HAYWARD

Disaster Debris Management Plan

2025

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In collaboration with:

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ACRONYMS AND ABBREVIATIONS

ACM	asbestos-containing materials
CalEPA	California Environmental Protection Agency
CalOES	California Governor's Office of Emergency Services
C&D	construction and demolition material
CDAA	California Disaster Assistance Act
CY	cubic yards
DDMP	Disaster Debris Management Plan
EMP	Emergency Management Plan
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Plan
HAZMAT	hazardous materials
HFD	Hayward Fire Department
HHW	household hazardous waste
LRP	Local Resilience Plan
NGO	Non-governmental organization
NIMS	National Incident Management System (NIMS)
NRF	National Response Framework
OA	Operational Area
RCRA	Resource Conservation and Recovery Act
SEMS	Standardized Emergency Management System
TDMS	Temporary Debris Management Sites
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency

1.0 INTRODUCTION AND OVERVIEW

The City of Hayward (the "City"), located within the Greater San Francisco Bay area, features rolling hills and a beautiful shoreline. Like all communities, the City also has predictable vulnerability to disasters. A recent update to the City's Local Resilience Plan (LRP) describes this vulnerability and places high priority on emergency management planning. Recognizing that debris removal operations have accounted for approximately 27 percent of nationwide disaster recovery costs in recent years, the City has developed this Disaster Debris Management Plan (DDMP).

This DDMP provides the City's guidelines for conducting the clean-up, removal, transport, reduction, and final disposal of disaster-generated debris in compliance with environmental requirements and cost recovery procedures. Most disaster debris management activities are implemented at the local level. This DDMP presents methods by which disaster debris management can be coordinated citywide. The purpose of the Hayward DDMP is to develop a coordinated approach for managing disaster-related debris generated in Hayward.

All communities can benefit from the lessons learned in other local jurisdictions and apply the state and federal standards that have been developed from those lessons learned through planning and preparing. By planning ahead, disaster-related waste can be managed in a manner that protects the environment, maximizing recycling options and minimizing landfilling of debris.

In the United States, the Federal Emergency Management (FEMA) National Preparedness Goal, and the National Response Framework (NRF) establish mission areas and a set of core capabilities that recognize and standardize what must be achieved during disasters to save lives, protect property and the environment, and preserve the social, economic, cultural, and political structure of impacted communities. This DDMP focuses on disaster debris management operations in support of the response and recovery mission areas and their associated core capabilities (Figure 1).

There are two major phases to debris operations – the initial response phase and the recovery phase. The response phase occurs during and immediately after an event. The recovery phase includes clearing emergency access routes and the major debris removal and disposal operations. It involves moving debris to temporary storage sites for volume reduction, or to landfills for permanent disposal. The DDMP addresses how response to and recovery from a debris-generating incident will be coordinated at the local level. The DDMP conforms to the State of California's Standardized Emergency Management System (SEMS) and current U.S. Environmental Protection Agency (EPA) guidance.

Figure 1: NRF Mission Areas, Core Capabilities

(source: FEMA, 2023)

The DDMP is a management document intended to be read and understood before an emergency occurs. The content herein outlines the potential activities of all City Departments to conduct disaster debris management operations in alignment with state and federal statutes, regulations, and policies at the time of plan development.

This DDMP is divided into the following sections:

- Section 2 – Methodology. This section describes the process through which the DDMP was developed and will be updated.
- Section 3 – Guidance Documents and Regulatory Requirements. Section 3 lists the guidance documents that provide the framework for the DDMP.
- Section 4 – Roles and Responsibilities. This section describes the roles, responsibilities, and actions that local, state, and federal agencies, and other organizations will fulfill to perform or support debris management operations.
- Section 5 – Debris Management Procedures, including debris streams and materials, estimating quantities, recovery operations, and transportation. Section 5 also covers establishment of temporary or long-term sites for debris storage.
- Section 6 – Special Debris Programs describes private property debris removal and the removal of hazardous trees, which may be required following some disasters.
- Section 7 – Debris Waste Characterization discusses debris waste sampling and analysis that would be required to properly characterize debris for appropriate reuse or disposal.
- Section 8 – Finance and Accounting. This section identifies the basic accounting and recordkeeping requirements needed to qualify for reimbursement by state or federal emergency funds for disaster debris diversion.

- Section 9 – Community Outreach. This section outlines the plan for developing a City education and public information program regarding disaster debris management.
- Section 10 – Plan Maintenance and Training. The needs for plan updates, and pre-disaster training for the debris management team are discussed in this section.

Sources utilized in preparation of this DDMP are provided in the list of references (Section 11).

