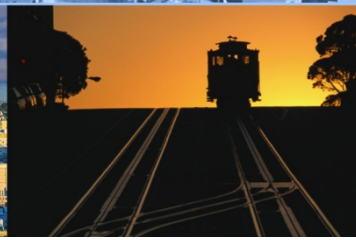
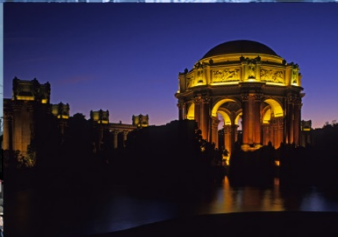




# City and County of San Francisco

## Disaster Debris Management Plan

An Element of the CCSF Emergency Management Program





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## SECTION 1: CRITICAL ACTION GUIDE

The Critical Action Guide is a tear-away resource for City and County of San Francisco (CCSF or the city) emergency services personnel responding in a debris-producing disaster impacting the city. The section includes:

- An overview of debris incident response and recovery phases (see Section 1.1, below).
- An overview of debris coordination and management responsibilities at the Emergency Operations Center (EOC), San Francisco Public Works (SFPW) Department Operations Center (DOC), and among other city departments and special districts (see Section 1.2, below).
- Debris Event Task Lists outlining important steps that must be taken or considered to successfully coordinate disaster debris (see Section 1.3, below).
- A roles and responsibilities table listing general duties of each CCSF department or partner with debris-related obligations (see Section 1.4, below).

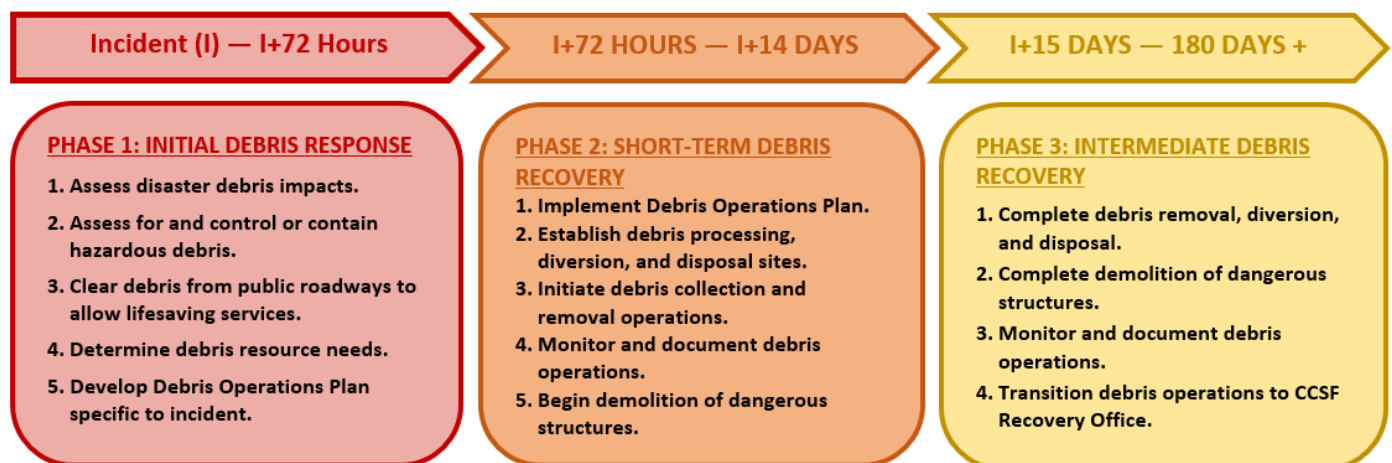
### 1.1 Debris Incident Response and Recovery Phases

Figure 1.1, below, provides a summary of the overall steps that must be addressed during debris incident response and recovery, as more fully explained in Section 4.3, below. The Disaster Debris Management Plan addresses the three phases shown below:

- Phase 1, Initial Debris Response, from the incident to incident plus 72 hours;
- Phase 2, Short-Term Debris Recovery, from incident plus 72 hours to incident plus 14 days; and
- Phase 3, Intermediate Debris Recovery, from incident plus 15 days to incident plus 180 days.

The time frames of each phase are approximations. Actual time frames for each phase may vary in an actual incident, and may also overlap. For task lists containing important steps that should be taken or considered during each phase to successfully manage and coordinate disaster debris, see Section 1.3, below.

Figure 1.1. Debris Incident Response and Recovery Phases





## 1.2 Overview of Debris Management and Coordination Responsibilities

Figure 1.2, below, outlines the overall disaster debris management and coordination responsibilities as envisioned by the Disaster Debris Management Plan. In general:

- All CCSF departments and special districts have responsibility for managing debris impacting their facilities and properties as department or district resources permit.
- The SFPW DOC is primarily responsible for managing disaster debris clearance, collection, removal, diversion, and disposal.
- The San Francisco EOC Debris Coordination Unit provides information and resource coordination and support, and acts as a liaison to local, regional, state, and federal debris partners.

**Figure 1.2. CCSF Debris Management and Coordination Responsibilities**

<b>SAN FRANCISCO EOC</b> Debris Coordination Unit	<b>SFPW DOC</b> Roadway Clearance and Route Recovery Group & Debris Management Group	<b>ALL CCSF DEPARTMENTS AND SPECIAL DISTRICTS</b>
<ul style="list-style-type: none"> <li>• Work with Policy Group to establish citywide debris objectives.</li> <li>• Gather and share information on debris impacts and status of debris response and recovery efforts.</li> <li>• Provide support to SFPW DOC in managing disaster debris.</li> <li>• Obtain, allocate, and monitor use of resources needed for debris operations.</li> <li>• Act as liaison between CCSF and local, regional, state, federal, and non-governmental partners.</li> </ul>	<ul style="list-style-type: none"> <li>• Implement citywide debris objectives.</li> <li>• Manage safe, timely, effective disaster debris clearance, collection, removal, diversion, and disposal.</li> <li>• Mitigate potential threats to health and safety of residents, responders, and others posed by disaster debris.</li> <li>• Ensure debris response and recovery efforts meet applicable legal requirements.</li> </ul>	<ul style="list-style-type: none"> <li>• Assess debris impacts to department facilities, structures, and property.</li> <li>• Provide debris impact information to DOC or to EOC if department has no DOC.</li> <li>• Manage disaster debris affecting department facilities and infrastructure as resources allow.</li> <li>• Assign, monitor, and document force account and contract labor costs for debris activities.</li> </ul>

For further discussion of debris coordination and management, see Section 4, below. For task lists outlining important steps to be taken or considered during each phase to successfully manage and coordinate disaster debris, see Section 1.3, below. For a table showing debris-related roles and responsibilities of CCSF departments and partner organizations, see Section 1.4, below.

## 1.3 Debris Operations Plan Development Process Overview

Figure 1.3, below, provides a graphic overview of the process to be used by the SFPW DOC in developing the Disaster Operations Plan (Debris OP) specific to the disaster. The Debris Op outlines the manner in which CCSF will manage disaster debris from collection through disposal. The SFPW DOC Debris Management Group Supervisor is responsible for overseeing development of the Debris OP, which must be approved by the SFPW Director and the EOC Policy Group. For further discussion of the Debris OP, see Section 4.4, below.

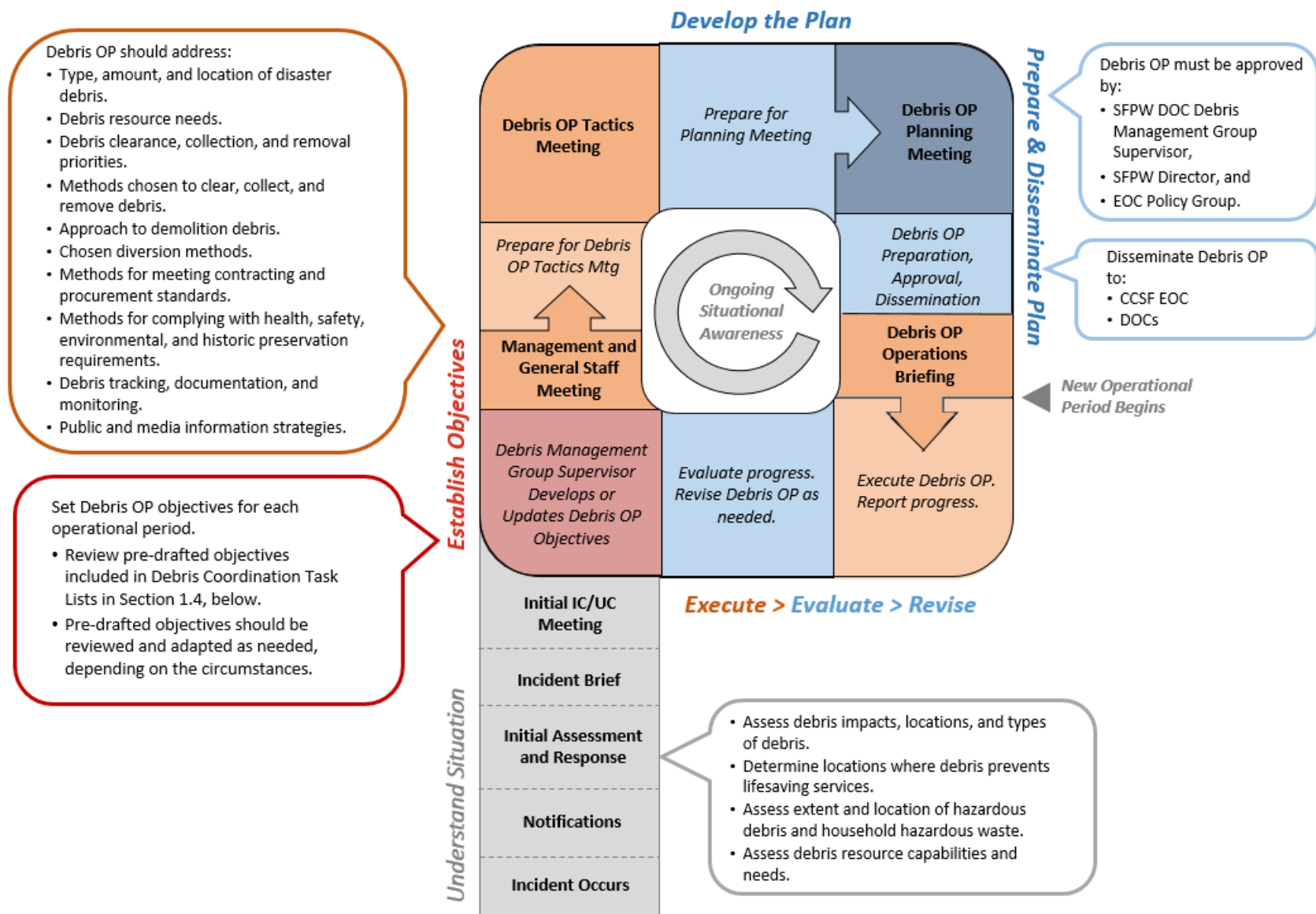




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Figure 1.3. Debris Operations Plan Planning Process





## 1.4 Debris Coordination Task Lists

The task lists below were developed for a large debris-producing incident impacting San Francisco. There is a separate task list for a natural hazard (Section 1.4.1) and for a terrorist incident (Section 1.4.2). Task lists are intended to serve as a guide for emergency management officials at the EOC and DOC level in responding to debris issues after a major debris-producing incident. The lists should be adapted depending on the circumstances presented by the incident, including time for response, safety considerations, and available resources. In addition, though each task is numbered, some tasks may be performed concurrently or in a different order, depending on the needs of the situation.

### 1.4.1 Natural Hazard

This task list covers actions to consider during response and recovery phases following a major debris-producing incident involving a natural hazard such as a severe earthquake. The time periods associated with each phase are approximations. Actual incidents will likely vary. In addition, the tasks listed below must be adapted to reflect conditions presented by the actual incident.

#### 1.4.1.1 PHASE 1: INITIAL DEBRIS RESPONSE (INCIDENT (I)—I+72 HOURS)

PHASE 1: INITIAL DEBRIS RESPONSE (I—I+72 HOURS)						
<b>OBJECTIVES</b>						
<ol style="list-style-type: none"> <li>1. Assess debris impacts, locations, and types of debris affecting the city.</li> <li>2. Assess extent and location of hazardous debris and initiate action to control or contain the hazards.</li> <li>3. Clear disaster debris from public roadways and other public areas to allow movement of emergency vehicles providing lifesaving services.</li> <li>4. Determine debris resource needs and initiate steps to obtain needed resources.</li> <li>5. Develop a Debris Operations Plan specific to the incident.</li> </ol>						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	NOTES/RESOURCES
1	Activate the San Francisco Emergency Operations Center (EOC) Debris Coordination Unit (DCU).	DEM or SFPW	CON, DPH, SFE, SFPW	4.2.3-4.2.4, 4.3.1	3, 5	<ul style="list-style-type: none"> <li>– Appendix D: EOC Debris Coordination Position Checklists</li> <li>– Appendix E: Debris-Related Essential Elements of Information</li> </ul>
2	Activate the San Francisco Public Works (SFPW) Department Operations Center (DOC) Debris Management Group (DMG).	SFPW	CON, DEM, DPH, SFE	4.2.3-4.2.4, 4.3.1	3, 5	<ul style="list-style-type: none"> <li>– Appendix D: EOC Debris Coordination Position Checklists</li> <li>– Appendix E: Debris-Related Essential Elements of Information</li> </ul>



<b>PHASE 1:</b> <b>INITIAL DEBRIS RESPONSE (I–I+72 HOURS)</b>						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	NOTES/RESOURCES
3	Determine road clearance priorities and share with field clearance personnel and EOC. Review each operational period.	SFPW DOC Roadway Clearance and Route Recovery Group (RCRRG)	DEM, CHP, Caltrans, SFFD, SFPD	5.3	1, 3, 5	– Appendix B-14, SFPW Windshield Survey Routes
4	Deploy Windshield Survey Teams to assess roads for debris and damage; status of utilities, major external building damage, and other impacts; and report on findings.	SFPW DOC Incident Communications Center	DEM, DBI, GSA, Port, SFFD, SFPD, SFPUC, SFO, CHP, Caltrans	4.5.3.2, 5.3	1, 3, 5	– Appendix B-14, SFPW Windshield Survey Routes
5	Deploy Safety Assessment Teams to inspect for debris and building and infrastructure damage; share results with SFPW DOC and EOC DCU.	SFPW DOC Safety & Structural Assessment Group	DEM, DBI, DPH, GSA, SFFD	4.5.3.2	3, 5, 10	– <u>Appendix to ESF #3: Post Disaster Safety Assessment Guide</u>
6	Initiate tracking of all costs related to debris work, including: <ul style="list-style-type: none"> <li>• Force account time and labor, force account equipment, rented equipment, contracted services, and materials.</li> <li>• Mutual aid time and labor.</li> </ul>	CON	SFPW, all supporting departments operating in the field	4.6.4.5	3, 5	
7	Share validated information on disaster debris impacts with DOC or, if department has no DOC, with CCSF EOC. DOCs then share debris information with CCSF EOC.	All CCSF departments	SFPW, DEM	4.5	3, 5, 12	– Appendix E: Debris-Related Essential Elements of Information
8	Assemble debris information from other DOCs and departments without DOCs and share it with SFPW DOC.	DEM	SFPW DOC DMG	4.5	3, 5, 12	– Appendix E: Debris-Related Essential Elements of Information



<b>PHASE 1:</b> <b>INITIAL DEBRIS RESPONSE (I-I+72 HOURS)</b>						
	<b>ACTION</b>	<b>INITIATING ENTITY</b>	<b>KEY STAKEHOLDERS</b>	<b>DEBRIS PLAN SECTION</b>	<b>ESF #</b>	<b>– NOTES/RESOURCES</b>
9	Maintain situational awareness and a common operating picture of debris impacts and operations.	SFPW DOC DMG, DEM	SFE, DPH, SFFD, SFPD	4.5	3, 5, 12	– Appendix E: Debris-Related Essential Elements of Information
10	Develop initial estimate of amounts, types, and locations of disaster debris.	SFPW DOC DMG	DEM, DBI, DPH, GSA	4.5.4	3, 12	– FEMA <a href="#">Debris Estimating Field Guide</a> – Appendix B: Maps – Appendix C: Debris Forecast Methodology
11	Request debris-related assistance from state and federal stakeholders in the form of mission tasking (state) and mission assignments (federal), as needed.	SFPW DOC request to EOC DCU	SFPW DOC DMG, Cal OES, FEMA, USACE, USCG, US EPA	4.6.7	3, 5, 7	– State Mission Tasking: Section 4.6.7.1 – Federal Mission Assignments: Section 4.6.7.2
12	If needed, request formation of Interagency Debris Management Task Force (IDMTF) to facilitate interagency cooperation during debris response and recovery efforts; ensure CCSF participation in IDMTF.	SFPW DOC DMG request to EOC DCU	DEM, SFPW DOC DMG, Policy Group, Cal OES	4.2.5.3	3, 5	
13	Assess debris for presence of hazardous materials, household hazardous waste (HHW), and other toxic materials; initiate actions to contain and remove hazardous or toxic debris.	SFFD, EOC Land-Based Oil & Haz-Mat Response Unit	DPH, SFPW, DBI, GSA, Port, SFO, BAAQMD, Cal OES, CAB, CalEPA, DTSC, FEMA, USACE, USCG, US EPA	11.3.4, 12, 6.5	3, 8, 10, 12	– Appendix O: Health and Safety Best Practices – <a href="#">ESF #10, Oil and Hazardous Materials Response Annex</a>
14	Before handling or disposing of hazardous materials, contact appropriate federal and state agencies to identify legal requirements that apply if not suspended or waived under emergency proclamation; obtain required waivers or permits as needed.	SFPW DOC DMG Health & Safety Unit	DPH, SFE, Cal OES, FEMA	11.3.4.2	3, 8, 10, 12	– Appendix O: Health and Safety Best Practices – <a href="#">ESF #10, Oil and Hazardous Materials Response Annex</a>





<b>PHASE 1:</b> <b>INITIAL DEBRIS RESPONSE (I-I+72 HOURS)</b>						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	– NOTES/RESOURCES
15	Ensure appropriate certified hazardous waste specialists capture, recycle, reuse, or dispose of hazardous materials.	EOC Land-Based Oil & Haz-Mat Response Unit	DPH, SFE, Cal OES, FEMA	11.3.4.2	3, 8, 10, 12	<ul style="list-style-type: none"> <li>– Appendix O: Health and Safety Best Practices</li> <li>– <u>ESF #10, Oil and Hazardous Materials Response Annex</u></li> <li>– All hazardous material/waste haulers must possess Hazardous Substance Removal Certification from Contractors State License Board and all other required certifications and insurance.</li> </ul>
16	Determine methods for emergency clearance of debris on public roadways.	SFPW DOC RCRRG	DEM, DPH, SFFD, SFPD	4.2.4.1, 5.2	1, 3, 7, 12	
17	Determine debris collection priorities during response and recovery phase operations.	SFPW DOC Debris Collection Unit	DEM, DBI, DPH, SFE	6.4	3, 5, 8, 10	
18	Determine debris removal priorities during response and recovery phase operations.	SFPW DOC Debris Removal Unit (DRU)	DEM, DBI, DPH, SFE, CON, Port	6.4, 6.5	3, 5, 8, 10, 12	
19	Determine methods needed for collecting and removing debris.	SFPW DOC Debris Collection Unit & DRU	DEM, DBI, DPH, SFE, Port	6.4, 6.5	3, 5, 8, 10, 12	
20	Develop approach for safe and efficient demolition of public and private buildings that cannot be repaired.	SFPW DOC Demolition Unit	DBI, SFE, DPH, SFFD, SFPD	4.3.2, 6.5.6	3, 5	
21	Develop health and safety protocols for personnel participating in debris operations.	SFPW DOC Health and Safety Unit	DPH	11.2.2.1	3, 5	– Appendix O: Health and Safety Best Practices



<b>PHASE 1:</b> <b>INITIAL DEBRIS RESPONSE (1-1+72 HOURS)</b>						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	NOTES/RESOURCES
22	Assess debris resource capabilities and obtain needed resources, including debris facilities, through contracts, mutual aid, volunteers, and logistics requests.	SFPW DOC DMG	DEM, CON, DPH, OCA, Port, SFFD, SFMTA, SFPD, SFPUC, SFO	4.6	3, 5, 7, 12	<ul style="list-style-type: none"> <li>Appendix F: Force Account Equipment List</li> <li>Appendix G: Prequalified Debris Contractors</li> <li>FEMA <i>Public Assistance Program and Policy Guide</i> (PAPPG)</li> <li>Public Works Mutual Aid Agreement, <a href="http://www.ladpw.org/dsg/pwmaa/">http://www.ladpw.org/dsg/pwmaa/</a></li> <li>ESF #7, Logistics Annex</li> </ul>
23	If applicable, prepare for processing of large numbers of decedents, including preparing or requesting temporary mortuary and storage facilities.	OCME	SFPW	13.2.2.3	7, 13	OCME Mass Fatality Incident Response and Management Plan
24	Establish or request OCME facility security and credentialing systems to limit entry to OCME facility.	OCME	SFPW, SFPD, SFSO	13.2.2.3	7, 13	OCME Mass Fatality Incident Response and Management Plan
25	Check status of Public Assistance Alternative Procedures (PAAP) Pilot Program; make recommendation to SFPW DOC Commander, DEM Executive Director and Controller regarding CCSF participation.	SFPW DOC DMG	DEM & CON (principal agents); OCA, Policy Group	4.7	3, 5, 14	<ul style="list-style-type: none"> <li>PAAP Information: <a href="http://www.fema.gov/alternative-procedures">http://www.fema.gov/alternative-procedures</a></li> <li>Appendix L: FEMA PAAP Pilot Program</li> <li>Consider participating in all Pilot Programs <u>EXCEPT</u> increased cost share/accelerated debris removal.</li> </ul>
26	Determine scope of participation in PAAP; file Acknowledgement Form with FEMA.	DEM & CON	SFPW, SFE, OCA	4.7, Appendix L	3, 5, 14	Appendix L-2: Public Assistance Alternative Procedures Pilot Program for Debris Removal Acknowledgment Form
27	Determine extent of CCSF's capability to divert disaster debris from landfills and methods for addressing diversion capability shortfalls.	SFPW DOC Diversion/Management Site Unit	DEM, DPH, SFE	8.5, 8.6, 9.2.1, 9.2.2.1	3, 5, 8	
28	Determine extent of CCSF's capability to dispose of disaster debris that cannot be diverted, and methods for addressing disposal capability shortfalls.	SFPW DOC DRU	DEM, DPH, SFE	9.2.2.1	3, 5, 8	



<b>PHASE 1:</b> <b>INITIAL DEBRIS RESPONSE (I-I+72 HOURS)</b>						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	NOTES/RESOURCES
29	Begin emergency clearance of disaster debris from public roadways and other public areas within CCSF control.	SFPW DOC RCRRG	DEM, DPH, SFFD, SFPD	4.2.4.1, 5.2	1, 3, 12	
30	Ensure debris clearance crews avoid blocking sidewalks, curb ramps, and other critical pathways whenever possible.	SFPW DOC RCRRG	MOD, SFFD, SFPD	4.8.3	1, 3	
31	If needed, request federal or state assistance in performing debris clearance on federal or state roads through REOC or SOC.	SFPW DOC RCRRG request to EOC DCU	SFPW, CHP, Caltrans	5.5	1, 3	
32	Procure debris-related contract resources as needed, abiding by local, state, and federal requirements whenever possible.	SFPW DOC DMG, all procuring departments	DEM, CON, OCA	4.6.4.3, 5.8, 6.10.1	3, 5, 7	<ul style="list-style-type: none"> <li>– <b>CAUTION:</b> Procurement not meeting federal, state, and local requirements is ineligible for Public Assistance reimbursement.</li> <li>– <u>FEMA Procurement Guidance Under 2 C.F.R. Part 200</u></li> </ul>
33	Submit requests for needed debris resources that cannot be filled by CCSF department to EOC DCU.	All impacted departments	DEM, CON, SFPW	4.6.5	3, 5, 7	<ul style="list-style-type: none"> <li>– Appendix F: Force Account Equipment List</li> <li>– Appendix G: Prequalified Debris Contractors</li> <li>– ESF #7, Logistics Annex</li> </ul>
34	Submit resource requests for needed debris resources, including facilities, to EOC Logistics Section.	EOC DCU	EOC Logistics, CON, SFPW	4.6.5	3, 5, 7	<ul style="list-style-type: none"> <li>– Appendix F: Force Account Equipment List</li> <li>– Appendix G: Prequalified Debris Contractors</li> <li>– ESF #7, Logistics Annex</li> </ul>
35	Request deployment of FEMA Procurement Disaster Assistance Team to provide training on federal procurement standards.	SFPW DOC request to EOC DCU	SFPW, CON, OCA, FEMA (Region IX)	4.6.4.3	3, 5	<ul style="list-style-type: none"> <li>– <u>FEMA Procurement Guidance Under 2 C.F.R. Part 200</u></li> </ul>
36	Develop debris-related public information strategy for the incident.	SFPW DOC Public Outreach Unit	EOC JIS, EOC PIO, 311	14.3.3.2	3, 5, 14	



<b>PHASE 1:</b> <b>INITIAL DEBRIS RESPONSE (I-I+72 HOURS)</b>						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	NOTES/RESOURCES
37	Develop Debris Operations Plan for specific incident debris, including: <ul style="list-style-type: none"> <li>• Debris resource needs.</li> <li>• Debris clearance, collection, and removal priorities.</li> <li>• Demolition debris approach.</li> <li>• Chosen methods for clearing, collecting, and removing debris.</li> <li>• Chosen methods for diverting debris.</li> <li>• Debris tracking, documentation, and monitoring systems to be used.</li> <li>• Health and safety protocols.</li> <li>• Public and media information strategy.</li> </ul>	SFPW DOC	DEM, Policy Group	4.3.2, 4.4, 5.3-5.4, 6.4, 6.5.6, 7.4, 8.2, 9.2.1, 11.2.2.1, 14.3.3.2	3, 5, 10, 12	– Contents of Debris Operations Plan: Section 4.4.3
38	Consider needs of people with disabilities and access and functional needs in designing debris clearance, collection, diversion, and removal programs.	SFPW DOC	MOD, DEM, DPH	4.8	3, 5, 6	
39	Begin sharing public information on disaster debris impacts, the city's response, and how public can assist.	SFPW DOC Public Outreach Unit, EOC JIC	DEM, EOC PIO, 311, DPH, SFE, RPD	14.3.3.3, 14.3.3.4	3, 5, 14	– Appendix H: Public Information Materials
40	Ensure debris public messaging is accessible to all members of the public, including people with disabilities and access and functional needs.	SFPW DOC Public Outreach Unit, EOC JIC	EOC PIO and JIC, 311, DPH, MOD	14.3.3.4	3, 5, 14	– Appendix H: Public Information Materials
41	Develop and disseminate general health and safety protocols for all personnel performing debris work.	SFPW DOC Health & Safety Unit	DPH	11.3	3, 5, 8, 10	– Appendix O: Health and Safety Best Practices
42	Develop and disseminate site-specific health and safety plans for each debris management site.	SFPW DOC Health & Safety Unit	DPH	11.3.2.2	3, 5, 8, 10	– Appendix O: Health and Safety Best Practices



<b>PHASE 1:</b> <b>INITIAL DEBRIS RESPONSE (I-I+72 HOURS)</b>						
	<b>ACTION</b>	<b>INITIATING ENTITY</b>	<b>KEY STAKEHOLDERS</b>	<b>DEBRIS PLAN SECTION</b>	<b>ESF #</b>	<b>– NOTES/RESOURCES</b>
43	Ensure debris personnel wear appropriate personal protective equipment (PPE) at all times.	SFPW DOC Health & Safety Unit	DPH	11.3.2.2	3, 5, 8, 10	– Appendix O: Health and Safety Best Practices
44	Ensure personnel serving as field safety monitors for personnel performing debris work receive appropriate training and supervision.	SFPW DOC Health & Safety Unit	DPH	11.3	3, 5, 8, 10	– Appendix O: Health and Safety Best Practices
45	Ensure compliance with monitoring of all debris work performed by contractors.	SFPW DOC DMG	DEM, CON, Cal OES, FEMA	6.8, 8.7, 8.8, 9.4, 10.4.1, 10.5	3, 5	– Appendix N: Debris Monitoring Checklists and Sample Forms
46	Ensure compliance with documentation requirements.	SFPW DOC DMG	DEM, CON, Cal OES, FEMA	5.9, 10.3.2, 10.9	3, 5	– Appendix N: Debris Monitoring Checklists and Sample Forms
47	Ensure compliance with environmental, and historic preservation (EHP) requirements, including: <ul style="list-style-type: none"> <li>• Identifying possible EHP issues early on.</li> <li>• Quickly notifying EOC DCU, Cal OES, and FEMA of potential EHP issues.</li> <li>• Providing Cal OES and FEMA with information needed for EHP review.</li> <li>• Maintaining EHP documentation.</li> </ul>	SFPW DOC DMG Legal Permit/ Review Unit	DPH, SFE, Cal OES, CalEPA, SHPO, FEMA, US EPA	6.10.2, 11, 12.2.3, 12.2.4	3, 5, 8, 10	– <b>CAUTION:</b> Failure to comply with EHP requirements may result in delay or loss of Public Assistance funding and in civil or criminal penalties. – Appendix O: Health and Safety Best Practices – <u>FEMA, Unified Federal EHP Review Guide</u>





#### 1.4.1.2 PHASE 2: SHORT TERM DEBRIS RECOVERY (I+72 HOURS—I+14 DAYS)

<b>PHASE 2:</b> <b>SHORT TERM DEBRIS RECOVERY (I+72 HOURS—I+14 DAYS)</b>						
<b>OBJECTIVES</b>						
<b>1. Implement the Debris Operations Plan developed for the specific incident.</b> <b>2. Establish debris processing, diversion, and disposal sites.</b> <b>3. Initiate debris collection operations.</b> <b>4. Monitor and document debris collection activities to ensure compliance with all federal, state, and local requirements.</b> <b>5. Begin the process for condemning and demolishing dangerous structures.</b>						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	NOTES/RESOURCES
1	Begin implementation of Debris Operations Plan.	SFPW DOC DMG	DEM, PPH, SFE, RPD, CON, OCA	4.4	3, 5, 7, 10	
2	Complete emergency debris clearance operations.	SFPW DOC	DEM, SFFD, SFPD, DPH	4.2.4.1, 5	3, 5, 12	
3	Contain and begin removal of hazardous and toxic debris and HHW.	SFFD, DPH	SFPW, DBI, GSA, Port, SFO, SFPUC, BAAQMD, Cal OES, CAB, CalEPA, DTSC, FEMA, USACE, USCG, US EPA	11, 12	3, 5, 10	<ul style="list-style-type: none"> <li>– Appendix O: Health and Safety Best Practices</li> <li>– <u>ESF #10, Oil and Hazardous Materials Response Annex</u></li> <li>– All hazardous material/waste haulers must possess Hazardous Substance Removal Certification from California Contractors State License Board (1 800-321-2752 or <a href="http://www.cslb.ca.gov">http://www.cslb.ca.gov</a>), and all other required certifications and insurance.</li> </ul>
4	Determine whether private property debris removal is needed; if so, <i>obtain Cal OES and FEMA approval before performing work.</i>	SFPW DOC DMG	DEM, City Attorney (CAT), CON, DPH, SFE	6.4, 6.5, 6.5.4	3, 5, 8, 10	<ul style="list-style-type: none"> <li>– <b>CAUTION:</b> This includes collecting debris from public right-of-way fronting apartments and condominiums.</li> <li>– Appendix K: Private Property Debris Removal Forms</li> </ul>
5	Obtain and establish debris facilities as set forth in Debris Operations Plan, including existing debris processing centers and temporary debris management sites (TDMS).	SFPW DOC DMG	DEM, DPH, SFE	4.4, 7, 5.4, 6.4, 7.4, 8.2, 8.5, 8.6	3, 5	<ul style="list-style-type: none"> <li>– Appendix I: Debris Transfer, Processing, Diversion, and Disposal Facilities</li> <li>– Appendix M: Temporary Debris Management Site Information</li> </ul>



<b>PHASE 2:</b> <b>SHORT TERM DEBRIS RECOVERY (I+72 HOURS—I+14 DAYS)</b>						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	NOTES/RESOURCES
6	If needed, seek expansion of existing facilities to handle increased amounts of debris.	SFPW DOC DRU	DEM, DPH	4.2.4.4, 7.4.1, 7.4.2, 8, 9	3, 5	
7	If needed, issue emergency waivers to CCSF solid waste facility operators for temporary relief from state minimum solid waste standards or terms or conditions of facility permits.	SFPH LEA	SFPW, DEM	9.5	3, 5, 7, 8	
8	Initiate debris collection activities as provided in Debris Operations Plan.	SFPW DOC DMG	DEM, DPH, SFE, RPD	4.4, 6	3, 5, 6, 7	
9	Responders finding deceased persons at an incident site should follow protocols for handling of human remains, including: <ul style="list-style-type: none"> <li>• Notification of OCME.</li> <li>• Cover and treat deceased with respect, as resources and situation permit.</li> <li>• Escort Medical Examiner to remains for documentation and collection.</li> <li>• Medical Examiner or lead law enforcement agency must approve moving deceased.</li> </ul>	SFPW, SFFD, SFPD	OCME, DPH	13.2.2.3, 13.3.3	8, 13	<ul style="list-style-type: none"> <li>– OCME Mass Fatality Incident Response and Management Plan</li> <li>– San Francisco Emergency Medical Services Agency Mass Casualty Plan</li> </ul>
10	Ensure personnel handling human remains have access to critical incident stress management programs providing psychological and emotional support.	OCME	DHR, SFPW	13.3.2.2	8, 13	<ul style="list-style-type: none"> <li>– CDC, <a href="#"><u>“Interim Health Recommendations for Workers Who Handle Human Remains After a Disaster”</u></a></li> </ul>
11	Address needs of people with disabilities and access and functional needs during debris collection and removal.	SFPW DOC DMG	MOD, DEM, DPH	4.8	3, 5, 6	



<b>PHASE 2:</b> <b>SHORT TERM DEBRIS RECOVERY (I+72 HOURS—I+14 DAYS)</b>						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	NOTES/RESOURCES
12	Disseminate public information on city's debris collection, removal, and diversion process and how public can assist. Provide status updates as needed.	SFPW DOC DMG	DEM PIO and JIC, 311, DPH, SFE, RPD	6.4.3, 14.3.4	3, 5, 8, 15	– Appendix H: Public Information Materials
13	Provide information to link people with disabilities or access and functional needs with volunteer organizations available to assist with private property debris work.	SFPW DOC DMG	MOD, DEM PIO and JIC, 311, DPH	4.8, 6.5.7, 14.3.3.4	3, 5, 6, 15	– Appendix H: Public Information Materials
14	If applicable, prepare for processing of large numbers of decedents, including preparing or requesting temporary mortuary and storage facilities.	OCME	SFPW, DPH	13.2.2.3	8, 13	– OCME Mass Fatality Incident Response and Management Plan
15	Establish or request OCME facility security and credentialing systems to limit entry to OCME facility.	OCME	SFPW, DPH	13.2.2.3	8, 13	– OCME Mass Fatality Incident Response and Management Plan
16	Recover human remains resulting from incident.	OCME	SFPW, DPH	13.2.2.3	8, 13	– OCME Mass Fatality Incident Response and Management Plan
17	Coordinate transport of human remains from incident scene to OCME facilities.	OCME	SFPW, DPH	13.2.2.3	8, 13	– OCME Mass Fatality Incident Response and Management Plan
18	Track personal property associated with human remains and provide accounting of valuable items.	OCME	SFPW, SFPD, SFSO	13.2.3.5	3, 13	– OCME Mass Fatality Incident Response and Management Plan
19	Identify deceased persons and prepare death certificates.	OCME	SFPW, DPH	13.2.2.3	8, 13	– OCME Mass Fatality Incident Response and Management Plan
20	Determine when personal property found at scene is cleared for release to owners or can be managed as disaster debris.	OCME	SFPW	13.2.3.4	3, 13	– OCME Mass Fatality Incident Response and Management Plan



<b>PHASE 2:</b> <b>SHORT TERM DEBRIS RECOVERY (I+72 HOURS—I+14 DAYS)</b>						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	NOTES/RESOURCES
21	Ensure compliance with monitoring of all debris collection performed by contractors.	SFPW DOC DMG	DEM, CON, Cal OES, FEMA	6.8, 8.7, 8.8, 9.4, 10.4.1, 10.5	3, 5	– Appendix N: Debris Monitoring Checklists and Sample Forms
22	Ensure compliance with documentation requirements.	SFPW DOC DMG	DEM, CON, Cal OES, FEMA	10.3.2, 10.9	3, 5	– Appendix N: Debris Monitoring Checklists and Sample Forms
23	Ensure compliance with health and safety, environmental, and historic preservation (EHP) laws requirements.	SFPW DOC DMG Legal Permit/Review Unit	DPH, SFE, Cal OES, CalEPA, SHPO, FEMA, US EPA	6.10.2, 11, 12.2.3, 12.2.4	3, 5, 8, 10	– Appendix O: Health and Safety Best Practices – <u>FEMA, Unified Federal EHP Review Guide</u>
24	Maintain and share debris documentation with FEMA Public Assistance staff.	CON	SFPW, DEM, Cal OES, FEMA	10.9	3, 5	– FEMA <i>Public Assistance Program and Policy Guide</i> (PAPPG)

#### 1.4.1.3 PHASE 3: INTERMEDIATE DEBRIS RECOVERY (I+15 DAYS—I+180 DAYS OR MORE)

<b>PHASE 3:</b> <b>INTERMEDIATE DEBRIS RECOVERY (I+15 DAYS—I+180 DAYS OR MORE)</b>						
<b>OBJECTIVES</b> 1. Complete debris removal, diversion, and disposal operations. 2. Monitor and document debris removal, diversion, disposal, and other operations to ensure compliance with all federal, state, and local legal requirements. 3. Complete demolition of dangerous structures. 4. Transition debris-related operations to the CCSF recovery office to continue coordinating debris recovery, if needed.						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	NOTES/RESOURCES
1	Begin removal of debris from public right of way (ROW) and other public property.	SFPW DOC DMG	DEM, DPH, SFE, RPD, SFO, SFPUC	6.4, 6.6, 6.7	3, 5, 12	



<b>PHASE 3:</b> <b>INTERMEDIATE DEBRIS RECOVERY (I+15 DAYS—I+180 DAYS OR MORE)</b>						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	NOTES/RESOURCES
2	If needed and pre-approved by Cal OES and FEMA, begin removal of debris from private property.	SFPW DOC	DEM, DPH, SFE, Policy Group	6.5	3, 5	– Appendix K: Private Property Debris Removal Forms
3	Complete removal of hazardous and toxic debris and HHW.	SFFD, DPH	SFPW, DBI, GSA, Port, SFE, SFO, BAAQMD, Cal OES, CAB, CalEPA, DTSC, FEMA, USACE, USCG, US EPA	11.3.4.2 12	3, 5, 10	– Appendix O: Health and Safety Best Practices – <u>ESF #10, Oil and Hazardous Materials Response Annex</u>
4	Ensure compliance with applicable federal and state laws and regulations for transporting disaster debris.	SFPW DOC DMG	DEM, DPH, Cal OES, FEMA	6.7.2, 11, 12	3, 5, 12	
5	Address needs of people with disabilities and access and functional needs during debris removal.	SFPW DOC DMG	MOD, DEM, DPH	4.8	3, 5, 6	
6	Disseminate public information on city's debris diversion and removal process and how public can assist. Provide status updates as needed.	SFPW DOC DMG	DEM PIO and JIC, 311, DPH, SFE, RPD	3, 5, 14.3.4	3, 5, 8, 15	– Appendix H: Public Information Materials
7	Provide information to link people with disabilities or access and functional needs with volunteer organizations available to assist with private property debris removal.	SFPW DOC DMG	MOD, DEM PIO and JIC, 311, DPH	4.8, 6.5.7, 14.3.3.4	3, 5, 6, 15	– Appendix H: Public Information Materials
8	Demolish unsafe facilities or infrastructure as requested by DBI.	SFPW DOC Demolition Unit	DBI, SFE, DPH, SFFD, SFPD	4.3.2, 6.5.6	3, 5	
9	Complete removal of disaster debris from public areas and from private areas as approved by Cal OES and FEMA.	SFPW DOC DRU	DEM, Cal OES, FEMA	6	3, 5, 8, 12	



<b>PHASE 3:</b> <b>INTERMEDIATE DEBRIS RECOVERY (I+15 DAYS—I+180 DAYS OR MORE)</b>						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	NOTES/RESOURCES
10	Complete diversion of disaster debris.	SFPW DOC DRU	DEM, Cal OES, FEMA	7	3, 5	
11	Complete disposal of debris that cannot be diverted.	SFPW DOC DRU	DEM, Cal OES, FEMA	9	3, 5	
12	Ensure compliance with requirements for monitoring of debris work performed by contractors.	SFPW DOC DMG	DEM, CON, Cal OES, FEMA	6.8, 8.7, 8.8, 9.4, 10.4.1, 10.5	3, 5	– Appendix N: Debris Monitoring Checklists and Sample Forms
13	Ensure compliance with debris documentation requirements.	SFPW DOC DMG	CON, Cal OES, FEMA	10.3.2, 10.9	3, 5	– Appendix N: Debris Monitoring Checklists and Sample Forms
14	Ensure compliance with health and safety, environmental, and historic preservation (EHP) laws, regulations, and other requirements.	SFPW DOC DMG Legal Permit/Review Unit	DPH, SFE, Cal OES, CalEPA, SHPO, FEMA, US EPA	6.10.2, 11, 12.2.3, 12.2.4	3, 5, 8, 10	– Appendix O: Health and Safety Best Practices – <u>FEMA, Unified Federal EHP Review Guide</u>
15	Maintain and share debris documentation with FEMA Public Assistance staff.	CON	SFPW, DEM, Cal OES, FEMA	10.9	3, 5	– FEMA <i>Public Assistance Program and Policy Guide</i> (PAPPG)
16	On closure of CCSF EOC, transition disaster debris operations to the recovery office for continued coordination, as needed.	CCSF EOC, SFPW DOC	DEM, DBI, DPH, SFE, Cal OES, FEMA	4.2.3.1, 4.2.3.2	3, 5, 14	
17	Demobilize debris operations in CCSF EOC or recovery office once debris work is completed.	CCSF EOC, SFPW DOC	DEM, DBI, DPH, SFE, Cal OES, FEMA	4.2.3.1, 4.2.3.2	3, 5, 14	

### 1.4.2 Terrorist Incident

This task list covers actions to consider during response and recovery phases following a major debris-producing incident involving a human-caused disaster such as a terrorist incident. The tasks listed below are largely *in addition* to those set forth in Section 1.3.1, above. Time periods associated with each phase are approximations. Actual incidents will vary. In addition, the tasks listed below must



be adapted to reflect conditions presented by the actual incident.

#### 1.4.2.1 PHASE 1: INITIAL DEBRIS RESPONSE (INCIDENT (I)—I+72 HOURS)

PHASE 1: INITIAL DEBRIS RESPONSE (I—I+72 HOURS)						
<b>OBJECTIVES</b> 1. Establish and secure the incident site. 2. Determine if hazardous materials are present. 3. Contain and properly handle hazardous materials. 4. Treat incident site as a crime scene. 5. Perform search and rescue for possible victims.						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	NOTES/RESOURCES
1	Lead law enforcement agency assumes Incident Commander role.	SFPD or FBI	SFPW, SFSO	13.2.2	13	– FBI is lead investigative agency for crimes involving terrorist activities inside US. – Once on scene, FBI San Francisco Office assumes lead authority for investigation.
2	Establish and secure incident site perimeter and control access to site, including: <ul style="list-style-type: none"> <li>Ensuring debris personnel have appropriate badging and credentials to enter incident site.</li> <li>Establishing secure points of ingress and egress for debris haulers and other debris-related vehicles.</li> </ul>	SFPD, FBI	SFPW	13.2.2.2, 13.2.2.4	13	
3	Determine if incident site presents chemical, biological, radiological, or nuclear safety issues and identify contaminants.	FBI	SFFD	13.2.3.2	10, 13	
4	Develop and implement site-specific health and safety plan regarding decontamination requirements; handling, movement, and disposal of hazardous debris; and required PPE.	FBI	SFFD, DPH	13.2.3.2	10, 13	– Appendix O: Health and Safety Best Practices
5	Initiate search and rescue efforts.	FBI	SFFD, DPH	13.2.2.2	9, 13	





<b>PHASE 1: INITIAL DEBRIS RESPONSE (1–1+72 HOURS)</b>						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	NOTES/RESOURCES
6	Determine if on-site processing of incident debris is feasible. If not, secure off-site processing center for incident debris.	FBI, SFPW	SFPD, DPH	13.2.2.4	3, 13	
7	Establish and maintain chain of custody for all debris evidence.	FBI	SFPW, SFPD, FBI	13.2.2.4, 13.2.3	3, 13	
8	Initiate collection, preservation, and documentation of evidence, including incident debris.	FBI, SFPD	SFPW, FBI	13.2.2.2	3, 13	
9	If off-site processing is needed, arrange secure transport of debris evidence to off-site location for sorting, processing, and investigation.	FBI, SFPW DOC DMG	SFPD	11.3.4.2, 13.2.2.4, 13.2.3.2	3, 13	NOTE: If hazardous debris will be transported to an off-site location for processing and investigation, off-site facility must approve receipt and be appropriate for storing hazardous materials.
10	Ensure hazardous debris is appropriately contained before transport from the inner perimeter.	FBI, SFPW DOC DMG	SFPD	13.2.3.2	3, 13	
11	Ensure security detail is assigned to accompany all debris transports from initial site to any off-site processing facility.	FBI, SFPW DOC DMG	SFPD	13.2.2.2, 13.2.2.4	3, 13	
12	Secure debris sorting and processing facilities.	SFPD	SFPW, FBI	13.2.2.2	13	
13	Prepare for processing of large numbers of decedents, including preparing or requesting temporary mortuary and storage facilities.	OCME	SFPW, FBI	13.2.2.3	13	– OCME Mass Fatality Incident Response and Management Plan
14	Establish or request OCME facility security and credentialing systems to limit entry to OCME facility.	OCME	SFPW, FBI	13.2.2.3	13	– OCME Mass Fatality Incident Response and Management Plan
15	Recover human remains at incident site.	OCME	FBI, SFPD, SFPW	13.2.2.3	13	– OCME Mass Fatality Incident Response and Management Plan



<b>PHASE 1:</b> <b>INITIAL DEBRIS RESPONSE (I–I+72 HOURS)</b>						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	– NOTES/RESOURCES
16	Coordinate transport of human remains from incident scene to OCME facilities.	OCME	SFPW, FBI	13.2.2.3	13	– OCME Mass Fatality Incident Response and Management Plan

#### 1.4.2.2 PHASE 2: SHORT TERM DEBRIS RECOVERY (I+72 HOURS—I+14 DAYS)

<b>PHASE 2:</b> <b>SHORT TERM DEBRIS RECOVERY (I+72 HOURS—I+14 DAYS)</b>						
<b>OBJECTIVES</b> 1. Implement the Debris Operations Plan for the specific incident. 2. Treat incident debris as evidence until declared clear by lead law enforcement agency. 3. Securely handle, monitor, transport, and process incident debris.						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	NOTES/RESOURCES
17	Implement Debris Operations Plan, including HASP.	FBI, SFPW DOC	DPH, SFFD, OCME	4.4	3, 5, 7, 10	
18	Maintain chain of custody for all debris evidence.	FBI	SFPW, SFPD	13.2.2.4, 13.2.3	3, 13	
19	Continue collection, preservation, and documentation of evidence, including incident debris.	FBI	SFPW, FBI	13.2.2.2	3, 13	
20	Log all property found at scene on official evidence or property logs prior to removal from the scene.	FBI	OCME, SFPW, SFPD	13.2.3.4	3, 13	
21	Collect evidence associated with human remains.	OCME	SFPW, FBI	13.2.2.3	13	– OCME Mass Fatality Incident Response and Management Plan



<b>PHASE 2:</b> <b>SHORT TERM DEBRIS RECOVERY (I+72 HOURS—I+14 DAYS)</b>						
#	ACTION	INITIATING ENTITY	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	– NOTES/RESOURCES
22	Identify deceased persons and prepare death certificates.	OCME	SFPW, FBI	13.2.2.3	13	– OCME Mass Fatality Incident Response and Management Plan
23	Track personal property associated with human remains and provide accounting of valuable items.	OCME	FBI, SFPW, SFPD	13.2.3.5	3, 13	
24	Determine when personal property found at scene is cleared for release to owners or can be managed as disaster debris.	FBI	OCME, SFPW, SFPD	13.2.3.4	3, 13	

### 1.4.3 Policy Group Tasks

Section 1.4.3 covers debris-related tasks the Policy Group may be asked to consider and provide direction on during response and recovery phases following a major incident. The Policy Group is an advisory body composed of CCSF officials that the Mayor may convene during an incident to advise and provide direction on policy matters. The tasks listed should be adapted to reflect conditions and needs presented by the actual incident. For further discussion of the Policy Group, see Section 4, below, and the CCSF Emergency Response Plan.

