program and Eligibility. This is an 8-hour online course designed to provide an overview of Public Assistance project eligibility and requirements
 - FEMA IS – 0632.a Introduction to Debris Operations. This is a 2 hour online course designed to familiarize participants with general debris removal operations and identify critical debris operations issues.
 - FEMA IS – 1009 Conditions of the Public Assistance Grant. This is a 7-hour course that is designed to identify strategies to better enable Applicants to execute the Public Assistance Grant, describe the Federal requirements for receipt of Federal funds, and inform Applicants of actions that may jeopardize Public Assistance grant funding and potential remedies for non-compliance.
 - See the FEMA training website for additional information at <https://training.fema.gov/>.

6.2.1 Exercises

Exercises are essential to maintaining readiness and in determining the effectiveness of plans, personnel, and resources in responding to a debris-generating event. Workshops and exercises should be conducted periodically to test the ability of jurisdictions to coordinate resources for debris operations.

Following exercises, an after-action report will be developed to document strengths and areas needing improvement. An improvement plan will be developed to list corrective actions, identify individuals or agencies responsible for completing the corrective actions, as well as indicating a timeline for completion.

ACRONYMS AND DEFINITIONS

Acronyms

ACGIH	American Conference of Governmental Industrial Hygienists
ACM	Asbestos Containing Materials
AQMD	Air Quality Management District
C&D	Construction and Demolition
CA	California
CAC	Certified Asbestos Consultant
CalEPA	California Environmental Protection Agency
Cal/OSHA	California Division of Occupational Safety and Health
CCEH	Contra Costa Environmental Health
CDA	California Disaster Assistance Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CPG	Comprehensive Planning Guide
CY	Cubic Yards
DDMP	Disaster Debris Management Plan
DDPT	Disaster Debris Planning Team
DMAC	Disaster Management Area Coordinator
DOSH	State of California Division of Occupational Safety & Health, better known as Cal/OSHA
DRRA	Disaster Recovery Reform Act
DSG	Disaster-Specific Guidance
EBRCS	East Bay Regional Communications System
EMMIE	Emergency Management Mission Integrated Environment
ENSO	El Niño-Southern Oscillation

EOC	Emergency Operations Center
EPA	Environmental Protection Agency
ESF	Emergency Support Function
FAST	Functional Access Service Team
FBI	Federal Bureau of Investigations
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
GPS	Global Positioning System
HASP	Hazard and Security Plan
HAZMAT	Hazardous Materials
HSC	Health & Safety Code
ICS	Incident Command System
MCEF	Mixed Cellulose Ester Filters
NESHAP	National Emission Standards for Hazardous Air Pollutants
NIMS	National Incident Management System
NIOSH	National Institute for Occupational Safety and Health
NOAA	National Oceanic and Atmospheric Administration
OA	Operational Area
OAEOC	Operational Area Emergency Operations Center
OIG	Office of Inspector General
OSHA	Occupational Health and Safety Administration
PA	Public Assistance
PAC	Public Assistance Coordinator
PAO	Public Assistance Officer
PDA	Preliminary Damage Assessment
PNP	Private Nonprofit
PPE	Personal Protective Equipment
PWs	Project Worksheets

RCRA	Resource Conservation and Recovery Act
ROW	Right-of-Way
SARA	Superfund Amendments and Reauthorization Act
SEMS	Standardized Emergency Management System
SF	Square Footage
SRIA	Sandy Recovery Improvement Act
TDMS	Temporary Debris Management Site
TDS	Temporary Disposal Site
TEM	Transmission Electron Microscopy
US	United States
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
WMD	Weapons of Mass Destruction

Definitions

Applicant – State agency, local government or eligible private nonprofit organization that intends on applying for FEMA PA grants.

Code of Federal Regulations: Title 44 – Emergency Management and Assistance – The Code of Federal Regulations – Title 44 Emergency Management and Assistance (44 CFR) provide procedural requirements for the PA Program operations. These regulations are designed to implement a statute based upon FEMA’s interpretation of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act). They govern the PA Program and outline program procedures, eligibility, and funding

Construction and Demolition Debris – FEMA Publication 104-009-2 defines C&D debris as damaged components of buildings and structures such as lumber and wood, gypsum wallboard, glass, metal, roofing material, tile, carpeting and floor coverings, window coverings, plastic pipe, concrete, fully cured asphalt, heating, ventilation and air conditioning systems and their components, light fixtures, small consumer appliances, equipment, furnishings and fixtures. Current eligibility criteria include:

- Debris must be located within a designated disaster area and be removed from an eligible applicant’s improved property or ROW;
- Debris removal must be the legal responsibility of the applicant; and
- Debris must be a result of the major disaster event.