2.0 METHODOLOGY

This DDMP was prepared in conjunction with the update of the City's Emergency Management Plan. The DDMP was developed using a comprehensive engagement and subject matter expert consultation strategy to develop content to ensure accuracy and applicability. The Hayward Fire Department (HFD) acted as the lead agency in developing the DDMP through collaboration between Ganey Science (consultant) and representatives from City Fire Rescue, Public Works and Maintenance Services. This strategy included meetings among HFD, its consultant, and key stakeholders from other City Departments. Feedback from this team guided the framework of the plan. The resulting information, refined with extensive research of state and federal regulations, policies, and plans, resulted in the procedures outlined in this plan.

2.1 PLANNING ASSUMPTIONS

Planning assumptions for debris management take into consideration the following ideas:

- A substantial volume of debris will be generated by a disaster impacting the City.
- Initial emergency response will require debris clearance coordination with a focus on critical transportation corridors and nodes.
- Critical infrastructure damage assessment and restoration will depend on a prioritized debris clearance approach.
- A significant incident will also impact surrounding jurisdictions; competition for resources with other jurisdictions will impact debris management capabilities.
- Estimation of likely debris volumes. Appendix A provides debris estimates and resource requirements for high probability/vulnerability incident types.
- Temporary Debris Management Sites (TDMS) will need to be established in accordance with applicable environmental protection regulations. These, and other TDMS considerations are described in Appendix B.
- Disasters result in large expenditures for labor, equipment, materials, and supplies.
- Federal disaster assistance. Federal disaster assistance (FEMA Public Assistance) will require the City to identify and report damages to FEMA within the 60-day regulatory timeframe.

California Environmental Protection Agency (CalEPA) Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions Pursuant to a State and Local Emergency Proclamation is provided in Appendix C.

2.2 DEBRIS MANAGEMENT STRATEGIES

Debris management strategies generally align with those in the Alameda County Operational Area and include the following:

- The quantity of disaster-related debris that is diverted and disposed of will be measured and recorded;
- The repair of damaged structures is preferred over demolition; and

- For the replacement of an existing structure damaged in a disaster, the use of disaster debris will be promoted for its reconstruction.

2.3 PLAN MAINTENANCE

For this Plan to maintain viability, the document will be updated regularly, and personnel should be trained on the content prior to a disaster. 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.

The City 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.

3.0 GUIDANCE DOCUMENTS AND REGULATORY REQUIREMENTS

3.1 SEMS

The SEMS is California's emergency response system. It began in 1993, in response to the state's frequent hazard threats. The National Incident Management System (NIMS) mirrors SEMS for use nationwide. The objective of SEMS is to improve the coordination of state and local emergency response. All local governments must use SEMS in multi-jurisdictional or multiagency emergency responses to be eligible for state reimbursement of response-related personnel costs. Section 3 describes roles and responsibilities for disaster debris management by the City, Operational Area, State, Federal government, the private sector and non-profit sector within the SEMS structure.

3.2 NIMS

NIMS guides all levels of government, non-governmental organizations (NGOs), and the private sector to work together to prevent, protect against, mitigate, respond to, and recover from incidents. This system provides disaster response and recovery teams nationwide with shared vocabulary systems and processes to guide operations.

3.3 CALIFORNIA DISASTER RECOVERY FRAMEWORK

The California Disaster Recovery Framework establishes the overall disaster recovery strategy for the State of California. This framework guides how state entities organize, operate, and utilize existing resources to promote effective recovery to support local government. It also provides an overarching framework to assist local and tribal governments, the private sector, NGOs, and other emergency managers to plan for and execute disaster recovery operations in California. The CDRF is also a resource for how to access anticipated state and federal disaster assistance programs following ad disaster.

3.4 ALAMEDA COUNTY EMERGENCY OPERATIONS PLAN

The Alameda County Emergency Operations Plan provides an overview of the jurisdiction's approach to emergency operations. It identifies emergency response policies, describes the response and recovery organization, and assigns specific roles and responsibilities to County departments, agencies, and community partners. The Plan has the flexibility to be used for all emergencies and is intended to facilitate response and recovery activities efficiently and effectively. This Plan is also a reference for managers from other local governments in the Operational Area, including Hayward.

3.5 HAYWARD EMERGENCY MANAGEMENT PLAN

This DDMP is a part of the City's Emergency Management Plan (EMP), and the authorities, policies and procedures described in the latest version of the EMP apply to debris management, too.