#	ROLE	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	SPECIFIC QUESTIONS/NOTES
1	Determine scope of participation in Public Assistance Alternative Procedures (PAAP) Pilot Program for debris removal.	DEM, SFPW, SFE, CON, OCA	4.7, Appendix L	3, 5, 14	<ul style="list-style-type: none"> <li>– Should CCSF participate in PAAP pilot program for debris removal?</li> <li>– Which pilot programs below should CCSF participate in? <ul style="list-style-type: none"> <li>o Increased federal cost share for accelerated debris removal (<b>CAUTION:</b> see Section 4.7 and Appendix L).</li> <li>o Reimbursement of straight-time for force account labor.</li> <li>o Retention of income generated from recycling debris</li> <li>o One-time two percent increased cost-share for FEMA-accepted debris management plan.</li> </ul> </li> </ul>



#	ROLE	KEY STAKEHOLDERS	DEBRIS PLAN SECTION	ESF #	SPECIFIC QUESTIONS/NOTES
2	Approve citywide debris-related objectives.	SFPW DOC, DEM	1.3, 1.4, 4.2.3.1, 4.2.3.5	3, 5	Provide draft citywide debris-related objectives to Policy Group for review and approval.
3	Approve debris clearance, collection, and removal priorities.	SFPW DOC, DEM	5.3.1	3, 5, 12	Provide draft debris clearance, collection, and removal priorities to Policy Group for review and approval.
4	Determine location within CCSF of temporary debris management sites (TDMS), if needed.	SFPW DOC, DEM, Port, RPD, SFE, DPH	7.4.3, Appendix M	3, 5	<ul style="list-style-type: none"> <li>– Should the city temporarily store debris on specific property located within CCSF?</li> <li>– If needed, provide draft list of TDMS to Policy Group for approval.</li> <li>– Are other or different locations needed to serve as TDMS?</li> </ul>
5	Determine whether to request formation of Interagency Debris Management Task Force (IDMTF) to facilitate cooperation during debris response and recovery.	DEM, SFPW DOC DMG, Cal OES	4.2.5.3	3, 5	<ul style="list-style-type: none"> <li>– Will the city request that Cal OES and FEMA form an IDMTF with CCSF representation to facilitate cooperation during debris response and recovery?</li> <li>– What department or departments will represent the city on the IDMTF?</li> </ul>
6	Determine whether to request Cal OES and FEMA approval of private property debris removal if needed.	SFPW DOC, DEM, CON	6.5	3, 5	<ul style="list-style-type: none"> <li>– Will the city remove debris from private property if it meets the requirements for Public Assistance reimbursement?</li> <li>– Will the city remove debris from private property even if it fails to meet requirements for Public Assistance reimbursement?</li> </ul>
7	Approve Debris Operations Plan (Debris OP) for specific incident.	SFPW DOC, DEM	4.4	3, 5, 10, 12	<p>Provide draft Debris OP to Policy Group for review and approval.</p> <ul style="list-style-type: none"> <li>– Should the city transport debris out of the city by barge, rail, or truck to existing processing centers, instead of performing debris processing within CCSF?</li> <li>– Is there a need to renegotiate or to enter into additional agreements for debris facilities?</li> <li>– What are the city's priorities for managing critical (i.e., scarce) debris-related resources?</li> </ul>



## 1.5 Roles and Responsibilities

This table describes in general the disaster debris-related roles and responsibilities of each listed organization in an incident requiring debris coordination.

### 1.5.1 Coordinating and Supporting Departments

<b>Coordinating Department</b>	San Francisco Public Works (SFPW)
<b>Supporting Departments</b>	311, Animal Care and Control (ACC), Controller's Office (CON), Department of Building Inspection (DBI), Department of Emergency Management (DEM), Department of Public Health (DPH), General Services Agency (GSA), Mayor's Office on Disability (MOD), Office of Contract Administration (OCA), Office of the Chief Medical Examiner (OCME), Port of San Francisco (Port), Recreation and Park Department (RPD), San Francisco Department of the Environment (SFE), San Francisco Fire Department (SFFD), San Francisco International Airport (SFO), San Francisco Police Department (SFPD), San Francisco Public Utilities Commission (SFPUC), San Francisco Sheriff's Department (SFSD), Treasure Island Development Authority (TIDA)
<b>Other Supporting Organizations</b>	<u>Local:</u> Recology (current city refuse hauler).
	<u>State:</u> California Air Resources Board (CARB), Bay Area Air Quality Management District (BAAQMD), California Environmental Protection Agency (CalEPA), California Department of Resources, Recycling, and Recovery (CalRecycle), California Department of Transportation (Caltrans), California Governor's Office of Emergency Services (Cal OES), California Highway Patrol (CHP), California Office of Historic Preservation (COHP), Department of Toxic Substances Control (DTSC), Office of Environmental Health Hazard Assessment (OEHHA), San Francisco Bay Conservation and Development Commission (SFBCDC)
	<u>Federal:</u> Federal Emergency Management Agency (FEMA), Federal Highway Administration (FHWA), Occupational Safety and Health Administration (OSHA), United States Army Corps of Engineers (USACE), United States Coast Guard (USCG), United States Department of Defense (US DOD), United States Environmental Protection Agency (US EPA)

### 1.5.2 CCSF Department Responsibilities

Department	Responsibilities
All Departments	<ul style="list-style-type: none"> <li>Assess debris status and staffing needs; notify and recall personnel as needed.</li> <li>Gather situational awareness of debris impacts to department facilities, structures, and property, and locations of large debris fields.</li> <li>Provide debris impact information to department operations center (DOC), or to CCSF Emergency Operations Center (EOC) if the department has no DOC. DOCs share debris information with CCSF EOC.</li> <li>Manage disaster debris affecting department facilities and infrastructure as resources allow.</li> </ul>



Department	Responsibilities
All Departments (cont.)	<ul style="list-style-type: none"> <li>• Assign, track, monitor, and document force account and contract labor costs for debris-related activities that may be eligible for state and federal reimbursement.</li> <li>• Submit documentation of force account and contract labor costs for debris-related efforts to CON for pre-audit.</li> </ul>
SFPW	<ul style="list-style-type: none"> <li>• Activate SFPW DOC, and staff DOC Debris Management Group.</li> <li>• Staff EOC Operations Support Section, Infrastructure Branch Coordinator position.</li> <li>• Ensure proper organization and staffing of EOC Debris Coordination Unit.</li> <li>• Gather situational awareness of debris and damage to CCSF roads, facilities, and other infrastructure.</li> <li>• Obtain and review Hazards US-Multihazard (Hazardus-MH), USGS, USACE, or other available projections and identify locations where large amounts of debris may be located.</li> <li>• Determine if SFPW resources, other CCSF resources, or pre-contracted resources are sufficient to conduct debris operations; if not request additional resources through the CCSF EOC.</li> <li>• Lead development of debris clearance priorities.</li> <li>• Determine statutory, regulatory, and other legal provisions that may affect debris removal, staging, processing, recycling, and disposal operations, and seek waivers as needed.</li> <li>• Work with CON to provide guidance to DOC and field personnel regarding Public Assistance debris and procurement requirements in order to maximize reimbursement of debris-related costs when federal Public Assistance is sought or granted.</li> <li>• Identify existing, permitted debris transfer and processing sites, and potential temporary debris management sites if needed.</li> <li>• Identify permitted active landfills that can accept debris and confirm facility information, such as hours of operation, type of load accepted, amount of load accepted, and permits required.</li> <li>• Determine appropriate debris collection and removal methods to be utilized.</li> <li>• Lead development of debris diversion strategies to be utilized.</li> <li>• Coordinate the identification of hazardous materials in impacted facilities and infrastructure, and their appropriate handling and disposition.</li> <li>• Develop and implement a disaster-specific Debris Operations Plan (Debris OP) for clearance, collection, removal, diversion, and disposition of disaster debris.</li> <li>• Lead development of strategy for demolition of unsafe structures.</li> <li>• Perform and oversee performance of disaster debris clearance and removal of debris over which CCSF has responsibility.</li> <li>• Work with current waste hauler, Recology, to ensure that household and commercial waste (i.e., garbage) is not commingled with disaster debris removal operations.</li> </ul>
311	<ul style="list-style-type: none"> <li>• Coordinate all activities with GSA DOC.</li> <li>• Staff position in EOC Joint Information Center (JIC) as needed.</li> <li>• Assist with development and distribution of public information regarding timelines for debris clearance, collection, and removal.</li> </ul>



Department	Responsibilities
311 (cont.)	<ul style="list-style-type: none"> <li>• Provide public information regarding how the public can assist with debris sorting, collection, diversion, and disposal.</li> <li>• Staff debris hotline if asked to do so.</li> </ul>
ACC	<ul style="list-style-type: none"> <li>• Assess ACC status and staffing needs; notify and recall personnel as required.</li> <li>• Coordinate all activities with GSA DOC.</li> <li>• Staff position in EOC Operations Support Section, Health and Human Services Branch, Animal Unit, and provide support to EOC Debris Coordination Unit as needed.</li> <li>• Assist with disposition of animals that have died as a result of the disaster.</li> <li>• Track and document force account and contract labor costs for ACC debris-related efforts that may be eligible for state or federal reimbursement.</li> <li>• Submit documentation of force account and contract labor costs for ACC debris-related efforts to CON for pre-audit.</li> </ul>
CON	<ul style="list-style-type: none"> <li>• Activate CON DOC.</li> <li>• Staff Section Chief position in EOC Finance and Administration Section, and provide support to EOC Debris Coordination Unit and SFPW DOC Debris Management Group as needed.</li> <li>• Implement cost and time tracking in PeopleSoft, and provide direction to EOC and DOC Finance and Administration Sections to ensure appropriate tracking of costs and time.</li> <li>• Provide cost recovery technical assistance to CCSF departments during response and recovery phases, including: <ul style="list-style-type: none"> <li>○ Accounting, time tracking, and cost and loss estimation assistance.</li> <li>○ Assistance in preparing Public Assistance grant cost documentation.</li> </ul> </li> <li>• Collect cost and loss estimates from CCSF departments and prepare Initial Damage Estimate.</li> <li>• As Authorized Agent for State and Federal Disaster Assistance: <ul style="list-style-type: none"> <li>○ Perform pre-audit of force account and contract labor cost summaries and supporting documentation before submitting documentation to Cal OES.</li> <li>○ If required, recommend financing options to sustain extended debris removal operations.</li> <li>○ Oversee submission of documentation of CCSF debris-related costs that may be eligible for state or federal reimbursement to Cal OES as part of the state and federal reimbursement process, as applicable.</li> </ul> </li> </ul>
DBI	<ul style="list-style-type: none"> <li>• Activate DBI DOC.</li> <li>• Staff position in EOC Operations Support Section, Infrastructure Branch, and provide support to EOC Debris Coordination Unit as needed.</li> <li>• Coordinate and conduct initial safety assessments in impacted areas.</li> <li>• Coordinate CCSF damage assessment teams.</li> <li>• Coordinate with Cal OES and FEMA Damage Assessment Teams.</li> <li>• Gather situational awareness of damage to private and public buildings through formal windshield surveys.</li> <li>• Determine if DBI resources, other CCSF resources, or pre-contracted resources are sufficient to conduct safety assessments; if not, request additional resources through</li> </ul>





Department	Responsibilities
DBI (cont.)	<p>CCSF EOC.</p> <ul style="list-style-type: none"> <li>• Monitor, track, and assign force account, California Safety Assessment Program (SAP) volunteers, and contracted labor to conduct rapid safety assessments of CCSF-owned and other facilities and infrastructure according to the EAP safety assessment priorities.</li> <li>• Determine which red-tagged facilities or infrastructure need to be fenced off.</li> <li>• Contract outside firms to conduct detailed safety assessments for city buildings that have been red-tagged.</li> <li>• Work with SFPW to develop a strategy for demolition of CCSF-owned and private facilities or infrastructure that are unsafe.</li> <li>• Coordinate demolition procedures with other CCSF departments and agencies, as necessary.</li> <li>• Hold onsite hearings for unsafe facilities or infrastructure requiring demolition and issue emergency demolition orders if there is no opposition.</li> <li>• As needed, declare a building a public nuisance and request that SFPW perform demolition.</li> <li>• Enforce or modify demolition permits and expedite permitting and required building inspections, as needed and allowed.</li> </ul>
DEM	<ul style="list-style-type: none"> <li>• Activate and staff CCSF EOC as appropriate.</li> <li>• Request activation of SFPW DOC and other DOCs as appropriate.</li> <li>• Activate Joint Information System (JIS)/Joint Information Center (JIC) to coordinate public and media information dissemination.</li> <li>• Provide support to EOC Debris Coordination Unit and SFPW DOC Debris Management Group as needed.</li> <li>• Gather CCSF department reports on, and maintain situational awareness of, disaster debris impacting the city; share debris information with SFPW DOC Debris Management Group.</li> <li>• Share SFPW DOC debris status reports with other city partners and the public as appropriate.</li> <li>• Coordinate requests for debris-related resources that cannot be filled by requesting departments.</li> <li>• Act as a liaison with regional, state, and federal emergency management agencies.</li> <li>• Coordinate state and federal Public Assistance and other forms of aid through emergency proclamation process as needed.</li> <li>• Coordinate non-discipline specific resources from other jurisdictions through state mutual aid system as needed.</li> </ul>
DPH	<ul style="list-style-type: none"> <li>• Activate DPH DOC.</li> <li>• Staff ESF #8 position in EOC Operations Support Section, Public Health, and provide support to SFPW DOC Debris Management Group as needed.</li> <li>• Coordinate with EMSA to relay debris-related information to critical healthcare facilities.</li> <li>• Work with SFPW and SFE to identify debris processing facilities and landfills to accept debris.</li> </ul>



Department	Responsibilities
DPH (cont.)	<ul style="list-style-type: none"> <li>• Act as CCSF's Local Enforcement Agency (LEA) with primary responsibility for ensuring proper storage and transportation of solid wastes, including: <ul style="list-style-type: none"> <li>◦ Permitting, inspection, and enforcement of regulations at solid waste disposal sites;</li> <li>◦ Permitting, inspection, and enforcement of state regulations at transfer and processing stations, materials recovery facilities, and composting facilities;</li> <li>◦ Inspecting and enforcing litter, odor, and nuisance regulations at solid waste landfills.</li> </ul> </li> <li>• As state-designated enforcement program for Hazardous Materials Unified Program Agency (HMUPA), ensure proper storage and transportation of hazardous materials and waste.</li> <li>• Determine local, state, and federal public health requirements that may affect debris operations; ensure compliance or seek modification or waivers as needed and as safe and permissible.</li> <li>• Evaluate direct and indirect debris-related threats to public health and to the environment, and ensure resulting public safety needs are addressed.</li> <li>• Advise Unified Command and EOC on debris-related exposure, facility, public health, and environmental issues.</li> <li>• Monitor, track, document, and assign force account or pre-contracted labor to contain and clean up hazardous materials.</li> <li>• Coordinate with OCME as necessary.</li> </ul>
GSA	<i>See roles and responsibilities as outlined in CCSF Emergency Response Plan.</i>
MOD	<ul style="list-style-type: none"> <li>• Coordinate all activities with GSA DOC.</li> <li>• Staff liaison position in EOC Management and provide support to Debris Coordination Unit and SFPW DOC Debris Management Group as needed.</li> <li>• Coordinate with EOC and Unified Command to ensure people with disabilities and access and functional needs receive appropriate debris-related services and communications.</li> <li>• Coordinate with SFPW and DBI to inspect facilities and infrastructure impacted by debris to ensure needs of people with disabilities and access and functional needs are met.</li> </ul>
OCA	<ul style="list-style-type: none"> <li>• Assist in procuring needed debris-related commodities and contracted services as needed, in accord with local, state, and federal requirements.</li> </ul>
OCME	<ul style="list-style-type: none"> <li>• Coordinate all activities with GSA DOC.</li> <li>• Staff position in SFPW DOC Debris Management Group, as needed.</li> <li>• Lead efforts to recover human remains during incidents.</li> <li>• In a terrorist incident, work with lead law enforcement agency to perform functions in coordination with law enforcement and command efforts.</li> <li>• Participate in crime scene investigation and evidence collection associated with human remains.</li> <li>• Prepare for and oversee the processing of decedents during incidents.</li> <li>• Coordinate transport of human remains from the incident scene to OCME facilities.</li> </ul>



Department	Responsibilities
OCME (cont.)	<ul style="list-style-type: none"> <li>• Determine the cause, manner, and circumstances surrounding deaths during incidents.</li> <li>• Identify deceased persons, prepare death certificates, and provide information on the circumstances of the incident.</li> <li>• Track personal property associated with human remains and provide an accounting of valuable items.</li> <li>• Make final decisions as to what personal property items found in association with human remains in a non-human-caused disaster can be returned to owners.</li> </ul>
Port	<ul style="list-style-type: none"> <li>• Activate Port DOC.</li> <li>• Staff position in EOC Operations Support Section Infrastructure and Transportation Branches, and provide support to EOC Debris Coordination Unit as needed.</li> <li>• Notify Port lessees, guests, visitors, employees, and partners of debris-related issues and expectations regarding sorting, collection, and removal of debris.</li> <li>• Notify Port master long-term lease tenants if they are responsible for safety assessments.</li> <li>• Coordinate with the EOC and SFPW DOC regarding debris clearance on The Embarcadero and Illinois Street.</li> <li>• Coordinate with USCG, USACE, SFFD, and SFPD to support water-side safety and damage assessment, debris removal, and restoration.</li> <li>• Submit land-side debris clearance and removal, and demolition resource requests through SFPW DOC, and safety assessment resource requests through the DBI DOC, as needed.</li> <li>• Notify SFPW DOC Debris Management Group and EOC Debris Coordination Unit of status of Port property that may be used for temporary debris management sites (TDMS).</li> <li>• If applicable, coordinate with SFPW DOC on preparation, operation, and demobilization of TDMS on Port property in accordance with local, regional, state, and federal requirements associated with debris management sites.</li> <li>• Monitor, track, document, and assign force account and contract labor to: <ul style="list-style-type: none"> <li>○ Perform debris clearance from Port land-side facilities.</li> <li>○ Manage and contain hazardous spills.</li> <li>○ Conduct safety assessments on Port facilities.</li> <li>○ Stage, process, remove, and dispose of debris.</li> <li>○ Demolish unsafe Port facilities.</li> </ul> </li> </ul>
RPD	<ul style="list-style-type: none"> <li>• Activate RPD DOC.</li> <li>• Staff position in EOC Operations Support Section Human Services Branch, and provide support to SFPW DOC Debris Management Group as needed.</li> <li>• Notify SFPW DOC Debris Management Group and EOC Debris Coordination Unit of status of potential RPD property that may be used as TDMS, if needed.</li> <li>• Coordinate with Port, USCG, and USACE to support water-side safety and damage assessment, debris removal, and restoration of RPD marina and harbor facilities.</li> <li>• Provide heavy equipment, arborists, and labor to support SFPW debris clearance and removal operations, if available and requested.</li> </ul>



Department	Responsibilities
RPD (cont.)	<ul style="list-style-type: none"> <li>• Monitor, track, and assign force account labor to conduct safety assessments of and debris clearance operations on RPD properties.</li> <li>• Coordinate with SFPW and DBI on demolishing unsafe RPD facilities.</li> </ul>
SFE	<ul style="list-style-type: none"> <li>• Staff position in EOC Operations Support Section Infrastructure Branch, and provide support to SFPW DOC Debris Management Group as needed.</li> <li>• Work with SFPW and DPH to identify permitted, actively-registered debris haulers, debris processing facilities, and landfills to accept debris.</li> <li>• Work with SFPW and DPH to determine potential debris management sites for Household Hazardous Waste (HHW) storage.</li> <li>• Determine preferred collection method for HHW and e-waste and notify SFPW of recommendations.</li> <li>• Determine local, state, and federal environmental and other legal requirements that may affect debris staging, processing, diversion, and disposal operations; assist with compliance or seek modifications or waivers as needed and allowable.</li> <li>• Enforce, modify, suspend, or waive demolition debris recovery plans, as needed and permitted.</li> </ul>
SFFD	<ul style="list-style-type: none"> <li>• Activate SFFD DOC.</li> <li>• Gather situational awareness of damage, debris, and hazardous materials issues impacting CCSF through SFFD company windshield surveys.</li> <li>• Share windshield survey reports with SFFD DOC, which will share with CCSF EOC.</li> <li>• Staff ESF #4, #9, and #10 positions in EOC Operations Support Section, Public Safety Branch and provide support to SFPW DOC Debris Management Group as needed.</li> <li>• Conduct hazardous materials field testing and analysis.</li> <li>• Request Fire and Rescue Mutual Aid, including firefighting, search and rescue, and hazardous materials resources, as needed.</li> <li>• Advise Unified Command and EOC on nature of hazardous materials threats and on structural and debris management issues.</li> <li>• Report major damage to infrastructure and buildings, the location of large debris fields, and critical transportation routes needing debris clearance to SFPW DOC and EOC Operations Support Section, Infrastructure Branch Debris Management Group.</li> <li>• Determine CCSF Fire Code provisions that may affect debris operations and enforce, modify, or seek waivers of provisions as needed and allowed.</li> <li>• Coordinate with SFPW and DBI on demolishing unsafe SFFD facilities.</li> <li>• Assist SFPD in road closures as appropriate.</li> <li>• Assign, track, document, and monitor force account and contract labor to contain and clean up hazardous materials.</li> </ul>
SFO	<ul style="list-style-type: none"> <li>• Activate SFO EOC.</li> <li>• Staff ESF #1 Air Transportation Unit position in CCSF EOC and provide support to SFPW DOC Debris Management Group as needed.</li> <li>• Provide information to EOC and Federal Aviation Agency regarding condition of SFO systems and infrastructure.</li> <li>• Assign, track, document, and monitor force account and contract labor to:</li> </ul>



Department	Responsibilities
SFO (cont.)	<ul style="list-style-type: none"> <li>○ Clear debris from SFO facilities according to citywide and SFO-specific debris clearance priorities.</li> <li>○ Conduct rapid safety assessments to evaluate SFO facilities' capacity to resume full normal operations, versus reduced or no operations due to dangerous conditions.</li> <li>○ Collect, remove, process, and dispose of debris impacting SFO.</li> <li>○ Demolish unsafe SFO facilities.</li> <li>● Submit debris clearance, debris removal, and demolition resource requests through the CCSF EOC, as needed.</li> </ul>
SFPD	<ul style="list-style-type: none"> <li>● Oversee management of non-terror crime scene debris.</li> <li>● Oversee Initial management of terror incident debris until FBI assumes lead.</li> <li>● Assist SFPW in removing abandoned vehicles on public routes as allowed by law.</li> <li>● Provide traffic management assistance as needed for debris sites and debris facilities within CCSF.</li> <li>● Provide security for debris incident sites and facilities in terror incident.</li> </ul>
SFPUC	<ul style="list-style-type: none"> <li>● Activate SFPUC DOC.</li> <li>● Staff Water Unit Leader position in EOC Operations Support Section, Infrastructure Branch, and provide support to SFPW DOC Debris Management Group as needed.</li> <li>● Assign, track, and monitor force account or contract personnel clearing and removing debris from SFPUC property and facilities.</li> <li>● Coordinate response to debris-related utility issues, including "render safe," restoration, and repair.</li> <li>● Assess, restore, and repair SFPUC facilities that are damaged or disrupted as a result of the disaster, such as water and wastewater facilities.</li> <li>● Provide equipment and labor to support SFPW debris clearance and removal operations, if available and requested.</li> <li>● Coordinate with SFPW and DBI on demolishing unsafe SFPUC facilities.</li> </ul>
SFSO	<ul style="list-style-type: none"> <li>● Provide support to SFPD in managing non-terror crime scene debris.</li> <li>● Provide support to SFPD in initial management of terror incident debris until FBI assumes lead.</li> <li>● Provide security for debris incident sites and facilities in terror incident.</li> <li>● If requested and available, activate Auxiliary Air Patrol volunteers to perform overflights of disaster-impacted areas.</li> </ul>
TIDA	<ul style="list-style-type: none"> <li>● Activate TIDA Incident Command Post as needed.</li> <li>● Coordinate all activities with GSA DOC.</li> <li>● Staff TIDA position in EOC Operations Support Section, Community Branch as needed.</li> <li>● Activate TIDA-SFPW Post-Earthquake Windshield Survey Assessment Protocol as needed.</li> <li>● Coordinate with USCG, USACE, SFFD, and SFPD to support water-side safety and damage assessment, debris removal, and restoration as needed.</li> <li>● Move and dispose of abandoned vessels in Clipper Cove consistent with legal authority, as needed.</li> <li>● Notify GSA DOC and SFPW DOC Debris Management Group of the status of TIDA</li> </ul>



Department	Responsibilities
TIDA (cont.)	<p>property that may be used for temporary debris management sites for on-Island debris.</p> <ul style="list-style-type: none"> <li>• Provide support for incident-specific debris operations on Treasure and Yerba Buena Islands, including: <ul style="list-style-type: none"> <li>○ US Navy review and approval of proposed debris management, debris removal, and building demolition, as appropriate.</li> <li>○ Planning Department coordination of historic preservation and compliance issues associated with particular buildings.</li> <li>○ Hazardous materials identification, assessment, and removal.</li> <li>○ Amplifying public information developed by the EOC JIC.</li> </ul> </li> <li>• Monitor, track, document, and assign contract labor to: <ul style="list-style-type: none"> <li>○ Perform debris clearance from TIDA land-side facilities.</li> <li>○ Manage and contain hazardous material releases.</li> <li>○ Stage, process, remove, divert, and dispose of debris.</li> <li>○ Demolish unsafe TIDA facilities.</li> </ul> </li> </ul>

### 1.5.3 Other Organization Responsibilities

Organization	Responsibilities
<i>Local Entities</i>	
Recology	<ul style="list-style-type: none"> <li>• Provide report to SFPW DOC on status of company operations, capability to perform non-disaster debris removal, capability to assist with disaster debris removal, and timetable for resuming regular waste hauling if disrupted.</li> <li>• Resume non-disaster residential and commercial refuse collection and removal, including materials to be recycled or diverted, as quickly as possible.</li> <li>• Work with SFPW DOC Debris Management Group to avoid commingling non-disaster refuse with disaster debris.</li> <li>• Perform other contracted-for debris-related services as needed.</li> </ul>
<i>State and Regional Agencies</i>	
CARB	<ul style="list-style-type: none"> <li>• Provide emergency air monitoring of areas impacted by disaster debris.</li> <li>• Provide technical resources to assess air quality impacts, characterize air contaminants, identify and report on consequences of air incidents.</li> <li>• Support air modeling and forecasting to simulate pollutant movement and dispersion.</li> <li>• Provide air quality data summaries and associated consequences to local incident command and EOC coordination staff and health officials.</li> <li>• Coordinate public messaging on air impacts with health officials and with EOC Joint Information Center.</li> </ul>
BAAQMD	<ul style="list-style-type: none"> <li>• Provide emergency air monitoring of CCSF areas impacted by disaster debris.</li> <li>• Provide technical resources to assess air quality impacts, characterize air contaminants, and report on consequences of air incidents.</li> </ul>





Organization	Responsibilities
BAAQMD (cont.)	<ul style="list-style-type: none"> <li>• Issue public advisories and provide air quality information to local incident command and EOC coordination staff and health officials.</li> <li>• Coordinate public messaging on air impacts with health officials and with EOC Joint Information Center.</li> <li>• Regulate stationary (e.g., non-vehicular) sources of air pollution in nine counties surrounding San Francisco Bay, including San Francisco County.</li> <li>• Issue emergency variances for temporary relief from specific regulation requirements when appropriate.</li> </ul>
CalEPA	<ul style="list-style-type: none"> <li>• Serve as lead agency for coordinating emergency activities related to hazardous materials.</li> <li>• Advise CCSF if an emergency action will create or aggravate threats to human health or the environment, and provide environmental justice leadership.</li> <li>• Ensure that effective and coordinated compliance and enforcement actions are taken to protect public health and the environment.</li> <li>• Provide public information assistance to the EOC Joint Information Center (JIC), Public Information Officers (PIOs), and public health officials, including fact sheets, notices, and other materials needed to advise the public of potential health and environmental issues.</li> </ul>
Cal OES	<ul style="list-style-type: none"> <li>• Coordinate requests for state and federal assistance with debris removal.</li> <li>• Following state proclamation of emergency or presidential declaration of a major disaster in CCSF, provide supplemental assistance for eligible debris related activities.</li> <li>• Provide guidance regarding requirements to ensure eligibility of debris management activities for funding.</li> <li>• Provide technical assistance to ensure compliance with Public Assistance Program policies and other applicable statutes and regulations.</li> <li>• Ensure local government adheres to applicable state environmental laws and regulations relevant to debris removal.</li> <li>• Monitor debris operations performed by CCSF force account or by contract workers.</li> <li>• Assist in providing training to debris monitors.</li> </ul>
CHP	<ul style="list-style-type: none"> <li>• Provide initial reports on debris on and damage to state roads, highways, and freeways within CCSF.</li> <li>• Coordinate with Caltrans and CCSF to assist with debris clearance on state roads, highways, and freeways within CCSF.</li> <li>• Coordinate with Caltrans and CCSF to provide traffic control on and to secure unsafe sections of state roads, highways, and freeways within CCSF.</li> <li>• Assist emergency vehicles and equipment in entering or leaving debris-impacted areas or other hazardous locations.</li> <li>• Coordinate with CCSF law enforcement officers and SFFD to support debris management operations.</li> <li>• Provide Liaison Officers to Incident Command Posts and CCSF EOC as needed.</li> <li>• Maintain contact with DEC 911 Dispatch.</li> </ul>





Organization	Responsibilities
CHP (cont.)	<ul style="list-style-type: none"> <li>Monitor traffic to ensure safe transport of debris during debris removal and demolition operations.</li> </ul>
COHP	<ul style="list-style-type: none"> <li>Provide assistance in evaluating post-disaster damages and threats to archaeological sites and historic structures.</li> <li>Direct protection efforts to safeguard archaeological sites and historic structures.</li> </ul>
CalRecycle	<ul style="list-style-type: none"> <li>Assist CCSF in developing post-disaster debris management plan to recycle, reuse, or otherwise divert disaster debris from disposal.</li> <li>Assist CCSF in ensuring that solid waste generated by the disaster is properly managed.</li> <li>Assist CCSF in expeditious recovery of areas affected by disaster debris while protecting public health and safety.</li> <li>If requested and tasked, oversee and manage contractors and consultants conducting debris removal operations on private property.</li> </ul>
Caltrans	<ul style="list-style-type: none"> <li>Provide Liaison Officers to CCSF EOC as needed.</li> <li>Maintain contact with DEC 911 Dispatch.</li> <li>Provide status, debris, and damage reports on inspection of federal and state roads, highways, and freeways within CCSF.</li> <li>Coordinate with CCSF on performing debris clearance federal and state roads, highways, and freeways within CCSF.</li> <li>Coordinate with CCSF on closure and reopening of federal and state roads, highways, and freeways within CCSF, including bridges, overpasses, and underpasses.</li> <li>Establish and implement long-term closures for detouring and channeling traffic.</li> </ul>
DTSC	<ul style="list-style-type: none"> <li>If requested and tasked, respond to actual or potential hazardous substance releases posing an acute threat to public health or to the environment.</li> <li>Dispatch, assign scope of work, and provide direct oversight of hazardous materials contractors to assess, stabilize, remove, and dispose of HHW and other hazardous substances in debris as needed.</li> <li>Coordinate response activities with CCSF, federal, and state agencies, including SFFD, US EPA, Cal OES, California Department of Fish and Wildlife, and California Department of Justice.</li> </ul>
OEHHA	<ul style="list-style-type: none"> <li>Assist in determining health effects and characterize risk to public health and the environment from toxic chemical releases by providing toxicological information, risk assessment, and public health recommendations.</li> <li>Provide personnel, such as toxicologists and epidemiologists, to assist incident command, local health agencies, EOC coordination officials, and other health professionals in determining environmental threats; performing environmental sampling; and compiling information on health impacts of breakdown or reaction products, residual risks associated with remediation, estimating exposure, and identifying pathways of exposure.</li> <li>Provide public health recommendations, information, and technical resources regarding chemical releases.</li> <li>Provide health information to incident command, EOC JIC, and PIOs, and help</li> </ul>



Organization	Responsibilities
OEHHA (cont.)	<ul style="list-style-type: none"> <li>develop public health messages during and after chemical releases.</li> <li>Assist with disposal and decontamination recommendations for food and animal carcasses after large-scale disasters impacting these sectors.</li> </ul>
SFBCDC	<ul style="list-style-type: none"> <li>Provide staff with expertise on San Francisco Bay and coastal area seismic safety and flood protection measures.</li> <li>Approve emergency permits for all activities within and along San Francisco Bay.</li> <li>Provide personnel with expertise in oil spill containment and clean up.</li> </ul>
<b>Federal Agencies</b>	
FEMA	<ul style="list-style-type: none"> <li>Provide funding to assist with debris removal operations.</li> <li>Provide debris management teams to assist with debris removal operations.</li> <li>Task other federal agencies to provide specific technical expertise to accomplish debris management tasks as appropriate.</li> <li>Provide technical assistance before debris contract execution to help ensure compliance with Public Assistance Program policies and other applicable statutes and regulations.</li> <li>Monitor debris operations performed by CCSF force account or by contract workers.</li> <li>Provide training to local debris monitors.</li> </ul>
FHWA	<ul style="list-style-type: none"> <li>May provide funding under FHWA Emergency Relief Program to local governments and Caltrans for debris removal on federal-aid roads in incidents where: <ul style="list-style-type: none"> <li>The Governor declares an emergency but there is no Presidential declaration under the Stafford Act; or</li> <li>The President declares a major disaster or emergency, but debris removal has not been authorized or FEMA determines that debris removal costs submitted by CCSF are ineligible.</li> </ul> </li> </ul>
OSHA	<ul style="list-style-type: none"> <li>Provide guidance, training, outreach, education, and assistance on disaster debris and site worker guidelines to improve debris worker safety.</li> <li>Ensure disaster debris workers operate in a safe and healthful workplace by setting and enforcing workplace safety standards and regulations.</li> <li>Provide OSHA staff on the ground to protect response and recovery workers from safety and health hazards associated with debris cleanup.</li> </ul>
USACE	<ul style="list-style-type: none"> <li>Regulate discharge of pollutants into United States waters.</li> <li>Remove or oversee removal of sunken vessels and other obstructions from navigable waters under emergency conditions.</li> <li>Collect and remove drift and debris from publicly-maintained commercial harbors and surrounding land and water areas.</li> <li>Provide assistance to CCSF in debris management associated with repair of flood control works.</li> <li>On request by CCSF through the REOC or SOC, and if assigned by FEMA, provide: <ul style="list-style-type: none"> <li>Planning and response teams to coordinate and execute debris management, including clearance, removal, staging, characterization, classification, reduction, profiling, transportation, and disposal operations.</li> </ul> </li> </ul>



Organization	Responsibilities
USACE (cont.)	<ul style="list-style-type: none"> <li>○ Contract resources to conduct clearance, removal, staging, characterization, classification, reduction, profiling, transportation, and disposal operations.</li> <li>○ Debris management technical assistance and permitting services.</li> </ul>
USCG	<ul style="list-style-type: none"> <li>● Provide status and timing on closure of Port and other waters to vessel traffic.</li> <li>● Coordinate with Port and WETA to support safeguarding of vessels and security operations in water areas of Port.</li> <li>● Provide Liaison Officers to Incident Command Posts and CCSF EOC as needed.</li> <li>● Maintain contact with DEC 911 Dispatch.</li> <li>● Assess coastal zone for marine debris, pollution, and hazardous materials releases resulting from disaster.</li> <li>● Act as lead federal agency for disaster-related pollution and hazardous materials responses in coastal zone as needed.</li> </ul>
US DOD	<ul style="list-style-type: none"> <li>● Deploy construction forces, including the U.S. Naval Construction Force at Port Hueneme in Ventura County, California, to assist with debris response as needed.</li> <li>● Through National Response Team (NRT), provide technical assistance, resources, and coordination for response and recovery in oil and hazardous material spills.</li> <li>● Through Region IX Regional Response Team (RRT), provide assistance including identifying debris management resources, as requested by FOSC.</li> </ul>
US EPA	<ul style="list-style-type: none"> <li>● Provide technical assistance regarding debris removal operations.</li> <li>● Provide Environmental Response Teams composed of EPA technical experts for round-the-clock assistance at the scene of hazardous substance releases.</li> </ul>



## SECTION 2: PLAN OVERVIEW

### 2.1 Introduction

Like other California communities, the City and County of San Francisco (CCSF or “the city”) is vulnerable to earthquakes, tsunamis, and other hazards that may result in a major disaster. For San Francisco, the most likely and potentially catastrophic of these hazards is earthquake. The Working Group on California Earthquake Probabilities estimates that there is a 72 percent likelihood of a Magnitude 6.7 or larger quake in the San Francisco region between 2014 and 2044.<sup>1</sup> A Magnitude 7.9 earthquake on the northern segment of the San Andreas fault could produce an estimated 10 million tons of disaster debris in San Francisco.<sup>2</sup>

The amount of debris from such an incident\* will quickly overwhelm city resources and will require assistance from regional, state, and federal partners. In such a scenario, debris from damaged infrastructure may injure and trap people, block critical transportation routes, prevent first responders from quickly reaching those needing assistance, impede timely damage assessment, and pose a threat to public and environmental health. Removing large quantities of disaster debris in a safe, efficient, and cost-effective manner is critical to San Francisco’s recovery from earthquakes and other large incidents.

Disaster debris may include construction and demolition debris; vehicles; “white goods” such as refrigerators and freezers; food waste; soil, sediment, and vegetation; and household hazardous waste. San Francisco’s dense urban footprint and the lack of solid waste transfer, processing, disposal, and recycling facilities within city boundaries make rapid diversion and disposal of large amounts of disaster debris a challenge. In addition, disaster-impacted areas may contain hazardous materials such as asbestos, lead, mercury, and radon. Though the short-term goal is to remove such debris from the city as quickly as possible, care must be taken to ensure that the methods used do not pose a threat to human health or to the environment.<sup>3</sup>

Proper disaster debris collection, removal, and disposal is expensive. The California Governor’s Office of Emergency Services (Cal OES) estimates that debris management costs average about 45 percent of the total cost of a disaster.<sup>4</sup> Between 2003 and 2011, disaster debris costs in California totaled approximately \$228.6 million.<sup>5</sup> Having a disaster debris management plan approved by Cal OES and the Federal Emergency Management Agency (FEMA) makes San Francisco eligible for a one-time, increased federal cost-share of two percent for debris removal in a presidentially-declared disaster.<sup>6</sup>

For these reasons, it is critical that CCSF take steps to plan and prepare for debris collection, removal, processing, and disposal in advance of a disaster. Engaging in debris management planning helps ensure San Francisco is prepared to effectively coordinate and manage disaster debris. This, in turn, enhances the city’s ability to quickly and fully recover from a disaster while protecting the health and safety of our people and environment.<sup>7</sup> The San Francisco Disaster Debris Management Plan was developed to help ensure the city’s safe and effective response to and recovery from a debris-producing incident.

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\* This plan follows the National Incident Management System in using the word “incident” to include emergencies and disasters of all kinds and sizes.



## 2.2 Plan Purpose and Goals

The purpose of the San Francisco Disaster Debris Management Plan is to provide a framework of support and guidance to CCSF departments and partner agencies tasked with managing the city's debris response and recovery efforts following a large debris-producing disaster. The overarching goal of this Plan is to safeguard public health and the environment while facilitating safe, timely, effective debris management that maximizes CCSF's eligibility for state and federal assistance.

This Plan represents the best judgment of the Planning Team regarding available and recommended approaches to managing disaster debris following a debris-producing incident. The circumstances resented by a specific incident may require different approaches or responses. However, the Plan is intended to provide city personnel with the overall guidance and resources needed to be flexible in addressing additional or unexpected challenges.

The Plan sets forth in general terms the critical operational steps needed to properly coordinate debris clearance, collection, removal, processing, diversion, and disposal following a major disaster. It also provides an overview of the debris-related roles and responsibilities of key CCSF departments, partners, and stakeholders. In addition, the Plan provides guidance regarding statutory and regulatory requirements applicable to the debris management process, including health and safety, environmental, historic preservation requirements, and rules governing debris monitoring, documentation, and procurement requirements. The plan also contains public information guidance and sample messaging.

## 2.3 Plan Scope and Applicability

The CCSF Disaster Debris Management Plan is primarily intended for use in a major, presidentially-declared disaster or emergency producing a large volume of debris in San Francisco. However, the Plan is scalable for use in any debris-generating incident. The Plan is always in effect; elements of the plan can be implemented at any time. The Plan is applicable to all CCSF departments and agencies with roles in debris management. For a roles and responsibilities table, see Section 1.5, above.

The Disaster Debris Management Plan is an Appendix to Emergency Support Function (ESF) #3: The Public Works and Engineering Annex to the CCSF Emergency Response Plan (ERP). The ERP provides a broad, "all-hazards" framework for CCSF organizations working together to manage disasters and emergencies impacting San Francisco. The Disaster Debris Management Plan does not alter or replace procedures or policies set forth in the ERP. Rather, it provides additional guidance to CCSF organizations and leaders in coordinating the disaster debris removal process following an incident.

The Disaster Debris Management Plan complies with the National Response Framework, the National Disaster Recovery Framework, the National Incident Management System (NIMS), the Standardized Emergency Management System (SEMS), and the California State Emergency Plan. In keeping with the purpose of the Disaster Debris Management Plan as an EOC- and DOC-focused plan, the Plan does not include detailed tactics or response actions for field personnel. CCSF departments, agencies, and other partners with debris-related roles and responsibilities in the field during a disaster are urged to develop plans and standard operating procedures to provide additional debris-specific guidance to their personnel.



## 2.4 Plan Development

### 2.4.1 Planning Process

The San Francisco Disaster Debris Management Plan was developed by a dedicated Planning Team composed of representatives from CCSF departments and partner agencies with roles and responsibilities in coordinating debris following a debris-producing disaster in San Francisco. Between August 2016 and August 2018, the Planning Team met six times as a full group to assist with development of the Disaster Debris Management Plan. Members of the Planning Team also gathered for a number of smaller workgroup meetings to discuss and resolve specific debris planning issues, including temporary debris management and prequalification of debris contractors. In addition, Planning Team members reviewed and provided feedback on draft versions of the Disaster Debris Management Plan and approved the final version of the Plan.

### 2.4.2 Planning Participants

Disaster Debris Management Plan Planning Team members and other participants in the planning process are listed in Table 2.1, below.

**Table 2.1. Disaster Debris Management Plan Planning Team and Other Participants**

NAME	TITLE	DEPARTMENT/AGENCY
Cynthia Chono	Emergency Manager	San Francisco Public Works
Edie Schaffer	Emergency Planner	San Francisco Department of Emergency Management
Donna Adkins	Programmatic Access Specialist	Mayor's Office on Disability
Jeff Airth	Airport Emergency Management Coordinator	San Francisco International Airport
Mamdouh Awwad	Senior Environmental Health Inspector	San Francisco Department of Public Health
Adrienne Bechelli	Emergency Planning and Security Analyst	San Francisco Public Utilities Commission
Glen Bongi	Commercial Division Manager	Recology Sunset Scavenger
Jerry Bynum	Marine Salvage and MTS Recovery Specialist	U.S. Coast Guard
Lt. Alejandro Cabebe	Homeland Security	San Francisco Sheriff's Department
Severino Carranto	Contract Preparation & Project Controls	San Francisco Public Works
Rachel Cheng	Senior Environmental Health Inspector	San Francisco Department of Public Health
Michael Cochrane	Assistant Deputy Chief	San Francisco Fire Department
Alaric Degrafinried	Assistant Director	City of San Francisco Office of Contract Administration
Stanley DeSouza	Division Manager, Site Assessment and Remediation	San Francisco Public Works
Alex Dmitriew	Commercial Zero Waste Coordinator	San Francisco Department of the Environment
Edward Donnelly	Building Inspector	San Francisco Department of Building Inspection





NAME	TITLE	DEPARTMENT/AGENCY
Maggie Johnson	Residential Toxics Reduction Coordinator	San Francisco Department of the Environment
Jeremy Lobo	Site Assessment and Remediation	San Francisco Public Works
Lindy Lowe	Resilience Program Director	Port of San Francisco
Andy Maimoni	Deputy Director	311 Customer Service Center
Nick Majeski	Emergency Response Manager	Office of the City Administrator
Gregory Margida	Disaster Management Program Officer	San Francisco Recreation and Park Department
Mark McLean	Disaster Recovery and Resilience Manager	San Francisco Office of the Controller
Leila Mongan	Deputy City Attorney	Office of the City Attorney
Elaine O'Neil	Deputy City Attorney	Office of the City Attorney
James Slattery	C&D Debris Recovery Assistant Coordinator	San Francisco Department of the Environment
Beronica Slattingen	Principal Environmental Health Inspector	San Francisco Department of Public Health
Joshua Smith	EMS Captain	San Francisco Fire Department
Ken Stewart	Maintenance Manager	Recology Sunset Scavenger
Brian Strong	Chief Resilience Officer and Director	Office of Resilience and Capital Planning
Peter Summerville	Operations Planner	Treasure Island Development Authority
Ron Tom	Assistant Director	San Francisco Department of Building Inspection
Alec Tune	Emergency Manager	San Francisco Office of the Controller
Hyun Williams	Contract Administration	San Francisco Public Works
Mark Wingate	Deputy District Engineer for Programs and Project Management	U.S. Army Corps of Engineers
Christopher Wirowek	Director of Operations	Office of the Chief Medical Examiner
Carol Wong	Deputy City Attorney	Office of the City Attorney
Francis Zamora	External Affairs Manager	San Francisco Department of Emergency Management

## 2.5 Local Plan Adoption

As part of the debris planning process, FEMA requires that local debris management plans be approved by the local jurisdiction.<sup>8</sup> The City and County of San Francisco Disaster Council will recommend the Disaster Debris Management Plan for approval, and the plan will be approved by the Mayor under the authority granted by the San Francisco Administrative Code.<sup>9</sup> Local adoption documentation will be included in Appendix A, below.