Debris Removal Contractor – The debris removal contractor is contracted by the City of DeSoto (City) to remove and dispose of debris that is a result of a severe debris-generating event.

Disaster-Specific Guidance – Disaster-Specific Guidance (DSG) is a policy statement issued in response to a specific post-event situation or need in a state or region. Each DSG is issued a number and is generally referred to along with their numerical identification.

FEMA Publication FP 104-009-2 – Public Assistance Program and Policy Guide – Combines all Public Assistance policy into a single volume and provides an overview of the PA Program implementation process with links to other publications and documents that provide additional process details. It provides a general overview of the FEMA PA Program protocol immediately following a disaster. The PA Program provides the basis for the federal/local cost-sharing program. This document specifically describes the entities eligible for reimbursement under the PA Program, the documentation necessary to ensure reimbursement and any special considerations that local governments should be aware of to maximize eligible activities.

Force Account Labor – The use of the City’s own personnel and equipment.

Hazardous Limb– A limb is hazardous if it poses a significant threat to the public. The current eligibility requirements for hazardous limbs according to FEMA Publication FP 104-009-2 are:

- The limb is greater than two inches in diameter;
- The limb is still hanging in a tree and threatening a public-use area; and
- The limb is located on improved public property.

Hazardous Stump – A stump is defined as hazardous and eligible for reimbursement if all of the following criteria are met:

- The stump has 50 percent or more of the root-ball exposed;
- The stump is greater than 2 feet in diameter when measured 2 feet from the ground;
- The stump is located on a public ROW; and
- The stump poses an immediate threat to public health and safety.

Hazardous Tree – A tree is considered hazardous when the tree’s present state is caused by a disaster, the tree poses a significant threat to the public and the tree is six inches in diameter or greater, measured 4.5 feet from the ground. The current eligibility requirements for such hazardous trees according to FEMA Publication 104-009-2 are:

- The tree has a broken canopy;
- The tree has a split trunk;
- The tree is leaning at an angle greater than 30 degrees.

HHW – The RCRA defines hazardous wastes as materials that are ignitable, reactive, toxic or corrosive. Examples of HHW include items such as paints, cleaners, pesticides, etc. Due to the nature of hazardous waste certified technicians must be used to handle, capture, recycle, reuse, and dispose of hazardous waste. The eligibility criteria for HHW are as follows:

- HHW must be located within a designated disaster area and be removed from an eligible applicant’s improved property or ROW;
- HHW removal must be the legal responsibility of the applicant; and

- HHW must be a result of the major disaster event.

Monitoring Firm – The monitoring firm is an organization under contract with the City to monitor debris removal operations. The monitoring firm ensures the debris removal contractor is working within the scope of work contracted by the City and documents debris removal operations.

Robert T. Stafford Disaster Relief and Emergency Assistance Act – Provides the authorization of the PA Program. The fundamental provisions of this act are as follows:

- Assigns FEMA the authority to administer federal disaster assistance;
- Defines the extent of coverage and eligibility criteria of the major disaster assistance programs;
- Authorizes grants to the states; and
- Defines the minimum federal cost-sharing levels.

SRIA of 2013 – The law authorizes changes to the way FEMA may deliver federal disaster assistance to survivors. Key provisions of the act are as follows:

- Provides substantially greater flexibility in use of federal funds and less administration burden if applicants accept grants based on fixed capped estimates, which may be provided by applicants' licensed engineer and validated by independent expert panel.
- Offers a package of cost share adjustments, reimbursement for force account, and retention of program from recycling to speed debris removal and encourage pre-disaster debris planning.
- Allows PA applicants for all disasters declared on or after October 30, 2012 an option to request binding arbitration for certain projects with an amount in dispute of over \$1 million after first appeal, instead of pursuing a second appeal under FEMA's PA Program.

Vegetative Debris – As outlined in FEMA Publication 104-009-2, vegetative debris consists of whole trees, tree stumps, tree branches, tree trunks and other leafy material. Vegetative debris will largely consist of mounds of tree limbs and branches piled along the public ROW by residents and volunteers. Current eligibility criteria include:

- Debris must be located within a designated disaster area and be removed from an eligible applicant's improved property or ROW;
- Debris removal must be the legal responsibility of the applicant; and
- Debris must be a result of a presidentially declared major disaster event.

White Goods – White goods are defined as discarded household appliances such as refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, and water heaters. White goods can contain ozone-depleting refrigerants, mercury or compressor oils that the federal Clean Air Act prohibits from being released into the atmosphere. The Clean Air Act specifies that only certified technicians can extract refrigerants from white goods before they can be recycled. The eligibility criteria for white goods are as follows:

- White goods must be located within a designated disaster area and be removed from an eligible applicant's improved property or ROW;
- White goods removal must be the legal responsibility of the applicant; and
- White goods must be a result of the major disaster event.