4.0 ROLES AND RESPONSIBILITIES

Disaster recovery efforts begin at the local level at the City of Hayward and the leadership roles for disaster debris management and functional area leads for recovery tasks are listed in this section. Disasters of higher magnitude may require supplemental state or federal assistance. This section describes the relevant responsibilities of applicable government agencies, as well as the roles of the private sector, NGOs, and local residents.

4.1 CITY ROLES

NIMS identifies four standardized positions to be designated with authority and responsibility for disaster debris planning and operations. The City adopts the use of the following positions as described below and shown in Table 11.

Debris Operations Officer NIMS ID 7-509-1347

Activates the DDMP and 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; and
- Reimbursement.

Debris Planning Officer NIMS ID 7-509-1348

The Debris Planning Officer establishes the DDMP, 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; and
- 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; and
- 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; and

The following personnel are the current officials in these roles and should be notified in the case of an incident:

Table 1. Hayward Debris Operations Officials

Position	Primary Contact	Secondary Contact	Tertiary Contact
Debris Operations Officer	Jeff Krump 908-506-8268	Erik Pierson 510-299-5490	Rod Affonso 510-677-0428
Debris Planning Officer	Rich Nield 510-385-1068	John Sanders 510-681-9592	Dave Jackson 510-385-1070
Debris Supervisor	Randy Nunes 209-834-7152	Mike Stotts 510-882-4928 (work) 510-909-4242 (personal)	J.C. Oliva 415-513-926*
Debris Technical Specialist	Brian Figuroa 510-381-3097	Andrew Tapia 510-468-7337	Armondo Quintaro 510-690-3964

The City also assigns responsibility to the following Departments/functional areas in support of the DDMP:

Public Works Department

- Serves as the Debris Operations Officer;
- Activates and implements the City's DDMP;
- Conducts damage assessments and estimates debris totals;
- Oversees debris operations including internal resources and contracted services;
- Coordinates with local, state, and federal agencies regarding regulatory requirements for debris operations;
- Coordinates with the Operational Area (OA), i.e., Alameda County. and other City Departments as needed for debris operations support;
- Obtains approval from regulatory agencies for TDMS;

- Provides situational updates on debris operations to the local Emergency Operations Center (EOC);
- Maintains documentation for federal disaster assistance for debris operations;
- Ensures compliance with federal disaster assistance programs for debris removal; and
- Reviews the DDMP annually.

City Administration

- Makes policy-level decisions related to debris operations; and
- Provides 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/Fire Department

- Coordinates the preparation, review, and update of the jurisdiction's DDMP.
- Provides emergency services at TDMS in the event of a fire.

Finance and Purchasing

- Understands current federal disaster assistance program guidance and regulations related to debris operations;
- Manages documentation for federal reimbursement for debris operations;
- Coordinates with public works and purchasing to obtain force account labor, equipment, and overtime documentation related to debris removal operations for potential federal reimbursement;
- Audits purchase orders and documents, general ledger entries, cash receipts, and payroll documents related to debris removal operations;
- Manages and audits contractor invoices for payment;
- Provides support to procure goods and services for debris removal operations;
- Coordinates with finance and administration to ensure disaster debris services are procured following local, state, and federal procurement regulations;
- Reviews and updates emergency procurement policies as necessary following an emergency;
- Assists with the documentation of debris operations for potential federal reimbursement; and
- Supports audit and closeout of debris projects.

Code Enforcement

- Enforces nuisance abatement codes;
- Documents nuisance abatement cases to support private property debris removal; and
- Maintains awareness of TDMS and operations.

Planning Department

- Provides GIS data to appropriate agencies and vendors for debris removal operations, which may include road lists, data on historical properties, debris estimates, and land ownership.
- Establishes debris estimates using U.S. Army Corps of Engineers (USACE) HAZUS software for planning purposes.

Health Services

- Determines debris that poses an imminent threat to public health and safety; and
- Provides documentation regarding health and safety issues to support debris operations.
- Provides recommendations for health and safety procedures for debris operations; and
- Coordinates 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.

Law Enforcement

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

Legal Services

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

Public Information Officer

- Coordinates with public works and emergency management to develop public information messages related to debris operations;
- Provides press releases related to debris removal operations, set out procedures and citizen debris drop-off locations; and
- Provides timely information regarding debris operations in accessible formats.

4.2 OPERATIONAL AREA

An Operational Area (OA) means an intermediate level of the state emergency services organization, consisting of a county and all political subdivisions within the county area. The OA for Hayward is Alameda County. The OA was established by a January 1995 Agreement for Participation in Alameda County Operational Area Emergency Management Organization. All the cities in the county including Hayward are participants in this Agreement (Alameda County Waste Management Authority, which has the following responsibilities during an emergency:

- Implement OA Emergency Response Plan;
- Establish and maintain the Operational Area Emergency Operations Center (EOC);
- Coordinate the utilization of County, other local government, state and federal resources within the OA; and
- 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 EOC; and
- 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.