## 2.6 FEMA Plan Checklist and Crosswalk

The FEMA Debris Management Plan Checklist and Crosswalk, which lists FEMA debris plan requirements and where they are addressed in this Plan, is available in Appendix A, below.

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## SECTION 3: INCIDENTS AND ASSUMPTIONS

### 3.1 Section Overview

This section discusses the types of incidents that may generate a large volume of debris in the City and County of San Francisco (CCSF). It also provides a forecast of the amount and type of debris that each disaster may generate. In addition, the section includes information regarding the geographic characteristics of the areas most likely to be impacted by disaster debris.

### 3.2 Anticipated Disaster Types and Severity

The types of disasters most likely to produce large quantities of debris in San Francisco include earthquake, tsunami, urban conflagration and wildfire, reservoir failure, and terrorism. Flooding is not included in this plan as a hazard for which debris estimates have been created. Though San Francisco can experience both coastal flooding and stormwater ponding, neither of these types of flooding have historically produced large quantities of debris, nor are they expected to do so in the future. San Francisco does not experience riverine flooding because few natural watercourses remain in the city. For extensive discussion of the nature and impact of these hazards and our city's vulnerability to them, see the San Francisco Hazard Mitigation Plan.

### 3.3 Anticipated Debris Types and Quantity

#### 3.3.1 General Disaster Debris Types

The types of debris produced in a disaster vary depending on the disaster and the geographic and land use characteristics of the areas that are most impacted. For instance, San Francisco is a dense urban area that will have less vegetative debris than a more rural jurisdiction. Table 3.5, below, lists typical disaster-generated debris types, examples of each, and the types of disasters that may produce them in CCSF. The table also includes notes regarding the debris types and cross-references to additional information in the plan.

**Table 3.5. Types of Disaster Debris**

DEBRIS TYPES	EXAMPLES	DISASTER TYPES	NOTES/REFERENCES
<b>Vegetation</b> (Green Waste)	<ul style="list-style-type: none"> <li>• Trees</li> <li>• Limbs</li> <li>• Leaves</li> <li>• Brush</li> </ul>	<ul style="list-style-type: none"> <li>• Earthquake</li> <li>• Tsunami</li> <li>• Flood</li> <li>• Reservoir Failure</li> <li>• Fire</li> </ul>	<ul style="list-style-type: none"> <li>• May be found on both public and private property.</li> <li>• May block vehicular traffic on streets.</li> <li>• There are strict tree-related rules on what is reimbursable by FEMA. See Appendix J.</li> </ul>
<b>Sediment, Sand, Rocks</b>	<ul style="list-style-type: none"> <li>• Soil</li> <li>• Mud</li> <li>• Sand</li> <li>• Rocks</li> <li>• Boulders</li> </ul>	<ul style="list-style-type: none"> <li>• Earthquake</li> <li>• Tsunami</li> <li>• Flood</li> <li>• Reservoir Failure</li> <li>• Fire</li> </ul>	<ul style="list-style-type: none"> <li>• Areas with loose soil may become highly-destructive sediment flows during flood or reservoir failures.</li> <li>• Sediment suspected to be contaminated must be screened. If not contaminated, it can be returned to original location and used as fill in reconstruction or as cover material in landfills.</li> <li>• Sandbags used to protect against flooding should be treated as hazardous material, tested, and disposed of appropriately. See Section 11.3.4, below.</li> </ul>



DEBRIS TYPES	EXAMPLES	DISASTER TYPES	NOTES/REFERENCES
<b>Construction and Demolition (C&amp;D):</b> Damaged components of structures.	<ul style="list-style-type: none"> <li>Lumber</li> <li>Metal</li> <li>Glass</li> <li>Carpet</li> <li>Drywall</li> <li>Tile</li> <li>Roofing material</li> </ul>	<ul style="list-style-type: none"> <li>Earthquake</li> <li>Tsunami</li> <li>Flood</li> <li>Reservoir Failure</li> <li>Fire</li> <li>WMD</li> </ul>	<ul style="list-style-type: none"> <li>These materials must be evaluated by experts to determine whether they contain asbestos, lead, and other potentially hazardous materials. See Section 11.3.4.</li> <li>Debris will be assessed to determine the most appropriate diversion strategy (e.g., recycling, composting, reuse, repurpose).</li> </ul>
<b>Utility Systems:</b> Items from power, telephone, cable, and other utilities.	<ul style="list-style-type: none"> <li>Utility poles</li> <li>Wiring</li> <li>Conduit</li> </ul>	<ul style="list-style-type: none"> <li>Earthquake</li> <li>Tsunami</li> <li>Flood</li> <li>Reservoir Failure</li> <li>Fire</li> </ul>	<ul style="list-style-type: none"> <li>Close coordination with utility companies is needed to determine areas of responsibility and to expedite recovery.</li> <li>Polychlorinated Biphenyls (PCBs) may be found in pre-1979 transformers attached to downed utility poles.</li> </ul>
<b>Personal Property and Household Items</b>	<ul style="list-style-type: none"> <li>Furniture</li> <li>Matresses and other household furnishings</li> <li>Personal belongings</li> <li>Firearms and ammunition</li> </ul>	<ul style="list-style-type: none"> <li>Earthquake</li> <li>Tsunami</li> <li>Flood</li> <li>Reservoir Failure</li> <li>Fire</li> </ul>	<ul style="list-style-type: none"> <li>Personal property and household items may be mixed with Household Hazardous Waste. See Household Hazardous Waste on this table and Section 6.4.3.3, below.</li> </ul>
<b>Household Hazardous Waste (HHW):</b> Household items that are ignitable, corrosive, reactive, or toxic.	<ul style="list-style-type: none"> <li>Latex and oil-based paints and stains</li> <li>Cleaning supplies</li> <li>Chemicals</li> <li>Insecticides</li> <li>Automotive products</li> <li>Batteries</li> </ul>	<ul style="list-style-type: none"> <li>Earthquake</li> <li>Tsunami</li> <li>Flood</li> <li>Reservoir Failure</li> <li>Fire</li> </ul>	<ul style="list-style-type: none"> <li>HHW may be mixed with personal property debris.</li> <li>Segregate HHW from other debris prior to collection or drop-off. See Section 6.4.3.3, below.</li> </ul>
<b>Electronics (Ewaste)</b>	<ul style="list-style-type: none"> <li>Computers</li> <li>Cell phones</li> <li>Printers, copiers</li> <li>Televisions</li> <li>Radios</li> <li>Stereos</li> <li>Other corded devices</li> </ul>	<ul style="list-style-type: none"> <li>Earthquake</li> <li>Tsunami</li> <li>Flood</li> <li>Reservoir Failure</li> <li>Fire</li> <li>WMD</li> </ul>	<ul style="list-style-type: none"> <li>Electronics may contain heavy metals (e.g., lead, chromium, cadmium, mercury, beryllium, nickel, or zinc), and other hazardous materials.</li> <li>California law treats nonfunctioning cathode ray tubes from televisions and monitors and most types of electronic waste as hazardous.</li> <li>Ewaste may be recyclable.</li> </ul>
<b>White Goods</b>	<ul style="list-style-type: none"> <li>Washers</li> <li>Dryers</li> <li>Refridgerators</li> <li>Freezers</li> <li>Stoves</li> </ul>	<ul style="list-style-type: none"> <li>Earthquake</li> <li>Tsunami</li> <li>Flood</li> <li>Reservoir Failure</li> <li>Fire</li> </ul>	<ul style="list-style-type: none"> <li>White goods must be segregated and recycled if possible.</li> <li>Refrigerants and other hazardous materials contained in white goods must be removed by certified technicians before collection. See Section 6.4.3.5. below.</li> </ul>
<b>Hazardous Waste:</b> Waste generated by a business or other non-household source that is potentially harmful to human health or to the environment.	<ul style="list-style-type: none"> <li>Petroleum or chemical leak</li> <li>Storage tanks with unknown substances</li> <li>Compressed gas containers</li> <li>Latex and oil-based paint</li> <li>Industrial/commercial cleaning products</li> </ul>	<ul style="list-style-type: none"> <li>Earthquake</li> <li>Tsunami</li> <li>Flood</li> <li>Reservoir Failure</li> <li>Fire</li> <li>WMD</li> </ul>	<ul style="list-style-type: none"> <li>Comply with federal, state, and local environmental requirements for handling hazardous waste. See Section 11.3.4, below.</li> <li>California Environmental Protection Agency (CalEPA) and US EPA provide first response in commercial, industrial, or toxic waste spills.</li> </ul>



DEBRIS TYPES	EXAMPLES	DISASTER TYPES	NOTES/REFERENCES
<b>Hazardous Waste</b> (cont.)	<ul style="list-style-type: none"> <li>• Used and new lubricating oils</li> <li>• Gasoline and other fuels</li> <li>• Commercial insecticides</li> <li>• Vehicle and back-up power batteries</li> </ul>		
<b>Infectious Waste:</b> Waste capable of causing infections in humans.	<ul style="list-style-type: none"> <li>• Animal waste</li> <li>• Human blood or blood products</li> <li>• Medical waste</li> <li>• Pathological waste</li> <li>• Discarded sharps</li> </ul>	<ul style="list-style-type: none"> <li>• Earthquake</li> <li>• Tsunami</li> <li>• Flood</li> <li>• Reservoir Failure</li> <li>• Fire</li> <li>• WMD</li> </ul>	<ul style="list-style-type: none"> <li>• Clearance, removal, and disposal of these wastes may be the authority of federal or state agencies.</li> </ul>
<b>Putrescents</b>	<ul style="list-style-type: none"> <li>• Animal carcasses</li> <li>• Decomposing food or other organic material</li> </ul>	<ul style="list-style-type: none"> <li>• Earthquake</li> <li>• Tsunami</li> <li>• Flood</li> <li>• Reservoir Failure</li> <li>• Fire</li> </ul>	<ul style="list-style-type: none"> <li>• Putrescants should be segregated and managed quickly.</li> <li>• Some putrescants may be composted.</li> </ul>
<b>Vehicles and Vessels</b>	<ul style="list-style-type: none"> <li>• Motor vehicles</li> <li>• Boats</li> </ul>	<ul style="list-style-type: none"> <li>• Earthquake</li> <li>• Tsunami</li> <li>• Flood</li> <li>• Reservoir failure</li> <li>• Fire</li> <li>• WMD</li> </ul>	<ul style="list-style-type: none"> <li>• Removal and disposal is generally the owner's responsibility, but must be coordinated by appropriate governing authorities. See Section 5.7, below.</li> </ul>

Sources: U.S. EPA, *Planning for Natural Disaster Debris* (Washington, DC, 2008), 19–26; Cal OES, *Disaster Debris Management* (Mather, CA, 2014), 19–23.

Additional debris will likely be generated during recovery efforts. For example, sand bags may remain after a flood or wildfire, or may have been used for erosion control during response efforts. Plastic water bottles and plastic sheeting may be left as part of mass care operations. Additional waste also may be produced as part of construction and renovation activities or from demolition of damaged structures.<sup>1</sup>

### 3.3.2 Forecasted Debris Amounts By Disaster

#### 3.3.2.1 DEBRIS FORECASTING OVERVIEW

Disaster debris forecasting is a pre-disaster technique used to predict the amount of debris expected for particular disasters. Debris forecasts can be useful during planning to understand potential debris impacts and the types of debris that will likely be produced. In addition, debris forecasting can be used to determine the resources needed to adequately respond to debris from specific disasters. However, it is important to note that debris forecasting is an inexact “science.” There is no single accepted standard or process for producing debris forecasts for every type of disaster. Of necessity, the forecasting process involves the use of broad assumptions and wide-scale projections. Accordingly, the debris forecasts provided in this section are approximations only. Debris amounts following actual incidents will likely vary widely.



### 3.3.2.2 DISASTER DEBRIS FORECASTS FOR CCSF

Tables 3.6 and 3.7, below, provide forecasts of the amount of debris anticipated in CCSF from the hazards profiled in this section. A description of the methods used and assumptions made in developing these forecasts is included in Appendix C, below.

**Table 3.6. Earthquake Forecasted Debris Amounts**

EARTHQUAKE FAULT AND MAGNITUDE	C&D DEBRIS (tons)		VEGETA- TIVE (tons)	OTHER (tons)	TOTAL TONS	TOTAL CUBIC YARDS	TRUCK LOADS (25 tons per truck)
	Brick, Wood, Other	Concrete and Steel					
<b>San Andreas M7.9</b>	1,620,000	4,380,000	600,000	3,340,000	9,940,000	26,140,000	397,600
<b>Hayward M7.0</b>	229,000	345,000	57,400	214,676	846,076	2,236,304	33,843
<b>Calaveras M6.7</b>	0	0	0	0	0	0	0

Source: Hazus-MH 3.2.

**Table 3.7. Other Disaster Forecasted Debris Amounts**

DISASTER TYPES	C&D DEBRIS (tons)	VEGETATIVE (tons)	OTHER (tons)	TOTAL TONS	TOTAL CUBIC YARDS	TRUCK LOADS (25 tons per truck)
<b>Tsunami</b>	3,729,375	372,938	1,394,786	5,497,099	14,529,646	219,884
<b>Urban Conflagration/Wildfire</b>						
Earthquake- Induced: Marina District fire	95,667	3,189	33,631	132,467	338,614	5,299
Wildland Urban Interface: High Fire Severity Area	467,128	15,571	164,117	646,816	2,371,758	25,873
<b>Reservoir Failure</b>						
Sunset Basin, North and South	4,053,788	405,379	1,516,117	5,975,284	15,793,560	239,011
Sutro Reservoir	94,285	9,429	35,263	138,977	364,338	5,559
University Mound, North and South	552,373	55,237	206,587	814,197	2,152,042	32,567
<b>Terrorism—Weapon of Mass Destruction</b>						
Scenario 1: Government Site	146,560	4,885	51,491	202,936	518,624	8,117
Scenario 2: Commercial Site	200,557	6,685	70,462	277,704	709,702	11,108
Scenario 3: Transportation and Commercial Site	366,362	12,212	128,715	507,289	1,296,432	20,292

For maps showing forecasted locations of earthquake-related debris from the San Andreas and Hayward earthquake scenarios, see Appendix B, below. For maps showing hazard areas for different hazards San Francisco may experience, see also Appendix B, below.



## 3.4 Geographic Characteristics of Areas Most Likely Impacted

### 3.4.1 General Terrain

The City and County of San Francisco is located on the coast of Northern California, approximately 350 miles northwest of Los Angeles and 300 miles south of the California-Oregon border. The city occupies the northern tip of a peninsula lying between San Francisco Bay and the Pacific Ocean; it is bordered by the Pacific Ocean to the west, by San Francisco Bay to the north and east, and by San Mateo County on the south. CCSF occupies approximately 46.87 square miles. With elevations ranging from sea level to nearly 1,000 feet, San Francisco is known for its hilly terrain. The city has over 43 official, named hills, and is one of the hilliest cities in the world.<sup>2</sup> The city also includes Treasure Island and Yerba Buena Islands, which are physically separated from the rest of the city by San Francisco Bay.

### 3.4.2 Land Use

San Francisco is the second most densely-populated major city in the United States.<sup>3</sup> According to the United States Census Bureau, San Francisco's population as of June 2017 is an estimated at 884,363,<sup>4</sup> for an average density of approximately 18,868 people per square mile. San Francisco is also spatially small. In 2016, San Francisco's built-up urban area was the 23rd largest in the world in terms of land area. In contrast, the world's largest built-up urban area in geographical expanse,<sup>5</sup> New York City, with 8.6 million in estimated population, is over six times as large as San Francisco.

The San Francisco Planning Department has divided the city into commerce and industry districts, characterized by predominant economic activities, employment concentration, business density, and other spatial features that reflect variations in land use in the city. Those districts include the following:<sup>6</sup>

- The Financial District covers the densest area with the highest concentration of employment and establishments.
- The Civic Center district is defined by its high concentration of institutional and government activities.
- The Van Ness district runs along a commercial corridor surrounded by mid- to high-density residential buildings.
- The Mission and North Beach districts are characterized by intense local retail activities and have very defined identities for city residents and visitors.
- The South of Market district contains a combination of office and Production/Distribution/Repair (PDR) activities, located between the Financial District and Bayview. PDR activity includes establishments related to processing, movement, and repair of goods and provision of citywide infrastructure. It includes manufacturing, wholesale, construction, transportation (including vehicle maintenance and repair), information, and utilities.
- The Bayview district contains a high concentration of PDR activities and has low density in terms of population, employment, and establishments.
- The North Central district concentrates a large proportion of institutional activities that are primarily health related. It is a transitional area between the Financial District and residential areas located to the west.





- The Southwest and Northwest districts are predominantly residential, with a very low business density.

A map showing these districts is included in Appendix B, below. Additional maps showing San Francisco zoning and land use also are provided in Appendix B, below.

There is little land available for development within CCSF. Topography is the primary constraint on the amount of developable land in San Francisco. The city is surrounded by areas that are not developable, including an ocean and a bay; and federal, state, and city parks that add greatly to the beauty and quality of living in the Bay Area. Another constraint on development in San Francisco is the extent to which the city has already been developed. Estimates by the U.S. Census Bureau indicate that there were about 397,550 housing units in San Francisco County in 2017, an average of 13 housing units per acre or about 8,482 housing units per square mile.<sup>7</sup>

### 3.4.3 Accessibility

As mentioned in Section 3.4.1, above, San Francisco sits on a peninsula bordered on three sides by water. This factor, along with San Francisco's small size and high density as an urban area, combine to make San Francisco less accessible than other California coastal cities. The core goods transportation systems for the Bay Area include:<sup>8</sup>

- Major truck routes, defined as having average annual daily traffic (AADT) of over 3,000 three or more axle-trucks:
  - Within San Francisco: Interstate 80 and US Highway 101, though Highway 101 does not have over 3,000 AADT of three or more axle truck traffic within San Francisco.
  - Greater Bay Area: Interstate 80, Interstate 880, Interstate 580, US Highway 101, I-238, and I-680.
- Rail lines available to the city for possible use include:
  - The Class I main lines operated by the Union Pacific Railroad and the BNSF Railway. A Class I railroad is a line haul railroad with annual operating revenue of \$433.2 million or more. Class I railroads are the nation's largest rail carriers and provide primarily long-haul freight rail services.
  - Class III lines operated by the San Francisco Bay Railroad, a short-line railroad that serves the city and the Port of San Francisco with a Union Pacific interchange. San Francisco Bay Railroad also operates a rail terminal in Richmond California.<sup>9</sup>
  - Near-dock intermodal rail terminals, rail classification yards, and rail auto terminals.
- Water:
  - The Port of San Francisco provides maritime facilities and commercial real estate along seven and one-half miles of waterfront the city's waterfront.
  - The Port of Oakland serves as the principal international water trade gateway in the Bay Area.
- Air:
  - Principal international air cargo gateway at the San Francisco International Airport (SFO);
  - Principal domestic air cargo gateway at Oakland International Airport (OAK).



A map showing this core transportation system is included in Appendix B, below.

The core system is complemented by other truck routes; Class III short line railroads, including Northwestern Pacific Railroad, California Northern Railroad, Oakland Gateway Rail Enterprise, Richmond Pacific Railroad Corporation, and the San Francisco Bay Railroad; small niche marine ports such as the Port of Richmond, Port of Benicia, and the Port of Redwood City; and the Mineta San Jose International Airport (SJC).

It is also important to note that San Francisco city ordinances place limits on the operation of vehicles over a certain weight on a number of city streets. It is a violation of the San Francisco Transportation Code to operate vehicles with a gross weight of over 6,000 pounds or three tons on certain streets.<sup>10</sup> The Transportation Code also limits the operation of vehicles with an *unladen* weight of over 18,000 pounds or nine tons on certain streets.<sup>11</sup> A map showing restricted access streets is included in Appendix B, below.

### 3.4.4 Impact on Debris Operations

San Francisco's density as an urban area will present difficult challenges for debris operations in terms of the lack of space for the movement of trucks and other debris-related vehicles, especially within the Financial District, the city's urban core. Many San Francisco streets are narrow and winding, and—in hilly areas of the city—quite steep. These factors make CCSF streets a poor fit for large vehicles often used in debris operations, such as semi-end and transfer dump trucks and knuckle boom trucks. San Francisco is also one of the most traffic-congested areas in the United States. According to a 2016 study by INRIX Global Traffic Scorecard, drivers in San Francisco spend more than 80 hours per year on gridlocked, congested roadways.<sup>12</sup>

The lack of available open space in CCSF will also make it difficult, if not impossible, to operate temporary debris management sites (TDMS) within the city to perform debris sorting, processing, and diversion. Access to locations where debris can be sorted, processed, and diverted is essential to meet San Francisco's commitment to maximize debris material recovery efforts, including recycling, composting, repurposing, and reuse of disaster debris. These efforts are necessary to limit impacts on regional landfills, the environment, and human health. Of necessity, CCSF will need to make extensive use of existing, permitted debris transfer and processing centers located outside San Francisco. For further discussion of TDMS, see Section 7, below. For further discussion of debris diversion, see Section 8, below.

It is also important to keep in mind that industrial areas located primarily on the eastern side of the city, and U.S. Navy environmental remediation areas on Treasure Island, may present special health, safety, and environmental concerns during debris operations. San Francisco has a number of Superfund sites.<sup>13</sup> These are areas identified by the U.S. Environmental Protection Agency (US EPA) as contaminated by hazardous waste that are candidates for cleanup because they pose a risk to human health or to the environment.<sup>14</sup> There are also a number of "brownfield" sites located in San Francisco, properties that may have hazardous substances, pollutants, or contaminants present. For a list of these locations, see the California Department of Toxic Substances web site.<sup>15</sup>

In addition, over 80 percent of San Francisco's housing was built before 1980.<sup>16</sup> These older buildings may contain asbestos and lead.<sup>17</sup> Common asbestos-containing building materials include stucco, roofing, floor tile, fireplace insulation, furnaces, wall insulation, acoustical



treatments, sheetrock, joint compound, construction adhesives, vapor barriers, pipe wraps, and electrical wiring insulation.<sup>18</sup> Hazardous debris requires special handling and disposal. CCSF debris managers will implement a program to detect, identify, and prevent improper handling, transport, and processing of hazardous materials that may be contained in disaster debris. For further discussion of health and safety issues posed by disaster debris, see Section 11, below. For further discussion of environmental issues posed by disaster debris, see Section 12, below.

### 3.5 Debris Planning Assumptions

In developing this plan, the Planning Team made the following assumptions:

- In a catastrophic disaster such as a severe earthquake, communication networks will likely be inoperable, transportation routes may be severely disrupted, and city resources will be overwhelmed.
- A major debris-producing disaster will require lengthy, sustained debris operations lasting six months or more.
- The amount of debris resulting from a major debris-producing disaster will exceed the city's force account or "in-house" debris clearance, removal, processing, diversion, and disposal capabilities.
- Following a disaster exceeding CCSF resources, the Mayor will proclaim a local emergency, and will request that the Governor proclaim a state of emergency authorizing state resources to assist in disaster debris removal. If the disaster exceeds both local and state resources, the Governor will request a presidential disaster declaration.
- Following a debris-producing disaster exceeding CCSF resources, the city will request state and federal resources to assist in debris clearance, removal, diversion, and disposal of debris, as appropriate.
- CCSF will contract for additional resources to assist in debris clearance, removal, diversion, and disposal as needed.
- CCSF will continue its efforts to meet state- and city-mandated recycling policies and diversion goals during a disaster to minimize disposal of disaster debris at landfills.
- Because San Francisco is a dense, highly urbanized city, it is not practical to perform extensive debris sorting and processing using temporary debris management sites within city limits. Accordingly, whenever possible CCSF will perform temporary debris management functions at regional debris management sites located at existing debris transfer and processing centers in the Bay Area or outside the Bay Area if needed.



## SECTION 4: DISASTER DEBRIS COORDINATION

### 4.1 Section Overview

This section provides guidance on how San Francisco will coordinate the debris removal process after a disaster. It describes the role and responsibilities of the San Francisco Public Works (SFPW) Department Operations Center (DOC), which is charged with overall management of debris removal following a disaster. The section also discusses the role and responsibilities of the San Francisco Emergency Operations Center (EOC) in debris coordination. In addition, the section describes the phases of debris operations and the priorities to be met during each phase. The section further discusses the development of a Debris Operations Plan specific to each debris-producing incident and what should be included in the plan. This section also covers initial debris assessments needed to understand the location, extent, and types of disaster debris affecting the city. Also covered is CCSF's debris resource management process, including use of force account, contract, and mutual aid resources; and considerations for people with disabilities and access and functional needs.

### 4.2 Debris Coordination Process

#### 4.2.1 Overall Incident Management

In a debris-producing incident, CCSF's emergency management and response system is organized as described in the San Francisco Emergency Response Plan (ERP). The city's response to such incidents is managed at the lowest level possible in accordance with the National Incident Management System, the Standardized Emergency Management System (SEMS), and the Incident Command System.<sup>1</sup> Accordingly, CCSF has responsibility for managing the response to and recovery from debris-generating incidents within the jurisdiction.

In general, each city department and special district is responsible for managing disaster debris affecting their facilities and infrastructure as the department's or district's resources allow. This includes city departments or special districts with infrastructure outside San Francisco County, such as the San Francisco International Airport (SFO), the Sheriff's Department, and the San Francisco Public Utilities Commission. In addition, each department or special district is responsible for reporting its debris removal status to their DOC, which in turn is responsible for forwarding those reports to the EOC Operations Support Section, Infrastructure Branch Debris Coordination Unit, and to the SFPW DOC Debris Management Group. When city departments or special districts require resources or other assistance in performing disaster debris-related activities, the department or district will follow the resource request procedures outlined in Section 4.6, below.

#### 4.2.2 Coordinating and Supporting Departments

The CCSF ERP provides that the Infrastructure Branch in the EOC Operations Support Section is responsible for carrying out Emergency Support Function (ESF) #3: Public Works and Engineering. SFPW is the coordinating department for ESF #3. Among the tasks assigned to ESF #3 by the ERP is debris removal, which includes coordinating debris activities following a disaster impacting the city. CCSF departments acting in a supporting role in coordinating debris removal activities include the following:

- The Controller's Office (CON).
- Department of Building Inspection (DBI).

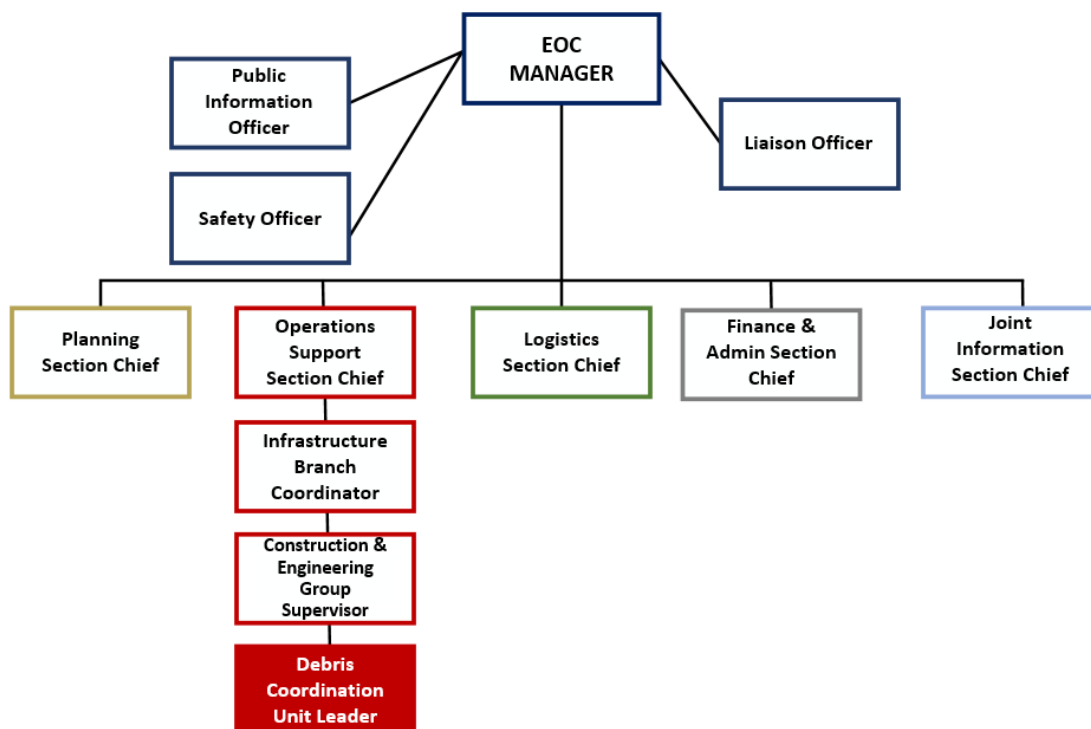


- Department of Emergency Management (DEM).
- Department of Public Health (DPH).
- Office of Contract Administration (OCA).
- Office of the Chief Medical Examiner (OCME).
- Port of San Francisco (Port).
- Recreation and Park Department (RPD).
- San Francisco Environment (SFE).
- San Francisco International Airport (SFO).
- San Francisco Public Utilities Commission (SFPUC).
- Treasure Island Development Authority (TIDA).

#### 4.2.3 EOC Debris Coordination

The CCSF ERP and ESF #3 identify debris coordination as an emergency function of the San Francisco EOC Operations Support Section Infrastructure Branch. Within the Infrastructure Branch is the Debris Coordination Unit, which is responsible for overall disaster debris coordination following a debris-generating disaster or emergency in San Francisco. For a chart showing the location and organization of the Debris Coordination Unit within the EOC, see Figure 4.1, below.

**Figure 4.1. EOC Debris Coordination Unit Organization**



##### 4.2.3.1 DEBRIS COORDINATION UNIT MISSION AND LOCATION

The Debris Coordination Unit's mission is to:

- Work with the Policy Group, EOC Manager, and SFPW DOC Debris Management Group to establish citywide debris-related objectives.



- Gather information regarding the city's debris status and the status of debris response and recovery efforts, and share that information with the public and with city partners.
- Provide support to the SFPW DOC in managing the safe, timely, and effective clearance, collection, removal, diversion, and disposal of disaster debris following an incident.
- Obtain, allocate, and monitor the use of resources needed to effectively perform disaster debris response and recovery.
- Act as a liaison between the city and regional, state, federal, and non-governmental partners for purposes of information sharing and resource gathering.

During disaster response efforts, the Debris Coordination Unit will be located in the EOC to provide a centralized location for coordinating disaster debris activities. However, because debris removal, processing, and disposal work may continue during recovery efforts after deactivation of the EOC, the Debris Coordination Unit may relocate to a CCSF recovery office charged with managing the city's long-term recovery efforts. For further discussion of short-term recovery, see ESF #14: Recovery Management Annex to the CCSF ERP.

#### **4.2.3.2 ACTIVATION AND DEACTIVATION**

The EOC Debris Coordination Unit will activate when the SFPW DOC Debris Management Group has activated to manage citywide disaster debris efforts. In addition, the Debris Coordination Unit may be activated by the EOC Manager, the Operations Support Section Chief, or the Infrastructure Branch Coordinator. Similarly, the Construction and Engineering Group Supervisor may activate the Unit after consultation with the Infrastructure Branch Coordinator and Operations Support Section Chief. The EOC Debris Coordination Unit may be deactivated by the EOC Manager, the Operations Support Section Chief, or the Recovery office Manager.

#### **4.2.3.3 ORGANIZATION AND STAFFING OF EOC DEBRIS COORDINATION UNIT**

The EOC Debris Coordination Unit will be managed by a Unit Leader from San Francisco Public Works (SFPW), from the San Francisco Department of Emergency Management (DEM), or from another department with debris coordination capabilities. If necessary, the Unit Leader may appoint specialists to assist in performing unit tasks. For an EOC Debris Coordination Unit organizational chart, see Figure 4.1, above. Position responsibilities are discussed in Section 4.2.3.4, below. Position checklists for EOC Debris Coordination Unit personnel are included in Appendix D, below.

#### **4.2.3.4 UNIT ROLES AND RESPONSIBILITIES**

##### Unit Leader

The Debris Coordination Unit Leader is responsible for managing the overall operations of the unit, with responsibilities including:

- Acting as the sole point of contact for all debris-related functions within the EOC or, if applicable, in the recovery office.
- Staffing the unit with qualified personnel, as needed.
- Assigning tasks to unit personnel and tracking the status and completion of tasks.
- Acting as a liaison for the unit within the EOC, and with DOCs and partner agencies.
- Coordinating debris-related functions between CCSF departments and partner agencies.
- Assisting the EOC Joint Information Section (JIS) and Public Information Officer (PIO) in





developing public messaging regarding CCSF's overall debris coordination efforts.

#### Debris Coordination Unit Specialist(s)

The Debris Coordination Unit Specialist is responsible for assisting the Unit Leader in performing unit responsibilities, including:

- Providing informational and logistical support to the SFPW DOC and other CCSF DOCs with emergency debris clearance functions.
- Tracking the progress of debris operations.
- Coordinating with local, regional, state, and federal officials involved in debris operations.
- Assisting the EOC JIS and PIO in developing public messaging regarding debris operations.

Position checklists for EOC Debris Coordination Unit personnel are included in Appendix D, below. For further discussion of information management, see Section 4.5, below. For further discussion of resource management, see Section 4.6, below.

#### **4.2.3.5 OTHER EOC STAFF WITH DEBRIS COORDINATION RESPONSIBILITIES**

Other EOC staff or sections with debris coordination responsibilities include the following:

- The Policy Group, which is responsible for providing debris-related policy guidance and setting citywide debris objectives.
- The Finance and Administration Section coordinates with and provides situational awareness to the Controller's Office, and advises the EOC on citywide and EOC-specific cost and time tracking. The Controller's Office is responsible for implementing cost and time tracking codes for debris-related work; ensuring the city maintains complete and accurate documentation of debris work; providing technical assistance on local, state, and federal contract procurement rules; as the authorized agent for Federal Emergency Management Agency (FEMA) Public Assistance, pre-auditing Public Assistance Project Worksheets prepared by city departments prior to submission to the California Governor's Office of Emergency Services (Cal OES) and FEMA; and setting and ensuring compliance with record retention rules.
- The Logistics Section, which is responsible for acquiring debris-related resources requested by the EOC Operations Support Section; tracking the status of resource requests; and coordinating requests for debris-related facilities such as debris management sites.
- The JIS and PIO, which are responsible for developing and disseminating public and media messaging regarding the city's debris coordination efforts. For further discussion of public information, see Section 14, below.

For discussion of general responsibilities of EOC sections and staff, see the CCSF ERP.

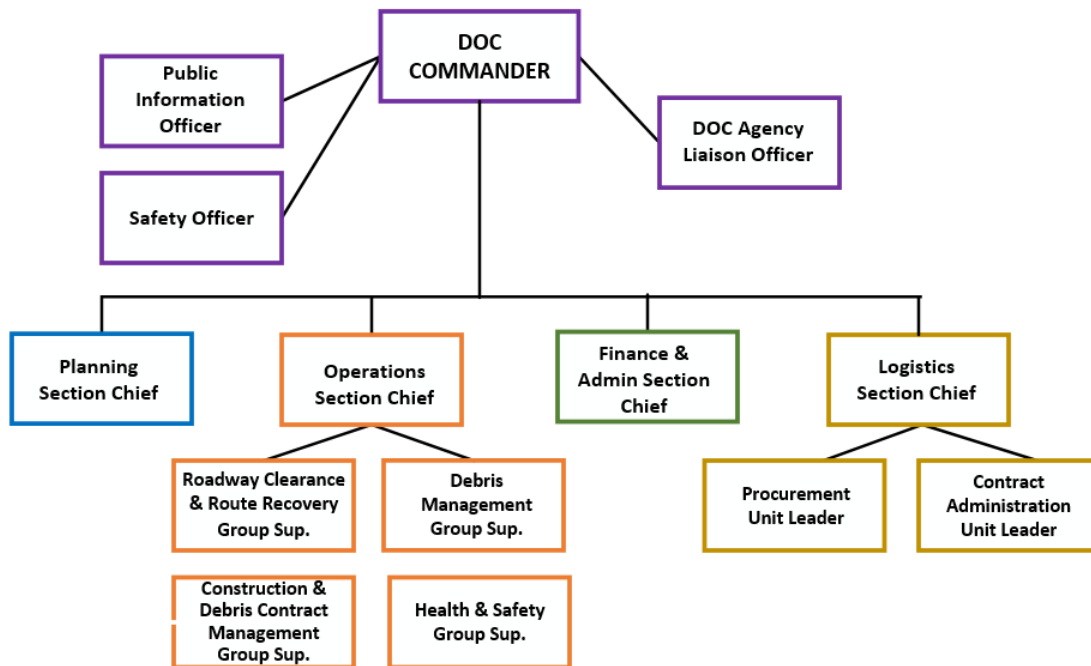
#### **4.2.4 SFPW DOC Debris Management**

The SFPW DOC has primary responsibility for managing the city's emergency debris clearance, collection, removal, diversion, and disposal activities following a debris-producing disaster. Debris clearance within the SFPW DOC is managed by the Road Clearance and Route Recovery Group. Debris collection, removal, diversion, and disposal activities are managed by the Debris Management Group. Both groups are located in the SFPW DOC Operations Section.<sup>2</sup> For a SFPW DOC Operations Section organizational chart, see Figure 4.2, below.





Figure 4.2. SFPW DOC Debris Management Organization



Source: San Francisco Public Works (SFPW), "Emergency Department Operations Center, Organizational Chart & Team Descriptions" (2017).

#### 4.2.4.1 ROAD CLEARANCE AND REPAIR GROUP

##### Mission

The SFPW DOC Roadway Clearance and Route Recovery Group is responsible for managing emergency debris clearance efforts. The group's mission is to:

- Implement citywide debris clearance objectives as established by the Policy Group and EOC.
- Manage the safe, timely, and effective clearance of debris from streets and roads following a disaster.
- Ensure that debris clearance activities are conducted in accord with federal, state, and local laws, regulations, and other requirements governing debris.

Ensure that debris clearance work is performed in a manner that avoids blocking access to sidewalks, curb ramps, and other critical pathways whenever possible (see Section 4.8, below).

##### Organization and Staffing

The Roadway Clearance and Route Recovery Group is managed by a Group Supervisor from SFPW or another qualified department. Serving under the Group Supervisor is the Street Clearance Unit Leader, who is responsible for managing the emergency clearance of debris from roadways,<sup>3</sup> including coordinating with state and federal officials for clearance of state and federal roadways.

#### 4.2.4.2 SFPW DOC DEBRIS MANAGEMENT GROUP

##### Mission

The SFPW DOC Debris Management Group's mission is to:



- Implement citywide debris-related objectives as established by the Policy Group and EOC.
- Manage the safe, timely, and effective clearance, collection, removal, diversion, and disposal of disaster-generated debris following a disaster;
- Mitigate potential threats to the health and safety of city residents, responders, and others in San Francisco posed by disaster debris; and
- Ensure that debris response and recovery activities are conducted in accord with applicable federal, state, and local laws, regulations, and other legal requirements governing debris.

### Organization and Staffing

The SFPW DOC Debris Management Group is managed by a Group Supervisor from SFPW or another qualified department. Serving under the Group Supervisor are the following positions:<sup>4</sup>

- Collection Unit Leader.
- Debris Removal Unit Leader.
- Demolition Unit Leader.
- Debris Health and Safety Unit Leader.
- Debris Diversion/Management Site Unit Leader.
- Legal/Permit Review Unit Leader.
- Public Outreach Unit Leader.

Group positions will be staffed by appropriate personnel from SFPW and, when needed, personnel from other city departments such as the Department of Public Health (DPH) and San Francisco Environment (SFE), as determined by the Debris Management Group Supervisor.

### Roles and Responsibilities

Below are the roles and responsibilities performed by the SFPW DOC Debris Management Group Supervisor and the various units in the group. Every unit leader in the group is responsible for tracking the unit's progress in performing its duties, reporting its status to the Group Supervisor, and assisting the Public Outreach Unit Leader in developing public messaging regarding debris response and recovery efforts.

#### *Group Supervisor*

The DOC Debris Management Group Supervisor is responsible for managing the overall operations of the Group, with responsibilities including:

- Acting as the sole point of contact for debris collection, removal, diversion, and disposal functions within the DOC.
- Staffing the group with qualified personnel.
- Assigning tasks to group personnel and tracks the status and completion of tasks.
- Acting as a liaison for the group with the EOC, other DOCs, and partner agencies.
- Working with the group to develop strategies for debris clearance, collection, removal, temporary management, recycling, and disposal.

#### *Collection Unit Leader*

The Collection Unit Leader is responsible for managing debris collection operations, including:



- Forecasting debris quantities before incidents with notice and estimating debris quantities following no-notice incidents.
- Developing a debris estimating strategy for post-disaster debris quantities.
- Developing debris collection schedules and plans.
- Managing and facilitating the debris collection operations (see Section 6, below).
- Ensuring that FEMA private property debris removal policies are complied with before initiating any private property debris collection (see Section 6.5, below).
- Ensuring the availability and positioning of equipment and resources for debris collection.
- Ensuring that force account and contract laborers performing debris collection are properly monitored and supervised (see Section 10, below).
- Ensuring that CCSF meets debris collection documentation requirements (see Section 10, below).
- Supervising the Household Hazardous Waste (HHW) Team Leader, the Hazardous and Toxic Waste Team Leader, and the Electronic (E) and White Waste Team Leader.

The HHW Team is responsible for managing collection of HHW. The Hazardous and Toxic Waste Team Leader is responsible for managing collection of hazardous and toxic waste. The E and White Waste Team Leader is responsible for managing collection of electronic waste and white goods. For further discussion of debris collection, see Section 6, below.

#### *Debris Removal Unit Leader*

The Debris Removal Unit Leader is responsible for managing the safe and efficient removal and disposal of disaster debris, including:

- Developing procedures for debris removal and disposal.
- Managing and facilitating the removal and disposal process.
- Selecting and mapping debris transportation routes in coordination with the EOC Operations Support Section, Transportation Branch.
- Ensuring the availability and positioning of staff, equipment, and other resources for removal.
- Ensuring that FEMA private property debris removal policies are complied with before initiating any private property debris removal (see Section 6.5, below).
- Accessing available landfill sites and determining if additional sites are needed.
- Ensuring that force account and contract laborers performing removal, diversion, and disposal work are properly monitored and supervised (see Section 10, below).
- Ensuring that CCSF meets debris removal documentation requirements (see Section 10, below).

For further discussion of debris removal, see Section 6, below. For further discussion of debris disposal, see Section 9, below.

#### *Demolition Unit Leader*

The Demolition Unit Leader is responsible for managing the safe and efficient demolition of public and private buildings that cannot be repaired, including:



- Developing a plan for demolition of public and private buildings that are damaged beyond repair.
- Managing and facilitating the demolition process.
- Ensuring the availability and positioning of staff, equipment, and other resources for demolition.
- Ensuring that FEMA private property demolition policies are complied with before initiating any private property demolition (see Section 6.5.6, below).
- Ensuring that force account and contract laborers performing demolition work are properly monitored and supervised (see Section 10, below).
- Ensuring that CCSF meets demolition documentation requirements (see Section 10, below).

For further discussion of demolition on private property, see Section 6.5.6, below.

#### *Debris Health and Safety Unit Leader*

The Debris Health and Safety Unit Leader is responsible for ensuring the safe removal and disposal of disaster debris, including:

- Developing and ensuring implementation of site-specific Health and Safety Plans (HASPs) for all debris facilities.
- Reviewing debris-related health and safety protocols established by field and DOC personnel to ensure CCSF adheres to applicable health and safety laws, regulations, and other such legal requirements.
- Monitoring health and safety practices of force account and contracted service personnel performing debris work.
- Ensuring that all debris facilities have force account or contract safety officers at all times during facility operations.
- Acting as a liaison with state and federal health and safety personnel for debris-related issues.
- Ensuring the availability of health and safety equipment, supplies, and other resources.
- Acting as a liaison to state and federal health and safety personnel for debris-related issues.

The SFPW DOC Health and Safety Unit should have representation from the San Francisco Department of Public Health (DPH), which is CCSF's local solid waste enforcement agency; and from the San Francisco Department of the Environment (SFE). For further discussion of the local solid waste enforcement agency, see Section 4.2.4.4, below.

#### *Debris Diversion/Management Site Unit Leader*

The Diversion/Management Site Unit Leader is responsible for managing efforts to divert disaster debris from city landfills through reduction, recycling, composting, repurposing, and reuse; and for use of temporary or existing debris management sites, including:

- Determining appropriate debris reduction and recycling methods.
- Developing a plan for diversion and the use of existing or temporary debris management sites.



- Managing and facilitating debris diversion and the use of debris management sites.
- Accessing available reduction, recycling, composting, or reuse facilities and determining if additional sites are needed.
- If applicable, working with Controller's Office DOC to ensure that proceeds from debris diversion are used only for approved purposes as required by the FEMA Alternative Procedures Pilot Program for Debris Removal.<sup>5</sup>
- Ensuring the availability of equipment and resources for debris diversion and debris management sites.
- Selecting existing or temporary debris management sites.
- When needed, designing temporary debris management site layouts.
- Ensuring that force account and contract laborers performing debris diversion or working at debris management sites are properly monitored and supervised.

The Diversion/Management Site Unit should have representation from the DPH and SFE. For further discussion of debris management sites, see Section 7, below. For further discussion of debris diversion, see Section 8, below.

#### *Legal/Permit Review Unit Leader*

The Legal/Permit Review Unit Leader is responsible for managing the debris-related permitting process and legal review of debris contracts, including:

- Managing and facilitating debris permitting and legal review process, including Environmental and Historic Preservation reviews.
- Obtaining needed permits or waivers.
- Reviewing debris contracts and land lease agreements to ensure compliance with legal requirements, including federal procurement rules.
- Evaluating and providing guidance on structure condemnation procedures.
- Reviewing requests for private property debris removal and demolition of private structures to ensure they meet all prerequisites (see Section 6.5, below).
- Reviewing and providing guidance on right-of-entry and hold-harmless agreements for private property debris removal.

#### *Public Outreach Unit Leader*

The Public Outreach Unit Leader is responsible for developing outreach messaging for the public and for debris personnel, including:

- Assisting the EOC JIS and PIO in developing and delivering public messaging regarding debris management efforts.
- Overseeing public relations efforts by field teams performing debris collection and removal.
- Monitoring and using social media to gather debris-related information and to share approved debris-related messaging developed in consultation with the EOC Joint Information Section.

For further discussion of the roles and responsibilities of the SFPW DOC Public Outreach Unit Leader, see Section 14.3.2.4, below.



#### 4.2.4.3 ADDITIONAL SFPW DOC INVOLVEMENT

Additional SFPW DOC sections with debris-related roles and responsibilities include the following:

- Planning Section Windshield Survey Unit, which gathers debris and damage information from all CCSF DOCs.
- Operations Section Debris and Construction Contract Management Group, which prepares contracts for emergency debris work and monitors and documents contract performance.
- Finance and Administration Section:
  - Procurement Unit, which identifies, processes, and enters into contracts with debris contractors.
  - Contract Administration Unit, which processes and administers debris contracts.
  - Cost Tracking and Reimbursement Unit, which tracks debris-related costs in consultation with the Controller's Office.

#### 4.2.4.4 LOCAL ENFORCEMENT AGENCY REPRESENTATION IN SFPW DOC

Under California law, local solid waste enforcement agencies, known as LEAs, are responsible for ensuring correct operation and closure of solid waste facilities in California. LEAs also have responsibility for guaranteeing proper storage and transportation of solid wastes.<sup>6</sup> LEAs have been designated for every California county.<sup>7</sup> The San Francisco Board of Supervisors has designated the San Francisco Department of Public Health (DPH), Environmental Health Branch as San Francisco County's LEA. The LEA is responsible for permitting, inspecting, and regulating solid waste handling and disposal sites in CCSF.<sup>8</sup> When the SFPW DOC Debris Management Group is activated during a debris-producing disaster, a representative from the LEA will serve in the SFPW DOC Planning Section as a technical advisor. If the SFPW DOC is not activated, a LEA representative will serve in the EOC Planning Section as a technical advisor.

As San Francisco's LEA, the DPH Environmental Health Branch is empowered within CCSF to:<sup>9</sup>

- Enforce statutory provisions and regulations regarding solid waste management.
- Request enforcement of solid waste storage, handling, and disposal laws by appropriate federal, state, and local agencies.
- Develop, implement, and maintain CCSF solid waste facility inspection, enforcement, and permitting programs.
- Establish specific local standards for solid waste handling and disposal, subject to approval by the Board of Supervisors.
- Establish and maintain an inspection program to determine if a solid waste facility is operating without a permit; operating in violation of its permit or of state standards; or if the facility poses a significant threat to public health and safety or to the environment.

The LEA communicates with the California Department of Resources Recycling and Recovery (CalRecycle) for technical guidance and support at the state level. CalRecycle provides tools, information, and contacts to the LEA in disasters.

During the recovery phase, the LEA may issue an emergency waiver of standards allowing an operator of an existing permitted solid waste facility, a locally-approved temporary transfer or





processing site, or a locally-approved temporary compostable material handling activity to accept disaster debris and other nonhazardous wastes in a manner that is inconsistent with an existing solid waste facilities permit or applicable state standards.<sup>10</sup> The LEA also can communicate with LEAs for other jurisdictions to prepare for emergency waiver of standards for those jurisdictions' solid waste facilities, so the facilities can accept additional tonnage and traffic volumes to admit San Francisco debris. The LEA submits waiver approvals to CalRecycle for review. However, the LEA may only issue an emergency waiver when a state of emergency has been proclaimed by the Governor or a local emergency has been proclaimed by the Mayor.<sup>11</sup> For further discussion of emergency waivers, see Section 8, below.

#### **4.2.5 Stakeholders**

##### **4.2.5.1 REGIONAL, STATE, AND FEDERAL**

Effective management of disaster debris within CCSF will require extensive collaboration with regional, state, and federal stakeholders, such as Cal OES, the California Environmental Protection Agency (CalEPA), the U.S. Environmental Protection Agency (US EPA), and the U.S. Army Corps of Engineers (USACE). The EOC Debris Coordination Unit Leader acts as the primary liaison with these stakeholders on debris-related matters. For a table showing the debris-related roles of these stakeholder agencies, see Section 1.5.3, above. For further discussion of the EOC Debris Coordination Unit, see Section 4.2.3, above.

##### **4.2.5.2 STATE AND FEDERAL RESPONSIBILITY FOR DEBRIS WORK**

State and federal agencies may be required or authorized by law to perform certain debris-related duties in a disaster impacting San Francisco. For example, the California Department of Transportation (Caltrans) is responsible for clearing debris from federal and state roads in San Francisco (see Section 5.5, below). The USACE and U.S. Coast Guard (USCG) have joint responsibility for removing disaster debris from federal navigable waters such as San Francisco Bay (see Section 6.6, below).<sup>12</sup> For a table showing roles and responsibilities of these agencies, see Section 1.5.3, above.

##### **4.2.5.3 INTERAGENCY DEBRIS MANAGEMENT TASK FORCE**

During presidentially-declared disasters, stakeholder agencies listed in Section 1.5.3, above, may be asked to participate along with CCSF representatives in an Interagency Debris Management Task Force (IDMTF). The purpose of the Task Force is to facilitate interagency cooperation during debris response and recovery efforts. Early formation of an IDMTF will help expedite the involvement of state and federal agencies in the debris removal process. As quickly as possible following a large debris-producing disaster, after consultation with the EOC Manager and Policy Group, the EOC Debris Coordination Unit Leader will make a request through Cal OES for formation of an IDMTF. Typically, the USACE coordinates the efforts of the Task Force. The EOC Debris Coordination Unit Leader, the SFPW DOC Debris Management Group Supervisor, or persons designated by them, will participate as CCSF representatives on the Task Force.

### **4.3 Debris Operations Phases and Priorities**

Disaster debris operations are divided into three phases: initial response, short-term debris recovery, and intermediate debris recovery. Initial response phase activities include the emergency clearance of debris from roads and other areas where it hampers immediate life-





saving activities and poses an immediate threat to public health or safety. Recovery phase activities include collecting, removing, processing, and disposing of debris that hinders recovery, but poses less of a threat to public health or safety. See Section 1.1 for a diagram showing the three phases and the objectives to be addressed in each phase.

#### **4.3.1 Initial Response Phase Priorities**

During the initial response phase, generally the first 72 hours after the event, the primary activity that must be performed is emergency debris clearance: moving debris obstructing roadways to the road shoulder or curb to facilitate immediate lifesaving activities and to reduce immediate threats to public health or safety. During this phase, the following activities must be prioritized:

- Activating the San Francisco EOC Debris Coordination Unit and the SFPW DOC Debris Management Group and implementing the Disaster Debris Management Plan.
- Assessing debris impacts, locations, and types of debris and locations where lifesaving services are needed.
- Assessing the extent and location of hazardous debris and household hazardous waste (HHW), and taking action to contain or remove the hazards (see Section 11.3.4, below).
- Clearing disaster debris from public roadways and other public areas to allow movement of emergency vehicles providing lifesaving services (see Section 5, below).
- Assessing debris resource needs and CCSF capabilities, and initiating steps to obtain needed resources (see Section 4.6, below).
- Developing a Debris Operations Plan specific to the disaster that outlines the manner in which CCSF will manage the debris from collection through disposal (see Section 4.4, below).

#### **4.3.2 Recovery Phase Priorities**

Beginning generally at Event plus 72 hours, debris-related recovery phase activities begin. Recovery phases during which debris work is performed include short-term (days) and intermediate (weeks to months) phases, and long-term (months to years) as provided by the National Disaster Recovery Framework.<sup>13</sup> Debris-related recovery phase activities should occur during the short-term and intermediate periods. These activities include collecting, removing, processing, recycling, composting, repurposing, reusing, and disposing of debris that hinders recovery, but poses less of a threat to public health or safety.

During the short-term recovery phase, the following activities must be prioritized:

- Implementing the Debris Operations Plan developed for the disaster (see Section 4.4, below).
- Initiating debris collection operations (see Section 6, below).
- Establishing debris processing, diversion, and disposal sites (see Sections 8 and 9, below); and if needed, debris staging and storage sites (see Section 7, below).
- Monitoring debris operations to ensure that CCSF follows all federal, state, and local laws, regulations, and other requirements necessary to safeguard CCSF residents, property, and the environment; and to maximize federal and state reimbursement for disaster debris work (see Sections 11 and 12, below).



- Beginning the process for condemning and demolishing dangerous structures, as needed (see Section 6.5.6, below).

During the intermediate debris recovery phase, the following activities must be prioritized:

- Initiating debris removal operations (see Section 6, below).
- Continuing to monitor debris operations to ensure that all federal, state, and local requirements necessary are followed (see Sections 11 and 12, below).
- Completing demolition of dangerous structures, as needed (see Section 6.5.6, below).
- If a CCSF recovery office is established to coordinate disaster recovery activities, moving the Debris Coordination Unit to the recovery office to continue coordinating debris recovery.

Because debris removal, processing, diversion, and disposal may continue for months after the debris-generating disaster, debris management and coordination may continue to be performed under the authority of a CCSF recovery office. The recovery office is tasked with coordinating long-term recovery for the city. For further discussion of short-term recovery, see ESF #14: CCSF Recovery Management Annex.

## **4.4 Debris Operations Plan**

### **4.4.1 Development of Debris Operations Plan**

After a debris-producing incident, it is critical that CCSF develop a Debris Operations Plan (Debris OP) designed to address the specific debris-related issues arising from the incident. The Debris OP will establish a systematic approach for safe and efficient clearance, removal, diversion, and disposal of disaster debris from CCSF property. If private property debris removal is needed, the Debris OP also will outline the approach to be taken. This is particularly important in a presidentially-declared disaster to ensure the requirements for private property debris removal have been met (see Section 6.5, below).

### **4.4.2 Debris Operations Plan Responsibility and Approval**

The SFPW DOC Debris Management Group is responsible for developing the Debris OP in consultation with the SFPW Director and the EOC Debris Coordination Unit Leader. The SFPW DOC Debris Management Group Supervisor is responsible for overseeing development of the Debris Operations Plan. The Debris OP must be approved by the SFPW Director and the EOC Policy Group.

The DOC Debris Management Group is also responsible for review of the Debris OP during each operational period to ensure that it continues to effectively meet debris needs during disaster response and recovery. When substantial revision of the plan is necessary to address those needs, the Debris Management Group Supervisor will supervise revision of the plan and will obtain approval from the SFPW Director and the EOC Policy Group.

### **4.4.3 Debris Operations Plan Contents**

The Debris OP will follow the overall guidance provided by this Disaster Debris Management Plan and any specific debris response and recovery priorities set by the Mayor and Policy Group. Issues the plan should address include the following:<sup>14</sup>

- Estimates of the types and amounts of disaster debris and where debris is located.<sup>15</sup>



- Debris resource needs, including processing, facility, labor, equipment, and supply needs (see Section 4.6, below). This includes temporary debris management sites for storage and processing of debris prior to diversion or disposal (see Section 7, below), or waivers for existing transfer and processing facilities to enable them to accept San Francisco disaster debris (see Section 7.4.4, below).
- Debris clearance, collection, and removal priorities during both response and recovery phase operations.
- Selected methods for clearing, collecting, and removing debris given CCSF's response, recovery, and debris collection priorities (see Sections 5 and 6, below).
- Approach to dealing with demolition debris (see Section 4.2.4.2, above, and Section 6.5.6, below).
- Selected methods for diverting debris, including recycling, composting, repurposing, or reuse, given CCSF's response, recovery, and debris collection priorities (see Section 8, below).
- Methods for ensuring CCSF complies with applicable federal, state, and local contracting and procurement standards.
- Methods for ensuring CCSF follows all federal, state, and local laws and regulations regarding health and safety, the environment, and historic preservation (see Sections 11 and 12, below).
- Debris tracking, documentation, and monitoring systems to be employed to ensure compliance with federal, state, and local requirements (see Section 10, below).
- Public and media information strategy to be employed to inform the public of CCSF debris response and recovery efforts and how they can assist (see Section 14, below).

## **4.5 Information and Situational Awareness**

### **4.5.1 Gathering and Sharing Debris-Related Information**

In general, the process used to gather and share debris-related information during an incident is the same as that described in the CCSF ERP for other incidents. Each CCSF department with a DOC is responsible for gathering, validating, and sharing information regarding debris impacts to its properties and facilities with their DOC. In turn, DOCs will forward debris information to the EOC through periodic situation status reports. If a department does not have a DOC, it will share debris-related information directly with the EOC.

Debris-related information that each department should gather, validate, and share includes:

- Location and extent of debris impacts observed;
- Type of debris involved (see Section 3.3.1, above);
- If possible, a rough estimate of the amount of debris;
- If known, whether the debris contains hazardous or toxic substances; and
- Debris resource needs that the department cannot meet with its force account, contracted, or mutual aid resources (see Section 4.6, below).

In addition, CCSF departments with responsibility for situation assessment through performing citywide windshield damage surveys, such as the San Francisco Fire Department (SFFD),



Department of Building Inspection (DBI), and the San Francisco Department of Public Health (DPH) Hazardous Materials and Waste Program, will share debris-related information gathered during windshield surveys with the EOC, which will in turn share it with the SFPW Debris Management Group.

The EOC Debris Coordination Unit is responsible for:

- Assembling debris information from other CCSF DOCs and departments without DOCs.
- Sharing assembled debris information with the SFPW Debris Coordination Group.

The SFPW DOC Debris Management Group will validate debris-related information, analyze it, and share a summary of the information with the EOC Debris Coordination Unit. The EOC Debris Coordination Unit will then share the summarized information with CCSF partners and with the public as approved by the EOC Manager and Public Information Officer. For debris-related essential elements of information to be gathered by the SFPW DOC Debris Management Group and EOC Debris Coordination Unit, see Appendix E.

#### **4.5.2 Maintaining Situational Awareness During Debris Operations**

It is critical that CCSF continue to maintain situational awareness and a common operating picture of debris impacts and operations. Continual debris operations monitoring assists personnel in the SFPW DOC and EOC to:

- Determine debris impacts in the city as a whole and to CCSF departments.
- Take steps to protect lives and mitigate debris impacts while minimizing danger to the public and to field personnel.
- Estimate the amount of debris present and the resources needed to respond and recover.
- Prioritize debris response and recovery efforts.
- Ensure debris operations adequately and effectively address response and recovery objectives and needs.
- Ensure debris operations are conducted in accord with federal, state, and local laws and are properly monitored and documented.

Additional methods for maintaining situational awareness regarding debris impacts and the status of debris response and recovery efforts include performing unpiloted aerial vehicle, helicopter, or airplane overflights; and viewing footage recorded by close circuit television or by television news helicopters. The San Francisco Sheriff's Department also may be requested to activate its Auxiliary Air Patrol volunteers to assist in providing **aircraft support over** impacted areas. In addition, CCSF may submit a request through Cal OES for a reconnaissance flight of impacted areas. The Civil Air Patrol, California Wing of the United States Air Force Auxiliary also may have local resources that can provide overflight services. For further discussion of state mission tasking in debris incident, see Section 4.6.7.1, below.

#### **4.5.3 Debris Assessment**

##### **4.5.3.1 PURPOSE OF DAMAGE AND DEBRIS ASSESSMENT**

In the aftermath of a disaster, there is a potential for widespread debris, including debris containing toxic substances and other threats to public health and the environment. It is critical that response efforts to address hazardous substance and debris removal begin as quickly as



possible to reduce the impacts from such debris. Damage and debris assessments are necessary to determine the extent, location, and types of debris impacting the city. Obtaining this information in a safe but expeditious manner will enable CCSF to:

- Safeguard responders, the public, and the environment.
- Appropriately prioritize impacted areas and resources; and
- Ensure that needed resources are obtained to address debris issues.

#### **4.5.3.2 METHODOLOGY FOR CONDUCTING ASSESSMENTS**

SFPW is the lead city department responsible for beginning and coordinating initial damage and debris assessments. Within four to eight hours after an incident occurs, SFPW DOC will deploy:

- Windshield Survey Teams to inspect roads for debris and damage.
- Safety Assessment Teams to inspect for building and infrastructure damage and debris.

SFPW Windshield Survey Teams perform an initial survey of impacted areas to identify critically-damaged areas and to assist in prioritizing emergency roadway clearance. Windshield Survey Teams also identify roads or adjacent areas with debris obstructing priority routes or posing an immediate threat to life safety. The SFPW DOC Incident Communications Center is responsible for coordinating the Windshield Survey.

The SFPW Safety Assessment Teams perform an initial survey of impacted buildings and other CCSF infrastructure to identify buildings that are unsafe for occupancy. As part of their activities, Safety Assessment Teams identify collapsed or collapsing buildings or infrastructure and adjacent areas with large amounts of debris or debris that poses an immediate threat to life safety. The SFPW DOC Safety & Structural Assessment Group is responsible for coordinating safety assessments.

In addition, the San Francisco General Services Agency (GSA), Real Estate Division, and Department of Building Inspection (DBI) also will mobilize their staff to conduct safety assessments of the city's building and structures. During this process, assessment teams will estimate the number of buildings or other infrastructure needing demolition. The San Francisco Department of Public Health Hazardous Materials team will also work with local, state, and federal officials to assess debris for hazardous materials and waste before beginning clearance efforts. For further discussion, see Section 11.3.4, below.

#### **4.5.3.3 PUBLIC ASSISTANCE REIMBURSEMENT FOR DEBRIS SURVEYS**

After a presidentially-declared disaster for which CCSF seeks Public Assistance reimbursement, the city is responsible for identifying locations of incident-related debris impacts. FEMA treats costs related to assessing overall impacts of the incident, including locating debris impacts, as indirect costs eligible for Public Assistance reimbursement as management costs.<sup>16</sup> After performing an initial debris survey, if CCSF does further detailed inspections to determine the quantity of debris and method of removal, the more detailed inspections also are eligible as part of the work to remove the debris. Having a professional evaluation done as part of a more-detailed inspection is also eligible for reimbursement.<sup>17</sup>

**NOTE:** The Controller's Office will provide codes to track costs and times, but the lead agency will be responsible for tracking the location and instructing supporting other CCSF agencies on accounting for costs using the proper codes and debris locations.





## 4.5.4 Estimating Disaster Debris

### 4.5.4.1 OVERVIEW

Determining the quantity and types of debris produced by an incident is critical to CCSF's debris management efforts. Decisions regarding the need for additional resources, whether through mutual aid, contractual agreements, or state and federal assistance, require reasonably accurate estimates of the amounts and types of debris produced by the incident. Debris estimating is a process normally used post-disaster to develop a reasonable estimate of the actual debris quantities and types produced by the incident.<sup>18</sup>

CCSF will use debris estimates to determine the city's ability to handle the debris with force account resources, or whether additional resources will be needed. CCSF also will use debris estimates to determine the need for debris management sites, diversion needs, and disposal space requirements. In addition, FEMA will produce its own debris estimates during Preliminary Damage Assessment (PDA) activities to determine whether to recommend issuance of a presidential disaster declaration. FEMA also uses PDA debris estimates to determine if there is a need for federal mission assignments for technical or Direct Federal Assistance if CCSF seeks Public Assistance.<sup>19</sup>

### 4.5.4.2 RESPONSIBILITY AND METHODOLOGY FOR CCSF DEBRIS ESTIMATES

The SFPW DOC Debris Management Group Debris Removal Unit is responsible for developing an initial CCSF estimate of the amounts and types of disaster debris. The Debris Removal Unit will need to work closely with SFPW Windshield Survey and Safety Assessment Teams and with GSA and DBI damage assessment teams to produce debris volume estimates. It is strongly recommended that the Debris Removal Unit use the debris estimating techniques provided in the *FEMA Debris Estimating Field Guide*.<sup>20</sup> The guide provides a consistent methodology to obtain accurate debris estimates in accordance with Public Assistance program eligibility criteria.

In addition, the Debris Removal Unit may use FEMA's ArcGIS-based Hazus program to create debris estimates for actual earthquakes impacting San Francisco. Within a short time after significant earthquakes, the U.S. Geological Survey Earthquake Hazards Program makes GIS ShakeMap files for the earthquake available to the public. The GIS ShakeMap files can be imported into Hazus and used to create estimates of construction and demolition debris from the earthquake. Shakemaps can be found on the USGS website.<sup>21</sup> CCSF departments with Hazus expertise include the Department of Emergency Management, the Office of Resilience and Capital Planning, and the Office of the Controller.

CCSF's Damage Assessment Teams are required to work closely with FEMA debris technical specialists and with the state to produce reasonable, consensus-based debris estimates.<sup>22</sup> FEMA debris technical specialists will rely on the *FEMA Debris Estimating Field Guide* to produce their estimates. The formulas, assumptions, and conversions used by the debris technical specialists must be applicable to the circumstances of the disaster and must be consistently applied.

## 4.6 Debris Resource Management

### 4.6.1 Overview

Jurisdictions may use their own "force account" resources, mutual aid resources, direct state



and federal assistance, contract resources, or a combination of these to conduct debris removal and monitoring of debris operations.<sup>23</sup> This section provides guidance as to when CCSF will use its own force account personnel and equipment, and when it will use contracted resources to perform disaster debris-related work. In addition, this section discusses resource requests and requesting assistance through mission assignments. The section also includes information regarding mutual aid and state and federal direct assistance that may be available depending on the type and extent of the incident.

#### **4.6.2 Assessing Resource Needs and Capabilities**

In small debris-producing incidents, it may be possible to rely on city personnel and equipment and on existing contract resources to perform most debris-related work. CCSF's general policy is that the departments must exhaust their internal resources, including inventories on hand and contract resources and vendors, before escalating requests to the next supporting level (e.g., the DOC, discipline-specific mutual aid, or the CCSF EOC). However, in a large debris-producing incident such as a severe earthquake generating millions of tons of debris in San Francisco, the city's force account resources will be quickly overwhelmed by the volume of debris. Moreover, many CCSF personnel will themselves be impacted by such a disaster, making it difficult for them to rapidly or effectively respond.

After a debris-producing incident impacting CCSF, the SFPW DOC Debris Management Group will review information regarding the location, extent, and types of debris gathered as part of debris and damage assessment during Phase I initial response. In addition, the Debris Management Group will assess department debris resource needs to gain awareness of whether the incident has or will soon exceed the city's available debris resources. When it is apparent that successful management of disaster debris is or will soon be beyond the capabilities of CCSF's force account and contract resources, the SFPW DOC Debris Management Group will initiate efforts to obtain additional resources using standard CCSF logistics processes. For further discussion of general CCSF logistics protocols, see ESF #7: Logistics Annex to the CCSF ERP.

**NOTE:** It is essential that the SFPW DOC Debris Management Group quickly determine the need for debris facilities, including debris management and storage sites, to accommodate the amount of debris produced by the incident. The Debris Management Group is responsible for submitting resource requests for debris facilities to the EOC Debris Coordination Unit. If the facilities needed cannot be provided through representatives in the EOC Operations Support Section, the EOC Debris Coordination Unit is responsible for submitting a resource request for needed facilities to the EOC Logistics Section Facilities/Land Branch. Such requests must be submitted as early as possible to ensure that debris-related land and facility needs are properly addressed. For further discussion of resource requests for debris resources, see Section 4.6.5, below.

#### **4.6.3 Use of Force Account Resources**

"Force account" means CCSF's own personnel and equipment.<sup>24</sup> In general, CCSF will rely on force account personnel, when available, to perform the following debris-related activities:

- Debris assessment.
- Emergency debris clearance.





- Debris collection from public property and public rights-of-way (ROW).
- Debris collection from private property, if authorized by Cal OES and FEMA.
- Monitoring of debris work.

Force account personnel available to carry out disaster debris operations may be obtained from several CCSF departments and agencies, including SFPW, DBI, the Port of San Francisco (Port), the Recreation and Park Department (RPD), SFO, and the San Francisco Public Utilities Commission (SFPUC). Similarly, force account equipment to perform disaster debris operations may be obtained from several CCSF departments and agencies, including SFPW, the Port, RPD, SFO, and SFPUC. For a table of CCSF's debris-related force account equipment capabilities, with equipment location and contact information, see Appendix F.

#### **4.6.4 Use of Contract Resources**

##### **4.6.4.1 WHEN CCSF MAY RELY ON CONTRACT LABOR**

CCSF may rely on contract labor to perform disaster debris work in larger debris-producing incidents, when:

- CCSF does not have the personnel required;
- Personnel are not available through existing contracts or mutual aid;
- Personnel with specialized knowledge, skills, or equipment that CCSF lacks are needed to address debris-related issues.

Under those circumstances, contract labor may be used to perform the following debris-related activities:<sup>25</sup>

- Emergency clearance.
- Debris collection and removal.
- Collection and removal of hazardous or toxic debris or HHW.
- Operation of temporary debris management sites, if needed.
- Debris diversion through methods such as recycling, composting, repurposing, reuse, and reduction.
- Monitoring of debris work.
- Project management.
- Final disposal.

##### **4.6.4.2 PREQUALIFICATION OF POTENTIAL DEBRIS CONTRACTORS**

As part of the planning process for the 2018 Disaster Debris Management Plan, the Planning Team developed a process for pre-qualifying potential debris contractors that may participate in the contract procurement process before or after a debris-producing disaster. For further discussion of the pre-qualification process and a list of prequalified debris contractors, see Appendix G, below.

##### **4.6.4.3 PROCEDURE FOR ACQUIRING CONTRACTED SERVICES**

###### General Standards

In a presidentially-declared disaster, FEMA may provide Public Assistance funding for contract costs for eligible debris work.<sup>26</sup> To receive this funding, CCSF must comply with federal



procurement and contracting rules in the Code of Federal Regulations (C.F.R.),<sup>27</sup> and in particular the procurement standards in 2 C.F.R. §§ 200.317–200.326.<sup>28</sup> Whenever possible, in procuring contract resources during a disaster, CCSF will:<sup>29</sup>

- Use CCSF’s documented procurement procedures reflecting applicable state and local laws and regulations, as long as these procedures conform to applicable federal law;<sup>30</sup> and
- Meet the following federal standards:<sup>31</sup>
  - Provide full and open competition by publicly soliciting contracts for services and allowing all responsible sources interested in competing to do so.<sup>32</sup>
  - Take all necessary affirmative steps to ensure the use of minority businesses, women’s business enterprises, and labor surplus area firms.<sup>33</sup>
  - Exclude contractors from competing for procurements for which they have developed or drafted specifications, requirements, statements of work, invitations for bids, or requests for proposals.<sup>34</sup>
  - Maintain written standards of conduct covering conflicts of interest and the performance of employees who select, award, and administer contracts.
  - Maintain oversight to ensure contractors perform according to the terms, conditions, and specifications of their contracts.
  - Establish procedures to avoid purchasing unnecessary or duplicative items.
  - Maintain records detailing the history of the procurement, including (1) the rationale for choosing the method of procurement used, (2) selection of contract type, (3) contractor selection or rejection, and (4) the basis for the contract price. For further discussion of required record-keeping, see Section 10.9, below.

When federal procurement standards do not address a particular area of procurement, CCSF will apply applicable local or state procurement standards or regulations. However, when there is a direct conflict between a federal procurement standard and a local or state procurement standard or regulation, CCSF must apply the more restrictive procurement standard.<sup>35</sup>

During a presidentially-declared emergency or disaster for which Public Assistance is available, CCSF may request technical assistance from the state or from FEMA to ensure procurement standards are properly met.<sup>36</sup> FEMA also may deploy its Procurement Disaster Assistance Team to provide local jurisdictions impacted by an incident with training, reference materials, and real-time guidance on federal procurement standards. The EOC Debris Coordination Unit should submit requests for this training to FEMA Region IX.<sup>37</sup>

**NOTE:** The Davis-Bacon Act,<sup>38</sup> which requires payment of “prevailing wages” to laborers, does not apply to local government or to private nonprofit organization contracts for Public Assistance-funded projects. However, if CCSF incorporates prevailing wage rates as part of its normal practice for all contracts regardless of the funding source, then those rates are eligible for reimbursement.<sup>39</sup>

#### Procurement Methods

In general, to meet federal requirements, CCSF must use one of the following procurement methods:<sup>40</sup>



- Micro-purchase.
- Small purchase procedure.
- Sealed bid or formal advertising.
- Competitive proposal.

Micro-purchasing may be used to acquire supplies or services when the aggregate dollar amount of the procurement does not exceed the micro-purchase threshold set by law.<sup>41</sup> Micro-purchases may be awarded without soliciting competitive bids if CCSF considers the price reasonable. To the extent possible, CCSF must distribute micro-purchases equitably among qualified suppliers.<sup>42</sup> Similarly, small purchase procedures allow purchasing of services, supplies, or other property that do not cost more than the simplified acquisition threshold.<sup>43</sup> If CCSF uses small purchase procedures, the city must obtain price or rate quotations from an adequate number of qualified sources.<sup>44</sup>

In procuring through a sealed bid, the applicant publicly solicits bids and awards a firm fixed-price contract for a lump sum or unit price to the responsible bidder with the lowest bid that conforms with all material terms and conditions in the request for bids.<sup>45</sup> For sealed bidding to be feasible, the following conditions should be present:<sup>46</sup>

- A complete, adequate, and realistic specification or purchase description is available;
- Two or more responsible bidders are willing and able to compete effectively for the business; and
- The procurement lends itself to a firm fixed price contract so the selection of the successful bidder can be made principally on the basis of price.

When CCSF uses sealed bids, the city will, whenever possible:<sup>47</sup>

- Publicly advertise the request for bids, solicit bids from an adequate number of known suppliers, and provide a sufficient response time before the date set for opening bids.
- Include in the request for bids any specifications, pertinent attachments, and definitions of the services at issue so bidders can properly respond.
- Publicly open all bids at the time and place prescribed in the invitation for bids.
- Award a firm fixed price contract in writing to the lowest responsive, responsible bidder.
- Provide a sound, documented reason for rejecting any or all bids.

The competitive proposal method is normally used when more than one source submits an offer, and either a fixed price or cost-reimbursement type contract is to be awarded. Competitive proposals may be used when conditions are not appropriate for using sealed bids. If CCSF uses the competitive proposal method, the city will, whenever possible:<sup>48</sup>

- Publicize requests for proposals identifying all evaluation factors and their relative importance.
- Consider any response to a publicized request for proposals to the maximum extent practical.
- Solicit proposals from an adequate number of qualified sources.
- Have a written method for evaluating the proposals received and for selecting recipients.
- Award contracts to the responsible firm with the proposal that is most advantageous to



the program considering price and other factors.

Procurement by non-competitive proposal is procurement through solicitation of a proposal from only one source. FEMA may reimburse costs incurred under a contract procured through a noncompetitive proposal *only* when one or more of the following apply:<sup>49</sup>

- The item is only available from a single source.
- The public exigency or emergency for the requirement does not permit competitive solicitation.
- FEMA or the state expressly authorizes a noncompetitive proposal in response to a written request from CCSF.
- After solicitation of a number of sources, CCSF determines that competition is inadequate.

#### **4.6.4.4 LOCAL PROVISIONS GOVERNING CONTRACT LABOR PROCUREMENT**

Depending on the type of debris work or services for which contract labor is needed, different local Administrative Code provisions on procurement may apply. Chapter 6 of the San Francisco Administrative Code allows the Board of Supervisors to declare an emergency and to direct department heads for SFPW, the San Francisco Municipal Transportation Agency (SFMTA), SFO, the Port, SFPUC, or the Recreation and Park Commission to perform public works emergency repair work in any manner the Board determines is in the city's best interests.<sup>50</sup> In an actual emergency, responsible department heads also may declare an emergency after providing notice to the Board of Supervisors, Mayor, and Controller, and may execute construction or engineering repair work in "the most expeditious manner."<sup>51</sup> After declaring an emergency under Chapter 6, the department head may proceed with emergency work valued at \$250,000 or less without additional approvals. For emergency work costing more than \$250,000, the department head must first secure written approval from the Mayor or the relevant city board or commission, and from the Board of Supervisors.<sup>52</sup>

Chapter 6 also exempts certain emergency contracts for construction or engineering repair from Administrative Code provisions, including competitive bidding and nondiscrimination in contracting, though departments must make every attempt to comply with these requirements before waiving them.<sup>53</sup> Only the following departments are authorized to contract for public works under Chapter 6: SFPW, SFMTA, SFO, the Port, SFPUC, and the Park Commission. All other departments or commissions must procure construction or related professional services through SFPW.<sup>54</sup>

Chapter 21 of the Administrative Code authorizes CCSF department heads, in an emergency, to execute general and professional services contracts for emergency response efforts in the "most expeditious manner."<sup>55</sup> Chapter 21 governs acquisition of commodities and services. It generally does not apply to contracts pertaining to public works or improvements.<sup>56</sup> The CCSF Office of Contract Administration oversees contracts for general and professional services under Chapter 21.

In addition, the City Charter empowers the Mayor, in an emergency threatening the lives, property, or welfare of CCSF or its citizens, to direct personnel and resources of any department, command aid of other persons, and do whatever else the Mayor deems necessary to meet the emergency. In this situation, the Mayor must act with the concurrence of the Board



of Supervisors, or a majority of its members immediately available if the emergency causes the absence of a Board member. The Mayor must seek Board concurrence as soon as reasonably possible.<sup>57</sup>

**CAUTION:** In a presidentially-declared disaster for which Public Assistance is available, procurement of debris-related contract services must follow federal, state, and local contracting and procurement requirements. Procurements that do not meet federal, state, and local requirements are not eligible for Public Assistance reimbursement.<sup>58</sup> When there is a direct conflict between a federal procurement standard and a local or state procurement standard or regulation, FEMA expects CCSF to apply the more restrictive procurement standard.<sup>59</sup> In this situation, the more restrictive standard is the federal procurement standard requiring competitive bidding. For further information regarding federal procurement rules, see FEMA's *Procurement Guidance for Recipients and Subrecipients Under 2 C.F.R. Part 200*.<sup>60</sup>

#### 4.6.4.5 TRACKING COSTS

Early in the incident, the Controller's Office is responsible for initiating and ensuring that SFPW and all CCSF departments with field operations track costs related to debris removal, including:

- Force account time and labor, force account equipment, rented equipment, contracted services, and materials, including accounting for location of work performed.
- Mutual aid time and labor.

Failure to track these costs appropriately may result in a loss of state or federal Public Assistance reimbursement dollars.

#### 4.6.5 Resource Requests

In general, debris-related resource requests are handled in the same way other resource needs are addressed during a disaster. CCSF departments are required to utilize departmental resources, inventories on hand, and procurement processes from their vendors to fill debris-related resource needs before escalating requests to their representative in the EOC Operations Support Section. When a department's resources for a debris-related need are or will soon be exhausted, the department or DOC may submit a request for needed resources to its representative in the EOC Operations Support Section.

All debris-related resource requests flowing into the EOC must be channeled through the EOC Debris Coordination Unit. The EOC Debris Coordination Unit will use the following approach in filling debris-related resource requests:

- The Unit will attempt to fill requests using resources from CCSF departments represented in the EOC Operations Support Section.
- If it is not possible to fill the request using resources available to the Operations Support Section, the Debris Coordination Unit will submit the resource request to the EOC Logistics Section using established EOC resource request procedures.

The EOC Debris Coordination Unit is also responsible for submitting resource requests for debris facilities to the EOC Logistics Section Facilities/Land Branch using the standard process for resource ordering. Such requests must be submitted as early as possible to ensure that land and facility needs for debris are properly addressed. For further information regarding the handling of resource needs within the EOC, see ESF #7: Logistics Annex.



CCSF department requests for assistance in performing debris clearance from public roads or debris removal from public property or ROWs will be submitted to the EOC Debris Coordination Unit, which will relay them to the SFPW DOC Debris Management Group for review and response. Similarly, requests for debris removal from private property must be submitted to the EOC Debris Coordination Unit, which will relay them to the SFPW DOC Debris Management Group Legal/Permit Review Unit for review. The Legal/Permit Review Unit must ensure that the additional requirements for private property debris removal discussed in Section 6.5, below, are met before assigning or seeking resources to fill the request.

When the SFPW DOC's debris clearance or removal resources are or will soon be exhausted, SFPW DOC will request additional resources from the EOC by filing a resource request with the Debris Coordination Unit. If force account, mutual aid, and contract service resources are not sufficient to meet debris clearance or removal needs, the EOC will request additional resources from the Regional Emergency Operations Center (REOC) or the State Operations Center (SOC).

NOTE: Federal agencies such as the U.S. Army Corps of Engineers may participate in emergency debris clearance efforts if resource needs exceed regional or state capabilities. Early formation of an Interagency Debris Management Task Force (IDMTF) will help expedite the involvement of such federal resources. For further discussion of the IDMTF, see Section 4.2.5.3, above.

#### **4.6.6 Mutual Aid**

In a significant debris-producing incident, debris response needs may quickly exceed CCSF's resource capabilities. When this occurs, CCSF may obtain needed debris resources through mutual aid from other jurisdictions. The California Disaster and Civil Defense Master Mutual Aid Agreement (MMAA) governs mutual aid between local governments and the state in disasters.<sup>61</sup> CCSF has adopted and agreed to abide by the MMAA.<sup>62</sup>

In addition to the statewide mutual aid system, several discipline-specific mutual aid systems exist in California, including a statewide Public Works Mutual Aid Agreement (PWMAA), which San Francisco has signed as a participant. The PWMAA is voluntary; participating agencies are under no obligation to provide or to deplete their own resources. The PWMAA requires a local emergency proclamation, and requesting jurisdictions must pay for any PWMAA assistance. However, jurisdictions receiving PWMAA assistance may request reimbursement from the state if the governor proclaims a state emergency, and from the federal government if the president declares a disaster.<sup>63</sup>

These mutual aid systems operate within the framework of SEMS and the MMAA to allow mobilization of resources to and from emergency response agencies, local governments, operational areas, and regions. In CCSF, discipline-specific mutual aid is requested by the responsible department under the specific agreement for the mutual aid system. Requests falling outside discipline-specific mutual aid systems are addressed through the emergency services mutual aid system handled by emergency management staff at the CCSF EOC. For further information on mutual aid resource requests, see ESF #7: Logistics Annex. Mutual aid also may be obtained from other states. Interstate mutual aid may be obtained through direct state-to-state contacts, through inter-state agreements and compacts, or may be coordinated through federal agencies. California may obtain out-of-state resources through state-to-state arrangements or through the Emergency Management Assistance Compact (EMAC), to which California is a signatory. For further discussion of EMAC requests, see ESF #7: Logistics Annex.





#### 4.6.7 Requesting Assistance From State and Federal Partners

CCSF may request debris-related assistance from regional, state, and federal partners in addressing disaster debris impacts. Cal OES issues mission tasking assignments to state agencies with disaster debris capabilities. FEMA issues mission assignments to federal agencies with disaster debris capabilities. For example, Cal OES may issue a mission assignment directing the CalEPA's Department of Toxic Substances Control (DTSC) Emergency Response Program to respond to an actual or potential hazardous substance release posing a threat to public health or the environment. FEMA may direct USACE to provide support for debris removal when both state and local capabilities have been exceeded.

##### 4.6.7.1 STATE MISSION TASKING

During a state-proclaimed emergency, the Governor may direct state agencies to provide resources in support of local disaster debris operations. As part of this effort, Cal OES may issue mission tasks to state agencies directing them to assist local jurisdictions with various aspects of debris management. A mission task is a necessary action identified by the Operations Support Section to fulfill an operational objective. To be eligible for state mission tasking, CCSF must show that all local resources have been exhausted, including contracting and mutual aid. Table 4.1, below, identifies state agencies that may provide technical or other forms of support in managing debris.

The EOC Debris Coordination Unit is responsible for initiating debris-related requests for state mission tasking within the EOC. The Debris Coordination Unit Leader must approve all requests for state mission tasking before they are submitted to the EOC Logistics Section. The EOC Logistics Section is responsible for completing a Mission Request Tasking Form using the CCSF WebEOC CalEOC Mission/Resource Request Board, and for submitting the form to the Regional Emergency Operations Center (REOC). The REOC may approve the request or may submit it to the State Operations Center (SOC) for response. For further discussion of mission request tasking, see ESF #7, Logistics Annex.

**Table 4.1. State Debris Management Resources**

CALIFORNIA STATE AGENCY	RESPONSIBILITIES OR TYPE OF ASSISTANCE
California Department of Public Health (CDPH)	<ul style="list-style-type: none"> <li>Assessment of health risks to first responders and public due to contaminants generated by disasters.</li> <li>Technical assistance related to public drinking water systems, communicable disease, hazardous materials, biohazards and radioactive materials, and other public and environmental health concerns.</li> </ul>
California Department of Resources Recycling and Recovery (CalRecycle)	<ul style="list-style-type: none"> <li>Technical assistance, personnel, and support to local governments regarding collection and handling of solid and household hazardous waste management.</li> <li>Technical assistance and oversight on diversion of disaster debris.</li> </ul>
California Department of Transportation (Caltrans), District 4	<ul style="list-style-type: none"> <li>Conducts damage assessments and provides supportive services related to the state highway system within San Francisco.</li> <li>Establishes route priorities during recovery efforts.</li> <li>Clears debris from key transportation routes in the state.</li> <li>Assists first responders in accessing affected sites.</li> <li>Restores contaminated highways and other transportation facilities under Caltrans jurisdiction.</li> </ul>





CALIFORNIA STATE AGENCY	RESPONSIBILITIES OR TYPE OF ASSISTANCE
California Environmental Protection Agency (CalEPA)	<ul style="list-style-type: none"> <li>• Lead state agency for coordinating emergency activities related to hazardous materials and for assessing health risks to public and environment from environmental contaminants.</li> <li>• Provides emergency personnel with information on health effects of chemical agents.</li> <li>• Public information assistance through External Affairs Office.</li> </ul>
CalEPA, Air Resources Board (ARB), Office of Emergency Response (OER)	<ul style="list-style-type: none"> <li>• Supports air contaminant monitoring, sampling, analysis, and dispersion modeling.</li> <li>• Emergency toxicological assessments, health advisory recommendations, indoor air quality assessments, air monitoring for recovery operations, and assessment of air quality for re-entry.</li> <li>• Supplies portable air monitoring stations, air pollution specialists, and meteorologists.</li> </ul>
CalEPA, Department of Toxic Substances Control (DTSC)	<ul style="list-style-type: none"> <li>• Protects public health and environment from hazardous materials.</li> <li>• Technical expertise for hazardous material incidents.</li> <li>• Limited technical support for assessment, containment, and mitigation of radiological hazards.</li> <li>• Environmental toxicologists for technical issues and communication.</li> </ul>
CalEPA, Office of Environmental Health Hazard Assessment (OEHA)	<ul style="list-style-type: none"> <li>• Assists in determining public health risks and provides health effects information following hazardous materials incident.</li> <li>• Technical resources, such as toxicologists and epidemiologists, and assists in determining environmental risk and threats following hazardous materials incident.</li> <li>• Provides health effects information to the public.</li> </ul>
CalEPA, State Water Resources Control Board	<ul style="list-style-type: none"> <li>• Technical environmental staff to evaluate potential impact to water quality from emergencies.</li> <li>• Critical information on water uses in areas that might be affected by hazardous materials releases.</li> <li>• Sewage collection, treatment, and disposal.</li> </ul>
Cal OES Safety Assessment Program (SAP)	<ul style="list-style-type: none"> <li>• Conducts building safety inspections to determine whether buildings are safe for occupancy or require demolition.</li> </ul>
California Highway Patrol (CHP), Golden Gate Division	<ul style="list-style-type: none"> <li>• Conducts damage assessments to secure disaster areas.</li> <li>• Assistance in removing obstructing vehicles.</li> </ul>
California National Guard	<ul style="list-style-type: none"> <li>• Helps clear debris and rubble from roadways, bridges, and essential government facilities.</li> <li>• Provide road and waterway clearance using mechanical and explosive methods to provide safe passage for emergency service vehicles and equipment.</li> <li>• Advises Cal OES on use of military equipment and supplies to support debris removal activities.</li> <li>• Technical and engineering assessments through Full Spectrum Integrated Vulnerability Assessment Team and Air National Guard Civil Engineering units.</li> <li>• Limited resources to conduct aerial damage assessments.</li> </ul>
California Natural Resources Agency (CNRA), California Conservation Corps (CCC)	<ul style="list-style-type: none"> <li>• Personnel and equipment to support emergency debris clearance and monitoring of debris removal operations.</li> <li>• Personnel to conduct damage assessment and stabilize hillsides.</li> </ul>
CNRA, Department of	<ul style="list-style-type: none"> <li>• Geotechnical data and expertise to support emergency operations.</li> </ul>



CALIFORNIA STATE AGENCY	RESPONSIBILITIES OR TYPE OF ASSISTANCE
Conservation, California Geological Survey	<ul style="list-style-type: none"> <li>• Technical specialists for seismological and geological data.</li> </ul>
CNRA, Department of Fish & Wildlife (DFW), Office of Spill Prevention and Response (OSPR)	<ul style="list-style-type: none"> <li>• Lead state agency for oil spill response in state inland and marine waters.</li> <li>• Statewide incident management and technical specialists or teams for marine or inland oil and hazardous materials incidents.</li> <li>• Shoreline and inland assessment of impacts to marine and wildlife from oil spills and other materials on state surface waters, and monitoring of wildlife.</li> <li>• Technical expertise, equipment, and staff to conduct underwater surveys, air monitoring, site characterization, and streambed alterations.</li> </ul>
CNRA, Department of Forestry and Fire Protection (CAL FIRE)	<ul style="list-style-type: none"> <li>• Personnel and equipment to support emergency debris clearance.</li> <li>• All Hazard Incident Management Teams to direct large-scale, complex emergency incidents.</li> <li>• Technical resources for safety, environmental, and damage assessments and building inspections, civil engineers, and light and heavy equipment repair personnel and facilities.</li> <li>• With OSHPD, inspects hospitals and other licensed care facilities for structural integrity and fire and life safety.</li> <li>• Technical expertise on emergency response planning and mitigation for liquid pipelines, spills, and other hazardous materials incidents.</li> </ul>
CNRA, Department of Parks and Recreation (California State Parks)	<ul style="list-style-type: none"> <li>• Assesses structural damage and assists with emergency stabilization.</li> <li>• Historical preservation technical staff with expertise in National Environmental Policy Act (NEPA) and CEQA.</li> <li>• Equipment operators and earth-moving equipment for debris removal, shoring levees, and establishing temporary roads and fire breaks.</li> <li>• Information on historic resources through California Historic Resource Information System (CHRIS).</li> </ul>
CNRA, Department of Water Resources (DWR)	<ul style="list-style-type: none"> <li>• Expertise on bay and coastal area seismic safety and flood protection measures.</li> <li>• Personnel with expertise in oil spill containment and clean up.</li> <li>• Supports California Water and Wastewater Agency Response Network (CalWARN), which provides mutual assistance processes for public and private water and wastewater utilities.</li> </ul>

Sources: Cal OES, *State Emergency Plan* (Mather, CA, October 2017), 84–87, 105–145. Cal OES, “Debris Management Assistance,” 1, <http://www.caloes.ca.gov/RecoverySite/Documents/Debris%20At-a-Glance%20Feb%202015.pdf>.

**NOTE:** State personnel, equipment, and facilities may be used to clear and dispose of debris on private property only after the Governor finds that:<sup>64</sup>

1. The use is for a state purpose;
2. The use is in the public interest; and
3. State personnel, equipment, and facilities are already in the emergency area.

For further discussion of debris removal from private property, see Section 6.5, below.

#### 4.6.7.2 FEDERAL MISSION ASSIGNMENT—DIRECT FEDERAL ASSISTANCE

When the impact of an incident is so severe that both the state and CCSF lack the capability to perform or to contract for eligible debris removal, CCSF may ask that Cal OES request that the



federal government provide this assistance as part of what is called “Direct Federal Assistance.”<sup>65</sup> However, as with requests for state mission tasking, CCSF must show that it has exhausted all local resources, including contract-resources and mutual aid. Table 4.2, below, identifies federal agencies that may provide debris-related support to local governments as part of Direct Federal Assistance.

The EOC Debris Coordination Unit is responsible for initiating debris-related requests for direct federal assistance within the EOC. The Debris Coordination Unit Leader must approve all requests for Direct Federal Assistance before they are submitted to the EOC Logistics Section. The Logistics Section is responsible for completing a Mission Request Tasking Form using the CCSF WebEOC CalEOC Mission/Resource Request Board, and for submitting the form to Cal OES. Cal OES is responsible for coordinating local requests for Direct Federal Assistance. For further discussion of requesting federal assistance, see ESF #7, Logistics Annex.