4.3 STATE ROLES

State agencies provide regulatory guidance and technical assistance for debris operations. Roles and responsibilities of State agencies involved in debris operations are as follows:

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY (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).

CALIFORNIA OFFICE EMERGENCY SERVICES (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.

4.4 FEDERAL ROLES

Federal agencies support debris operations by providing disaster assistance funding, regulatory oversight and technical assistance. An overview of the roles and responsibilities of federal agencies involved in debris operations follows:

FEMA

- Provide technical assistance for debris operations.
  - Environmental and historical preservation review process.
  - Public assistance grant program reimbursement process.
  - Procurement assistance.
- Make 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.

USACE

- 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.

4.5 PRIVATE BUSINESS/COMMERCIAL SECTOR

Private businesses will have a very large role in managing mass debris operations. The City does not have enough internal resources to conduct debris operations during a widespread event without the use of contracted service providers. The roles and responsibilities of private sector businesses for debris operations is described here.

WASTE MANAGEMENT (FRANCHISED HAULER)

- Collect, transfer, transport, process, and divert organic materials within the City.
- Collect, transfer, transport, and dispose of solid waste generated within the City.
- Collect, transport, and transfer recyclable materials generated within the City.

DEBRIS HAULING FIRMS

In the event the scope of debris collection operations is beyond the capabilities of the City, state, and mutual aid resources, it may be necessary to contract for labor and equipment. The City will use its purchasing policies in coordination with federal contracting guidance to establish a contract with one or more debris hauling firms to assist with debris collection and disposal. Responsibilities of a debris hauling firm will include the following:

- Clear and remove debris from City 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 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, hanging limbs and 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.
  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 FIRMS

- 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.

4.6 NON-PROFIT SECTOR

The City will partner with nonprofit and volunteer organizations to provide assistance to individuals with disabilities and/or access and functional needs. The City will ask that non-profit sector entities coordinate with jurisdictions to ensure their efforts are conducted in coordination with jurisdiction objectives. In addition, the City 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 health and safety policies. 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 City to identify vulnerable populations and incorporate strategies to assist these populations in local DDMPs.
- Coordinate with City and volunteer organizations post-disaster to assist individuals with disabilities and access and functional needs with debris to the public right-of-way (ROW) collection area.
- Coordinate with City 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.

RESIDENTS

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

- 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 household hazardous waste to citizen drop-off locations.
- Use caution when operating equipment and dangerous machinery.
- Help others who may need assistance with debris removal.

Appendix D provides health and safety messages for use by the City Public Information Officer.

5.0 DEBRIS MANAGEMENT OPERATIONS

Debris management operations includes the steps to plan for, remove, and dispose of disaster-generated debris. This section provides information regarding types of debris materials, collection and disposition.

5.1 MATERIALS AND DEBRIS STREAMS

Various types of disaster-generated debris require distinct removal practices, transportation methods, and final disposal locations to minimize environmental impacts and protect public health and safety. The separation of types of materials in transportation and processing is referred to as debris/waste streams. In classifying waste streams, it must be determined whether a material is waste, reusable, or recyclable. Table 2 shows the various debris types typical to disaster waste streams.

Table 2. Disaster Debris Types

Debris Type	Description	Disposal Options
Vegetative debris	Whole trees, tree stumps, tree branches, tree trunks, and other leafy material	Recyclable wood, (chipping or mulching for compost or erosion control). Wood materials can be sold to lumber mills, firewood providers, or biomass to energy facilities, or taken to a landfill
Soil, mud, sand	These materials are often deposited by floods, landslides, and storm surges	Contaminated materials: Class I/II Landfill. Non-contaminated materials: Class III Landfill
Sandbags	Used to protect against flooding may be contaminated with pollutants from flooded sewage treatment plants, pesticides, herbicides, and other chemicals	Contaminated materials: Class I/II Landfill. Non-contaminated materials: Class III Landfill
Construction and demolition material	May include disaster-damaged building materials and damaged contents	Treated Wood Waste: Class I Landfill (unless re-regulated to permitted lined Class 2 Landfills). Concrete rubble can be recycled/ disposed of at a landfill. Wood material can be sold for reuse, recycling, or taken to a landfill