**NOTE:** Once CCSF submits the Mission Request Tasking Form through CalEOC, the EOC Logistics Section must call the Cal OES Coastal Region Emergency Services Coordinator (ESC) if the request is submitted during working hours to let the ESC know of the request. If the request is submitted after working hours, the Logistics Section must call the California State Warning Center to let them know of the request.

If Cal OES determines that federal assistance is appropriate, it will create a Resource Request Form for the request and forward it to the FEMA Regional Administrator for consideration.<sup>66</sup> If the Administrator approves the request, FEMA will issue a Mission Assignment to task the work.<sup>67</sup> FEMA may task another federal agency to perform the debris work or to obtain contract resources to do the work if eligible under the Public Assistance program. Direct Federal Assistance has the same cost-share provisions applicable to the disaster declaration.<sup>68</sup> If all or a part of the requested work falls within the statutory authority of another federal agency, the FEMA Regional Administrator will not approve that portion of the work. Instead, FEMA will refer the unapproved portion of the request to the appropriate federal agency for action.<sup>69</sup>

**Table 4.2. Federal Debris Management Resources**

FEDERAL AGENCY	TYPE OF ASSISTANCE
Federal Emergency Management Agency (FEMA)	<ul style="list-style-type: none"> <li>Debris management teams to assist with debris removal operations.</li> <li>May task other federal agencies to provide technical expertise.</li> <li>May task another federal agency to perform debris management activities directly on behalf of local governments.</li> </ul>
Natural Resources Conservation Service (NRCS)	<ul style="list-style-type: none"> <li>Expertise in soil science and leadership for soil surveys.</li> <li>Assists local governments in performing emergency work necessary to protect life, property, and public health and safety in watersheds damaged by a disasters.</li> </ul>
U.S. Army Corps of Engineers (USACE)	<ul style="list-style-type: none"> <li>Planning and response teams coordinate and execute debris management requirements, including clearance, removal, staging, characterization, classification, reduction, profiling, transportation, and disposal operations.</li> <li>Conduct clearance, removal, staging, characterization, classification, reduction, profiling, transportation, and disposal operations.</li> <li>Technical assistance and permitting services to local governments for debris management.</li> <li>Emergency demolition or stabilization of damaged structures and facilities.</li> </ul>



FEDERAL AGENCY	TYPE OF ASSISTANCE
U.S. Coast Guard (USCG)	<ul style="list-style-type: none"> <li>Specialized equipment and incident-management teams to contain and clean up polluting substances in coastal zones via the National Strike Force, including the Pacific Strike Force based in Novato, California.</li> </ul>
U.S. Department of Defense (US DOD)	<ul style="list-style-type: none"> <li>Construction forces, including the U.S. Naval Construction Force at Port Hueneme in Ventura County, California.</li> <li>Technical assistance, resources, and coordination for response and recovery in oil and hazardous material spills.</li> <li>Assistance in identifying debris management resources, as requested by Federal On-Scene Coordinator.</li> </ul>
U.S. Environmental Protection Agency (US EPA)	<ul style="list-style-type: none"> <li>Technical assistance regarding debris removal operations.</li> <li>Environmental Response Teams composed of EPA technical experts offering round-the-clock assistance at the scene of hazardous substance releases.</li> </ul>

Sources: Cal OES, *State Emergency Plan*, 84, 85. Cal OES, “Debris Management Assistance,” 2.

#### 4.7 Participation in FEMA Alternative Procedures Pilot Program for Debris

FEMA has implemented alternative procedures related to disaster debris through its Public Assistance Alternative Procedures Pilot Program.<sup>70</sup> The Pilot Program has been available since 2013. Accordingly, CCSF may elect to participate in one or more of the following FEMA debris removal alternative programs, if available at the time:<sup>71</sup>

1. Increased federal cost share based on a sliding scale linked to the accelerated completion of debris removal in events with “significant impacts.”
2. Reimbursement of straight-time for force account labor.
3. Retention of income generated from recycling debris (see Section 8.3.3.2, below).
4. A one-time two percent increased cost-share incentive for a FEMA-accepted debris management plan, with pre-qualified debris removal contractors before the incident period begins.

For further discussion of each of the four alternative procedure pilots, see Appendix L, below.

##### 4.7.1 Participation in Pilot Program

On the President’s declaration of a major disaster or emergency authorizing FEMA debris removal assistance, FEMA may give CCSF the option to participate in the Public Assistance Alternative Procedures Pilot Program if available. Participation in the pilot program is voluntary. Each alternative procedure can be used alone or in combination with another alternative procedure.<sup>72</sup>

Before considering whether to participate in the Alternative Procedures Pilot Program, the SFPW DOC Debris Management Group Supervisor will check the status of the Pilot Program, and will share status information with the EOC Debris Coordination Unit Leader and Infrastructure Branch Coordinator. The Debris Removal Alternative Procedures Pilot Program is typically reauthorized in the month of June each year. Contact the Cal OES Recovery Debris Management Office for an update on the status of the debris Pilot Programs.<sup>73</sup>

If the Pilot Program is still available, the SFPW DOC Debris Management Group Supervisor will make a recommendation to the SFPW DOC Manager, the Executive Director of DEM, and the



Controller regarding which Alternative Procedures for debris removal CCSF should participate in, if any. The recommendation should be made in consultation with the SFPW DOC Manager, the EOC Infrastructure Branch Coordinator, the EOC Finance and Administration Section Chief, and the EOC Debris Coordination Unit Leader. The DEM Executive Director and the Controller, as CCSF's Authorized Agents for State and Federal Disaster Assistance, have the ultimate responsibility for determining whether CCSF will participate in the Alternative Program, and if so, the alternative procedures the city elects to opt into.

**RECOMMENDATION:** Strong consideration should be given to participation in all Alternative Procedure Pilot Programs other than the increased cost share based on accelerated debris removal. For further discussion of the accelerated debris removal pilot program, see Appendix L, below.

If CCSF decides to use one or more of the alternative procedures, the city must notify FEMA by submitting a signed Public Assistance Alternative Procedures Pilot Program for Debris Acknowledgement form. A copy of the acknowledgement form is included in Appendix L, below. The acknowledgement form must be submitted to FEMA within 60 days of the Recovery Scoping Meeting or before obligation of the first award for debris removal, whichever occurs first.<sup>74</sup>

#### **4.7.2 Rescinding Participation in Pilot Program**

Once CCSF submits an acknowledgement form to FEMA opting in to the Alternative Procedures Pilot Program, the city may rescind its participation in the program by submitting a written notice of rescission. However, CCSF must provide FEMA with the notice of rescission within 60 days of the Kickoff Meeting, and before obligating funds for the first debris removal project. After that time, CCSF may not withdraw from the Alternative Procedures Pilot Program.<sup>75</sup> For further discussion of the Alternative Procedures Pilot Program, see Appendix L, below.

### **4.8 Considerations for People with Disabilities or Access and Functional Needs**

#### **4.8.1 Definitions**

For purposes of this plan, "people with disabilities" are individuals who have a physical or mental impairment that limits one or more major life activities, who have a record of such impairment, or who are regarded as having such an impairment.<sup>76</sup> "People with access and functional needs" includes persons with disabilities as well as individuals with developmental or intellectual disabilities, physical disabilities, chronic conditions or injuries, limited to no English proficiency, older adults, children, people living in institutionalized settings; or those who are low income, homeless, or transportation disadvantaged, including those who are dependent on public transit or who are pregnant.<sup>77</sup>

#### **4.8.2 Addressing Needs of People with Disabilities and Access and Functional Needs**

CCSF's debris coordination strategies must include strategies for meeting the requirements of people with disabilities and access and functional needs. Such strategies may include, but are not limited to:

- Prioritizing providing accessible paths of travel and public transit resources for people with disabilities or access and functional needs.
- Creating a mechanism for linking individuals with disabilities or access and functional needs with volunteer organizations that can assist them in moving debris on their private





property to public ROW (see Section 6.5.7, below).

- Providing a contact number for people with disabilities or access and functional needs to request debris-related assistance or needed services (see Section 14, below).
- Ensuring that all public information messages are accessible to people with disabilities and access and functional needs, including people for whom English is a second language (see Section 14, below).

### **4.8.3 Debris Planning Considerations**

Disasters and the debris they produce may create new physical barriers and may eliminate or lessen access to public facilities, infrastructure, and services for all San Franciscans. However, people with disabilities or access and functional needs are often more severely impacted by disasters because of disruptions to their support systems and because of the loss of access, equipment, supplies, transportation, and communication caused by the incident. As of July 1, 2017, the U.S. Census Bureau estimated that 884,363 people live in San Francisco County.<sup>78</sup> Of these, an estimated 21.9 percent, or 193,675 people, may have a disability.<sup>79</sup> Accordingly, the city's debris-related strategies and tactics must take cognizance of and prioritize the needs of people with disabilities and access and functional needs to the greatest extent possible given the scope of the disaster and CCSF's capabilities and resources.

#### **4.8.3.1 EMERGENCY DEBRIS CLEARANCE**

Emergency debris clearance creates challenges for individuals with limited mobility. During the debris clearance phase, CCSF or contract personnel push debris blocking access on public roads to the road shoulder. This work is done to permit roadway access by emergency vehicles and first responders, but may result in blocked sidewalks or curb ramps leading to sidewalks. This, in turn, may limit access for people with mobility disabilities or functional needs. To address this issue, the SFPW DOC Debris Management Group will:

- Instruct crews performing debris clearance work to avoid blocking sidewalks, curb ramps, and other critical pathways whenever possible.
- Ensure that CCSF provides a contact number for people with disabilities or access and functional needs to call to inform the city of blocked sidewalks or curb ramps.
- Expedite removal of debris from sidewalks, curb ramps, and other critical pathways for individuals with mobility challenges.

For further discussion of emergency debris clearance, see Section 5, below.

#### **4.8.3.2 DEBRIS COLLECTION**

During disaster debris collection, residents who own private property are generally asked to bring disaster debris from their properties to the public ROW, where CCSF or contract personnel can collect the debris. This can create challenges for people with disabilities or access and functional needs, who may be unable to bring debris to the public ROW. To address this issue, CCSF will provide coordination services to link people with disabilities and access and functional needs who require assistance in moving disaster debris to the ROW with volunteer organizations active in disasters that are available to perform such debris work. For further discussion of debris collection, see Section 6, below.



#### 4.8.3.3 PUBLIC INFORMATION

It is critical that CCSF provide preparedness and disaster information that is accessible, available in multiple formats, and provides content that addresses the needs of people with disabilities or access and functional needs. CCSF must provide people with disabilities or access and functional needs with timely, effective, understandable information regarding what has happened, what the city is doing to address debris issues, and how people can help or get needed assistance. It is also important to provide people with disabilities or access and functional needs with information on how to prepare for disasters well before they strike.

Effective communication considerations include providing:

- American Sign Language interpreters for people who are deaf or have hearing loss.
- Messaging in alternative formats for people who are blind or are low vision.
- Translation services for persons with limited English proficiency or for non-English speaking individuals.
- A contact number for people with disabilities or access and functional needs to request assistance or needed services.

CCSF has developed debris-related public messaging and a plan for outreach that considers the needs of people with disabilities and access or functional needs. For further discussion of public information, see Section 14 and Appendix H, below.





## SECTION 5: EMERGENCY DEBRIS CLEARANCE

### 5.1 Section Overview

This section covers emergency debris clearance, determining debris clearance priorities, and other strategies for clearing debris from roadways after a disaster. The section also discusses constraints relevant to state or federal reimbursement for debris clearance activities.

### 5.2 Definition and Purpose of Emergency Debris Clearance

Emergency debris clearance, or “route opening,” involves clearing disaster debris blocking roadways or other areas to the road shoulder or curb to allow field responders to address threats to life safety within the first hours or days following a disaster. Debris clearance is part of the debris-related response phase, which also includes addressing threats to public health, safety, and the environment posed by disaster debris.

The primary purpose of debris clearance activities is to clear obstructed roads so that search and rescue, fire suppression, emergency medical, law enforcement, and other response personnel can reach those needing assistance. Debris clearance is necessary to allow:

- Movement of emergency personnel and vehicles such as fire trucks, ambulances, and police units into impacted areas.
- Damage assessment of critical facilities and infrastructure so emergency repair work can begin.
- Resumption of critical services such as water, power, and telephone utilities.

During debris clearance activities, personnel from San Francisco Public Works (SFPW) and other agencies will move disaster debris to the side of blocked roads to permit access to critical public facilities such as fire stations, police stations, hospitals, and emergency shelters. Removal of this debris from the right of way is typically done at a later time. For further discussion of debris removal, see Section 6, below.

### 5.3 Determining Debris Clearance Priorities

Before beginning debris clearance efforts, road clearance priorities—the order in which roads will be cleared—must be determined to ensure that clearance crews address the most critical needs first. The SFPW Department Operations Center (DOC) Roadway Clearance and Route Recovery Group Supervisor is responsible for determining debris clearance priorities in consultation with the Debris Management Group Supervisor. Initially, the priority must be clearing routes needed to protect lives, public health, and safety. Debris clearance efforts also must be structured to meet CCSF’s overall response and recovery priorities.

#### 5.3.1 Criteria for Setting Emergency Clearance Priorities

The SFPW DOC Roadway Clearance and Route Recovery Group Supervisor will use the following criteria in setting debris clearance priorities, taking into consideration citywide response and recovery priorities set by the EOC and the Policy Group:

1. Immediate life-safety needs such as firefighting, emergency medical assistance, search and rescue, and extrications or evacuations from life-threatening conditions.
2. Clearance of at least one lane on all critical routes to ensure ingress and egress for fire stations, police stations, hospitals, the EOC, DOCs, and critical staging areas, as shown on



the SFPW windshield survey map provided in Appendix B, below.

3. Clearing access to public schools and other facilities used for emergency shelters.
4. Clearing access to other government and public facilities essential to recovery.
5. Access for utility restoration, including power substations, pump stations, and wastewater treatment plants.
6. Secondary road clearance.
7. Clearance on private roads where there is debris that adversely affects public welfare.

**CAUTION:** The California Governor’s Office of Emergency Services (Cal OES) and the Federal Emergency Management Agency (FEMA) must pre-approve clearance of debris from private roads or property in order for such clearance activities to be eligible for Public Assistance. For further discussion of clearance on private roads, see Section 6.5, below.

The SFPW DOC Roadway Clearance and Route Recovery Group Supervisor will review debris clearance priorities during each Operational Period and will make needed changes depending on the circumstances presented at the time. Debris clearance operations may be revised based on updates to debris or damage assessments, changes in EOC objectives, or other relevant information. Debris clearance operations may also be expanded to include additional critical facilities such as evacuation pick-up points and secondary shelters.

### **5.3.2 Pre-Established Public Works Windshield Survey Routes**

CCSF has pre-established and mapped windshield survey routes that SFPW staff will use to survey critical emergency transportation routes within CCSF for disaster-related debris and damage. These routes should be considered a priority during initial debris clearance activities. As part of the process of selecting these transportation routes, CCSF identified facilities that are critical to CCSF’s emergency response activities, including fire stations, police stations, hospitals, and potential shelters. Following a disaster, routes to these critical facilities must be cleared to allow ingress and egress of emergency response vehicles. The SFPW windshield survey routes are included in the windshield survey map in Appendix B, below. The SFPW DOC Incident Communications Center is responsible for coordinating windshield surveys and collecting information and damage assessments.

### **5.3.3 Communicating Clearance Priorities**

Once the Roadway Clearance and Route Recovery Group Supervisor determines debris clearance priorities, the Group Supervisor is responsible for communicating the priorities within the SFPW DOC and to the CCSF EOC. The SFPW DOC is also responsible for ensuring that debris clearance priorities are communicated to field personnel performing debris clearance.

## **5.4 Debris Clearance Resources**

During initial debris clearance activity, CCSF will utilize available city personnel and equipment (“force account” resources) to perform emergency roadway clearance. If personnel, equipment, or supply needs exceed available CCSF resources, the city will augment resources through mutual aid, contracted services, and volunteer labor. To prepare for the possibility that contracted services may be needed to assist with debris clearance within hours or days of a disaster, CCSF has developed a process for pre-qualifying potential debris contractors. For further discussion of the pre-qualification process, see Appendix G, below. For further



discussion of debris-related resource management, including the use of force account and contract personnel, see Section 4.6, above.

## 5.5 Debris Clearance on Federal and State Roads

Several federal and state roads in San Francisco are among the pre-established windshield survey routes that must be assessed and cleared of obstructing debris during debris clearance. These routes are as follows:

- Federal roads:
  - Federal Interstate 80, which provides access to the San Francisco-Oakland Bay Bridge.
  - Federal Interstate Highway 280.
  - US Highway 101, which contains portions of Doyle Drive, Lombard Street, and Van Ness Avenue, and provides access to the Golden Gate Bridge.
- State roads:
  - State Highway 1, which includes Veterans Boulevard, Park Presidio Boulevard, Crossover Drive, 19th Avenue, and Junipero Serra Boulevard.
  - State Highway 35, which includes portions of Sloat Boulevard and Skyline Boulevard.
  - State Highway 80, which includes the James Lick Skyway.

**NOTE:** San Francisco does not have authority to perform debris clearance on federal or state roads within CCSF. The SFPW DOC Roadway Clearance and Route Recovery Group Supervisor must make a request through the CCSF EOC, which will forward the request to the REOC or SOC for federal or state assistance in performing debris clearance on these routes. In addition, it is important to keep in mind that Public Assistance funds generally are not available for debris clearance activities on routes over which CCSF lacks authority.<sup>1</sup> For further discussion of Public Assistance eligibility of debris clearance on federal and state roads, see Section 5.6, below.

## 5.6 Reimbursement for Debris Clearance on Federal or State Roads

Normally, debris clearance in areas under the authority of a state or federal agency is not eligible for Public Assistance reimbursement in a presidentially-declared disaster. To be eligible for Public Assistance, debris clearance work must be the legal responsibility of the jurisdiction requesting reimbursement.<sup>2</sup> In general, this means that CCSF, as the jurisdiction seeking reimbursement, either must have jurisdiction over the area impacted or must have legal authority to conduct the work related to the request.<sup>3</sup>

San Francisco has Memorandums of Understanding (MOU) with the California Department of Transportation (Caltrans) to perform routine maintenance on some state roads. However, these agreements do not give CCSF legal authority to perform debris clearance on those roads following a disaster. If CCSF wants responsibility for clearing disaster debris on state or federal roads, it must have specific contracts with Caltrans for that purpose to obtain Public Assistance reimbursement.

For incidents that are not declared a major disaster or emergency by the President under the Stafford Act, or for an incident that is declared a major disaster or emergency but in which FEMA determines debris removal is not eligible for Public Assistance, the cost of debris removal on federal roads may be an eligible expense under the Federal Highway Administration's Emergency Relief (ER) Program.<sup>4</sup> The state has the responsibility to request ER funds for



assistance for debris removal on federal-aid highways damaged by natural disasters or catastrophic failures.<sup>5</sup>

## 5.7 Abandoned Vehicles and Vessels

Privately-owned vehicles and vessels abandoned during a disaster may be classified as debris and moved if they block public access to critical facilities. Abandoned vehicles may be moved under the following circumstances:

- A peace officer who finds a vehicle parked or standing on a roadway in a manner that obstructs necessary emergency services or traffic routing at the scene of a disaster may move the vehicle to the nearest available parking location. If the vehicle is unoccupied and moving it to a parking location is impractical, the peace officer may store the vehicle.<sup>6</sup>
- A peace officer or regular salaried employee engaged in directing traffic or enforcing parking laws and regulations may remove a vehicle parked or left standing on a roadway in a manner that obstructs normal traffic movement or is hazardous to other traffic.<sup>7</sup>
- A CCSF police officer or parking control officer may remove a vehicle that is parked, disabled, or abandoned in a way that obstructs normal movement of pedestrian or vehicular traffic or that creates a hazard to other traffic in violation of the California Vehicle Code.<sup>8</sup>
- A police officer or CCSF authority charged with maintaining a roadway may move a vehicle that is disabled, abandoned, or obstructing traffic to the nearest available position on the same roadway to keep the road open or safe for public travel.<sup>9</sup>

Similarly, any peace officer, lifeguard, or marine safety officer employed by CCSF or a special district may remove a vessel from a public waterway and store it, if necessary, when:<sup>10</sup>

- The vessel is left unattended and is moored, docked, beached, or made fast to land in a position that obstructs normal movement of traffic or creates a hazard to public safety, to other vessels using the waterway, or to property belonging to another.
- The person in charge of the vessel is incapacitated because of physical injuries or illness such that the person is unable to provide for its custody or removal.
- The vessel interferes with or otherwise poses a danger to navigation or to public health, safety, or welfare.
- The vessel poses a threat to adjacent wetlands, levies, sensitive habitat, a protected wildlife species, or water quality.

Removal of privately-owned vehicles and vessels from a public roadway during clearance activities is eligible for reimbursement under the Public Assistance program if **all** of the following conditions are met:<sup>11</sup>

- The vehicle or vessel blocks access to a public-use area;
- The vehicle or vessel is abandoned and CCSF is unable to identify the owner;
- CCSF follows applicable state and local laws or ordinances for private vehicle or vessel removal; and
- CCSF verifies the chain of custody of the vehicle or vessel.



Abandoned vehicle and vessel storage also is eligible for reimbursement for a limited time if necessary to remove the vehicle or vessel before the owner can be identified. If CCSF subsequently identifies the owner, the federal share of any funds recovered from the owner for storage costs must be returned to FEMA.<sup>12</sup>

## 5.8 Contract-Related Constraints

### 5.8.1 Competitive Bidding Requirements

Though emergency debris clearance efforts begin immediately following a debris-producing incident, CCSF generally must engage in a competitive bidding process for debris clearance contractors if the city wants to receive Public Assistance reimbursement for work done pursuant to the contract. As with other disaster debris contracting, competitive bidding or a sealed bid process must be used for all debris clearance contracts.<sup>13</sup> This means that, in general, debris clearance contracting must be conducted in a way that allows for full and open competition consistent with the standards set forth in state and federal procurement regulations.<sup>14</sup> Non-competitive or “sole source” contracting may be used only in rare circumstances,<sup>15</sup> as when there is a “public exigency” or emergency that does not permit the delay required for competitive bidding.<sup>16</sup> Even when the public exigency exception applies, it should be possible to resume normal competitive bidding for emergency road clearance within days of the disaster.

**CAUTION:** Chapter 6 of the San Francisco Administrative Code allows department heads for SFPW, the San Francisco Municipal Transportation Agency, San Francisco International Airport, the Port of San Francisco, the San Francisco Public Utilities Commission, and Recreation and Park to execute contracts to perform emergency repair work deemed to be in the city’s best interests.<sup>17</sup> Chapter 6 exempts these contracts from Administrative Code provisions requiring bidding and nondiscrimination in contracting, though departments must make every attempt to comply with these requirements before waiving them.<sup>18</sup> However, when there is a direct conflict between a federal procurement standard and a local or state procurement standard or regulation, FEMA expects CCSF to apply the more restrictive procurement standard.<sup>19</sup> In this situation, the more restrictive standard is the federal procurement standard requiring competitive bidding. For further discussion about this provision, see Section 4.6.4.3, above.

### 5.8.2 Time and Material Contracts

In general, “time and materials” contracts should be avoided, but may be allowed for debris clearance work that is necessary immediately after the disaster.<sup>20</sup> In a time and materials contract, the cost to the applicant is the sum of the actual cost of materials, plus the direct labor hours charged at fixed hourly rates that reflect wages, general and administrative expenses, and profit.<sup>21</sup> Time and materials contracts are disfavored because they have an open-ended contract price that provides little incentive to contractors to control costs or provide efficient labor.<sup>22</sup> CCSF may use time and materials contracts for debris clearance only if all of the following apply:<sup>23</sup>

1. No other type of contract is suitable;
2. The contract includes a cost ceiling or a “not to exceed” a specified number of hours provision warning that the contractor exceeds the ceiling or hour limit at its own risk; and
3. CCSF provides a high degree of oversight over the contractor to ensure it is using efficient



methods and effective cost controls.<sup>24</sup>

CCSF also must carefully document contractor expenses.<sup>25</sup>

## 5.9 Documentation Needs

Whether debris clearance work is performed by force account resources or by contractors, proper documentation is critical to securing Public Assistance reimbursement in a presidentially-declared disaster. To maximize CCSF's chances of obtaining Public Assistance funding for debris clearance activities, CCSF must gather and maintain the following records:<sup>26</sup>

- Photographs of debris blocking routes before clearance, while work is underway, and after debris clearance work is completed.
- Estimated and actual debris clearance costs.
- Force account labor.
- Force account equipment.
- Rented equipment.
- Materials and purchases.

In addition, early in the incident, the Controller's Office is responsible for initiating and ensuring that SFPW and all CCSF departments with field operations track costs related to debris removal. For further discussion of cost tracking, see Section 4.6.4.5, above. For discussion of debris monitoring documentation, see Section 10, below.





## SECTION 6: DEBRIS COLLECTION AND REMOVAL

### 6.1 Section Overview

This section discusses the purpose of, and strategies for, disaster debris collection and removal. Debris collection and removal are part of debris-related recovery phase activities, which include collecting, removing, processing, and disposing of debris that hinders recovery but poses less of a threat to public health or safety. In addition, this section provides information regarding constraints or limitations to be aware of in performing debris collection and removal, including removal of disaster debris from private property.

### 6.2 Definitions and Purpose

Debris collection involves gathering debris from the public right-of-way (ROW) or other public areas preparatory to processing, diverting, or disposing of the debris. In general, public ROW means the area in, on, and along public sidewalks, streets, courts, and alleys, from property line to property line, which are owned by the city and are dedicated to public use.<sup>1</sup> Debris removal involves transporting debris to locations where it can be processed, recycled, composted, reused, repurposed, or reduced in volume, with disposal of the remainder in a safe, proper manner. The purpose of debris collection and removal is to facilitate recovery by moving disaster debris from public roads and property and from other locations where it poses an immediate and significant threat to public safety.

Depending on the severity of the incident and the volume of debris produced, debris collection and removal activities may include:

- Assessing and removing hazardous materials in debris (see Section 6.4.3.3–6.4.3.4, below).
- Removing debris from the public ROW and other public property.
- Under limited circumstances, removing debris from private property (see Section 6.5, below).
- If necessary, moving debris to temporary debris management sites before sending it to a site for processing, recycling, composting, repurposing, reuse, or disposal (see Section 7, below).
- Recycling, composting, repurposing, reducing, and reusing debris whenever possible (see Section 8, below).
- Transporting remaining debris to a landfill for final disposal (see Section 9, below).

### 6.3 Reimbursement for Debris Collection and Removal

In general, CCSF may only receive state and federal reimbursement for debris collection and removal on public property. Under limited circumstances, CCSF may obtain reimbursement for removal of debris on private property if it is pre-approved by the California Governor's Office of Emergency Services (Cal OES) and by the Federal Emergency Management Agency (FEMA).<sup>2</sup> For further discussion of collection and removal of debris from private property, see Section 6.5, below.

Debris removal from publicly- and privately-owned land and waters is eligible for state Public Assistance under the California Disaster Assistance Act (CDAA) if undertaken in response to a state of emergency proclamation by the Governor.<sup>3</sup> However, state financial aid for removing





debris from private property is available only when there is an immediate threat to public health and safety.<sup>4</sup> Examples of eligible debris work under the CDAA include removing pieces of destroyed buildings, structures, signs, or broken utility poles; removing loose or broken sidewalks and driveways; and removing fallen trees.<sup>5</sup>

In a presidentially-declared disaster for which federal Public Assistance is available, debris removal must meet the following criteria to be eligible for reimbursement:

- The debris was generated by the disaster event;
- The debris is located in a designated disaster area on improved public property or public ROW belonging to CCSF; and
- Removal of the debris is the legal responsibility of CCSF.

The following debris removal-related activities are reimbursable under Public Assistance:<sup>6</sup>

- Removal of debris from improved public property.
- Removal of debris from the public ROW, including removal of debris from federal-aid roads.
- Removal of debris placed on the public ROW by CCSF residents, provided the city or the state has authorized residents to place disaster debris from their residences on the public ROW.

In contrast, removal of the following debris generally is not eligible for Public Assistance reimbursement:<sup>7</sup>

- Debris from commercial properties placed on the public ROW. Commercial properties include apartments, condominiums, industrial parks, and golf courses.
- Materials related to construction, repair, or renovation of residential or commercial structures.
- Debris from federally-maintained navigable channels and waterways.
- Debris from flood control works under the authority of the Natural Resources Conservation Service (NRCS).
- Debris from agricultural or natural, unimproved land, such as heavily wooded and unused areas.

Removal of debris from commercial properties is generally ineligible because commercial enterprises are expected to have insurance that covers debris removal. However, in limited, extraordinary circumstances, FEMA may make an exception.<sup>8</sup> For further discussion of debris removal from private property, see Sections 6.4 and 6.5, below.

## **6.4 Strategies for Debris Collection and Removal**

Debris collection and removal strategies establish a systematic approach for safe, efficient collection and removal of disaster debris from public areas. As with debris clearance, collection of debris must be structured to meet CCSF's response and recovery priorities, and must comply with CCSF's Disaster Debris Operations Plan (Debris OP). Debris collection and removal also must meet all applicable federal, state, and local laws, regulations, and ordinances.<sup>9</sup>

The SFPW DOC Debris Management Group Debris Collection Unit Leader, in consultation with the Debris Management Group Supervisor and the Debris Removal Unit Leader, will develop a



debris collection strategy specific to the disaster or emergency. Similarly, the SFPW DOC Debris Removal Unit Leader, in consultation with the Debris Management Group Supervisor and the Debris Collection Unit Leader, will develop a debris removal strategy specific to the disaster or emergency. Development of these strategies involves:<sup>10</sup>

- Determining debris collection and removal priorities during both response and recovery phase operations, including:
  - Identifying locations, types, and amounts of hazardous materials or toxic debris and prioritizing their collection and removal (see Sections 6.4.3.3 and 6.4.3.4, below).
  - Identifying and prioritizing public ROW, public facilities, waterways, and other public areas impacted by debris (see Section 6.6, below).
  - Identifying and prioritizing private roads, facilities, waterways, or structures where disaster debris poses an immediate, significant threat to public safety or health such that removal of the debris would be in the public interest (see Section 6.5, below).
- Determining best methods for collecting and removing debris from public property given CCSF's response, recovery, and debris collection priorities.
- Determining whether to assist CCSF residents by conducting debris removal from public ROW, and if so, determining best methods for collecting and removing debris from public ROW given CCSF's response, recovery, and debris collection priorities.
- Working with the SFPW DOC Debris Diversion/Management Site Unit Leader to determine best methods for diverting debris for recycling or reuse, given CCSF's response, recovery, and debris collection priorities (see Section 8, below).
- Scheduling debris removal routes based on debris collection and removal priorities.
- Coordinating the debris collection and removal process with other entities involved in collecting and removing debris, including:
  - Local, regional, state, and federal officials involved in collection and recovery efforts.
  - Notifying local law enforcement agencies of locations where collection or removal work will be done, addressing law enforcement requirements for doing the work, and implementing traffic control procedures to assist with collection and removal efforts.
- Ensuring CCSF follows all federal, state, and local laws applicable to disaster debris collection and removal (e.g., contracting and procurement; debris tracking and monitoring; recycling, reuse and repurposing; environmental and historic preservation), or that CCSF obtains waivers of such requirements as applicable and appropriate (see Sections 8, 11, and 12, below).
- Working with the EOC Joint Information Section (JIS) to provide timely, effective messaging to inform the public of CCSF debris collection efforts and how the public can assist (see Sections 6.4.3 and 14, below).

**CAUTION:** Collecting debris placed on the public ROW from apartment and condominium complexes generally is not eligible for Public Assistance reimbursement unless collection is pre-approved by Cal OES and FEMA. However, in limited, "extraordinary circumstances," FEMA may allow reimbursement for removal of debris from the public ROW fronting apartment and condominiums complexes, providing CCSF follows the private property debris removal requirements outlined in Section 6.5.4, below. Approximately 65 percent of San Francisco



residents are renters. If CCSF is not able to assist these residents by removing disaster debris from public ROWs, that could pose a heightened public health risk or economic disadvantage to the city. CCSF should make a request for an exception to Cal OES and FEMA as early as possible and well before beginning to collect debris.

#### **6.4.1 Determining Debris Collection and Removal Priorities**

In determining debris collection and removal priorities during response and recovery phase operations, the SFPW DOC Debris Collection Unit Leader and Debris Removal Unit Leader will consider the following criteria:

- The need to remove debris posing a threat to public health and safety from both public and private property.
- Public roads, facilities, waterways, and other public areas impacted by debris.
- Private roads, residences, or other structures or areas where disaster debris poses an immediate, significant threat to public safety or health, which may indicate that removal of the debris is in the public interest.
- Population density, location of critical facilities, environmental protection, historical preservation, and environmental justice issues.

For further discussion of collection and removal of hazardous debris, see Sections 6.4.3.3 and 6.4.3.4, below. For further discussion of collection and removal of debris from private property, see Section 6.5, below.

#### **6.4.2 Selecting Debris Collection Methods**

The SFPW DOC Debris Collection Unit Leader, in consultation with the Debris Management Group Group Supervisor, will select the debris collection method or methods best suited to address the debris issues presented. In general, selecting a disaster debris collection program should be based on an assessment of the following:<sup>11</sup>

- Types and amounts of disaster debris generated and related local conditions.
- Availability of and need for debris facilities, including mixed debris processing facilities, temporary debris management sites, recycling facilities, and landfills.
- Availability of force account or contract labor to handle debris collection, including debris haulers, processors, and monitors.
- Availability of equipment for debris collection and removal, including trucks, rail cars, barges, collection bins, and the like.
- Debris processing requirements and constraints, including the requirement that CCSF recycle and reuse disaster debris to the maximum extent possible.<sup>12</sup>
- Availability of end-uses and markets for collected materials.

A comparison of debris collection methods most often used is provided in Table 6.1, below.

For each type of debris, a material recovery program should be established for recycling, composting, reuse, or repurposing of that particular waste type. Examples include mulching and chipping operations for wood, smelting for metals, and concrete crushing for concrete. For further discussion of debris recycling and reuse requirements, see Section 8, below.



### 6.4.3 Methods of Collecting Debris from Private Residents

In general, CCSF cannot remove disaster debris directly from private property and receive federal reimbursement for that work (see Section 6.5, below). However, CCSF may receive Public Assistance funding for removing disaster debris that private CCSF residents have placed on the public ROW for collection.<sup>13</sup> The SFPW DOC Debris Collection Unit Leader, in consultation with the Debris Management Group Group Supervisor, must determine whether the city will assist CCSF residents by collecting disaster debris generated by private residences. If so, the Debris Collection Unit Leader also must determine the best methods for collecting this debris.

CCSF may employ several methods, alone or in combination, for collecting disaster debris from private CCSF residences. These methods include:

- Curbside collection: When authorized by CCSF, private residential property owners may place disaster debris from their properties on the nearest public ROW, where CCSF or contract service providers can pick up and remove the debris.
- Drop-off collection: CCSF may position neighborhood or area drop-off containers or establish sites where private residential property owners can bring disaster debris.
- Household hazardous waste (HHW) round-ups: CCSF may hold or may join with state partners to pick up HHW from households on a neighborhood-by-neighborhood basis.
- White goods pick-ups: CCSF may request private residential property owners to move white goods (e.g., refrigerators, stoves, water heaters) damaged in the disaster to the nearest public ROW for collection.

Each method is discussed in more detail in Sections 6.4.3.1 through 6.4.3.5, below.

Regardless of the debris collection methods employed, CCSF must:

- Track and document the location where debris was generated, the location from which it was removed, and the types and quantities of debris being collected (see Section 6.8, below).
- Monitor debris collection and removal throughout debris operations (see Section 10, below).
- Provide the public with information regarding the collection methods to be used, and what CCSF expects the public will do to assist in the collection and removal process (see Section 14, below).
- Maximize reuse and recycling of disaster debris (see Section 8, below).

**CAUTION:** Tracking and documentation of debris collection and removal is critical in a presidentially-declared disaster for which CCSF seeks state and federal reimbursement for debris collection and removal activities. Failure to track and document required information may jeopardize state and federal reimbursement. Similarly, commingling disaster debris types, or commingling of disaster debris with non-disaster waste or debris, may result in lost state or federal dollars. In addition, debris collection and removal efforts must be monitored at all times in order to receive state and federal reimbursement. For further discussion of debris commingling issues, see Section 6.4.3.1, below. For further discussion of debris monitoring and documentation, see Section 10, below.



#### **6.4.3.1 CURBSIDE COLLECTION AND SORTING**

Curbside collection involves having CCSF residents set out disaster debris along the public ROW near their residence for collection. For debris collection on the public ROW to be eligible for Public Assistance reimbursement, the city must authorize residents to place disaster debris on the public ROW for collection.<sup>14</sup> Authorization may be done through the issuance of a press release. Prior to beginning curbside collection, the SFPW DOC Debris Collection Unit must work with force account and contract personnel performing collection to establish an appropriate schedule regarding the types of disaster debris to be picked up, and when each debris type will be collected. Typically, the city would make several “passes” to collect debris. CCSF may want to consider providing residents with free curbside collection only when residents properly separate debris before placing it at the curb.

For curbside collection to work properly, the SFPW DOC Public Outreach Unit Leader must work with the EOC Joint Information Section (JIS) to develop and share debris sorting and collection preparation information with residents well before collection begins, and preceding each curbside collection date. For further discussion of public information needs for effective curbside collection, see Section 14.3.4.3, below. For sample public information materials for use in curbside collection, see Appendix H, below.

#### **6.4.3.2 DEBRIS DROP-OFF**

Debris drop-off involves setting up neighborhood or area collection bins or receptacles where private property owners can drop off disaster debris. It also may involve asking or allowing residents to take debris to a centralized collection center. Residents would be instructed to place disaster debris in bins or receptacles located in their neighborhood or in a specific, nearby area. Debris drop-off may be used when curbside collection is unavailable or impractical, as in areas where topography is not ideal or streets are too narrow to accommodate large debris receptacles or the vehicles that haul them away. However, environmental permitting and land-use variances may be needed for drop-off sites that have not already met these requirements. For further discussion of this requirement, see Section 7.4.4, below.

Ideally, separate bins or receptacles should be designated and made available for each of the debris types at the drop-off location. Residents can then be instructed to sort debris either before or when dropping it off. Alternatively, CCSF may allow residents to place unsorted disaster debris in a single area or bin. However, this could lead to improper commingling of debris types, which may reduce CCSF’s ability to divert debris, and will require labor to sort the debris later.

Prior to beginning drop-off collection, the SFPW DOC Debris Collection Unit must work with force account and contract personnel involved with collection to establish the locations where drop-off bins would be located and a schedule for positioning and collecting debris. If applicable, the Debris Collection Unit also would establish a schedule for when each type of disaster debris may be dropped off. In addition, for drop-off collection to work properly, the SFPW DOC Public Outreach Unit Leader must work with the EOC JIS to develop and share information with residents well before drop-off collection begins and preceding each drop-off date. For further discussion of public information needs for effective drop-off collection, see Section 14.3.4.3, below. For public information materials for use in drop-off collection, see Appendix H, below.





### 6.4.3.3 HOUSEHOLD HAZARDOUS WASTE COLLECTION

#### HHW Definition

Household Hazardous Waste (HHW) means hazardous waste generated by residents as part of owning or maintaining a residence. Examples of HHW include motor oil, automobile batteries and other automotive products; latex and oil-based paints and stains; gasoline and other liquid fuels; solvents; household cleaners and drain openers; swimming pool chemicals; pesticides, fertilizers, and herbicides; compressed gas tanks such as propane and oxygen; vehicle and household batteries, fluorescent and other mercury-containing lighting; and other materials containing toxic and volatile chemicals. These products have ingredients that can catch fire, react, or explode under certain circumstances, or that may be toxic or corrosive.

In addition, HHW includes electronic waste, or “e-waste.” Electronic waste refers to consumer products that include a printed circuit board or a visual display screen and that contain hazardous materials such as lead, cadmium, nickel, and zinc. Examples of electronic waste include televisions, computers, cell phones, and most other electronic devices.

**NOTE:** HHW does not include hazardous waste generated as part of operating a business.<sup>15</sup> CCSF expects that hazardous waste generated by commercial or industrial sources will be properly and safely collected, removed, and disposed of by the commercial or industrial source.

#### Special Recycling and Disposal Rules for HHW

In California, it is illegal to dispose of HHW, including e-waste, by placing it in a recycling, composting, or solid waste collection container, down a drain, or by abandoning it.<sup>16</sup> Normally, CCSF residents must dispose of HHW through San Francisco’s Household Hazardous Waste Program.<sup>17</sup> Similarly, after a disaster, HHW must be segregated for collection and special handling.<sup>18</sup> It is critical that HHW, including e-waste, not be mixed with other debris types during disaster debris operations. Commingling HHW with other debris types contaminates the entire load, requiring that CCSF use special disposal methods for all debris in the load. HHW-commingled debris cannot be recycled or reused. This increases environmental impacts and the overall costs of labor, transportation, processing, and disposal.

#### Debris Operations Plan HHW Planning

Accordingly, the SFPW DOC disaster-specific Debris OP should include strategies for HHW collection and disposal, including:

- Methods for HHW identification, segregation, collection, and removal.
- Training of hazardous waste response teams to collect, sort, store, and dispose of significant quantities of HHW.
- If Temporary Debris Management Sites (TDMS) are utilized, training of TDMS personnel in identification and segregation of HHW that has been commingled with general disaster debris.
- Safe storage of HHW and other hazardous waste removed from general disaster debris at TDMS prior to off-site removal.
- Public information for residents with instructions regarding how to assist with collection and removal of HHW.
- Segregated facilities for temporary storage, if needed, and for final disposal of HHW.



CCSF should also consider having emergency hazardous waste removal contracts in place with qualified contractors to perform HHW collection and removal work.

Options for collection and removal of HHW include:

- Curbside: Asking residents to segregate and set out HHW at the public ROW for collection by CCSF or contracted hazardous waste response teams.
- Drop-off: Setting up HHW collection centers where residents are instructed to haul HHW to avoid commingling it with other debris. However, environmental permitting and land-use variances will be needed for HHW drop-off sites that have not already met these requirements. For further discussion of this requirement, see Section 7.4.4, below.

HHW round-ups: CCSF may join with state partners such as DTSC to host HHW round-ups where CCSF force account, state, or contract personnel perform pick up of HHW from households on a neighborhood-by-neighborhood basis.

For HHW collection to work properly, the SFPW DOC Public Outreach Unit Leader must work with the EOC JIS to develop and share HHW-related information with residents well before collection begins. For further discussion of public information related to HHW collection, see Section 14.3.4.3, below. For public information materials regarding HHW collection, see Appendix H, below. For a list of recycling centers permitted to take HHW and e-waste, see Appendix I, below.

#### **6.4.3.4 HAZARDOUS AND TOXIC MATERIALS ASSESSMENT AND COLLECTION**

After a major disaster, there is a potential for hazardous materials releases that can pollute air, water, and soil, and may pose a threat to public health and the environment. For example, earthquakes may result in airborne smoke and dust, which may contain asbestos and silica. Exposure to such substances can lead to acute and chronic health effects and may cause long-term public health and environmental impacts. Hazardous materials also pose an occupational health risk for public safety and recovery personnel deployed in impacted areas. It is critical that CCSF disaster debris response efforts to locate, assess, and address hazardous substance and debris are performed as quickly as possible to lessen these impacts.<sup>21</sup>

For further discussion of how CCSF will assess, contain, and remove hazardous or toxic substances, see Section 11.3.4, below. For discussion of how CCSF will collect and remove household hazardous waste after a debris-generating disaster, see Section 6.4.3.3, above.

#### **6.4.3.5 WHITE GOODS PICK UP**

“White goods” or “white waste” refers to discarded appliances such as refrigerators, stoves, air conditioners, washing machines, clothes dryers, heaters, and other large appliances that are damaged during a disaster. Many white goods contain ozone-depleting refrigerants, mercury, or compressor oils. The federal Clean Air Act prohibits the release of refrigerants into the atmosphere and requires that certified technicians extract this material from white goods before disposal or recycling.<sup>22</sup> California law also requires that a certified technician remove refrigerants and other toxic materials requiring special handling before white goods can be disposed of or recycled.<sup>23</sup> White goods that require special handling include:<sup>24</sup>

- Encapsulated polychlorinated biphenyls (PCBs), Di (2-Ethylhexylphthalate) (DEHP), and metal encased capacitors.
- Chlorofluorocarbons (CFCs), hydrochlorofluorocarbons, and other non-CFC replacement





Table 6.1. Comparison of Typical Debris Collection Methods

COLLECTION METHOD	DESCRIPTION	DEBRIS TYPES INVOLVED	ASSOCIATED SOURCE-SEPARATED RECYCLING PROGRAM	PROS	CONS	NOTES
Curbside	Residents place disaster debris at curbside on public ROW for pick up.	<ul style="list-style-type: none"> <li>Household furniture,</li> <li>C&amp;D Debris (e.g., wallboard, wood, metals, concrete, bricks),</li> <li>HHW (must be segregated from other debris types)</li> </ul>	wood chipping, mulching, concrete crushing	<ul style="list-style-type: none"> <li>May allow for more accurate documentation of location of debris source.</li> <li>May result in higher recycling rates.</li> </ul>	<ul style="list-style-type: none"> <li>Source separation is critical to avoiding contamination and reducing costs.</li> </ul>	<ul style="list-style-type: none"> <li>Documentation of location, type, and amounts of debris collected must be done.</li> <li>Collection process must be monitored throughout.</li> <li>Public information is critical for effectiveness.</li> </ul>
Drop-off	Residents place disaster debris in bins located in neighborhood or nearby area. Separate bins can be designated for specific materials, or all materials can be placed in one bin and separated later.	same as curbside	same as curbside	<ul style="list-style-type: none"> <li>May be used where curbside collection is unavailable or impractical.</li> <li>May result in higher recycling rates.</li> </ul>	<ul style="list-style-type: none"> <li>Environmental permitting and land-use variances may be needed for drop-off sites.</li> <li>May make documentation of debris location more difficult.</li> <li>Contamination and commingling of debris may occur if source-separation is not done, in absence of proper monitoring.</li> <li>Site security must be provided at drop-off sites.</li> </ul>	<ul style="list-style-type: none"> <li>Separate bins should be designated for each debris type collected to avoid improper commingling of debris.</li> <li>Proper documentation of location, type, amounts of debris collected must be done.</li> <li>Collection process must be monitored throughout.</li> <li>Public information is essential to effectiveness.</li> </ul>



COLLECTION METHOD	DESCRIPTION	DEBRIS TYPES INVOLVED	ASSOCIATED SOURCE-SEPARATED RECYCLING PROGRAM	PROS	CONS	NOTES
Drop-off (cont.)					<ul style="list-style-type: none"> <li>Placement of bins may pose problems, depending on area topography.</li> </ul>	
HHW	Residents take HHW to a collection event, mobile collection vehicle, or to a permanent collection center.	HHW includes automotive products, oil-based paints and solvents, household cleaners and drain openers, pool and photo chemicals, pesticides, fertilizers, compressed gas tanks.	oil filter, batteries, e-waste, fluorescent lamps and tubes	<ul style="list-style-type: none"> <li>Promotes segregation of HHW</li> </ul>	<ul style="list-style-type: none"> <li>Environmental permitting and land-use variances may be needed for collection centers.</li> <li>May make documentation of debris location more difficult.</li> </ul>	<ul style="list-style-type: none"> <li>Public information is essential to effectiveness of program.</li> </ul>
White Goods pick up	Residents place white goods at curbside on public ROW for pick up.	refrigerators, stoves, air conditioners, washing machines, clothes dryers, heaters, and other large appliances	metals, refrigerants	<ul style="list-style-type: none"> <li>Promotes segregation of white goods</li> </ul>		<ul style="list-style-type: none"> <li>Public information is critical to effectiveness.</li> </ul>



refrigerants in air-conditioning or refrigeration units.

- Used oil.
- Mercury in switches and temperature control devices.
- Other materials that, when removed from a major appliance, are a hazardous waste regulated under the California Health and Safety Code.<sup>25</sup>

To avoid harmful release of refrigerants or oils, collection of white goods must be done carefully by manually placing the appliance on trucks, or by using lifting equipment that will not damage the elements that contain the materials requiring special handling.<sup>26</sup> Furthermore, CCSF must follow all state and federal laws regarding final disposal of removed refrigerants, mercury, compressor oils, or other materials requiring special handling.

Options for white goods collection and removal include:

- Curbside: Asking residents to segregate and set out white goods at the public ROW for collection by CCSF or contracted hazardous waste response teams.
- Drop-off: Setting up collection centers where residents are instructed to haul white goods to avoid commingling them with other debris.

For white goods collection to work properly, the SFPW DOC Public Outreach Unit Leader must work with the EOC JIS to develop and share related information with residents well before collection begins, including the need to separate white goods to ensure they are not mixed with other debris types during collection. For further discussion of public information related to white goods collection, see Section 14.3.4.3, below. For public information materials regarding white goods collection, see Appendix H, below. For a list of certified recycling centers permitted to take white goods, see Appendix I, below.

#### **6.4.3.6 HUMAN WASTE**

Human waste is waste created predominately as a byproduct of digestion that is usually disposed of through a wastewater or sewer system. After an incident resulting in a failure of the city's water or wastewater infrastructure, water and wastewater systems may be damaged, resulting in residents and visitors being unable to flush their toilets. In response to such incidents, properly containing and disposing of human waste is critical to reducing the possibility of illnesses. Human waste is considered biological waste that requires special handling during disposal.

When the city's wastewater systems are damaged in a manner that prevents normal disposal of human waste, the San Francisco Public Utilities Commission (SFPUC) will inform the SFPW DOC Debris Management Group and the SF EOC Operations Support Section Infrastructure Branch. The SFPUC is responsible for management of human debris, and will work with the SFPW DOC Debris Management Group, the San Francisco Department of Health, and SFE to develop strategies for safely and effectively containing and collecting human waste while wastewater systems are being repaired. Such strategies may include directing members of the public to place human waste in garbage bags or other appropriate containers on the public ROW for collection by the city's normal refuse hauler. For further information on proper handling of human waste, see Section 11, below. In addition, SFPUC is responsible for working with the EOC Public Information Officer and Joint Information Section to share appropriate messages with the public regarding how to safely handle their human waste, and what to do to ensure such



waste is collected and removed by the city. For further discussion of public information messaging, see Section 14, below.

#### **6.4.3.7 HAZARDOUS TREES**

Trees may be damaged in incidents such as high-wind events, ice storms, floods, and earthquakes. These incidents may cause trees, limbs, or branches to fall, blocking streets or damaging homes and other structures. Trees, limbs, and branches left intact but in danger of falling may pose a threat to people or structures. However, in a disaster in which CCSF seeks federal Public Assistance reimbursement, it is important to follow FEMA's strict rules governing when federal funding is available for removal of trees, limbs, branches, and stumps. For a summary of these rules, see Appendix J, below.

### **6.5 Debris Removal from Private Property**

#### **6.5.1 State Reimbursement for Private Property Debris Removal**

In general, debris removal from privately-owned land and waters may be eligible for state financial assistance under the California Disaster Assistance Act (CDAA)<sup>28</sup> if done in response to a state of emergency proclamation by the Governor. However, state financial aid for private property debris removal is available only when there is an immediate threat to public health and safety.<sup>29</sup> Examples of private property debris work eligible for reimbursement under the CDAA include removing pieces of destroyed buildings, structures, signs, or broken utility poles; removing loose or broken sidewalks and driveways; and removing fallen trees.<sup>30</sup>

When reimbursement for removal of debris from private property is authorized by the Director of Cal OES, the following requirements apply, unless waived in part or in full by the Director:<sup>31</sup>

1. The property owner must move all disaster debris from the owner's property to the curb or public ROW;
2. CCSF must obtain a signed statement from the property owner indicating that the owner does not have insurance covering removal of the owner's disaster debris; and
3. CCSF must obtain a signed statement from the property owner granting the city the right of entry and absolving the city and state of any liability related to debris removal.

#### **6.5.2 Federal Reimbursement for Private Property Debris Removal**

This section includes information identifying the circumstances under which CCSF may seek FEMA approval to conduct private property debris removal in a presidentially-declared disaster, and the local laws that allow CCSF to intercede in private property matters. It also covers the processes CCSF will use to obtain permission to enter onto private property, and to recoup costs from private property owners when it is possible to do so.

Private property laws generally place limits on when local governments can enter and conduct activities on private property. Accordingly, removing debris from private property after a disaster is generally the responsibility of the property owner. In a presidentially-declared disaster, CCSF typically cannot obtain Public Assistance reimbursement from FEMA for removal of disaster debris from private property.<sup>32</sup> However, to assist private property owners in performing disaster debris removal on their property, CCSF may use a number of debris collection methods, such as curbside and drop-off collection (see Section 6.4.3, above).

In addition, under limited circumstances, FEMA may determine that it is in the public interest to



remove debris from private property.<sup>33</sup> This may occur in disasters, where debris on private property is so widespread that it threatens public health and safety or the economic recovery of the community. In that situation, CCSF or its contractor may enter private property to address the public health threat by removing debris, and may receive reimbursement from the Public Assistance program.<sup>34</sup> On determining that private property debris removal is in the public interest, FEMA also may provide assistance for removing debris and wreckage from both publicly- and privately-owned lands and waters.<sup>35</sup>

**CAUTION:** In a presidentially-declared disaster for which CCSF seeks Public Assistance reimbursement, the city must obtain prior approval from both Cal OES and FEMA before beginning any debris removal work on private property.<sup>36</sup> In addition, CCSF must obtain right-of-entry permission from property owners and agreements from them to indemnify and hold the federal government harmless. FEMA will not provide Public Assistance funding for debris removal from private property unless these prerequisites are met.<sup>37</sup> For further discussion of the request process, see Section 6.5.3, below.

### 6.5.3 Determination and Request Procedure

Before initiating any private property debris collection or removal, the SFPW DOC Debris Management Group will engage in the following process:

- The Debris Collection and Debris Removal Unit Leaders will work together with the Group Supervisor, the Department of Public Health, and other public entities with legal authority to determine whether disaster debris on private property constitutes an immediate threat to life, public health, or safety, or to the economic recovery of the community at large such that private property debris removal is needed.
- The SFPW DOC Commander must approve the determination.
- On approval by the SFPW DOC Commander, the DOC Debris Collection or Removal Unit Leader will inform the EOC Debris Coordination Unit Leader of the determination.
- Submit requests to Cal OES and FEMA for private property debris removal.
- The Debris Collection Unit Leader and Debris Removal Unit Leader will work together to ensure compliance with state and FEMA private property debris removal request procedures (see Section 6.5.4, below).

### 6.5.4 FEMA Requirements

In deciding whether to allow private property debris removal as part of eligibility for Public Assistance reimbursement in a presidentially-declared disaster, FEMA considers whether (1) the impact of debris on private property affects the general public, and (2) CCSF has legal authority to perform the work.<sup>38</sup> CCSF must submit a written request to Cal OES and to the Federal Coordinating Officer (FCO) to perform private property debris removal, and must obtain prior approval from both Cal OES and FEMA.<sup>39</sup> CCSF's request to FEMA must include documentation showing:<sup>40</sup>

- That removal of disaster debris from private property is in the public interest (see Section 6.5.4.1, below);
- That CCSF has legal authority to remove the debris (see Section 6.5.4.2, below);
- The specific properties or area of properties where CCSF seeks to perform private property debris removal; and



- That CCSF agrees to indemnify the federal government from claims arising from removing debris from private property (see Section 6.5.4.3, below).

A sample request to FEMA for permission to conduct private property debris removal is included in Appendix K, below.

FEMA is required to provide a written response to the request. If FEMA grants the request, the response must specify the properties or area of properties approved for debris removal.<sup>41</sup> For discussion of private property owner right-of-entry and indemnification requirements, see Section 6.5.4.4, below.

#### **6.5.4.1 PUBLIC INTEREST**

To be eligible for FEMA reimbursement, debris removal from private property must be in the public interest.<sup>42</sup> Debris removal from private property is in the public interest when it is necessary to:<sup>43</sup>

1. Eliminate immediate threats to life, public health, and safety; or
2. Eliminate immediate threats of significant damage to improved public or private property; or
3. Ensure economic recovery of the affected community to the benefit of the community-at-large.

When submitting a request to Cal OES and FEMA that FEMA allow private property debris removal, CCSF must provide documentation showing that removal of disaster debris from private property meets one or more of the above public interest criteria. The economic recovery condition is generally restricted to debris removal from large commercial areas when a significant percentage of the community's commercial sector is impacted and coordinated debris removal is necessary to expedite restoration of the economic viability of the affected community.<sup>44</sup>

The request must include information showing the basis for the city's determination that removing debris from private property is in the public interest. The determination must be made by the state, county, or city government's public health authority or by another public entity with legal authority to make a determination that disaster-generated debris on private property in the designated area constitutes an immediate threat to life, public health, or safety, or to the economic recovery of the community at large.<sup>45</sup> For example, the public interest determination may be made by the San Francisco Department of Public Health or by the California Department of Public Health. The request also must include documentation of the established, specific legal requirements for declaring the existence of a threat to public health and safety.<sup>46</sup>

#### **6.5.4.2 LEGAL AUTHORITY**

The request for FEMA approval must provide a detailed explanation documenting CCSF's legal authority and responsibility at the time of the disaster to enter private property to remove disaster debris to address immediate threats to public health and safety.<sup>47</sup> This includes:<sup>48</sup>

- Citing the law, ordinance, code, or emergency powers CCSF relies on as legal authority to remove debris from private property.
- Confirming that a legally-authorized CCSF official has ordered the exercise of public





emergency powers or other appropriate authority to address immediate threats to life, public health, and safety by entering onto private property in the designated area to remove disaster debris.

The legal authority cited must be applicable to the condition posing the immediate threat, and not merely to CCSF's uniform level of services. For instance, solid waste disposal ordinances are part of an applicant's uniform level of services and will not suffice as a justification for entering private property to remove disaster debris.<sup>49</sup> An example of an existing CCSF ordinance that may justify private property debris removal is the San Francisco Health Code provision authorizing the Director of Public Health, on determining that immediate action is necessary to contain a hazardous materials release and that the responsible party is not taking necessary action, to direct remedial actions as reasonably necessary to protect the health, safety, and welfare of the community from the hazard.<sup>50</sup> In addition, the Board of Supervisors may pass an emergency ordinance in a public emergency affecting life, health, or property to meet a specific need for authority that is not covered by existing CCSF authorities.<sup>51</sup>

When requesting FEMA approval of private property debris removal, a copy of the local disaster proclamation should be attached to the request. The Mayor has authority to proclaim a local emergency under the San Francisco Charter and the California Emergency Services Act.<sup>52</sup> The Board of Supervisors has authority to proclaim a local emergency under the California Emergency Services Act.<sup>53</sup>

#### **6.5.4.3 CCSF AGREEMENT TO INDEMNIFY FEDERAL GOVERNMENT**

As part of request for FEMA approval of private property debris removal, CCSF must include language agreeing to indemnify the federal government and its employees, agents, and contractors from any claims arising from removal of debris on private property.<sup>54</sup> For a sample request to FEMA for permission to conduct private property debris removal including indemnification language, see Appendix K, below.

#### **6.5.4.4 PRIVATE PROPERTY OWNER AGREEMENTS**

Before FEMA will actually give the city Public Assistance funding for private property debris removal, CCSF must furnish FEMA with documentation that the city has satisfied all legal prerequisites and has obtained permission from private property owners to enter their property. Accordingly, before conducting any private property debris removal, the city must obtain from each affected property owner both a right-of-entry agreement, and a hold-harmless agreement agreeing to indemnify and hold CCSF and the federal government harmless should any damage to their property occur during debris removal. CCSF must share these documents with FEMA.<sup>55</sup> The SFPW DOC Debris Removal Unit will work with the Department of Building Inspection to ensure that these policies are complied with before initiating any private property debris removal.

The right-of-entry agreement must include language requiring the property owner to avoid duplication of benefits.<sup>56</sup> Under the Stafford Act, FEMA is prohibited from providing assistance to a city or to another entity receiving benefits from another source.<sup>57</sup> As a condition of receiving federal Public Assistance grants to remove disaster debris from private property, FEMA requires that CCSF work with private property owners to pursue and recover insurance proceeds for debris removal work. Any insurance proceeds received must be credited to FEMA to the extent of the federal share of the work performed.<sup>58</sup> For a sample private property





owner right-of-entry, indemnification, and insurance agreement, see Appendix K, below.

Private property owners who refuse to sign a right-of-entry form will be asked to sign a right-of-entry denial form. This form documents the denial of entry, and the private property owner's assumption of responsibility for inspecting, testing, and removal of all debris on their property. For a sample private property owner right-of-entry denial form, see Appendix K, below.

### **6.5.5 Exceptions for Gated Communities and Commercial Properties**

Debris removal from private residential property within a gated community is not eligible for Public Assistance reimbursement from FEMA. However, if the debris is placed on a private road within the gated community, debris removal from the road may be eligible if it meets the eligibility and request criteria described in Section 6.5.4.1, above. Removal of disaster debris from private commercial properties such as apartments, condominiums industrial parks, and golf courses generally is not eligible for reimbursement from FEMA. FEMA expects that such commercial enterprises have insurance that covers debris removal. This means that removal of debris placed on the public ROW from commercial properties—including apartment and condominium complexes—is not eligible for Public Assistance reimbursement unless it is pre-approved by Cal OES and FEMA under the process described in Section 6.5.4, above.<sup>59</sup>

### **6.5.6 Private Property Demolition**

If more than one wall of a private property structure is standing, FEMA considers removal of the structure to be demolition rather than debris removal. Demolition of private structures may be eligible for Public Assistance funding as a Category B, Emergency Protective Measure. This type of demolition must meet additional eligibility and documentation requirements.<sup>60</sup> Emergency demolition of structures located on private property may be eligible for Category B reimbursement when partial or complete collapse is imminent, and the collapse poses an immediate threat to the general public.<sup>61</sup>

However, the following work is eligible for Public Assistance reimbursement as Category A debris removal if removal and disposal is conducted as part of overall debris removal operations:<sup>62</sup>

- Removing demolition debris, including personal effects; and
- Removing hazardous materials, such as asbestos and household hazardous waste.

Debris removal after demolition of a private structure must be completed within two years of the disaster declaration date, unless FEMA grants an extension.<sup>63</sup>

**NOTE:** FEMA usually reimburses demolition of public structures as part of a Public Assistance, Category C, Permanent Work project to replace the facility.<sup>64</sup>

### **6.5.7 Assisting People with Disabilities or Access and Functional Needs with Private Property Debris Removal**

People with disabilities or access or functional needs, may be unable to move debris from their private property to a curbside for pickup, or to load and transport debris to a drop-off center. Conversely, even if CCSF had the resources to assist in performing private property debris removal for people with disabilities or access and functional needs, it is unlikely that FEMA would reimburse the city for the costs to do this work, as private property debris removal typically is not eligible for Public Assistance reimbursement.



To address this issue, CCSF has identified several volunteer organizations that may provide assistance to people with disabilities or access or functional needs in moving debris from their private properties. In a large debris-producing incident, the city will invite those organizations to provide volunteer assistance to people with disabilities or access or functional needs in moving debris from their private properties so it can be collected. CCSF has also included material on these services in public information messaging, which will be disseminated following a debris-producing incident. For further discussion of public information, see Section 14, below.

## 6.6 Debris Removal From Waterways

Debris removal from waterways that is necessary to eliminate an immediate threat to life, to public health and safety, or to improved property is eligible for federal Public Assistance reimbursement. Removal of debris in a waterway that does not meet the “immediate threat” requirement is not eligible for Public Assistance reimbursement, even if the debris is deposited by the disaster.<sup>65</sup> For FEMA to determine that debris removal from waterways is eligible, CCSF must provide documentation of the following:<sup>66</sup>

- CCSF has legal responsibility for the waterway;
- The basis of CCSF’s immediate threat determination;
- The locations, types, and quantities of waterway debris; and
- Proof that the debris at issue was deposited by the disaster and was not pre-existing.

CCSF is responsible for identifying debris deposited by the incident that poses an immediate threat. If CCSF identifies an area of debris impacts and demonstrates the need for a survey to identify specific immediate threat, FEMA may provide Public Assistance funding for a survey in that location, including the use of side scan sonar. In contrast, random surveys to look for debris, including surveys performed using side scan sonar, are not eligible.<sup>67</sup>

The US EPA and USCG have specific authority to remove hazardous materials, as described in Section 6.6.1, below.

### 6.6.1 Navigable Waterways

The USCG and USACE have authority and responsibility to respond to actual or potential discharges of oil, hazardous substances, pollutants, and contaminants that may present an imminent and substantial danger to public health or welfare.<sup>68</sup> The USCG and USACE have authority and responsibility for removal of hazardous substances, vessels, and other obstructions from federally-maintained navigable waterways.<sup>69</sup> The USCG is responsible for responses in the coastal zone, which includes coastal waters and adjacent shorelands, including land in and under those waters, and in proximity to the shorelines of the coast, including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches.<sup>70</sup> The US EPA is responsible for response in the inland zone, the area inland of the coastal zone.<sup>71</sup> Federal response actions can include containment, stabilization, decontamination, collection, and disposal.<sup>72</sup> The EOC Debris Coordination Unit may request the assistance of these agencies through the Regional Emergency Operations Center (REOC) or State Operations Center (SOC).

Debris removal from a federally-maintained navigable waterway is not eligible for Public Assistance reimbursement. San Francisco Bay is a federally-maintained navigable waterway. Accordingly, debris removal from the Bay is the responsibility of the USACE, with assistance



from the USCG, and will not be eligible for Public Assistance reimbursement.<sup>73</sup>

If CCSF has legal responsibility for maintaining a navigable waterway, removal and disposal of debris obstructing the passage of vessels is eligible for Public Assistance reimbursement to a maximum depth of two feet below the low-tide draft of the largest vessel that utilized the waterway before the disaster. Debris below this zone is not eligible for Public Assistance reimbursement unless it is necessary to remove debris extending upward into an eligible zone. If a tree is still rooted to an embankment, but is floating or submerged, the cost to cut the tree at the water's edge is eligible.<sup>74</sup>

## 6.6.2 Non-Navigable Waterways

Debris deposited by the incident may obstruct a non-navigable, natural waterway or constructed channel, including flood control works. A natural waterway is one that is not improved or maintained. Removal of disaster debris from a natural waterway or constructed channel is eligible for Public Assistance reimbursement if the debris poses an immediate threat, as when disaster debris:<sup>75</sup>

- Obstructs, or could obstruct, intake structures;
- Could cause damage to structures such as bridges and culverts; or
- Is causing, or could cause, flooding to improved public or private property during a five-year flood.

Removal of the obstruction is eligible for Public Assistance reimbursement. This is so even for streams where debris removal would also be eligible under the Natural Resources Conservation Service (NRCS) Emergency Watershed Protection Program, unless the NRCS provides assistance for the debris removal. In contrast, debris removal from flood control works under the specific authority of NRCS is not eligible for Public Assistance funding, even if NRCS does not have sufficient funding or does not provide assistance. For flood control works that are eligible for the USACE Rehabilitation and Inspection Program (RIP), debris removal is eligible for Public Assistance funding. The USACE RIP provides rehabilitation assistance for flood risk reduction structures. USACE does not reimburse applicants for debris removal; instead, it conducts this activity directly when necessary.<sup>76</sup>

## 6.7 Transporting Debris

### 6.7.1 Determining Methods for Transport

Removal of debris includes transporting it to existing debris processing centers, recycling and composting facilities, or disposal sites; or, if necessary, to temporary debris management sites. CCSF may use a variety of methods to transport debris to these facilities, including using trucks on streets and roads, rail, and water barge, depending on the extent of and needs posed by the disaster. The SFPW DOC Debris Removal Unit Leader, in consultation with the Debris Management Group Supervisor and the SFPW Director, will make decisions on which of these methods should be used and the appropriate routes to be taken. In making this determination, the following criteria will be considered:

- Protecting the health and safety of the public and of response and recovery personnel.
- Environmental and occupational safety laws, regulations, and other legal provisions governing transportation of waste, including hazardous materials (see Sections 6.7.2 and 11 and 12, below).



- Availability and cost of transportation methods.

**NOTE:** In general, city ordinances require that all construction and demolition debris of one cubic yard or greater generated by a demolition project must be transported off the site by a registered transporter; and must be handled, processed, and otherwise managed by a facility that is registered to divert the materials from a landfill.<sup>77</sup>

In general, the costs of transporting disaster debris, including recyclable materials, may be eligible for Public Assistance reimbursement in a presidentially-declared disaster. However, costs related to transporting debris for the purpose of recycling may not be eligible.<sup>78</sup> For further discussion of temporary debris management, recycling, and disposal of debris, see Sections 7 through 9, below.

### **6.7.2 Compliance With Applicable Laws and Regulations**

As SFPW is the lead CCSF department for undertaking emergency debris removal actions, the SFPW DOC Debris Management Group must oversee and ensure compliance with all applicable federal and state laws and regulations for transporting disaster debris. For example, a representative from SFPW must sign manifests for transporting solid and hazardous waste debris from public property. Similarly, the Debris Management Group must ensure that when solid or hazardous waste on private property is to be transported, a representative for the private property owner signs the manifests for shipping the waste off site.<sup>79</sup>

In addition, the SFPW DOC Debris Management Group must ensure that CCSF personnel or contractors transporting disaster-generated hazardous waste have the following certifications and licenses, in addition to a California Department of Motor Vehicles Motor Carrier permit:<sup>80</sup>

- Hazardous Waste Transporter Registration Number issued by the California EPA's Department of Toxic Substances Control (DTSC).
- California Highway Patrol Hazardous Materials Transportation License.
- US Department of Transportation (USDOT), Federal Motor Carrier Safety Administration USDOT Identification Number.

All hazardous waste and HHW removed from impacted public property must be manifested and transported to a permitted treatment, storage, and disposal facility in good standing with local, state, and federal agencies. When shipping asbestos-containing material (ACM), there is no federal requirement to complete a Resource Conservation and Recovery Act hazardous waste shipment record. The California Hazardous Waste Manifest (CHWM) meets the requirements of the Asbestos NESHAP Waste Shipment Record (WSR).<sup>81</sup> For further discussion of health and safety and environmental considerations, see Sections 11 and 12, below.

## **6.8 Documentation and Monitoring of Debris Collection and Removal**

In a presidentially-declared disaster for which CCSF seeks federal Public Assistance reimbursement for debris collection and removal activities, the city must perform extensive documentation, including:<sup>83</sup>

- Debris-collection locations.
- Type of debris collected.
- Quantities of debris collected.



FEMA requires CCSF to monitor all contracted debris operations to document this information and to ensure that contracted personnel remove eligible disaster debris. Failure to properly monitor and document debris collection and removal operations will jeopardize CCSF's Public Assistance funding for that work.<sup>84</sup> The SFPW DOC Debris Collection and Debris Removal Units are responsible for ensuring that CCSF meets these documentation requirements. For further discussion of debris documentation and monitoring, see Section 10, below.

## **6.9 Non-Disaster Refuse Collection**

In addition to managing the clearance, collection, and removal of disaster debris, SFPW is responsible for ensuring that collection of the city's normal residential and commercial refuse continues during disaster response and recovery. Similarly, SFE is responsible for ensuring that city programs for diverting non-disaster refuse from landfills continue during disaster response and recovery. Currently, San Francisco has agreements with Recology, its existing refuse collector, to collect and remove residential and commercial refuse, including materials to be recycled or diverted in some other way from city landfills.

As soon as possible after a debris-producing incident, the SFPW DOC Debris Management Group will make contact with the existing refuse collector and obtain a report including:

- The status of company operations.
- Capability to perform non-disaster debris collection and removal under existing agreements.
- Timetable for resuming regular waste hauling if disrupted.
- Capability to assist with disaster debris removal, if needed.

Interruptions in regular refuse collection service may be expected following a severe disaster. Moreover, portions of the city may be inaccessible for purposes of refuse collection following a major incident. However, it is expected that the existing refuse collector will resume normal refuse collection as quickly as possible following a disaster.

In addition, care must be taken that non-disaster refuse is not commingled with disaster debris during collection and removal, as commingling may reduce Public Assistance funding available to the city from the state or federal government. The SFPW DOC Debris Management Group and SFE will work closely with the existing collector to ensure ongoing communication regarding its status and capabilities, and continuation or resumption of normal refuse collection and diversion programs in a timely and effective manner.

## **6.10 Constraints**

### **6.10.1 Bidding and Procurement Requirements**

To obtain federal Public Assistance funding in a presidentially-declared disaster, the process for procuring debris collection and removal contractors must be done in a way that involves full and open competition consistent with state and federal procurement requirements.<sup>85</sup> In general, competitive bidding or a sealed bid process must be used for all debris-related contracts.<sup>86</sup> Non-competitive or "sole source" contracting may be used only in rare circumstances,<sup>87</sup> as when there is a "public exigency" or emergency that does not permit the delay required for competitive bidding.<sup>88</sup> However, it is unlikely that the public exigency exception would apply to debris collection and removal, as it should be possible to resume



normal competitive bidding within days of the disaster. For further discussion of the procurement process, see Section 4.6.4.3, above.

### **6.10.2 Environmental Protection and Historic Preservation Laws**

FEMA must review each Public Assistance project to ensure that the work complies with applicable federal, state, and local environmental and historic preservation (EHP) laws, regulations, executive orders, and other requirements.<sup>89</sup> Accordingly, in a presidentially-declared disaster for which CCSF seeks Public Assistance reimbursement, the city must comply with federal, state, and local EHP requirements to obtain Public Assistance funding. For example, debris removal in areas with known or high potential for archaeological resources may require that FEMA perform an evaluation and consult with the State Historic Preservation Officer (SHPO). The SFPW DOC Debris Removal Unit Leader is responsible for ensuring that removal activities comply with EHP requirements. For further discussion of EHP requirements that may apply to CCSF debris operations, see Section 12.





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## SECTION 7: TEMPORARY DEBRIS MANAGEMENT SITES

### 7.1 Section Overview

This section describes the city's strategy for utilizing temporary debris management sites after a debris-producing incident. It covers the purpose, types, advantages and disadvantages of debris management sites. In addition, the section notes the issues that must be addressed to properly locate and operate temporary debris management sites.

### 7.2 Definition and Purpose of Temporary Debris Management Sites

Traditionally, temporary debris management sites (TDMS) are locations where a jurisdiction can temporarily store and process disaster debris before moving it to a final disposition site. Without the ability to move disaster debris to an existing transfer and processing center or to a TDMS where debris can be stored and processed before diversion processing or final disposition, disaster debris is more likely to end up in a landfill.<sup>1</sup> Such a scenario is contrary to state law, which sets a goal of 75 percent recycling, composting, or source reduction of solid waste by 2020 to decrease California's reliance on landfills.<sup>2</sup> It also conflicts with San Francisco ordinances, which require maximum recovery of material and debris generated during construction and demolition projects,<sup>3</sup> and mandatory recycling and composting of refuse,<sup>4</sup> with a goal of zero waste by 2020.<sup>5</sup>

Having the ability to move debris to an existing processing facility or to a temporary management site is critically important to the city's efforts to manage debris in a safe, effective, and environmentally responsible manner. This, in turn, will facilitate the city's recovery.

### 7.3 Advantages and Disadvantages of TDMS

Whenever possible, it is better to transport disaster debris directly to an existing debris processing, diversion, or disposal facility instead of using TDMS. Direct transport of debris allows jurisdictions to pay labor and transportation costs only once. In contrast, hauling debris to a TDMS and subsequently moving it again to a diversion or processing facility or to a landfill may result in significant cost increases.

However, in a large debris-producing incident, San Francisco's existing recycling and landfill facilities will not have the capacity to meet the debris needs created by the incident. The city's primary solid waste disposal facility is a 256-disposal-acre site with a maximum permitted throughput of 2,400 tons per day, and a maximum remaining capacity of approximately 30,000,000 cubic yards.<sup>6</sup> CCSF's primary recycling facility handles approximately 2,000 tons of mixed debris per day.<sup>7</sup> Moreover, if large quantities of disaster debris are landfilled, this could rapidly exhaust the city's current landfill agreement, leading to increased landfill costs and environmental and resource impacts.

Advantages of using TDMS include the following:<sup>8</sup>

- Expedites debris collection by reducing hauling time from the point of debris collection to the TDMS.
- Increases debris diversion and recovery.
- Minimizes impact on existing landfills.
- Reduces the time for removal and disposal of debris.



- Provides time for local landfill preparation before moving debris to disposal sites.

Disadvantages of using TDMS include the following:

- Added cost for handling debris twice, in moving it to the TDMS and in final disposition; and for proper TDMS planning, engineering, and permitting.
- Lack of appropriate city-owned open space for locating TDMS within San Francisco.
- If CCSF-owned land is unavailable, leasing private land for TDMS can be expensive.
- Additional time and effort required to complete environmental and historic preservation compliance reviews before establishing TDMS.
- Need for dedicated management and staffing for efficient TDMS operations, safety, and documentation.
- Environmental review and potentially extensive site cleanup may be needed before closing TDMS.

## **7.4 CCSF's TDMS Strategy**

### **7.4.1 Use of Existing Transfer and Processing Centers**

San Francisco is a dense urban area with few city-owned open spaces located outside a hazard zone or away from populated areas. Accordingly, the city's preferred strategy following a large debris-producing incident is to transport debris to regional temporary debris management sites, which are existing, permitted debris transfer and processing facilities located in the San Francisco Bay Area, or if necessary, to such facilities located outside the Bay Area. Existing transfer and processing facilities can store, sort, process, and divert debris. Some of these centers have connected debris disposal facilities where debris also may be disposed. If not, debris requiring disposal will then need to be transferred to a landfill. A list and map of existing, permitted debris transfer and processing facilities located in the Bay Area is provided in Appendix I.

NOTE: When necessary, San Francisco's Local Enforcement Agency (LEA) can work with the LEA in counties where existing transfer and processing centers are located to issue an emergency waiver of standards for debris processing sites serving CCSF so they can accept a higher volume of materials for sorting, separating, and diverting. For a draft emergency waiver form, see Appendix I, below. CCSF's LEA also can communicate with LEAs from other jurisdictions to identify additional transfer and processing sites that may be able to accept San Francisco disaster debris. The LEA will work with the SFPW DOC Debris Management Group in this capacity as needed. For additional discussion of the role of the LEA, see Section 4.2.4.4, above.

### **7.4.2 Use of TDMS**

TDMS may be needed within CCSF as temporary storage areas where the city can position debris while loading it on trucks, rail, or barge for transportation out of the city to an existing facility for debris processing, diversion, or disposal. The SFPW DOC Diversion/Management Site Unit Leader, in consultation with the SFPW DOC Debris Management Group Supervisor, will decide whether TDMS within CCSF are needed for this purpose. In making this decision, the Diversion/Management Site Unit Leader will consider the following:

- Estimates of the types and amounts of disaster debris produced by the incident.
- Whether existing, permitted debris transfer and processing facilities will be insufficient to



meet CCSF's immediate needs for debris storage.

Based on this information, the Diversion/Management Site Unit may need to take additional steps, which may include expanding existing recycling, processing, or disposal facilities to handle increased demand. For further discussion of recycling and other forms of debris diversion, see Section 8, below. For further discussion of debris disposal, see Section 9, below.

### **7.4.3 Pre-Identified and Additional TDMS Locations**

In developing this plan, the Planning Team identified several locations in CCSF where TDMS may potentially be located for temporary storage of debris in preparation for loading it on trucks, rail, or barge for transportation out of the city to an existing facility for debris processing, diversion, or disposal. Information regarding pre-identified sites is provided in Appendix M, below. In addition, the Planning Team identified a number of existing transfer and processing centers that may be used as regional TDMS as needed, subject to availability. These sites are listed in Appendix I-3, below.

NOTE: Pre-identification of potential TDMS locations does not necessarily mean they will be selected for such use after a disaster. The need for and locations of TDMS will depend on the specific disaster. In addition, following a disaster, the SFPW DOC Diversion/Management Site Unit must perform an updated vetting and consultation with the site owner of each pre-identified site to ensure that the site is still available and appropriate for use.

The SFPW DOC Diversion/Management Site Unit Leader, in consultation with the Debris Management Group Supervisor, will determine appropriate locations for TDMS if needed within CCSF. In making location decisions, the Diversion/Management Site Unit Leader will consult with the department or other organization with ownership or authority over the location. The Diversion/Management Site Unit Leader may rely for guidance on the TDMS site selection information provided in Appendix M, Table M.1, below. In addition, a TDMS Site Assessment Form for use in assessing potential TDMS locations is included in Appendix M, below. When necessary, the EOC Policy Group may be asked to make a final determination as to the location of TDMS if needed within CCSF.

### **7.4.4 Permits, Waivers, Variances; Use of Emergency Authority**

Depending on its location, to establish TDMS within San Francisco County, CCSF may first need to obtain certain permits, waivers, and variances. For a table of potential permits, waivers, and variances, see Appendix M, below. The San Francisco Planning Department should also be consulted for guidance on what would be needed.

If necessary, CCSF also may consider using its emergency authority to establish TDMS areas. After proclamation of a local or state emergency, the Mayor is empowered to make and issue rules and regulations on matters related to protecting life and property affected by an emergency. The Mayor may also obtain vital property, supplies, and equipment needed to protect life and property.<sup>9</sup> In addition, if needed, the city may pass an emergency ordinance establishing TDMS areas.<sup>10</sup>

### **7.4.5 Leasing Private Property**

If CCSF must locate a TDMS on private property, a land lease agreement will be required. The lease agreement must be reviewed by the SFPW DOC Debris Management Group Legal/Permit Review Unit, by the City Attorney's Office, or by the General Services Agency Real Estate



Division before execution to avoid damage or other claims regarding the site. For further discussion of leasing requirements, see the FEMA *Public Assistance Program and Policy Guide*.<sup>11</sup>

#### **7.4.6 TDMS Planning, Operations, and Closure**

If TDMS are deemed necessary, the SFPW DOC Diversion/Management Site Unit will be responsible for performing site design and operations planning before opening the TDMS. The Diversion/Management Site Unit will also be responsible for making arrangements for TDMS management, operations, and closure.

NOTE: Once operations at a TDMS have completed, CCSF is responsible for restoring the property to the environmental and physical condition it was in before its use as a debris management site before returning the site to its owner. Site restoration may require remediation of any contamination that occurred during debris management operations.<sup>12</sup> For further discussion of TDMS planning, operations, and closure requirements, see Appendix M, below.



## SECTION 8: DEBRIS DIVERSION

### 8.1 Section Overview

This section discusses the meaning and purpose of diverting disaster debris from landfills through recycling and reduction, and why diversion activities play a critical role in San Francisco's ability to manage disaster debris in a safe, effective, and environmentally sound manner. The section also covers laws and policies mandating that CCSF engage in active efforts to recycle disaster debris. In addition, the section provides guidance on how CCSF will conduct recycling and reduction efforts, and the department responsible for leading this effort during a disaster.

#### 8.1.1 Definitions

For purposes of this plan, "diversion" means activities that reduce or eliminate the amount of solid waste disaster debris placed in disposal sites such as landfills.<sup>1</sup> Recycling and reduction are the primary methods CCSF will use to divert disaster debris from city landfills. "Recycling" is the process of collecting, sorting, cleaning, treating, and reforming materials that would otherwise become solid waste, and placing these materials back in the marketplace in the form of raw material for new, reused, or reconstituted products.<sup>2</sup> Recycling does not include burning, incinerating, converting, or otherwise thermally destroying solid waste.<sup>3</sup> "Reduction" means any action that causes a net reduction in the generation of solid waste.<sup>4</sup>

"Solid waste" means all solid, semisolid, and liquid waste, including garbage; trash; refuse; paper; rubbish; ashes; industrial waste; demolition and construction waste; abandoned vehicles and vehicle parts; discarded home and industrial appliances; dewatered, treated, or chemically-fixed sewage sludge; vegetable or animal solid and semisolid wastes; and other discarded solid and semisolid waste.<sup>5</sup> For diversion purposes, solid waste does not include hazardous waste, radioactive waste, or medical waste.<sup>6</sup> These types of waste must be handled, processed, and disposed of separately in order to protect responders, the public, and the environment. For further discussion of hazardous waste handling, see Section 11, below.

#### 8.1.2 Purpose of Diversion

Following the Magnitude 6.9 Loma Prieta Earthquake in 1989, San Francisco recycled an estimated 32,000 cubic yards, or 12,000 tons, of disaster debris.<sup>7</sup> After the January 1994 Northridge Earthquake, the City of Los Angeles collected 2.9 million tons of earthquake debris and recycled 1.6 million tons, for a 56.5 percent recycling rate. Through both its recycling and demolition programs, Los Angeles saved approximately 6.4 million cubic yards or 1.6 million tons of landfill space.<sup>8</sup> Otherwise, much of that debris would have been disposed in a landfill. Accordingly, debris diversion is a critical aspect of CCSF's approach to managing disaster debris.

Having a strong program for diverting disaster debris from city landfills serves several purposes, including:<sup>9</sup>

- Reducing the impact on scarce city landfill sites, preserving landfill space for solid waste debris that cannot be reduced or recycled.
- Lowering the amount of tipping fees paid as part of the cost of final disposition of debris.
- Increasing the amount of recycled materials, such as building and road-paving materials, available to assist in recovery, thus reducing the need to purchase new materials.





- Reducing environmental impacts, such as climate change and pollution. For example, compostable materials such as putrescent and vegetative debris placed in a landfill produce methane, a greenhouse gas that is up to 72 times more potent than carbon dioxide.
- Creation of green jobs. By one estimate, recycling and reuse activity produces more than seven jobs per 1,000 tons for some non-metal material or product categories and around 20 jobs per 1,000 tons for metal products.<sup>10</sup>

## 8.2 Decision-Making Regarding Diversion Capability and Needs

As part of preparing the Debris Operations Plan (Debris OP), the San Francisco Public Works (SFPW) Department Operations Center (DOC) Debris Management Group Diversion/Management Site Unit will determine the extent of CCSF's capability to divert disaster debris from landfills and methods for addressing shortfalls. This determination will be made in consultation with the Debris Management Group Supervisor and the Directors of SFPW, the San Francisco Department of the Environment (SFE), and the San Francisco Department of Public Health, as Local Enforcement Agency (LEA). The Debris Management Group Diversion/Management Site Unit will consider the following in making this determination:

- Local and state laws and policies encouraging the use of recycling of debris following a disaster (see Section 8.3, below).
- The availability of FEMA's Alternative Program for debris recycling, which would allow CCSF to keep revenue from recycling disaster debris if it is used for the purposes specified by FEMA (see Section 8.3.3, below).
- The availability of markets for CCSF's recycled materials (see Section 8.5.1, below).
- The availability of sufficient recycling facilities and other resources for recycling debris (see Section 8.5.2, below).
- The cost of enlarging CCSF's existing debris recycling program to accommodate disaster debris. These costs would likely not be reimbursed by FEMA in a presidentially-declared disaster (see Section 8.3.3, below).
- The cost to CCSF of landfilling disaster debris that might otherwise be diverted through recycling or reuse (see Section 8.4, below).

**NOTE:** In operationalizing this plan, disposing of disaster debris in landfills should be considered a last resort. This approach is in accord with city policy requiring CCSF departments to maximize disaster debris landfill diversion.<sup>11</sup> For further discussion of disposal, see Section 9, below. For further discussion of the role of the LEA, see Section 4.2.4.4, above.

## 8.3 Laws and Policies on Disaster Debris Diversion

### 8.3.1 State Law

#### 8.3.1.1 DIVERSION REQUIREMENT

To decrease California's reliance on landfills, state law requires each city and county to reduce solid waste through reuse, recycling, composting, and other diversion activities.<sup>12</sup> The California Integrated Waste Management Act<sup>13</sup> mandated that cities and counties divert 50 percent of all solid waste generated within their jurisdictions by January 1, 2000.<sup>14</sup> In addition, state law sets



a goal of 75 percent recycling, composting, or source reduction of solid waste by 2020.<sup>15</sup> As of 2012, San Francisco diverts approximately 80 percent of its solid waste from city landfills. For further discussion of San Francisco's current diversion efforts, see Section 8.4, below.

#### **8.3.1.2 CLAIMING A DISASTER DISPOSAL REDUCTION CREDIT**

As part of the recycling and reuse requirements imposed by the Integrated Waste Management Act, each city and county must report annually to CalRecycle on its progress in reducing waste.<sup>16</sup> To prevent a jurisdiction's diversion rate from being impacted by disaster waste, the Integrated Waste Management Act allows jurisdictions to subtract disaster waste from disposal tons if the jurisdiction tracks the disaster waste.<sup>17</sup> Thus, CCSF must make sure that facility operators track the amount of disaster waste to ensure disposal reporting accuracy.

If CCSF intends to make an adjustment in its reporting year disposal tonnages because of a disaster, SFE must file with CalRecycle a Reporting Year Disposal Tonnage Modification Request and Certification (Form 876), as part of its annual report. The form must provide CalRecycle with documentation demonstrating the following:<sup>18</sup>

1. A local emergency or state of emergency was duly proclaimed as a result of the disaster;
2. The tonnages subtracted as a result of the disaster;
3. To the extent feasible, CCSF implemented a diversion program to maximize diversion through reuse, recycling, or composting of disaster-related solid waste; and
4. The tonnages subtracted are consistent with the additional tonnages reported by the facilities where the solid waste was disposed.

In this context, "extent feasible" is evidenced by the use of maximum efforts to recycle, reuse, or otherwise divert from disposal as much of the debris and other nonhazardous waste received by a solid waste facility as possible, as determined by the operator.<sup>19</sup> For further information on filing a Form 876, see the CalRecycle web site.<sup>20</sup>

### **8.3.2 Local Law**

#### **8.3.2.1 MAXIMIZING DISASTER DEBRIS LANDFILL DIVERSION**

In 1999, the San Francisco Board of Supervisors adopted Resolution Number 385-99, which urges CCSF departments to maximize disaster debris landfill diversion. The resolution acknowledges that landfilling debris from a major disaster would use up a large portion of the city's landfill capacity. In addition, the resolution tasks the SFE Solid Waste Management Program with coordinating the city's efforts to prepare for debris diversion in a disaster, as well as efforts by city departments responsible for debris removal work to increase diversion of construction and demolition debris on an ongoing basis.<sup>21</sup> San Francisco has set a goal of zero landfill waste by 2020.<sup>22</sup>

#### **8.3.2.2 CONSTRUCTION AND DEMOLITION DEBRIS RECOVERY ORDINANCE**

San Francisco has adopted the Construction and Demolition Debris Recovery Ordinance, which creates a mandatory program to maximize recycling of mixed construction and demolition (C&D) debris.<sup>23</sup> Under this ordinance, no person other than the owner of a property where C&D debris is generated may transport that debris unless the person has registered with SFE. Moreover, all C&D debris, regardless of transport or volume, must be processed at a registered facility.<sup>24</sup> To be registered, a facility must meet an overall minimum recovery rate of 65 percent



for C&D debris based on the most recent month.<sup>25</sup>

In addition, a person conducting full demolition of an existing structure must submit a waste diversion plan to SFE that provides for a minimum of 65 percent diversion of C&D debris from the landfill. The waste diversion plan must be submitted to the Director of SFE at the time the person applies for a demolition permit from the Department of Building Inspection (DBI). The SFE Director determines the adequacy of the plan and notifies DBI of its decision.<sup>26</sup> SFE maintains a current list of registered facilities and transporters available on its website and at its office. The list is updated every 60 days.<sup>27</sup>

### **8.3.2.3 MANDATORY RECYCLING OF REFUSE ORDINANCE**

CCSF also has enacted an ordinance requiring mandatory recycling of refuse.<sup>28</sup> Under this ordinance, all residents and businesses in San Francisco are required to source separate their refuse into recyclables, compostables, and trash, and to place each type of refuse in a separate container designated for disposal of that type of refuse.<sup>29</sup> "Source separate" means to divide refuse at the place where it is generated into separate containers designated for recyclables, compostables, and trash before collection.<sup>30</sup>

## **8.3.3 FEMA Recycling and Re-Use Policies**

### **8.3.3.1 UNDER STANDARD PUBLIC ASSISTANCE PROGRAM**

Under the Standard Public Assistance Program, FEMA encourages applicants to reduce the volume of debris before landfilling and to consider recycling or reuse of debris to conserve landfill space. Costs to reduce vegetative debris using methods such as mulching, grinding, or burning are eligible for Public Assistance reimbursement in a presidentially-declared disaster.<sup>31</sup> However, under the standard program, if CCSF receives revenue for recycling debris, FEMA will reduce Public Assistance funding by the amount of recycling revenue the city receives.<sup>32</sup>

In addition, under FEMA's standard program, CCSF may deduct the cost of administering and marketing the sale of the salvageable materials from the fair market value of the materials. If CCSF has a contract with a debris contractor that allows the contractor to take possession of salvageable material and benefit from its sale to lower bid prices, there is no salvage value to be recovered at the end of the project. In that situation, CCSF has no further obligation to FEMA.<sup>33</sup>

### **8.3.3.2 UNDER ALTERNATIVE PROCEDURES PILOT PROGRAM**

FEMA currently has an Alternative Procedures Pilot Program for recycling that allows local jurisdictions to retain revenue obtained through recycling of disaster debris if the revenue is used for a purpose approved by FEMA. As soon as possible after a debris-producing incident, the EOC Debris Coordination Unit Leader will check on the availability of the Alternative Procedures Pilot Program for recycling and will inform the SFPW DOC Diversion/Management Site Unit Leader of the program's status. For further discussion of participation in the Alternative Procedures Pilot Program in general, see Appendix L, below.

#### **Retention of Recycling Revenue**

If CCSF elects to participate in the FEMA Alternative Procedures Pilot Program for recycling, the city may retain revenue received through recycling as long as the city uses the revenue for one or more of the purposes permitted by FEMA before the period of performance deadline. The permitted purposes include the following:<sup>34</sup>



- To offset the non-federal cost share of CCSF's debris projects.
- To develop disaster preparedness and assistance plans, programs, and capabilities.
- To reduce the risk of future damage, hardship, or suffering from an incident.
- To improve future debris removal operations or planning, including the following:
  - Developing, updating, or revising a disaster debris management plan.
  - Enhancing CCSF-owned landfills and debris management sites.
  - Installing mechanisms to control the flow of debris in future incidents.
  - Purchasing equipment to facilitate sorting, reducing, recycling, or removing debris.
  - Purchasing software and hardware products to facilitate quantifying of debris.
  - Purchasing onboard weight measurement systems for debris-collection trucks.
  - Purchasing software systems for debris load management to assist in tracking trucks, drivers, and routes.