Debris Type	Description	Disposal Options
Utility systems/electrical waste	May include utility poles, wiring, conduit, and other items from power lines, computers, TV, cell phones, batteries and other electrical equipment	Consolidated at landfill
Household hazardous waste	Includes paints, solvents, cleaning supplies, insecticides, pool chemicals, propane, gasoline, oils, and other residential chemicals.	Segregated for appropriate disposition to Class II or III landfills
Hazardous waste	Waste with properties that make it potentially harmful to human health or the environment. Hazardous waste is regulated under Resource Conservation and Recovery Act	Processed to consolidate like materials near the operation then disposed of at a Class I Landfill
White goods	Include washers, dryers, freezers, clothes dryers, and stoves. Any refrigerants in these materials must be removed by certified technicians	Once hazardous chemicals are removed from white goods, they can be recycled as metal
Vehicles and vessels	Automobiles, farm equipment, trailers, boats	Must perform State vehicle identification and remove hazardous chemicals
Putrescent Debris	Carcasses of domestic and wild animals and other fleshy organic matter	Class III landfill
Chemical, Biological (Infectious), Radiological, Nuclear	Contaminated by chemical, biological, radiological, or nuclear materials	Contaminated: Class I/II Landfill. Non-contaminated: Class III Landfill

5.2 DEBRIS QUANTITIES

Estimating the quantities of debris that may be generated by various natural or man-made disasters is a complex analysis. There are multiple variables (type of incident, severity, location, etc.) that can dramatically affect the quantities of debris that may be generated by a disaster. Appendix A provides debris estimates and resource requirements for those scenarios identified in the City LRP as high probability/vulnerability incident types.

METHODS FOR ESTIMATING ACTUAL DEBRIS QUANTITIES DURING/AFTER A DISASTER

Debris estimates are based on a series of assumptions and should not be considered as the actual volumes following a disaster event. 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 USEPA recommends the Incident Waste Decision Support Tool (I-WASTE DST) for estimating debris volume (http://www2.ergweb.com/bdrtool/login.asp).

FEMA's Hazards U.S.-Multi-Hazard (Hazus-MH) model can be used for estimating potential losses from earthquakes, floods, and hurricanes (http://www.fema.gov/hazus). ArcGIS software is required to use Hazus-MH). FEMA also provides guidance on debris estimation in their publication titled Debris Estimating Field Guide (FEMA 329) https://www.fema.gov/sites/default/files/2020-07/fema_329_debris-estimating_field-guide_9-1-2010.pdf.

The assumptions used in all of these debris estimation models include:

- 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)

5.3 DEBRIS MANAGEMENT PROCEDURES

INITIAL RESPONSE

Immediately following a debris-generating incident, debris managers will initiate emergency roadway clearance to ensure the movement of emergency response vehicles, allow for access to and assessment of high priority critical infrastructure, and open evacuation routes. Debris managers will work with fire rescue and law enforcement to establish a prioritization scheme and will request support from power company representatives to ensure crew safety.

The City will use city owned resources to conduct emergency roadway clearance; if the scope of work for this stage requires more resources, the City will contract for services, or request additional resources through the OA.

SHORT-TERM 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, the City will continuously evaluate their capacity to conduct debris removal operations internally using force account equipment and labor, using mutual aid or by using contracted services. The City will also assess their capacity to conduct special debris programs and will identify the need for guidance and assistance with those activities that exceed local capability. Other tasks during short-term recovery include:

- Open TDMS locations.
- Establish segregation criteria.
- Establish decontamination procedures for trucks, equipment and personnel.
- Establish monitoring procedures and responsibilities.
- Prioritize support to roads/areas.
- Issue press releases regarding segregation of debris.
- Begin ROW debris removal.
- Begin environmental monitoring program of TDMS.
- Coordinate with mutual aid and contracted services providers.
- Obtain FEMA guidance for procurement and special debris programs.
- Obtain CalOES/CalEPA direction on state policies and regulations.

INTERMEDIATE RECOVERY

Intermediate recovery includes activities that 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 county, 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.

5.4 DEBRIS COLLECTION AND DISPOSITION

In the interest of conserving landfill capacity and reducing solid waste disposal, disaster-related debris should be recycled to the greatest extent possible and/or centrally held until it can be processed for maximum recycling.

Mixed debris collection is more convenient and allows all debris types to be delivered to a specific collection area (e.g., curbside or community collection centers), while source-segregated requires residents to sort the debris themselves. Collection types for a specific disaster should be determined during debris management planning following a disaster.

5.5 TEMPORARY DEBRIS MANAGEMENT SITES

A TDMS allows for the temporary staging, separation, reduction, and processing of disaster-generated debris when transport directly to an end-use facility is not immediately possible. TDMS serve a critical role in supporting the City's waste reduction, goals.