FEMA will reduce any Public Assistance funding by the amount of any recycling revenue used for a purpose not on the approved purposes list.<sup>35</sup>

**CAUTION:** FEMA will not provide Public Assistance funding for the cost of establishing or managing the recycling program or process. Nor will FEMA provide reimbursement for additional sorting or processing of debris for recycling purposes.<sup>36</sup>

**RECOMMENDATION:** Despite limits on the uses for which recycling revenue may be spent, opting in to the Alternative Procedures Pilot Program for recycling is the recommended course of action. Doing so will save CCSF significantly in avoiding lost Public Assistance reimbursement. In addition, participating in the recycling program will allow the city to abide by local and state law and policies, in conserving scarce landfill space, and in preserving the environment. For further discussion of opting in to the FEMA Public Assistance Alternative Program, see Appendix L, below.

#### Required Notification and Accounting

CCSF must provide FEMA with written notification of the revenue received within 30 days of completing debris removal operations. The notification must include the following:<sup>37</sup>

- The date when debris removal operations were completed;
- The quantity of debris recycled;
- The types of debris recycled; and
- The cost of processing the debris for recycling.

In addition, CCSF must submit to the state and to FEMA an accounting of how CCSF used the recycling revenue. The city must submit this information within 90 days of the performance deadline.<sup>38</sup> The SFPW DOC Debris Management Group Diversion/Management Site Unit is responsible for tracking and maintaining this information, for sharing it with the CCSF EOC, and for ensuring that the required notices are submitted to the state and FEMA.

#### EHP Review

Using recycling revenue for expenditures such as equipment or training does not require additional environmental or historical preservation (EHP) review by FEMA. In contrast, using



recycling funds for a project involving ground-disturbing activities, including demolition and site preparation work, does require EHP review before performing the work. In addition, if applicable, CCSF must provide documentation demonstrating compliance with the Resource Conservation and Recovery Act (RCRA).<sup>39</sup> For further discussion of EHP review and RCRA, see Section 12, below.

## 8.4 Current San Francisco Recycling Program

San Francisco has a robust and ongoing recycling program as part of a broader local effort to act in an environmentally- and economically-conscious manner to reduce reliance on landfilling. CCSF successfully achieved the state-mandated 50 percent landfill diversion goal in 2000. The city then extended its commitment to landfill diversion by setting and meeting a goal of 75-percent diversion by 2010. The city currently diverts approximately 80 percent of its discards from the landfill each year. SFE and San Francisco Public Works (SFPW) partner with the city's refuse hauler in implementing CCSF's recycling program.<sup>40</sup>

San Francisco's current landfill agreement began in January 2016, and allows the city to dispose refuse at Recology's Hay Road landfill in Solano County, California. The agreement is for a nine-year term or a limit of 3.4 million tons, whichever is reached first. However, the agreement may be renewed for an additional six-year term or an additional 1.6 million tons, whichever is reached first.

The city's landfill disposal rate in 2014, the last year for which SFE has confirmed figures, was 498,000 tons per year. At that rate, the current contract term will be reached by mid-2024. In a disaster scenario, landfilling large quantities of demolition debris could rapidly exhaust the city's landfill agreement, leading to increased landfill costs and heightened environmental and resource impacts for landfilling. Therefore, pursuing alternatives to landfilling debris benefits CCSF both economically and environmentally.

## 8.5 Development of Debris Diversion Strategy

Once the SFPW DOC Debris Management Group has produced an estimate of the amounts and types of debris generated by the disaster, the Diversion/Management Site Unit, in consultation with SFE, is responsible for developing a Debris Diversion Strategy for establishing a recycling and reuse program. The Debris Diversion Strategy will be part of the Debris Operations Plan for the specific incident and should include the following:<sup>41</sup>

- Estimated types and amounts of disaster debris generated (see Section 4.5.4, above).
- Estimated types and amounts of disaster debris that may be diverted through recycling, composting, and reuse.
- Estimated current CCSF recycling capability.
- Estimated needed recycling capability.
- Potential end-use markets for recycling debris.
- Types of processing and facilities needed to convert the debris to an end-use product.
- List of current and available processors with recycling capability.
- Labor and processing equipment needs.
- Temporary storage area information (see Section 7, above).
- The plan for obtaining needed diversion resources through:





- Contracting and procurement.
- Mutual aid.
- Other means.
- Diversion-related public information needs (see Section 14, below).
- A program for monitoring diversion activities and tracking types and amounts of debris diverted.
- Options for funding diversion operations.

A list and map of recycling facilities within 100 miles of CCSF is included in Appendix I, below.

### **8.5.1 Determine End Uses and Markets**

As soon as possible following activation of the SFPW DOC Debris Management Group, the Diversion/Management Site Unit must determine end-uses and market specifications for recoverable disaster debris. One of the most important factors in the overall success of a post-disaster diversion program is the viability of markets for materials generated by the disaster. In this context, markets are outlets for selling raw or processed materials. End-uses are the products made from disaster debris, such as crushed concrete or soil amendment.<sup>42</sup> For examples of potential markets or end-uses for disaster debris, see Table 8.1, below.

#### **8.5.1.1 END USES**

The SFPW DOC Diversion/Management Site Unit must determine end uses for materials before processing them to avoid using processing methods that could limit use of the materials for particular products. This, in turn, may limit marketability of the materials. For instance, grinding concrete too finely or mixing it with wood or brick may prevent its use for certain road applications.<sup>43</sup> For a sampling of disaster debris types, recycling end uses, and potential markets, see Table 8.1, below.

#### **8.5.1.2 MARKET SPECIFICATIONS**

The SFPW DOC Diversion/Management Site Unit must ensure that materials to be processed will meet market specifications for the intended end use. If specifications are not met, the material will be rejected. For example, most crushed asphalt and concrete can be used as road base on California Department of Transportation (Caltrans) or local public works road projects, providing it meets Caltrans or local specifications for road materials.<sup>44</sup> San Francisco uses Caltrans Standard Specification for Asphalt Concrete. For concrete base for use on local projects, SFPW uses City and County of San Francisco's Standard Specification, which allows the use of recycle materials up to 100 percent. More relaxed standards may apply if the processed material is to be used for less structural applications such as temporary roads at landfills or parks. For more detailed discussion of Caltrans' road base specifications, see the Caltrans fact sheet on recycled aggregate.<sup>45</sup> San Francisco's Standard Specifications are also available online.<sup>46</sup>

**NOTE:** If CCSF uses contract providers to process debris, the contract agreements should include the required processing specifications so that the contractor uses the equipment needed to meet the specification.

#### **8.5.1.3 IDENTIFY MARKETS AND BARRIERS**

To identify markets for disaster debris that can be diverted, the SFPW DOC Diversion/





Management Site Unit will work with SFE to:<sup>47</sup>

- Determine if established markets exist for the materials to be collected;
- Identify the recyclers, processors, and brokers who can divert the designated materials, and the amounts they can handle.

**Table 8.1. Recycling and Re-Use Markets for Disaster Debris**

DEBRIS TYPE	USE	POTENTIAL MARKETS
Construction and Demolition	<ul style="list-style-type: none"> <li>• Asphalt: Recycled asphalt</li> <li>• Concrete: Aggregate base, sidewalk backfill, gravel road cap, decorative gravel</li> <li>• Construction lumber: Reuse, fuel, bulking agents</li> <li>• Construction plastics: Reuse or recycle</li> <li>• Drywall: Gunit mix, soil amendments, new drywall, reuse</li> <li>• Carpet: Secondary fibers for recycled content products</li> <li>• Metals: Scrap metal</li> </ul>	<ul style="list-style-type: none"> <li>• Public works construction contractors, construction companies, asphalt recyclers, public works departments</li> <li>• Construction companies, building restoration &amp; repair contractors, cogeneration plants, waste to energy plants</li> <li>• Plastics recyclers, construction companies, salvage dealers</li> <li>• Drywall manufacturers</li> <li>• Carpet recyclers and rag industry</li> <li>• Construction companies, metals recyclers, salvage dealers, smelters and steel mills</li> </ul>
Inert debris	Gravel, backfill, soil amendment, landfill cover	Cement manufacturers, soil amendment or horticultural industries, landscape companies, landfills and construction companies
Damaged White Goods	Repair and reuse, metals salvaged	Resale shops, repair shops, second hand appliance shops, scrap metal dealers
Hazardous Waste	Latex paint: recycle Used motor oil: recycle	Paint manufacturers Motor oil manufacturers
Personal Property	Repair and reuse	Resale shops, non-profit organizations
Vegetative Debris	Food waste: Compost Trees, branches, leaves: Mulch, landfill cover, fuel	Farms, composting facilities, landslide companies, landfills
Damaged Vehicles	Repair and reuse, salvage	Resale, metal salvage yards
Bi-Metal Containers, Plastic or Glass Bottles, Sand Bags	Recycle	Standard Recycling Markets Cement Manufacturers

Source: Cal OES, *Disaster Debris Management* (July 2014), 53.

For a list of potential recyclers, processors, and brokers within a 100-mile radius of CCSF, see Appendix I, below.



Potential markets for disaster debris include:<sup>48</sup>

- City or county use for future projects such as temporary roads at landfills (concrete, brick, and asphalt), daily cover (dirt), erosion control, parkways (mulch), and riprap.
- City or county use for aggregate base and subbase in public works road projects.
- State agencies such as the Department of Parks and Recreation (mulch) and Caltrans, for aggregate base and subbase in road projects.
- The California Materials Exchange (CalMAX), the materials exchange program run by CalRecycle.<sup>49</sup>
- Recycling Market Development Zone (RMDZ) businesses.<sup>50</sup>
- National waste exchanges.
- Salvage operations and local materials exchanges.
- Non-profit organizations.
- Out-of-state markets and brokers shipping to the Pacific Rim and Mexico.

It is also important to identify potential barriers to recycling collected disaster debris, and to find solutions to those barriers. Barriers may include:<sup>51</sup>

- Expense to collect, transport, and process the materials.
- Low market price for materials.
- Inexpensive virgin sources.
- Limited end-uses and markets for materials.
- Few or no temporary debris storage sites.

## **8.5.2 Identify Recycling and Reuse Facilities**

### **8.5.2.1 CAPABILITY ASSESSMENT**

The SFPW DOC Diversion/Management Site Unit is responsible, in consultation with SFE, for identifying available recycling and reuse facilities, as well as the facilities available for debris disposal. In addition, the Diversion/Management Site Unit is responsible for determining the number of facilities needed to process and prepare disaster debris for recycling, reuse, or disposal in a safe and effective manner. In making this assessment, the Diversion/Management Site Unit should:<sup>52</sup>

- Review the estimates of amount and type of disaster debris likely to be generated and collected.
- Review the list of potential end-uses and markets for collected materials (see Section 8.5.1, above).
- Prepare a list of existing facilities and their storage, handling, and processing capabilities; facilities include source separated, mixed recycling, and disposal.
- Prepare a list of facilities in neighboring or other jurisdictions that may be utilized.
- Map transportation routes to the facilities; develop alternate routes as needed.
- Complete a facility assessment for each facility, considering:
  - Materials handled.
  - Processing capacity.



- Processing barriers.
- Remaining disposal capacity of facility.
- Description of on-site recycling facilities.
- Expected waste types and origin of waste.
- Expected storage capacity for disaster debris.
- Disaster debris diversion or disposal reporting formats.
- Tipping fees charged by the facility to accept debris (for further discussion, see Section 9.2.2.2, below).
- Based on the information developed above, develop a list of facilities needed.
- Negotiate with franchise haulers, facility operators, owners, processors, and neighboring jurisdictions to use facility to collect, process, and divert disaster debris.

Source separated facilities accept materials such as concrete or asphalt exclusively for recycling. Mixed recycling facilities accept both source-separated and all mixed debris, then process recyclable materials for recovery and dispose of residuals. Disposal facilities accept materials for landfilling only.<sup>53</sup>

#### **8.5.2.2 ADDRESSING RECYCLING CAPABILITY GAP**

If existing recycling facilities lack the capability to process expected volumes and types of disaster debris, the SFPW DOC Diversion/Management Site Unit will consider the following:<sup>54</sup>

- Expanding an existing recycling facility.
- Adding a temporary storage area at a landfill for recycling operations.
- Identifying contractors with mobile processing capabilities that can be used to establish a temporary processing facility.
- Establishing a temporary material recovery facility.
- As a last resort, expanding existing landfills for additional disposal.

### **8.6 Funding Options**

FEMA does not provide Public Assistance funding for the cost of establishing or managing the recycling program or process. Nor will FEMA provide reimbursement for additional sorting or processing of debris for recycling purposes.<sup>55</sup> In addition, FEMA typically reimburses jurisdictions like CCSF for debris-related costs; it generally does not advance those costs to jurisdictions, with the exception of “small projects.” Accordingly, CCSF will need to identify funds to start up and manage its disaster debris diversion program.

The EOC Finance and Administration Section is responsible for reviewing CCSF funding sources to determine where funds can be obtained to cover diversion programs until state and federal reimbursement is received. In looking at the availability of funding to start and manage the diversion program, the Finance Section will evaluate CCSF’s ability to:

- Use General Funds.
- Acquire a loan.
- Use private funds.

NOTE: FEMA does not provide Public Assistance funding for donated resources. However, CCSF



may use the value of donated resources to offset the non-federal share of the city's eligible Emergency Work projects and Direct Federal Assistance.<sup>56</sup>

## 8.7 Documentation of Debris Diversion Program

The SFPW DOC Diversion/Management Site Unit is responsible for creating and maintaining documentation needed for CCSF's recycling and diversion programs. This documentation is essential in order to receive state and federal reimbursement, and to meet local and state recycling requirements. Such documentation should include the following:

- Local policies requiring and encouraging debris diversion.
- Amount and types of debris recycled.
- Amount and types of debris reused.
- Locations where debris is processed for recycling, composting, or reuse purposes, and the amount of debris processed for recycling, composting, or reuse by each facility.

To facilitate documentation activities specific to diversion, the SFPW DOC Debris Management Group Planning and Engineering Team is responsible for:<sup>57</sup>

- Developing a system to track the types and amounts of debris collected and diverted.
- Documenting the types and amounts of debris collected and diverted.
- Setting up a records retention system and archives to maintain debris diversion records.
- Preparing a final report on diversion program activities and results.

**NOTE:** It is important not to underestimate the staffing needed to develop and maintain a tracking system to monitor the debris recycled and disposed and the facilities used. The system is critical to verifying weight tickets when used as payment, to determining the program's recycling and disposal rates, and to monitoring facility usage. Following the Northridge Earthquake in 1994, the City of Los Angeles employed six full-time staff to develop and maintain a tracking system to monitor recycling and disposal of disaster debris.<sup>58</sup>

In addition, facilities taking disaster waste are required to:

- Track all disaster waste by jurisdiction of origin and provide the data to the jurisdiction of origin on request by that jurisdiction.<sup>59</sup>
- Track all disaster waste and report jurisdiction of origin information to the local enforcement agency (LEA).<sup>60</sup>

For further discussion of the LEA, see Section 4.2.4.4, above.

## 8.8 Monitoring Diversion Program and Documentation

Monitoring is critical to achieving success in any diversion program. Appropriate monitoring will help CCSF to:<sup>61</sup>

- Evaluate and enhance diversion facility capacity.
- Assess the effectiveness of contractor training.
- Improve enforcement by inspectors.
- Manage program costs.

For further discussion of diversion monitoring, see Section 10, below.



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## SECTION 9: FINAL DEBRIS DISPOSAL

### 9.1 Section Overview

This section discusses final disposal of disaster debris, which typically occurs in landfills. The section covers the purpose of debris disposal and development of a debris disposal strategy following a disaster as part of the Debris Operations Plan (Debris OP). The section also discusses monitoring of disposal activities.

#### 9.1.1 Purpose of Disposal

Once diversion opportunities are exhausted for disaster debris through recycling, composting, repurposing, reduction, and reuse, remaining debris must be disposed of in a proper, safe, and effective manner. Disaster debris that is not hazardous can be disposed of in a construction and demolition (C&D) landfill, in a municipal solid waste landfill, or in a nonhazardous solid waste combustor, as appropriate. Hazardous waste must be disposed of in a hazardous waste disposal facility.<sup>1</sup> Similarly, household hazardous waste (HHW) that cannot be recycled must be disposed of in a HHW facility.<sup>2</sup>

**NOTE:** In operationalizing this plan, landfilling disaster debris will be considered a last resort. This approach is in accord with city policy requiring CCSF departments to maximize disaster debris landfill diversion.<sup>3</sup> For further discussion of diversion of disaster debris, see Section 8, above.

#### 9.1.2 Definitions and Types of Disposal Facilities

A landfill is a waste management facility where waste is placed in or on land for disposal.<sup>4</sup> In general, there are four types of disaster debris disposal facilities:

- **C&D landfill:** A C&D landfill is a solid waste disposal facility that typically accepts roadwork material, excavated material, demolition waste, construction or renovation waste, and site clearance waste.<sup>5</sup> By law, C&D landfills cannot accept hazardous waste<sup>6</sup> or industrial solid waste<sup>7</sup> unless the landfill meets applicable state and federal standards and has obtained a permit to receive C&D wastes.
- **Municipal solid waste landfill:** A municipal solid waste landfill is a site that receives household and other types of nonhazardous waste, such as commercial solid waste, nonhazardous sludge, small quantity generator waste, and industrial nonhazardous solid waste.
- **Nonhazardous municipal waste combustor:** A municipal waste combustor is a facility that burns municipal, nonhazardous solid waste or refuse collected from residential, commercial, institutional, and industrial sources.
- **Hazardous waste disposal site:** A hazardous waste disposal site is a location where final disposal of hazardous waste occurs.

### 9.2 Development of Debris Disposal Strategy

#### 9.2.1 Issues to Address

The San Francisco Public Works (SFPW) Department Operations Center (DOC) Debris Management Group Debris Disposal Unit is responsible for planning for final disposition of disaster debris that cannot be recycled. As part of developing the Debris OP for the specific





disaster or emergency, the Planning and Engineering Team should address the following issues with regard to disaster debris disposal:

- Estimated amounts, types, and location of debris to be disposed (see Section 4.5.4).
- Estimated current CCSF disposal capability.
- Estimated needed disposal capability.
- List of current and available waste facilities with disposal capability.
- Identify labor and equipment needs.
- Temporary storage area information (see Section 7, above).
- Plan for obtaining needed disposal resources through:
  - Contracting and procurement.
  - Mutual aid.
  - Other means.
- Tipping fee cost structure.
- Determine disposal-related public information needs (see Section 14, below).
- Program for monitoring disposal activities and tracking types and amounts of debris disposed (see Section 10, below).

## **9.2.2 Identifying Disposal Sites**

The SFPW DOC Debris Management Group Debris Removal Unit is responsible for identifying sites for final disposition of whole or reduced disaster debris, in consultation with the San Francisco Department of the Environment (SFE) and the Local Enforcement Agency (LEA) for San Francisco. The most cost-efficient approach will likely be to dispose of nonhazardous disaster debris in CCSF's current or normally-used landfills. However, a large debris-producing incident will likely overwhelm CCSF's existing landfill capacity. In that situation, the Debris Removal Unit will need to access disposal space in additional landfills in the Bay Area and possibly outside the Bay Area. Some county landfills will not accept waste from other counties, or may have stringent rules regarding what can be brought into the landfill. In advance of a disaster, CCSF is advised to investigate county-to-county agreements for landfill use to better ensure access when needed. For further discussion of the LEA's role, see Section 9.5, below, and Section 4.2.4.4, above.

### **9.2.2.1 CAPABILITY ASSESSMENT**

As soon as possible after a large debris-producing incident, the SFPW DOC Debris Removal Unit is responsible for determining the number of disposal facilities that will likely be needed to dispose of debris in a safe and effective manner. In addition, the Debris Removal Unit will identify facilities available for debris disposal. In making this assessment, the Debris Removal Unit should:<sup>8</sup>

- Review the estimates of amount and type of disaster debris likely to be generated.
- Prepare a list of facilities in neighboring or other jurisdictions that may be utilized.
- Map transportation routes to the facilities, and develop alternate routes as needed.
- Complete an assessment for each disposal facility, considering:
  - Materials handled.



- Processing capacity.
- Processing barriers.
- Remaining disposal capacity of facility.
- Expected waste types and origin of waste.
- Expected disposal capacity for disaster debris.
- Disaster debris disposal reporting formats.
- Tipping fees charged by the facility to accept debris.
- Based on the information developed above, develop a list of facilities to be used.
- Negotiate with haulers, facility operators, owners, processors, and neighboring jurisdictions to gain access to those sites.
- Identify air, water quality, or other permits that must be obtained.

A list and map of disposal facilities within 100 miles of CCSF is included in Appendix I, below.

#### **9.2.2.2 TIPPING FEES**

The SFPW DOC Debris Removal Unit should investigate and compare tipping fees as part of developing its debris disposal strategy. Debris facility tipping fees must be considered in determining which facilities to utilize, especially when debris is being taken to other counties. Tipping fees may include operating and maintenance costs, permitting fees, capital improvement costs, and taxes. Some disposal facilities may agree to waive certain taxes and fees for a neighboring governing body. FEMA Public Assistance reimbursement is available for some components of tipping fees in a presidentially declared disaster. For further discussion of FEMA reimbursement of tipping fees, see Section 9.3, below.

NOTE: Many disposal facilities list tipping fees and information regarding the types of debris they accept and current capacity in online web pages. However, the Debris Removal Unit should confirm this information with the facility before using it.

#### **9.2.3 Options When Landfill Capacity is Low**

Options to consider if CCSF is faced with limited debris disposal space include:<sup>9</sup>

- Maximizing recycling, composting, repurposing, reduction, and reuse of disaster debris.
- Reopening a closed debris disposal facility.
- Siting a new debris disposal facility.

Diversion of disaster debris through recycling, composting, repurposing, reduction, and reuse is preferable to disposing of it in landfills. However, it is not always possible to accomplish this while protecting human health and the environment. Protection of human health and the environment should always take precedence.<sup>10</sup> For further discussion of disaster debris diversion, see Section 8, above.

Reopening a closed disposal facility may be preferable to siting a new facility, providing the closed debris facility was originally engineered to protect the environment and is located in an area with favorable hydrogeologic conditions. Environmental assessment and monitoring may be necessary before, during, and after debris has been placed in a reopened debris disposal facility, as determined by applicable state and local environmental agencies.<sup>11</sup> The CCSF LEA may be able to assist in locating such facilities. For further discussion of the LEA's role, see



Section 9.5, below, and Section 4.2.4.4, above.

Opening a new disposal facility may be necessary if sufficient capacity does not exist and closed debris management facilities are not an option. New debris disposal facilities should be sited in areas with favorable hydrogeologic conditions. In addition, a new facility opened under emergency conditions must still comply with applicable state and local requirements. For example, environmental assessment and monitoring may be needed before, during, and after placing debris in the new facility.<sup>12</sup>

### 9.3 Public Assistance for Disposal Activities

FEMA provides Public Assistance reimbursement for various costs related to disposal of disaster debris. For example, FEMA provides Public Assistance funding for tipping fees charged by disposal sites. FEMA will not provide Public Assistance funding for the value of lost landfill capacity due to landfilling disaster-related debris.<sup>13</sup>

FEMA will reimburse fixed and variable costs directly related to landfill operations that are included as components of tipping fees, such as recycling taxes. Fixed tipping fee costs that are eligible for Public Assistance reimbursement include:<sup>14</sup>

- Equipment.
- Construction.
- Permits.
- Landfill closure.
- Post-closure activities.
- Amortized costs for facilities that support the landfill.

Eligible variable costs include:<sup>15</sup>

- Labor.
- Supplies.
- Maintenance.
- Operation of utilities.
- Operation of gas recovery systems.

Tipping fee components that are not directly related to landfill operations, such as special taxes or fees related to other government services or public infrastructure, are not eligible for reimbursement.<sup>16</sup>

### 9.4 Monitoring of Disposal Sites

The SFPW DOC Debris Removal Unit is responsible for ensuring that debris disposal sites utilized by CCSF are appropriately monitored. Monitoring incoming disaster debris is important at disposal facilities due to the large volume of debris and the potential for contamination from hazardous waste and other toxic debris. For example, it is recommended that when a truck enters a debris disposal area, spotters check the load for volume and for contaminants that are not allowed at the particular site. Spotters also are appropriate where the truck tips its load at disposal sites, and in the field where debris is being collected and sorted.<sup>17</sup> For further discussion of monitoring and documentation required to demonstrate eligibility for FEMA Public Assistance, see Section 10, below.



## 9.5 Emergency Waiver of Solid Waste Disposal Site Regulations

The California Department of Resources Recycling and Recovery (CalRecycle) has empowered LEAs to issue emergency waivers to solid waste facility operators on request in the event of a local emergency or state of emergency.<sup>18</sup> In CCSF, the LEA is the SFDPH Environmental Health Branch.<sup>19</sup> The waiver grants an operator of a solid waste debris disposal site temporary relief from specific state minimum solid waste standards or terms or conditions of the operator's solid waste facilities permit. The waiver may apply to all or some of the following:<sup>20</sup>

- Origin of the waste;
- Rate of inflow for storage, transfer, or disposal of waste;
- Type and moisture content of solid waste; and
- The hours of facility operation; and
- Storage time before transfer or disposal of wastes at a solid waste facility.

For further discussion of the emergency waiver process, see Appendix M, below.



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## SECTION 10: DEBRIS MONITORING AND DOCUMENTATION

### 10.1 Section Overview

This section discusses debris monitoring, including its purpose, and when and why monitoring is performed. The section also covers debris monitor qualifications, job tasks, and the debris monitoring process. In addition, the section discusses the documentation required as part of the debris monitoring process.

### 10.2 Monitoring Purpose and Scope

Monitoring of debris-related activities is an essential part of ensuring that disaster debris is handled in a safe, proper, and effective manner. FEMA requires that applicants for Public Assistance monitor debris removal activities performed by contractors in a presidentially-declared disaster. Debris monitoring allows CCSF to:<sup>1</sup>

- Identify, evaluate, and resolve debris issues.
- Track progress toward completion of debris removal.
- Determine the financial status of debris removal contracts.
- Receive federal Public Assistance reimbursement for disaster debris collection, removal, diversion, and disposal.

To properly perform debris monitoring, CCSF will put in place a comprehensive system for observation and documentation of post-disaster debris removal work done by contractors from the time debris collection begins through final debris disposal. Monitoring debris removal work involves constant observation and oversight by a team of monitors to ensure that contract workers perform eligible debris work in accordance with applicable federal, state, and local laws, and with Public Assistance guidelines.

### 10.3 FEMA Requirements

#### 10.3.1 Monitoring

The San Francisco Public Works (SFPW) Department Operations Center (DOC) Debris Collection Unit, Debris Removal Unit, and Diversion/Management Site Unit are responsible for ensuring that their respective debris operations are properly monitored when work is performed by contractors. In a presidentially-declared disaster for which CCSF seeks Public Assistance reimbursement, CCSF must monitor and provide oversight on all contracted debris operations to ensure:<sup>2</sup>

- Contractors only remove debris that is eligible for Public Assistance reimbursement;
- Compliance with applicable local, state, and federal requirements; and
- Achievement of contract performance expectations.

**CAUTION:** Failure to properly monitor contracted debris removal operations will jeopardize CCSF's Public Assistance funding for that work.<sup>3</sup>

#### 10.3.2 Documentation

The SFPW DOC Debris Collection Unit, Debris Removal Unit, and Diversion/Management Site Unit are responsible for ensuring their respective debris operations are properly documented. In a presidentially-declared disaster for which CCSF seeks federal Public Assistance





reimbursement for debris collection and removal activities, the city must create and maintain documentation as follows:<sup>4</sup>

- Photographs of debris impacts.
- Address and U.S. National Grid location of locations with debris impacts.
- Quantities of debris collected by type.
- The types and total quantity of debris that was hand-loaded.
- The types and total quantity of debris hauled in trucks without solid tailgates.
- Debris reduction methods used.
- Documentation to support legal responsibility for property where debris removal is conducted, including deeds, titles, lease agreements, and contracts for facilities under construction.
- Documentation to confirm CCSF's legal authority and responsibility to enter private property and remove disaster debris, if approved by Cal OES and FEMA.
- Copies of permits for reduction and disposal sites.
- Temporary debris management or other debris management site lease agreements, if applicable.

In addition, FEMA requires CCSF to monitor all contracted debris operations to document this information and to ensure that contracted personnel remove eligible disaster debris. Examples of monitoring documentation that must be collected and preserved include:<sup>5</sup>

- Load tickets that specify debris quantities, debris types, and location where debris is collected or picked up.
- Monitor reports.
- Logs confirming hours of operation and equipment used.
- Time sheets confirming hours and activities performed by force account, contract, and volunteer workers.

For further discussion of debris monitoring documentation, see Section 10.9, below.

### **10.3.3 Public Assistance Eligibility of Monitoring Activities**

Many debris monitoring activities are eligible for Public Assistance reimbursement. Monitoring activities that may be reimbursed include, but are not limited to, the following:<sup>6</sup>

- Field supervisory oversight.
- Monitoring contract personnel performing debris removal at debris loading sites.
- Monitoring contract personnel at debris disposal sites.
- Compiling documentation, such as load tickets and monitor reports, to substantiate eligible debris.
- Training debris monitors on debris removal operations, monitoring responsibilities and documentation processes, and FEMA debris eligibility criteria.

## **10.4 Jurisdictional Roles and Responsibilities**

Federal, state, and local jurisdictions play a role in monitoring disaster debris operations. It is



important that these jurisdictions work together to resolve debris-related issues that arise. Monitoring responsibilities and tasks of the different partners in monitoring operations are discussed in Section 10.4.1 through 10.4.3, below.

#### **10.4.1 Local**

The SFPW DOC Debris Collection Unit, Debris Removal Unit, and Diversion/Management Site Unit are responsible for ensuring that CCSF debris operations are properly monitored so they meet applicable laws and regulations regarding health and safety, waste management, environmental and historic preservation (EHP), and FEMA eligibility requirements. In general, these requirements include the following:<sup>7</sup>

- Safety
  - Contractors comply with public and employee safety standards.
  - Safety requirements are met during debris operations on roads and highways, including load limits and truck covers, as required.
- Compliance
  - Work complies with local ordinances and state and federal regulations.
  - Environmental compliance occurs at all temporary debris management and disposal sites.
  - Appropriate preservation measures are taken to protect historic and archaeological treasures.
- Debris Operations
  - Measurement, certification, and proper operation of trucks.
  - Proper loading of trucks and accurate evaluation of loads.
  - Proper completion and control of load tickets.
- Management and Oversight
  - Proper set up and management of debris sites.
  - Maintenance of accurate records and appropriate documentation.
  - Contractors conduct activities as required in the contract scope of work.

For further discussion of the specific tasks performed by CCSF debris monitors, see Section 10.6, below.

#### **10.4.2 State**

The state is responsible for:<sup>8</sup>

- Ensuring that CCSF fulfills its responsibilities in monitoring debris activities.<sup>9</sup>
- Verifying CCSF compliance with Public Assistance grant requirements by conducting random monitoring at debris collection or loading sites, at temporary debris management sites (TDMS), and at disposal sites.
- Notifying CCSF when issues are identified.
- Outlining corrective action.



### 10.4.3 Federal

The primary role of FEMA technical and debris monitoring specialists is to ensure CCSF meets Public Assistance grant requirements and eligibility criteria in all areas of debris operation. FEMA debris monitoring specialists are responsible for:<sup>10</sup>

- Ensuring compliance with Public Assistance eligibility criteria through roving observation of debris operations.
- Ensuring CCSF conducts sufficient monitoring and adequately manages debris-related activities.
- Reporting any issues requiring action, such as health and safety concerns, noncompliance with scope of work, improper equipment use, or ineligible debris, to the appropriate FEMA representative.

In addition, though FEMA debris monitoring specialists do not make eligibility determinations, they can provide CCSF with guidance on the eligibility of debris removal activities. FEMA Public Assistance management personnel make eligibility determinations.<sup>11</sup>

## 10.5 Debris Monitor Duties

The SFPW DOC Debris Collection Unit, Debris Removal Unit, and Diversion/Management Site Unit are responsible for ensuring that CCSF has monitors for all phases of debris removal operations, including monitors for all loading, temporary debris management sites (TDMS), and disposal sites. Debris monitors may perform different roles and responsibilities at different stages of debris removal. Debris monitors report directly to the field supervisor regarding their daily oversight, and must submit their logs and load tickets each day to the field supervisor.

The SFPW DOC Debris Collection Unit, Debris Removal Unit, and Diversion/Management Site Unit is responsible for ensuring that the following monitoring positions are filled at all times during site operations, at each debris collection or removal site, TDMS, or disposal site:

- Loading monitor.
- Tower or site monitor.
- Field supervisor.

For further discussion of the tasks performed by personnel in each of these roles, see Section 10.5.1–10.5.3, below.

**NOTE:** FEMA recommends that CCSF clearly outline the city’s debris monitoring requirements in any request for proposals or debris removal contracts. These documents should include instructions on actions to take to document and correct noncompliance issues.

### 10.5.1 Loading Site Monitors

Loading site monitors perform on-site, street-level debris monitoring at all disaster debris collection or loading sites to verify debris eligibility based on contract requirements, and initiate debris removal documentation using load tickets. The loading site monitor’s duties include:

- Estimating load volumes, issuing load tickets at the load site, and retaining copies of load tickets (for further discussion of load tickets, see Section 10.7.1, below).
- Maintaining logs of daily subcontractor performance, eligibility, or other activities as required.



The loading site monitor has additional safety, eligibility, compliance, and debris operations responsibilities. For a position checklist for loading site monitors, see Appendix N, below.

### **10.5.2 Tower or Site Monitors**

Debris monitors at TDMS are often referred to as tower or site monitors. The tower or site monitor's duties include:

- Observing and ensuring site safety.
- Ensuring that the site complies with applicable debris removal and disposal contract requirements.
- Ensuring that debris work complies with all federal, state, and local laws and regulations.
- Ensuring truck loads are properly credited and documented.
- Monitoring site development and restoring TDMS post-use.

Tower or site monitors have additional safety, eligibility, compliance, and debris operations responsibilities. For a position checklist for tower or site monitors, see Appendix N, below.

### **10.5.3 Field Supervisors**

The field supervisor is responsible for managing loading site and tower or site debris monitors and for overseeing their daily activities. Field supervisor duties include:

- Scheduling, deploying, and supervising loading site and tower or site debris monitors at loading sites, TDMS, and disposal sites.
- Resolving field operational, eligibility, and safety issues, and communicating these issues to the SFPW DOC Debris Management Group.
- Communication and coordination of site activities with CCSF, state, and FEMA personnel.
- Conducting or overseeing truck certifications, load measurements, and photo-documentation as required.

Field supervisors have additional safety, eligibility, compliance, and debris operations responsibilities. For a position checklist for field supervisors, see Appendix N, below.

## **10.6 Debris Monitor Qualifications and Training**

### **10.6.1 General Qualifications**

Applicant debris monitors should have the following minimum qualifications:

- Full understanding of monitor responsibilities under the Disaster Debris Management Plan, debris removal contract (if applicable), and other specific guidance provided by the SFPW DOC Debris Management Group.
- Ability to accurately and objectively estimate debris quantities.
- Ability to differentiate between types of disaster debris.
- Understanding of all phases of debris management operations and debris sites, including loading sites, TDMS, and final disposition sites.
- Understanding of site safety procedures.
- Ability to properly fill out load tickets.
- Ability to communicate effectively and efficiently.



Additional desirable qualifications include:

- Previous construction site experience.
- General knowledge of operation of large construction machinery.

## **10.6.2 Who May Act as Monitors**

### **10.6.2.1 FORCE ACCOUNT PERSONNEL**

CCSF may use force account personnel, including temporary hires; contractors; or a combination of these to perform debris monitoring activities.<sup>12</sup> CCSF employees are more likely to be familiar with our jurisdiction, with local laws and regulations, and with CCSF's Disaster Debris Management Plan. Accordingly, whenever possible, CCSF will use force account personnel to monitor debris removal operations.

### **10.6.2.2 CONTRACT MONITORS**

If CCSF determines that it must fill debris monitor roles with contract workers, CCSF must ensure that the contract is awarded to a contractor who has no vested interest in the debris removal contract or contractor. Care must be taken to avoid conflicts of interest between the monitoring contractor and the debris removal contractor. In addition, CCSF must monitor contracted monitors to ensure that the contractor performs satisfactorily and is meeting contract requirements. The SFPW DOC Debris Management Group Debris Collection Unit, Debris Removal Unit, and Diversion/Management Site Unit are responsible for ensuring that contract monitors for their respective areas meet contract performance requirements.

### **10.6.2.3 PROFESSIONAL QUALIFICATIONS UNNECESSARY**

Debris monitors do not need to be registered professional engineers. It is not necessary or cost-effective to have professional engineers or other certified professionals perform debris monitoring duties. FEMA considers the use of staff who are more qualified than necessary for the associated work to be an unreasonable cost. If CCSF uses staff with professional qualifications to conduct debris monitoring, the city must document the reasons why monitors with those qualifications were needed.<sup>13</sup>

## **10.6.3 Training of Monitors**

Monitors must receive training before being sent out on assignment. Training should cover the following, at a minimum:<sup>14</sup>

- Debris removal operations.
- Monitoring responsibilities.
- Documentation processes.
- FEMA debris eligibility criteria.

The SFPW DOC Debris Management Group Debris Collection Unit, Debris Removal Unit, and Diversion/Management Site Unit are responsible for ensuring that debris monitors have received appropriate training.

**NOTE:** On request from the SFPW DOC to the CCSF Emergency Operations Center (EOC) Debris Coordination Unit, the EOC can request that FEMA provide training to the city's force account debris monitors. Trained force account monitors may then provide training to contract monitors. Training of debris monitors is eligible for federal Public Assistance reimbursement.<sup>15</sup>



## **10.7 Monitoring Process and Considerations**

### **10.7.1 Load Tickets**

#### **10.7.1.1 PURPOSE OF LOAD TICKETS**

Load tickets are used to track types and quantities of disaster debris from the point where the debris is collected to the point where the debris is deposited at a TDMS or final disposal site. Load tickets also document information regarding the locations where debris is collected and deposited. This information supports CCSF's request for Public Assistance reimbursement from FEMA and assists in reimbursement of contractors.

The SFPW DOC Debris Management Group Debris Collection Unit, Debris Removal Unit, and Diversion/Management Site Unit will ensure that force account debris monitors are trained to use, and do use, the load ticket system employed by CCSF to track debris after a disaster. If CCSF retains contract resources to perform debris monitoring, the Debris Collection Unit, Debris Removal Unit, and Diversion/Management Site Unit will ensure that contract monitors either use an appropriate automated load tracking system or an acceptable alternative load ticket system to track debris types, quantities, and locations where debris was collected, reduced, recycled, and disposed.

NOTE: Reasonable costs associated with the use of electronic load ticket systems and other automated debris monitoring systems may be eligible for Public Assistance reimbursement.<sup>16</sup>

#### **10.7.1.2 LOAD TICKET PROCESS**

Loading site monitors initiate the use of load tickets to document the type, quantity, and location of disaster debris collected at collection sites. Site or tower monitors at TDMS or at disposal sites complete the load ticket when debris is brought in for storage, processing, or disposal. Monitors and debris haulers retain copies of the load tickets at each step of the process. For a sample load ticket form, see Appendix N, below.

Monitors will forward completed load ticket information to the SFPW DOC Debris Management Group Debris Collection Unit, Debris Removal Unit, or Diversion/Management Site Unit, which are responsible for tracking actual debris types, quantities, and locations for documentation and situational awareness purposes. Completed load ticket information will also be shared with the EOC Finance and Administration Section. The EOC Finance and Administration Section is responsible for ensuring payment of debris contractors, and for documenting eligible expenses for purposes of obtaining Public Assistance reimbursement, if applicable.

### **10.7.2 Truck and Trailer Certification Measurement**

If CCSF utilizes trucks and trailers to collect or haul disaster debris as part of debris removal activities, the trucks and trailers used must be measured. Truck and trailer certification measurements establish the volume capacity or unloaded weight of the trucks and trailers used to haul debris. Debris quantities may then be tracked based on weight or volume.

If CCSF tracks debris quantities based on weight, trucks and trailers must be weighed on entry and exit at TDMS and disposal sites. The empty truck or trailer weight is automatically established for every load, making separate periodic certification of unloaded truck or trailer weight unnecessary. Conversely, if CCSF tracks debris quantities by volume, the SFPW DOC Debris Collection Unit must ensure that truck and trailer certification is performed before use in





hauling disaster debris, and is periodically re-verified during debris removal activities. Truck and trailer certification must include the following information:

- Vehicle license plate number.
- Truck identification number as assigned by the owner.
- Brief physical description of the truck or trailer.
- Photographs of the truck or trailer.
- Size of the inside of the hauling bed in cubic yards.
- Certification of the unloaded weight of the truck or trailer.

The SFPW DOC Debris Collection Unit, Debris Removal Unit, and Diversion/Management Site Unit also must ensure that copies of certification paperwork for each truck or trailer are made available to TDMS and disposal site monitors for reference when inspecting incoming trucks and trailers to determine load volume. Periodic recertification of truck and trailer measurements is important, especially when monitors suspect tampering has occurred to alter apparent volume of trucks or trailers. For sample forms for use in truck and trailer certification and inspection, see Appendix N, below.

### **10.7.3 Issue Resolution**

During debris monitoring, monitors may identify issues, such as:

- Whether work is eligible for Public Assistance reimbursement.
- Whether costs are reasonable.
- Health and safety concerns.
- Environmental protection requirements.
- Historic preservation requirements.
- Disputes between monitors and personnel performing debris removal work.

When these or other significant issues arise, debris monitors will be required to:

- Log the issue on the daily issue log.<sup>17</sup>
- Communicate the issue to the field supervisor.

When necessary, the field supervisor will relay the issue to the SFPW DOC Debris Management Group Supervisor for resolution. The Group Supervisor will work with the field supervisor and other appropriate stakeholders to resolve the issue in a safe, effective, and timely manner. For further discussion of health and safety concerns, see Section 10.8, below. For a sample form for logging daily issues, see Appendix N, below.

## **10.8 Monitoring Health, Safety, and the Environment**

### **10.8.1 Health and Safety Monitoring**

Debris monitoring personnel are responsible for their individual health and safety while performing monitoring activities. As part of this responsibility, personnel must comply with all applicable federal, state, and local health and safety requirements, including the following:

- Identifying hazards.
- Hazard controls.





- Using appropriate personal protective equipment (PPE).
- Using appropriate health and safety incident management procedures.

If CCSF utilizes contract labor to perform debris monitoring, the contractor is responsible for monitoring the health and safety of their contract workers, including developing a TDMS or disposal site safety plan, implementing it, and monitoring compliance. CCSF will provide oversight, but that does not relieve the contractor of its health and safety responsibilities. Similarly, if federal or state agencies have sent personnel to debris collection, TDMS, or disposal sites, their respective agencies are responsible for the health and safety of their personnel. However, all personnel on scene may be required to comply with applicable federal, state, and local health and safety requirements for debris monitoring activities. For further discussion of health and safety requirements, see Section 11, below.

### **10.8.2 Environmental Monitoring**

CCSF must comply with federal, state, and local environmental requirements for handling debris, including hazardous waste. Hazardous waste and household hazardous waste (HHW) contain properties that make it potentially harmful to human health or to the environment. These wastes typically require special handling, segregation, transportation, and final disposition. Accordingly, monitors must closely and regularly monitor hazardous material and HHW processing to verify that personnel take proper precautions when handling hazardous waste and HHW, and that the chain-of-custody is maintained during handling. For further discussion of environmental requirements, see Section 12, below.

## **10.9 Debris Monitoring Documentation and Record Keeping**

### **10.9.1 General Documentation Requirements**

An important function of debris monitors is to document debris removal work to enable CCSF to fully account for debris clearance and removal costs in a presidentially-declared disaster. CCSF has overall responsibility for establishing a system to produce the documentation needed to support the city's Public Assistance reimbursement efforts. Load tickets provide comprehensive information and a paper trail for purposes of obtaining Public Assistance reimbursement (see Section 10.7.1, above). In addition, to support the information gathered through load tickets, debris monitors will use the following forms as part of their documentation process:

- Tower monitor log.
- Loading or site monitor report log.
- Daily issue log.
- Truck or trailer certification form.

Samples of these forms are included in Appendix N, below.

In addition, CCSF will gather and maintain the documents listed in Sections 10.9.2 and 10.9.3, below. The SFPW DOC Debris Management Group Finance and Administration Team is responsible for gathering this documentation and for sharing it with the Controller's Office (CON). As CCSF's authorized agent for FEMA Public Assistance, the Controller's Office is responsible for maintaining and sharing the documentation with FEMA Public Assistance staff for inclusion with FEMA Project Worksheets created to validate the work performed and the



costs attached for purposes of obtaining reimbursement. CCSF must maintain these documents for a minimum of three years from the date of the state's final financial status report, in accordance with FEMA requirements and with the city's Financial Records Retention and Destruction Policy.<sup>18</sup>

### **10.9.2 Documenting Force Account Debris Activities**

When CCSF uses force account resources to perform debris collection, removal, processing, and disposal work, requests for reimbursement should be supported by documentation of the labor and equipment charges incurred in performing the work. Such records include:

- Payroll records for full-time and temporary employees who performed debris activities.
- Documentation showing the location of debris activities, which demonstrates that the city performed eligible debris work.
- Records of CCSF-owned equipment used to perform debris activities, including operator name, hours the equipment was in service, and associated equipment rates.
- Invoices for rented equipment used in debris activities.
- Documentation from permitted, final disposal sites including:
  - Invoices of disposal tipping fees.
  - Quantities of debris disposed.

The Controller's Office has pre-assigned labor codes for CCSF department use to account for debris-related work and will provide departments with the mechanisms for tracking debris-related costs, including labor, equipment, and materials. As the lead department for "land-side" debris-related labor, SFPW DOC will track the location of the work, as described above, to separately account for the various debris projects. Supporting departments will coordinate with SFPW DOC's Finance and Administration Section for guidance on appropriately tracking debris-related labor, equipment, and material costs. For water-side work, the Port DOC will track and account for the various debris projects. Similarly, debris-related labor done on San Francisco International Airport (SFO) or San Francisco Public Utility Commission (SFPUC) properties or infrastructure will be tracked and accounted for by SFO and SFPUC, respectively.

### **10.9.3 Documenting Contractor Debris Activities**

When CCSF uses contractors to perform debris clearance, collection, removal, processing, or disposal work, documentation should correspond with invoiced costs and line item prices in the applicable debris contract. This documentation should be included on monitoring forms and reports, including load tickets and tower logs, which provide CCSF with information on:<sup>19</sup>

- FEMA debris removal eligibility determination.
- Locations of debris work.
- Contractor and debris hauling truck or trailer information.
- Type of debris collected.
- Debris quantities (volume or weight, determined at inspection site).
- Location of permitted final debris disposal site.
- Documentation of labor, equipment, and material charges, including hours of service and associated charges (for time-and-materials contracts, if permitted).



For sample forms, see Appendix N, below.

#### **10.9.4 Documenting Ineligible Work**

If CCSF undertakes debris work that is not eligible for Public Assistance funding, the city must have a methodology for separating ineligible work from eligible work. The SFPW DOC Finance and Administration Section and the Controller's Office will ensure that CCSF takes the following steps to minimize and to document ineligible work:

- Whenever possible, confer with the California Governor's Office of Emergency Services and FEMA before undertaking any work that may be ineligible.
- Document debris type, quantity, location of pickup, reduction and recycling methods used, and disposal location for ineligible as well as eligible debris work.