TDMS locations will require approval from the Alameda County Department of Environmental Health, CalRecycle and 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 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 Alameda Environmental Health and appropriate local land use and other jurisdictional agencies.
- Environmental permits and land-use variances may be required during removal operations for TDMS.

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; and
- Fire department permits.

In November 2023 planning meetings the City's debris management professionals identified preliminary locations considered to be suitable and well positioned for use as potential debris

management sites. Figure 2 shows the map used during the planning meetings to discuss and select TDMS. Debris management sites include:

- Debris staging and storage (short-term and long-term) locations; and
- Equipment staging and storage (short-term and long-term) locations

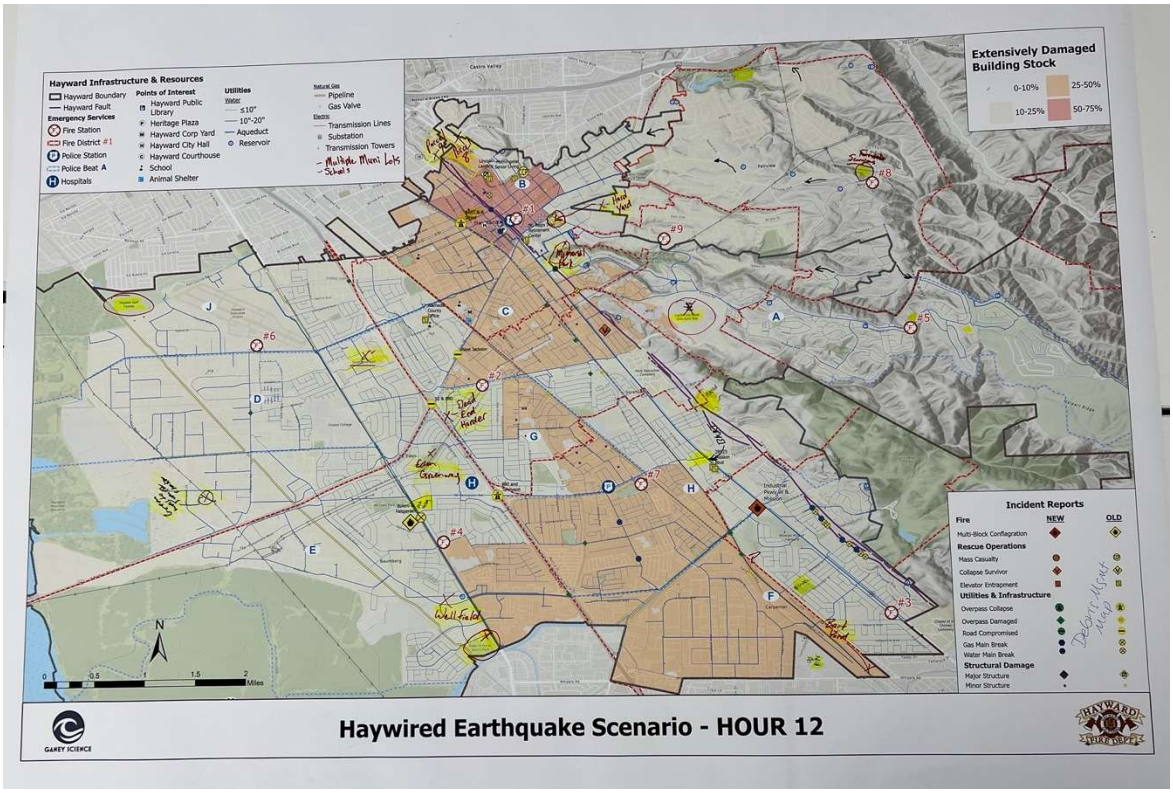

Figure 2: Potential Debris Management Sites

City owned equipment is stored and staged at the Corporation Yard located at:

24505 Soto Road
Hayward, CA 94544

Decontamination and treatment stations and waste management facilities had not yet been identified at the time of this DDMP and will be inserted into the next update of the Plan.

5.6 TRANSPORTATION

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; and
- Sketch/photo of the vehicle.

5.7 MONITORING OF DEBRIS OPERATIONS

The City 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. 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.

Disposal monitoring will be performed to document the disposal of disaster debris at approved TDMS locations and final disposal or end use locations. Monitors will 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.

6.0 SPECIAL DEBRIS PROGRAMS

6.1 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, CalOES 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.

The City will seek 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.

6.2 HAZARDOUS 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.

Removing a hazardous tree may be eligible for FEMA 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 (4.5 feet from the ground on the high side) of six inches or greater; and the tree:

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

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.

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 funds removal of broken limbs or branches located on private property if:

- 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.

A tree 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.

7.0 DEBRIS WASTE CHARACTERIZATION

Two different types of sampling may be needed to meet waste acceptance criteria at waste management facilities and to allay community concerns:

1) Sampling to classify and determine compliance with federal, state, local, or tribal regulatory criteria, and

2) Sampling to ensure that waste/materials have been effectively decontaminated.

The City will make all reasonable attempts to take the appropriate number of representative samples from the waste stream where it is expected to exhibit the average properties of the whole. The City will coordinate with Alameda County (the OA), CalOES and CalEPA to identify laboratories to support sample analysis and to establish sample quantities and procedures.

The City will rely on available laboratories identified by CalEPA or CalOES to conduct analysis of samples, and will rely on guidance from CalEPA to establish quality assurance procedures.

8.0 FINANCE AND ACCOUNTING

8.1 COST TRACKING AND REPORTING

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, the City will begin tracking costs once the threat has been identified. If there is no warning, The City will 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; and
    - Site inspection records.

The City will coordinate with state and federal agencies to obtain disaster-specific cost tracking spreadsheets and templates.

8.2 FUNDING SOURCES FOR DISASTER DEBRIS OPERATIONS

FEMA Public Assistance

The Stafford Act constitutes the statutory authority for most federal disaster response activities, especially as they pertain to FEMA and FEMA programs. The federal government provides several assistance programs through various agencies to support debris operations.

The mission of the FEMA Public Assistance Grant Program is to provide assistance to State and local governments and certain private nonprofit 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 Public Assistance Program. The Program also encourages protection of these damaged facilities from future events by providing assistance for hazard mitigation measures during the recovery process.

The FEMA Public Assistance 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 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.

The policy guidance for these assistance programs changes and adapts with lessons learned from each disaster across the United States. The City will maintain awareness of current federal assistance program guidance and regulations related to disaster debris federal funding programs.

California Disaster Assistance Act

The State can provide additional assistance through the California Disaster Assistance Act (CDAA). 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. The CDAA provides regulatory guidance for three components of disaster finance and administration; emergency work, emergency protective measures, and debris removal.

CDAA Regulations, Section 2925 state that 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.

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 and Farm Services Agency Emergency Programs.

8.3 PROCUREMENT REQUIREMENTS

USE OF FORCE ACCOUNT RESOURCES

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. The City will document the pre-existing condition for any equipment used for debris operations and determine if equipment is appropriate for debris operations. The City will provide training to personnel that will be involved in debris operations, to include those responsible for tracking costs.

USE OF PROCUREMENT AND CONTRACTED SERVICES

The City may find it necessary to contract for debris management services if operational needs exceed their force account resources, or if it is otherwise determined that securing contracted services is in their best interest. 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. The City may also need to implement its emergency procurement procedures during a disaster debris management incident.

The City 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.

In the event that The City 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.

9.0 COMMUNITY OUTREACH

Public information following a disaster will be a coordinated effort in accordance with the principles of SEMS. 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 City 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; and
- The status of garbage pickup.

The City's public information professionals will monitor public and media comments and correct any misinformation that could result in confusion among the general public and hinder debris operations.

As part of ongoing updates to the DDMP the City intends develop education and information programs that provide consistent messaging designed to familiarize people with their role in the diversion and disposal of debris wastes. The public information and education campaign will include press releases and public service announcements, social media posts, postings and storage of information at the City Library, and other methods deemed appropriate to maximize receipt of information by City residents.

10.0 TRAINING

10.1 TRAINING

Personnel must be trained on debris policies and procedures to maintain a viable plan. The City will maintain an ongoing training and exercises program, which. will include debris operations training and exercises. The following provides recommendations for debris operations training:

The City will 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 Public Assistance Program.
- All personnel involved in response to a debris-generating incident should participate in a briefing on safety policies and procedures.

Individuals identified as debris managers will 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; and
- 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 – 0632a 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.

Finance and administration staff responsible for documenting and tracking costs and activities will be trained in regulatory requirements for debris operations including procurement, Federal disaster grant programs, and 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.

10.2 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.

11.0 AUTHORITIES AND REFERENCES

LOCAL AUTHORITIES

- Hayward Emergency Operations Plan, 2023
- Hayward Local Resilience Plan Update, 2023
- Hayward Solid Waste Authority Ordinance No. 97-01 Regulating Solid Waste, Green Waste And Recyclable Material Collection, Processing, Disposal And Litter[10]
- Hayward, CA 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
- Hayward Solid Waste Authority Ordinance No. 19-1, An ordinance amending the construction and demolition debris program ordinance.

STATE AUTHORITIES

- Joint Exercise of Powers Act: Government Code § 6500 et seq.
- California Disaster Assistance Act (CDAA), Title 19, California Code of Regulations
  - Section 2920 – Emergency Work
  - Section 2930 – Emergency Protective Measures
  - Section 2925 – Debris Removal
- California Environmental Protection Agency (CalEPA) Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions Pursuant to a State and Local Emergency Proclamation, Appendix C
- California Governor's Office of Emergency Services Debris Management Plan
- 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 AUTHORITIES

- Clean Air Act, 42 U.S.C. § 7401 et seq.
- 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
- 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.

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U.S. Department of Homeland Security FEMA. 2020. Public Assistance Program and Policy Guide. Available at https://www.fema.gov/sites/default/files/documents/fema_pappg-v4-updated-links_policy_6-1-2020.pdf.

U.S. Department of Homeland Security FEMA. 2021. FEMA Debris Monitoring Guide. Available at https://www.fema.gov/sites/default/files/documents/fema_debris-monitoring-guide_sop_3-01-2021.pdf.

APPENDIX A – DEBRIS ESTIMATION (HAZUS)

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.

Table A.1. Concord-Green Valley Fault Earthquake Debris Estimate

Jurisdiction	Type 1 Debris (CY)	Type 2 Debris (CY)	Total (CY)	DMS Acres Needed	Trucks Needed	Personnel (Debris Monitors)
Hayward, CA	10,131.62	2,905.08	13,036.70	1	3	1

Notes:
CY – Cubic Yards
Type 1 Debris – Brick, wood, and other debris in CY
Type 2 Debris – Wrecked reinforced concrete and steel members

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).

Table A-2. 10% Flooding Debris Estimate

Jurisdiction	10% Annual Flood in Cubic Yards	DMS Acres Needed	Trucks Needed	Personnel (Debris Monitors)
Hayward, CA	180	5	1	1

SEVERE WEATHER EVENT SCENARIO ASSUMPTIONS AND DEBRIS ESTIMATE

The City 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 The City 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 the City could experience in a severe weather incident.

- USACE formula: Q=H(C)(V)(B)(S)

Where:

Q = 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 A-3. Severe Weather Debris Estimates

Jurisdiction	Households	Debris Estimate (CY)	C&D (CY)	Vegetative (CY)	DMS Acres Needed	Trucks Needed	Personnel (Debris Monitors)
Hayward, CA	15,959	59,750	17,925	41,825	5	10	5

Notes:
CY – Cubic Yards

WILDFIRE SCENARIO ASSUMPTIONS AND DEBRIS ESTIMATE

Portions of The City are susceptible to a wildfire incident. Using data from past California wildfire incidents compiled by consultants to the state, a formula was used 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 A-4. Wildfire Debris Estimates

Jurisdiction	Parcels at Risk	Debris Estimate (CY)	DMS Acres Needed	Trucks Needed	Personnel (Debris Monitors)
Hayward	322	80,135	5	12	6

Notes:
CY – Cubic Yards

APPENDIX B – TEMPORARY DEBRIS MANAGEMENT SITE (TDMS) CONSIDERATIONS

TDMS IDENTIFICATION AND PREPARATION

Concurrent to emergency roadway clearance and damage assessments, affected jurisdictions need to identify and prepare TDMS locations. The purpose of a 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 several potential TDMSs in The City. These will be further vetted and included in the next version of the DDMP. 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.

The City 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 The Alameda County Environmental Health Department and 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 Alameda County Health Department and appropriate local land use and other jurisdictional agencies.
Environmental permits and land-use variances may be required during removal operations for TDMS(s). Selection of sites may require review and approval under the California Environmental Quality Act.

Permits may include:

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

APPENDIX C – CALEPA DEBRIS REMOVAL GUIDANCE

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. 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; and
- Pool chemicals.

The following standard procedures are recommended by CalEPA:

- 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 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 cowel 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, 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 (PM2.5 or PM10) should be equal to or less than 35 $\mu g/m^3$; 8-hr averages should be equal to or less than 50 $\mu g/m^3$; and, 3hr averages should be equal to or less than 88 µg/m.

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 the City. The city will ensure that guidelines in accordance with 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:

1. FEMA initiates the Section 106 consultation process
2. 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)
3. 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.
4. 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.

APPENDIX D – PUBLIC INFORMATION HEALTH AND SAFETY CONSIDERATIONS

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.

Household Hazardous Waste - 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.