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## **SECTION 11: HEALTH AND SAFETY CONSIDERATIONS**

### **11.1 Section Overview**

Disaster debris operations and the debris itself can pose safety and health risks to response personnel and to the public. This section highlights the types of health and safety issues that may be encountered by debris operations personnel and by the public following a disaster. It also discusses the city's approach to ensuring the health and safety of the public and of debris responders. In addition, the section covers how CCSF will communicate health and safety information to debris personnel and to the public.

### **11.2 Responsibility for Health and Safety During Debris Operations**

#### **11.2.1 Public and Responder Safety of Highest Priority**

In any disaster or emergency, CCSF places the safety of the public and of disaster responders above all other priorities. When debris poses an immediate threat to public or responder safety, responders are directed to first take needed steps to mitigate the threat and protect human life. Once the threat to life safety is mitigated, steps can be taken to implement measures to manage the debris. Similarly, in performing debris operations work, debris responders will be trained to prioritize their personal health and safety, and the health and safety of the public, over all other priorities.

#### **11.2.2 CCSF and Debris Contractors**

Employers are responsible for providing a safe and healthful workplace for their workers. Accordingly, CCSF is responsible for providing for the health and safety of force account personnel performing disaster debris response activities. Debris contractors retained by CCSF to perform services during debris operations are responsible for the health and safety of their debris personnel. CCSF will provide periodic oversight of contractor compliance with health and safety laws, regulations, and protocols. However, that does not relieve contractors of their health and safety responsibilities to contract debris workers.

##### **11.2.2.1 ROLE OF SFPW DOC DEBRIS MANAGEMENT GROUP**

The San Francisco Public Works (SFPW) Department Operations Center (DOC) Debris Management Group has overall responsibility for developing health and safety protocols for personnel participating in debris operations, for including the protocols in the Debris Operations Plan for the incident, and for ensuring compliance by both CCSF and contract personnel. A Health and Safety Unit will be established in the SFPW DOC Debris Management Group to perform this function. For further discussion of the role of the SFPW DOC Health and Safety Unit, see Section 11.3, below.

##### **11.2.2.2 ROLE OF HEALTH AND SAFETY OFFICERS**

During disaster debris operations, CCSF will deploy health and safety officers at temporary debris management sites (TDMS) and at final debris disposal sites to monitor health and safety at those locations. CCSF will also deploy roving health and safety officers to monitor health and safety at debris collection or loading areas. For further discussion of health and safety officers, see Section 11.3, below.

##### **11.2.2.3 ROLE OF DEBRIS MONITORS**

Debris monitoring personnel have primary responsibility for their own health and safety while



performing debris monitoring activities. Debris monitors are also responsible for monitoring debris personnel and public safety at debris collection sites, temporary debris management sites, and disposal sites. For further discussion of debris monitoring, see Section 10, above.

### **11.3 Health and Safety Issues**

#### **11.3.1 Health and Safety Issues Associated with Debris Operations**

##### **11.3.1.1 FOR DEBRIS OPERATIONS PERSONNEL**

The United States Department of Labor, Occupational Safety and Health Administration (OSHA) has highlighted common health and safety issues for debris operations personnel, including:<sup>1</sup>

- Work zone safety, such as the need for proper personal protective equipment (PPE) and vehicular traffic control.
- Heavy equipment operation.
- Contact with downed power lines, live electrical equipment, and other utilities, such as gas or water lines.
- Overloading of debris-hauling vehicles.
- Manual handling of materials and lifting heavy objects.
- Work on, over, or near water.
- Use of chain saws.
- Power and hand tool use.
- Discovery and segregation of unknown chemicals in debris.
- The presence of lead, asbestos, and other hazardous waste in disaster debris or associated materials.
- Performing "hot work" such as welding, cutting, or burning in areas where flammable, combustible, corrosive, or toxic substances are being used, stored, or may otherwise be present.
- Use of debris reducing machinery such as wood chippers and metal shredders.
- Slips, trips, and falls on working surfaces.
- Noise.
- Silica, mold, nuisance dust, dried mud, and silt.
- Confined spaces.
- Chemical and material storage and use.
- Exposure to contaminated water, floodwater, or human waste.
- Discovery of human or animal remains.
- Cuts, lacerations, and other injuries.
- Weather stressors such as heat, cold, sunburn, and insects.

##### **11.3.1.2 FOR THE PUBLIC**

During debris operations, members of the public dealing with disaster debris on their private residential or commercial property may be impacted by many of the same health and safety issues noted in Section 11.3.1.1, above. Members of the public may also be impacted by



disaster debris work performed by CCSF or contract service providers on the public rights of way (ROW), in temporary debris management sites (TDMS), or at debris disposal sites. Additional health and safety issues stemming from the disaster itself or from disaster debris work may include:

- Impacts to air and potable water.
- Impacts to sewage and solid waste systems.
- Potential for the spread of infectious diseases.
- Debris blocking access to hospitals and other medical care facilities.
- Traffic control hazards at debris collection sites and TDMS.

### **11.3.2 Ensuring Personnel Health and Safety**

#### **11.3.2.1 STEPS TO BE TAKEN BY CCSF**

To help ensure the safety of personnel engaged in performing debris clearance, collection, removal, processing, and disposal activities, the following steps will be taken:

- The SFPW DOC Debris Management Group Health and Safety Unit will:
  - Develop and disseminate general health and safety protocols for all personnel performing debris work.
  - Develop and disseminate site-specific health and safety plans for each debris management site.
  - Ensure that personnel serving as field safety monitors overseeing health and safety practices of personnel performing debris work receive appropriate training and supervision.
- A full-time health and safety officer will be assigned to serve on the SFPW DOC Health and Safety Unit. If possible, the health and safety team leader will be a certified industrial hygienist (CIH).
- The SFPW DOC Health and Safety Unit will ensure the deployment of health and safety officers to monitor health and safety at debris operation locations to ensure compliance with health and safety requirements, including deploying:
  - Site safety officers to serve in each TDMS or disposal site.
  - Roving health and safety officers to periodically monitor debris collection activities.

For further discussion of the SFPW DOC Health and Safety Unit, see Section 4.2.3, above.

#### **11.3.2.2 SITE-SPECIFIC HEALTH AND SAFETY PLAN**

The SFPW DOC Debris Management Group Health and Safety Unit is responsible for developing site-specific health and safety plans (HASPs) covering hazardous waste and household hazardous waste (HHW) operations for all personnel entering debris sites in impacted areas of CCSF. Each HASP must meet federal Hazardous Waste Operations (HAZWOPER) and similar state requirements,<sup>2</sup> and should cover the following:<sup>3</sup>

- The health and safety program for the specific site or area covered by the HASP;
- Site characterization and analysis;
- Site control;





- Personnel training requirements;
- Medical surveillance;
- Engineering control work practices;
- Personal protective equipment (PPE) for employee protection;
- Air monitoring; and
- Decontamination.

All CCSF and contract personnel are required to abide by the HASP, by other health and safety protocols promulgated by CCSF during debris operations, and by all other local, state, and federal laws and regulations. CCSF may cancel the contract of any debris contractor that fails to abide by applicable health and safety plans, protocols, laws, and regulations. HASPs will be included as an addendum to all relevant debris-related contracts. Debris-related contracts will also include language informing contractors that failure to abide by an applicable HASP, by other health and safety protocols established by CCSF, or by applicable health and safety laws and regulations may result in termination of the contract.

### **11.3.3 Ensuring Public Safety**

To help keep the public safe during debris operations, the SFPW DOC Debris Management Group Health and Safety Unit will ensure that debris monitors and other disaster debris personnel take the following steps:

- Place appropriate signage, traffic cones, or other distinctive marking of debris collection, TDMS, and other debris operations sites to warn the public of the presence of potentially dangerous work.
- Erect appropriate fencing around TDMS to prevent public entry.
- Design public drop-off areas for recycling, reduction, or other debris located at a TDMS to prevent public access to non-public areas.
- Monitor debris collection work along public ROW to ensure public safety.
- Monitor the air near debris operations sites to limit possible pollutants, and monitoring groundwater or nearby water bodies to avoid contamination.

For further discussion of air monitoring, see Section 11.3.4, below.

In addition, when the nature of disaster debris or other substances in the debris makes it necessary, the SFPW DOC Health and Safety Unit is responsible for coordinating with the San Francisco Department of Public Health (SFPDH) on the development of a community safety plan under the Emergency Planning and Community Right-to-Know Act of 1986.<sup>4</sup>

### **11.3.4 Hazardous Materials Assessment and Removal**

After a major disaster, there is a potential for hazardous materials releases that may pollute air, water, and soil, and may pose a threat to public health and to the environment. For example, earthquakes may result in airborne smoke and dust, which may contain asbestos and silica. There is also a potential for toxic exposure and threats to public health and the environment due to hazardous substance releases following disasters. Examples of such substances include HHW such as pesticides, automotive products, and paints. If uncontrolled, such hazardous releases present a significant threat to public health through inhalation of dust and contamination of drinking water supplies.<sup>5</sup> Hazardous materials also pose an occupational



health risk for response and recovery personnel deployed in impacted areas.

Rapid response actions are needed to protect response personnel and the public from potential exposure to hazardous materials and debris.<sup>6</sup> It is critical that CCSF disaster debris response efforts to locate, assess, and address hazardous substance and debris are performed as quickly as possible following the disaster to lessen these impacts.<sup>7</sup> This section provides guidance for addressing hazardous waste and hazardous debris assessment and removal issues. For discussion of how CCSF will collect and remove household hazardous waste after a debris-generating disaster, see Section 6.4.3.3, above.

**NOTE:** As part of the effort to eliminate immediate threats to life, public health, and safety posed by hazardous materials in debris or in impacted areas, CCSF, state, regional, and federal officials may need to enter private property to assess and remove hazardous materials, to monitor air or water quality, or to demolish and remove private structures that have become unsafe because of a disaster. In general, special requirements apply to entry on private property to perform such work in a presidentially-declared disaster for which CCSF seeks state and federal reimbursement. For further discussion of private property debris removal, see Section 6.5, above.

#### **11.3.4.1 HAZARDOUS MATERIAL ASSESSMENT**

Activation of CCSF's ESF #10: Oil and Hazardous Materials Response Annex will likely be necessary to appropriately assess, identify, contain, and remove threats from land-based hazardous materials after a disaster. Under ESF #10, Part A: Land Response, the San Francisco Fire Department (SFFD) is the primary agency responsible for a land-based ESF #10 activation.<sup>8</sup> ESF #10 Part A should be activated for any release that exceeds the capacity of normal SFFD operations. As part of activation of ESF #10, a Land-Based Oil and Hazardous Material Response Unit will be staffed in the EOC Public Safety Branch, Fire and Rescue Group.<sup>9</sup> The EOC Debris Coordination Unit will work closely with the Land-Based Oil and Hazardous Material Response Unit to address hazardous materials releases following a disaster, before debris collection and removal operations can begin.

Before beginning debris removal activities, disaster-impacted land areas must be assessed for and cleared of hazardous materials, including removal of easily-identifiable asbestos, radioactive, and explosive materials. In large disasters, this assessment should include:<sup>10</sup>

- Assessment by SFFD to ensure a flammable atmosphere does not exist.
- Assessment by the California Department of Toxic Substances Control (DTSC) and U.S. Environmental Protection Agency (US EPA) of impacted city-owned and residential properties to identify hazardous materials onsite and to oversee its removal.
- Assessment and sampling by a California Division of Occupational Safety and Health Certified Asbestos Consultant of all residential and other affected areas in CCSF to identify and remove gross asbestos.
  - This ensures hazardous material cleanup personnel do not disturb areas that contain gross asbestos material.
  - Once easily-identifiable asbestos removal has been completed, hazardous material and HHW may be identified, segregated, classified, and properly removed from the area.
  - Asbestos-containing materials may be subject to National Emission Standards for



Hazardous Air Pollutants (NESHAP) requirements.<sup>11</sup> For further discussion of environmental protection requirements see Section 12, below.

- Screening for radioactivity by the California Department of Public Health, Radiation Safety and Environmental Management Division.
- Both on-site and off-site air monitoring by the Bay Area Air Quality Management District (BAAQMD) and the California Air Board.
  - Onsite or industrial hygiene air monitoring is conducted within the immediate debris removal area with the objective of protecting occupational health and quantifying dust mitigation practices.
  - Offsite or community-based air monitoring may be done to monitor offsite migration of airborne contaminants, especially if adjacent areas or neighborhoods are occupied. Sampling or monitoring also can target sensitive population centers or locations such as hospitals, shelters, and schools. Though community monitoring is not required during disaster recovery efforts, increased community sensitivity after a disaster may justify an offsite monitoring program.

Additional health and safety best practices to protect the public and field responders are provided in Appendix O, below. For discussion of assessment and removal of hazardous debris or other dangerous substances from waterways, see Section 6.6, above.

#### **11.3.4.2 HAZARDOUS MATERIAL REMOVAL**

##### **SFFD as Lead Agency**

Under ESF #10, Part A, the SFFD is the lead agency in land-based hazardous materials removal. The SFFD is responsible for coordinating cleanup and disposal of hazardous land-based materials and for coordinating acquisition of resources needed for removal. The SFFD will likely assume the role of Incident Commander and will staff the Hazardous Material Response Unit Leader position in the EOC.<sup>12</sup> The EOC Debris Coordination Unit must work closely with the Hazardous Material Response Unit with regard to hazardous materials removal relevant to debris operations.

##### **Applicable Laws**

CCSF must comply with federal, state, and local environmental requirements for handling hazardous materials.<sup>13</sup> Because disaster debris may include asbestos, heavy metals such as mercury or copper, and other regulated hazardous materials, federal laws such as the Resource Conservation and Recovery Act (RCRA),<sup>14</sup> the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA),<sup>15</sup> and the National Emission Standards for Hazardous Air Pollutants (NESHAP) may apply to removal activities. State laws or regulations that are stricter than federal requirements also may apply to cleanup and removal activities.<sup>16</sup> For further discussion of environmental laws that may apply to debris collection and removal, see Section 12, below.

##### **Direct Assistance**

The CERCLA authorizes the federal government to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.<sup>17</sup> Under CERCLA and the Clean Water Act (CWA),<sup>18</sup> the US EPA and the U.S. Coast Guard (USCG) also have authority to respond to actual or potential discharges of oil, hazardous substances,



pollutants, and contaminants that present an imminent and substantial danger to public health or welfare.<sup>19</sup> Similarly, the California Environmental Protection Agency (CalEPA) and the U.S. Environmental Protection Agency (US EPA) provide response and support personnel in hazardous waste situations involving commercial, industrial, and toxic waste spills.<sup>20</sup> In addition, the DTSC is responsible for managing, documenting, transporting, and properly disposing of hazardous waste. The EOC Debris Coordination Unit may request the assistance of these agencies through the Regional Emergency Operations Center (REOC) or State Operations Center (SOC). For further discussion of requesting federal or state assistance, see Section 4.6.7, above. For discussion of removal of marine-based hazardous substances, see Section 6.6, above.

#### Required Certification and Documentation for Waste Removers and Transporters

In general, hazardous material or hazardous waste removers must have Hazardous Substance Removal Certification from the California Contractors State License Board,<sup>21</sup> as well as other required certifications and insurance, prior to removing hazardous substances from locations where it was generated. A transporter of hazardous waste must be registered as a Hazardous Waste Transporter with the California Department of Toxic Substances Control, must have adequate liability insurance.<sup>22</sup> If the transporter is a motor carrier, it also must have a hazardous materials transportation license issued by the California Highway Patrol.<sup>23</sup>

In addition, a person generating hazardous waste to be transported for offsite handling, treatment, storage, or disposal must complete a Uniform Hazardous Waste Manifest form before transporting the waste.<sup>24</sup> The Uniform Hazardous Waste Manifest is the shipping document that travels with hazardous waste from the point of generation, through transportation, to the final treatment, storage, and disposal facility. Each party in the shipping chain signs and keeps a manifest copy, creating a "cradle-to-grave" tracking system for hazardous waste.<sup>25</sup> The generator must provide the manifest to the person transporting the waste. This is the driver if the waste will be transported by vehicle, or the person designated by a railroad corporation or vessel operator if the waste will be transported by rail or vessel.<sup>26</sup>

#### **11.3.4.3 PUBLIC ASSISTANCE ELIGIBILITY OF HAZARDOUS WASTE REMOVAL**

Removal and disposal of pollutants and hazardous substances are eligible for federal Public Assistance reimbursement. Eligible activities include:<sup>27</sup>

- Separation of hazardous materials from other debris.
- Use of special procedures for handling and disposing of hazardous materials.
- Control or stabilization of the hazardous material.
- Pumping and treating water contaminated with hazardous materials.
- Clean-up and disposal of the hazardous material.
- Testing for contaminants in water, air, or soil as needed to ensure elimination of the immediate threat.

When providing Public Assistance funding for debris work involving hazardous materials, FEMA must ensure compliance with the RCRA. Failure to follow RCRA, and other federal, state, or local laws or regulations may prevent CCSF from receiving state and federal reimbursement for removal activities.<sup>28</sup> Accordingly, before handling or disposing of hazardous materials, the EOC Land-Based Oil and Hazardous Material Response Unit should contact the appropriate federal



and state agencies to identify any statutes, regulations, or other legal policies that apply, if not suspended or waived under the emergency proclamation,<sup>29</sup> and obtain any required permits. In addition, appropriate certified hazardous waste specialists should handle, capture, recycle, reuse, or dispose of hazardous materials.<sup>30</sup>

## **11.4 Communication of Health and Safety Plans and Protocols**

### **11.4.1 Communicating With Debris Personnel**

The SFPW DOC Debris Management Group Health and Safety Unit is responsible for ensuring that force account and contract personnel performing debris removal work receive applicable HASPs, and all debris-related health and safety protocols, advisories, and other procedures in a timely and effective manner. The Health and Safety Unit may use CCSFAlert technology to share debris-related health and safety protocols, advisories, and other procedures to city partners and contractors with personnel performing debris activities. The Health and Safety Unit may also share health and safety protocols, advisories, and other messaging through the EOC's Significant Events Board. For further discussion of the HASP, see Section 11.3.2, above.

### **11.4.2 Communicating with the Public**

After a debris-producing incident, it is critical that CCSF provide the public with timely, effective, easy-to-follow instructions and other guidance on how to address debris issues on their private properties, and how to avoid other health and safety issues that may arise in connection with disaster debris. The CCSF EOC Joint Information Section is responsible for developing suitable messaging for both the media and the public to aid in this effort. This work will be done in consultation with the SFPW DOC Debris Management Group, SFDPH, the San Francisco Department of the Environment, state and federal health personnel, and other technical advisors, as appropriate.

As part of preparing this plan, the Planning Team worked with CCSF public information officers to develop a debris-related public information plan, and messaging for the public pertaining to health and safety considerations after a debris-producing incident. This material is included in Section 14, below.



## SECTION 12: ENVIRONMENTAL AND HISTORIC PRESERVATION COMPLIANCE

### 12.1 Section Overview

This section discusses the principal federal, state, and local environmental and historic preservation (EHP) laws, regulations, executive orders, and ordinances that CCSF must be aware of and comply with during the disaster debris removal process. The section discusses roles and responsibilities of federal, state, and local agencies in complying with EHP requirements. It also provides general guidance with regard to complying with relevant EHP requirements. The section does not contain exhaustive coverage of all EHP laws, regulations, executive orders, and ordinances that may apply during the debris removal process.

### 12.2 Compliance with Environmental and Historic Preservation Laws

#### 12.2.1 EHP Requirements Overview

San Francisco's environmental, cultural, and historic resources play a major role in defining the city and contributing to its unique character. Regardless of the size of a debris-producing incident, CCSF has a responsibility to comply with applicable federal, state, and local EHP laws, regulations, executive orders, and ordinances. As part of this responsibility, CCSF must ensure that debris removal operations avoid impacts to floodplains and wetlands; federal- or state-listed threatened or endangered species and their critical habitats; and historic or prehistoric properties, including maritime or underwater archaeological resources if waterways are impacted.<sup>1</sup> The following types of debris-related activities have a higher potential to impact EHP resources:<sup>2</sup>

- Debris removal and disposal.
- Project work in a waterway.
- Projects that impact a previously undisturbed area, such as establishing temporary debris management sites (TDMS) where debris is stored or processed.
- Projects involving cleanup or disposal of oil and hazardous materials.
- Demolition work.

In addition, in a federally-declared disaster for which CCSF seeks Public Assistance reimbursement, before providing funding, FEMA must review each Public Assistance project to make sure the work complies with applicable federal EHP laws, their implementing regulations, and executive orders.<sup>3</sup> Though FEMA has the responsibility to ensure compliance with these EHP laws, regulations, and Executive Orders, state and local jurisdictions are required to assist FEMA in carrying out its EHP responsibilities.

**CAUTION:** Failure to comply with the processes and procedures outlined in applicable EHP laws, regulations, and executive orders may result in delay or loss of Public Assistance funding, in civil or criminal penalties, and in unwanted negative publicity.<sup>4</sup>

#### 12.2.2 Unified Federal Review Process

FEMA and other federal agencies involved in EHP reviews as part of the disaster recovery have established the United Federal Review (UFR) Process to focus on federal EHP requirements applicable to recovery projects following a presidentially-declared disaster. Through the UFR





Process, FEMA, as the federal agency that funds Public Assistance projects, and other agencies that perform EHP reviews associated with those projects, coordinate their review activities with the goal of expediting EHP decision-making and delivery of assistance. The UFR Process does not change EHP requirements under existing federal law.<sup>5</sup>

When CCSF is an applicant for Public Assistance funding, the city's primary role in the UFR Process is to provide information to Cal OES and FEMA about proposed disaster recovery projects and their potential to affect natural and cultural resources.<sup>6</sup> A table of EHP information that applicants may be expected to provide as part of the UFR Process is available online.<sup>7</sup> For general EHP compliance actions, see Section 12.2.3, below.

### 12.2.3 General EHP Compliance Actions

General actions CCSF can take to minimize issues in complying with EHP requirements during debris operations include the following:<sup>8</sup>

- Do not assume that environmental and historic reviews of debris-related projects are not needed.
- Identify potential EHP issues as early as possible—preferably before beginning work.
- Whenever possible, provide information to Cal OES, FEMA, and other relevant local, state, and federal agencies on the proposed debris project and its potential to impact environmental, cultural, or historic resources before beginning the project.
- Provide clear descriptions of the project and its location. This helps prevent delays in the EHP review process.
- Work with Cal OES, FEMA, or other relevant agencies' EHP staff to consider reasonable alternatives to the planned project early in the project's development.
- Avoid new ground disturbance whenever possible. If new ground disturbance cannot be avoided, CCSF must consider impacts to natural and cultural resources and must obtain all necessary permits and approvals before beginning work.
- If it appears that debris-related activities may impact historical properties, or if such activities reveal artifacts, CCSF must immediately notify the State Historic Preservation Officer (SHPO) and, if necessary, the Tribal Historic Preservation Officer (THPO).
- Stage debris at a safe distance from property boundaries, surface water, wetlands, and other structures.
- On completion of debris removal and disposal, perform site remediation at TDMS and other impacted areas as needed (see Appendix M, below).
- Once funding has been awarded or approval of the project has been granted, CCSF must implement all applicable EHP conditions or requirements related to the project, such as best management practices, monitoring of site conditions, or EHP mitigation.
- Maintain all documentation generated in preparing for and during any EHP review.

For a table for use in assessing potential EHP issues, see the *Unified Federal Environmental and Historic Preservation Review Guide for Federal Disaster Recovery Assistance Applicants*.<sup>9</sup> For a table of federal EHP contacts, see the FEMA Unified Federal Environmental and Historic Preservation Review (UFR) Library.<sup>10</sup>





#### 12.2.4 Responsibility for Coordinating EHP Issues

The San Francisco Public Works (SFPW) Department Operations Center (DOC) Debris Management Group Legal/Permit Review Unit has primary responsibility for identifying and coordinating CCSF's participation in EHP review (see Section 4.2.4.2, above). In most cases, this requires that the Legal/Permit Review Unit:

- Identify possible EHP issues as early as possible.
- Notify the EOC Debris Coordination Unit Leader, Cal OES, and FEMA as quickly as possible of potential EHP issues.
- Provide Cal OES and FEMA with information necessary for any review.
- Communicate actions taken and any outreach to state and federal agencies to the CCSF Emergency Operations Center (EOC) Debris Coordination Unit.
- Maintain documentation generated in assessing EHP issues and as part of any EHP review.

If the Legal/Permit Review Unit needs assistance in determining whether a potential EHP issue may be present during debris operations, or in deciding on appropriate measures to address the issue, subject matter expertise is available from a number of sources, including the following:

- The San Francisco Department of Public Health (DPH), Environmental Health Section: Provides expertise regarding San Francisco's health-protective environmental policies and laws.
- The San Francisco Planning Department Historic Preservation program: Provides expertise regarding local, state, and federal historic preservation laws, and recommends methods to mitigate environmental impacts.
- The Cal OES Environmental-Historic Group: Provides expertise regarding state and federal EHP laws and regulations and methods for mitigating environmental impacts; conducts technical reviews of pending grant awards to determine whether the proposed projects comply with state and federal regulations; assists in resolving difficult environmental issues; conducts training for applicant staff.<sup>11</sup>
- FEMA Office of Environmental Planning and Historic Preservation: Provides guidance and long-term planning assistance to communities to ensure proposed projects meet environmental planning and preservation requirements.

For a table for use in assessing potential EHP issues, see the *Unified Federal Environmental and Historic Preservation Review Guide for Federal Disaster Recovery Assistance Applicants*.<sup>12</sup> For a table of federal EHP contacts, see the FEMA Unified Federal Environmental and Historic Preservation Review (UFR) Library.<sup>13</sup>

#### 12.3 Federal EHP Requirements

The principal federal laws and executive orders relevant to EHP during debris removal include the following:

- National Environmental Policy Act.<sup>14</sup>
- National Historic Preservation Act.<sup>15</sup>
- Endangered Species Act.<sup>16</sup>



- Clean Air Act.<sup>17</sup>
- Clean Water Act.<sup>18</sup>
- Resources Recovery and Conservation Act.
- Executive Order 11988, Floodplain Management.
- Executive Order 11990, Protection of Wetlands.
- Executive Order 12898, Environmental Justice.

For brief discussion of the above federal EHP provisions, see Sections 12.3.1 through 12.3.9, below. For discussion of compliance actions that may be taken to avoid violating these provisions, see Section 12.2.3, above. Most EHP laws contain emergency provisions to allow for expedited response activities when required to prevent imminent loss of human life or damage to improved property.<sup>19</sup> For a table for use in assessing potential EHP issues, see the *Unified Federal Environmental and Historic Preservation Review Guide for Federal Disaster Recovery Assistance Applicants*.<sup>20</sup>

### 12.3.1 National Environmental Policy Act

In general, the National Environmental Protection Act (NEPA)<sup>21</sup> requires FEMA to integrate environmental values into decision-making processes by considering the environmental impacts of proposed actions and reasonable alternatives to those actions, and to involve the public in decision-making.<sup>22</sup> Most disaster debris removal work is statutorily exempted from compliance with NEPA.<sup>23</sup> Debris-related actions or assistance that is statutorily exempt from the NEPA planning process include:<sup>24</sup>

- Debris clearance.
- Debris removal to a permitted or certified landfill.
- Hauling debris on improved rights of way.
- Demolition of unsafe structures.

**CAUTION:** The fact that most debris removal work is exempted from NEPA review does not mean that the project will not need review to address laws other than NEPA. CCSF must comply with other federal EHP laws such as the National Historic Preservation Act, Endangered Species Act, Clean Air Act, and Clean Water Act. For further discussion of these provisions, see Sections 12.3.2 through 12.3.9, below.

### 12.3.2 National Historic Preservation Act

The National Historic Preservation Act (NHPA)<sup>25</sup> requires FEMA and other federal agencies to consider the effect on historic properties of any federally-funded or -assisted project.<sup>26</sup> If a project funded by FEMA has the potential to affect an historic property, FEMA is required to initiate a "Section 106" Consultation. Section 106 of the NHPA requires federal agencies to participate in a four-step consultation process if historic properties could be affected by a federal undertaking.<sup>27</sup>

For purposes of the NHPA, an "historic property" is any district, building, structure, site, or object listed or eligible for listing on the National Register of Historic Places.<sup>28</sup> Typically, properties are included in the National Register because of their significance at the national, state, or local level in terms of American history, architecture, archeology, engineering, or culture. To qualify as an historic property, the property generally must be at least 50 years old



and must retain its integrity as a site.<sup>29</sup> San Francisco has almost 200 districts, buildings, structures, sites, or objects listed on the National Register of Historic Places, which can be accessed online.<sup>30</sup> In addition, the San Francisco Planning Department maintains a database of all city properties and their historic status.<sup>31</sup> For further discussion of local historic landmarks, see Section 12.5.3.1, below.

### **12.3.3 Endangered Species Act**

The Endangered Species Act (ESA)<sup>32</sup> protects threatened and endangered species by preserving the ecosystems in which they live. The ESA requires FEMA and other federal agencies to ensure the conservation of federally-listed threatened and endangered species, known as “listed species,” and their critical habitats.<sup>33</sup> “Endangered species” means the species is in danger of extinction in all or a significant portion of its range.<sup>34</sup> “Threatened species” means a species is likely to become endangered in the foreseeable future.<sup>35</sup>

There are over 30 endangered or threatened species on the federal list for San Francisco County. The list includes birds, amphibians, fish, insects, mammals, reptiles, and flowering plants.<sup>36</sup> In addition, the U.S. Fish and Wildlife Service (USFWS) has designated critical habitat for Franciscan manzanita, an evergreen ground shrub, in several locations within CCSF. It has also designated parts of San Francisco Bay north and east of the city as critical habitat for the steelhead trout. Lists of endangered and threatened species, and maps showing their critical habitat are available online.<sup>37</sup>

### **12.3.4 Clean Air Act**

The Clean Air Act (CAA)<sup>38</sup> maintains and protects the quality of air resources by setting air-quality standards and requirements to control the release of pollutants into the air. The CAA requires federal agencies such as FEMA to assess the impact projects will have on air quality and to take actions to prevent air quality degradation. The CAA also requires compliance with state and local air quality requirements.<sup>39</sup> Accordingly, debris clearance, removal, disposal, recycling, reduction, and demolition projects funded by FEMA under the Public Assistance Program must comply with air quality standards set by federal, state, and local regulatory agencies. Specifically, FEMA is responsible for ensuring that federal, state, and local policies are followed regarding debris burning, equipment exhaust, and construction dust. FEMA also must consider the potential for any proposed action involving a change in traffic patterns to cause increased vehicle emissions in the project area.<sup>40</sup>

### **12.3.5 Clean Water Act**

The goal of the Clean Water Act (CWA)<sup>41</sup> is to restore and maintain the integrity of the nation’s waters and wetlands by controlling and eliminating the discharge of pollutants into navigable waters of the United States,<sup>42</sup> and by regulating quality standards for surface water. The CWA makes it illegal for any person to discharge a pollutant from a specific source into navigable waters unless the person first obtains a permit for the discharge. A permit also is required to discharge dredged and fill materials into waters of the United States, including wetlands.<sup>43</sup>

Debris removal projects such as dredging, demolition, and construction and operation of sites used for debris management must comply with the requirements of the CWA as administered by federal, state, or local regulatory agencies. A permit is required for discharging dredged or fill materials into navigable waters.<sup>44</sup> The U.S. Army Corps of Engineers (USACE) and the



California Environmental Protection Agency's State Water Resources Control Board (SWRCB) issue permits under the CWA.<sup>45</sup>

### **12.3.6 Resources Recovery and Conservation Act**

The Resource Conservation and Recovery Act (RCRA)<sup>46</sup> provides a framework for federal, state, and local cooperation in managing hazardous and non-hazardous solid waste. US EPA has established minimum regulatory standards for the safe disposal of hazardous and non-hazardous solid waste, and also provides technical assistance.<sup>47</sup> The RCRA requires the safe disposal of waste materials, promotes the recycling of waste materials, and encourages cooperation with local agencies.<sup>48</sup> Accordingly, the RCRA applies to disposal of disaster debris and is of particular concern when hazardous materials are present.

US EPA works with state and local regulatory partners to ensure compliance and perform inspections and monitoring under the RCRA. US EPA has authorized the California Department of Toxic Substances Control (DTSC) to enforce RCRA's hazardous waste requirements in the state. DTSC is responsible for enforcement of RCRA standards for the generation, transportation, treatment, storage, and disposal of hazardous waste in California.<sup>49</sup>

### **12.3.7 Executive Order 11988, Floodplain Management**

Executive Order (E.O.) 11988 requires federal agencies to avoid, to the extent possible, adverse impacts associated with occupancy and modification of flood plains. E.O. 11988 also requires federal agencies to avoid direct and indirect support of floodplain development when there is a practicable alternative.<sup>50</sup> Before FEMA can fund a project located in a floodplain, the agency is required to take action to, among other things:<sup>51</sup>

- Reduce the risk of flood loss.
- Promote use of nonstructural flood protection methods to reduce the risk of flood loss.
- Minimize the impact of floods on human health, safety and welfare.
- Restore and preserve the natural and beneficial values served by floodplains.
- Involve the public throughout the floodplain management decision-making process.
- Adhere to the objectives of the Unified National Program for Floodplain Management.

### **12.3.8 Executive Order 11990, Protection of Wetlands**

E.O. 11990 grants protection to wetlands because of their critical role in providing wildlife habitat, pollution control, and flood control.<sup>52</sup> E.O. 11990 requires FEMA and other federal agencies actions to avoid adverse impacts on wetlands to the extent possible. For purposes of E.O. 11990, a wetland is an area of land in which the soil is saturated with moisture, either permanently or seasonally, and includes specific types of vegetation, soil, and hydrology. Examples of wetlands include swamps, bogs, marshes, bayous, estuaries, and tidal areas.<sup>53</sup> FEMA-funded projects in or near wetlands may require coordination with multiple agencies, including USACE, US EPA, and the California Natural Resources Agency.<sup>54</sup> Debris-related actions that may trigger review under E.O. 11990 include the siting of TDMS and other debris-related facilities.

### **12.3.9 Executive Order 12898, Environmental Justice**

E.O. 12898 establishes a federal policy on environmental justice.<sup>55</sup> E.O. 12898 requires that FEMA and other federal agencies:<sup>56</sup>



- Evaluate federal actions for disproportionately high and adverse effects on minority or low-income populations.
- Take steps to avoid disproportionate impacts as appropriate.

In addition, E.O. 12898 mandates that minority and low-income populations cannot be denied the benefits of federal actions and policies. Debris-related actions that may trigger review under E.O. 12898 include:

- Siting of TDMS and other debris-related facilities.
- Large-scale building demolition.

## **12.4 State EHP Requirements**

Principal state laws relevant to EHP include the California Environmental Quality Act,<sup>57</sup> the California Endangered Species Act,<sup>58</sup> and their implementing regulations. A description of each act is provided in Sections 12.4.1 through 12.4.3, below.

### **12.4.1 California Environmental Quality Act**

Under the California Environmental Quality Act (CEQA),<sup>59</sup> state and local agencies must assess the environmental impact of projects they intend to permit or construct, and must consider these impacts in their decision-making regarding the project. State and local agencies implement CEQA by preparing documents such as environmental impact reports (EIRs), negative declarations, and mitigated negative declarations.<sup>60</sup> In general, CEQA applies to discretionary projects proposed or approved by public agencies, including enacting and amending zoning ordinances, and issuing zoning variances and conditional use permits.<sup>61</sup>

### **12.4.2 California Endangered Species Act**

The California Endangered Species Act (CESA)<sup>62</sup> was enacted to conserve, protect, restore, and enhance endangered and threatened species and their habitats.<sup>63</sup> For purposes of CESA, “endangered species” means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant in serious danger of becoming extinct in all or a significant portion of its range due to one or more causes, including loss of or a change in habitat, overexploitation, predation, competition, or disease.<sup>64</sup> “Threatened species” means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that is likely to become an endangered species in the foreseeable future absent special protection and management under CESA.<sup>65</sup>

### **12.4.3 California Clean Air Act**

The California Clean Air Act (CCAA)<sup>66</sup> was enacted to protect and enhance the ambient air quality of the state through coordinated state, regional, and local effort.<sup>67</sup> The California Environmental Protection Agency’s Air Resources Board (ARB) is the state agency charged with coordinating efforts to meet and maintain ambient air quality standards.<sup>68</sup> To encourage a regional approach to the problem, the California Legislature divided the state into 15 “air basins.”<sup>69</sup> Under the CCAA, local and regional authorities have primary responsibility for controlling air pollution from non-vehicular sources of air pollution, while the ARB is generally responsible for controlling vehicular sources.<sup>70</sup> San Francisco County is within the basin managed by the Bay Area Air Quality Management District (BAAQMD).<sup>71</sup>





## **12.5 Local EHP Requirements**

### **12.5.1 Adoption of Precautionary Principle**

San Francisco has adopted the Precautionary Principle. When threats of serious or irreversible damage to people or nature exist that require decision-making and response, the Precautionary Principle mandates selecting an alternative that poses the least potential threat to human health and to the city's natural systems. Decision-making requires thorough exploration and careful analysis of a wide range of alternatives based on the best available science. It also requires public participation and an open and transparent decision-making process. All city and county officers, boards, commissions, and departments are required to implement the Precautionary Principle in conducting CCSF's affairs.<sup>72</sup>

### **12.5.2 CCSF Environmental Protection Ordinances**

The San Francisco Construction and Demolition Debris Recovery Ordinance<sup>73</sup> requires proper handling and recovery of wood, metals, and inerts from construction and demolition activities as a deterrent to unsafe and wasteful practices.<sup>74</sup> The ordinance complies with the California Integrated Waste Management Act of 1989, which requires each local jurisdiction in the state to divert 50 percent of discarded materials from landfills. Cities failing to meet this requirement can face fines up to \$10,000 a day.<sup>75</sup> The San Francisco Board of Supervisors set and met a goal of 75 percent diversion of solid waste from landfills by 2010, and has authorized the adoption of a zero waste goal by 2020.<sup>76</sup>

CCSF also has enacted a mandatory recycling of refuse ordinance.<sup>77</sup> Under this ordinance, all residents and businesses in San Francisco are required to source separate their refuse into recyclables, compostables, and trash, and to place each type of refuse in a separate container designated for disposal of that type of refuse.<sup>78</sup> For further discussion of these ordinances, see Section 8.3.2, above.

### **12.5.3 CCSF Historic Preservation Ordinances**

#### **12.5.3.1 CCSF's LOCAL LANDMARKS, HISTORIC DISTRICTS, AND CONSERVATION DISTRICTS**

The San Francisco Planning Code requires the city to protect and preserve historic and architecturally important structures, sites, and areas within CCSF.<sup>79</sup> The city maintains a list of locally-designated landmarks and historic districts that is similar to the National Register of Historic Places, but at the local level. Landmarks can be buildings, sites, or landscape features. Districts are defined generally as an area of multiple historic resources that are contextually united.<sup>80</sup> For further discussion of the National Historic Preservation Act, see Section 12.3.2, above.

The CCSF ordinances governing landmarks, the list of individual landmarks, and descriptions of each historic district, are found in the San Francisco Planning Code Article 10. A moratorium of up to one year can be placed on demolition permits for structures listed as Article 10 landmarks to provide time to explore feasible alternatives to demolition. Article 10 also normally provides for an additional layer of review for exterior alterations of structures on the local landmark list. Planning Code Article 11 also allows for the designation of conservation districts in San Francisco's downtown core area based on architectural significance. Proposed alterations to these buildings are generally subject to a separate application and review process.<sup>81</sup>



### 12.5.3.2 UNSAFE OR DANGEROUS CONDITIONS

CCSF's Planning Code Article 10 provides that when a structure listed as an Article 10 landmark or historic site is damaged in a natural or human-caused disaster, and the Department of Building Inspection (DBI) or the Bureau of Fire Prevention (BFP) determines that the structure cannot reasonably be repaired and restored, the structure may be removed in conformity with normal permit procedures and applicable laws.<sup>82</sup> In addition, Article 10 does not prevent construction, alteration, or demolition measures necessary to correct an unsafe or dangerous condition of any structure or part of a structure when:<sup>83</sup>

- The condition is declared unsafe or dangerous by the Director of DBI or the Chief of the BFP; and
- The official declares the proposed measures necessary to correct the condition.

However, only work that is absolutely necessary to correct the unsafe or dangerous condition may be performed under this provision.<sup>84</sup>

Article 11 similarly allows the Director of DBI or the Chief of the BFP to determine that a condition on or in a significant or contributory building within a conservation district is unsafe or dangerous, but that repair or other work is feasible and will not threaten public safety. On making that determination, the official, after consulting with the Planning Department and the city's Historic Preservation Commission, may determine the repair or other work needed to correct the condition in a manner consistent with state and local law, and the purposes and standards of Article 11.<sup>85</sup>





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## SECTION 13: ADDITIONAL CONSIDERATIONS

### 13.1 Section Overview

This section discusses and provides guidance on how CCSF will address the following circumstances that may impact debris removal in a disaster:

- Management of debris generated by a terrorist incident such as use of a weapon of mass destruction.
- Management of human remains.

### 13.2 Debris Management in a Terrorism Incident

#### 13.2.1 Terror Incident Overview

Debris operations following a terrorism incident, such as use of a weapon of mass destruction, differ in important aspects from debris management after a natural disaster. These differences include the following:

- Law enforcement agencies assume a lead role in controlling the scene and in managing debris after a terrorism incident.
- The site of the terrorist incident is treated as a “crime scene.” For purposes of crime scene investigation, the scene must be secured from initial response through recovery operations.
- Debris generated by a terrorist incident is considered evidence until the lead law enforcement agency declares otherwise. Accordingly, debris must be securely handled, monitored, transported, and processed.

For purposes of this plan, “terrorism” means the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or a segment of either, to further political or social objectives.<sup>1</sup>

Terrorism incidents involve complex, competing priorities beyond debris operations. The Incident Commander or Unified Command is responsible for managing these priorities and for determining response and recovery objectives. Initially, life safety of the public and of responders takes precedence over other response needs. Responders will take steps to secure the scene and to ensure that there are no secondary or tertiary explosive or other destructive devices present. Once the site is secured, search and rescue efforts may proceed as appropriate.

In a small-scale terrorist incident, evidence recovery does not begin until the search and rescue or recovery phase of the operation is complete. In a large-scale incident where there is a massive amount of evidentiary debris to be removed and processed, debris operations may occur concurrently with search and rescue or recovery operations. However, unlike debris operations after a natural disaster, personnel must investigate the debris and collect evidence as part of debris operations.<sup>2</sup>

#### 13.2.2 Roles and Responsibilities

##### 13.2.2.1 LEAD AGENCY

Immediately following a terrorism incident, the lead law enforcement agency will assume the role of Incident Commander. In CCSF, the San Francisco Police Department (SFPD) may initially serve as the lead local law enforcement agency. However, the Federal Bureau of Investigation



(FBI) is the lead investigative agency for crimes involving terrorist activities inside the United States.<sup>3</sup> Accordingly, once on scene, the FBI's San Francisco Field Office will assume lead authority for the overall investigation.<sup>4</sup>

FBI evidence recovery operations will occur in coordination with local and state public safety officials. As federal and state responders arrive, incident command should transition into use of Unified Command. However, case management decisions will be made by the FBI once on scene, including decisions regarding debris evidence management, collection, and preservation. The FBI may engage the services of its internal response assets to assist in evidence collection and management, including laboratory analysis of evidence collected from debris.<sup>5</sup>

#### **13.2.2.2 LOCAL LAW ENFORCEMENT**

As the lead local law enforcement agency, SFPD's responsibilities include:<sup>6</sup>

- Establishing and securing the incident site perimeter.
- Controlling access to the site, including determining credentialing necessary to enter.
- Coordinating with the San Francisco Fire Department (SFFD) to initiate search and rescue efforts.
- Assisting in collecting, preserving, and documenting evidence.
- Escorting debris during transport.
- Securing debris sorting and processing facilities.

In performing these duties, SFPD will likely need assistance from other law enforcement agencies. The San Francisco Sheriff's Department (SFSD) may assist in providing security at the incident site perimeter and at debris evidence processing facilities. Additional resources may be obtained through the Law Enforcement Mutual Aid system. For further discussion of mutual aid, see ESF #7, Logistics Annex.

#### **13.2.2.3 SAN FRANCISCO OFFICE OF THE MEDICAL EXAMINER**

In general, the Office of the Chief Medical Examiner (OCME) is responsible for:<sup>7</sup>

- Recovering human remains.
- Participating in the crime scene investigation and collecting evidence associated with the remains.
- Preparing for processing of large numbers of decedents, including preparing or requesting temporary mortuary and storage facilities.
- Establishing or requesting OCME facility security and credentialing systems to limit entry to the facility.
- Coordinating the transport of human remains from the scene to OCME facilities.
- Determining the cause, manner, and circumstances surrounding the deaths.
- Identifying deceased persons, preparing death certificates, and helping interpret the circumstances of the incident.

In a terrorist incident, the OCME will work with the lead law enforcement agency, the FBI, to perform these functions in coordination with Incident or Unified Command efforts. For further discussion of the handling of human remains after a disaster, see the OCME's Mass Fatality Incident Response and Management Plan.<sup>8</sup>



#### **13.2.2.4 SAN FRANCISCO PUBLIC WORKS DEPARTMENT OPERATIONS CENTER**

The San Francisco Public Works (SFPW) Department Operations Center (DOC) Debris Management Group must coordinate its efforts in collecting, storing, processing, and disposing of debris with the Incident Commander or Unified Command. All debris generated by the incident must be treated as evidence until the Incident Commander or Unified Command determines otherwise.

In addition to their normal debris responsibilities, the SFPW DOC Debris Management Group is also responsible for coordinating with the Incident Commander or Unified Command to perform the following tasks:

- Establishing and maintaining a chain of custody for all debris evidence (see Section 13.2.3, below).
- Making arrangements to transport debris evidence to an appropriate off-site location for sorting, processing, and investigation when on-site processing is not feasible.
- Ensuring a security detail is assigned to accompany all debris transports from the initial site to any off-site processing facility.
- Ensuring debris personnel have appropriate badging and credentials to enter the incident site before arrival.
- Establishing secure points of ingress and egress for debris haulers and other debris-related vehicles.
- Ensuring debris management personnel wear appropriate personal protective equipment (PPE) at all times.

The SFPW DOC Debris Management Group planning should include establishing a receiving point to secure large quantities and varying sizes of evidence. An off-site warehouse that can be secured by law enforcement 24 hours a day is a suitable option. Another option is using large storage containers that can be moved by truck, train, or other means at a later time.<sup>9</sup>

#### **13.2.3 Debris Handling**

A terrorist incident may generate a large quantity of debris, which must be treated as evidence until the lead law enforcement agency declares it free of evidentiary possibilities. As debris is removed to meet search and rescue or recovery objectives, it must be handled in a secure fashion. The FBI San Francisco Field Office's Evidence Response Team will have lead authority for collecting evidence from the terrorism incident site and from any off-site evidence processing facility.<sup>10</sup>

Some incident sites may have adequate space to allow for debris evidence processing within the site perimeter. However, in many cases, this is not feasible. If it is not feasible, the SFPW DOC Debris Management Group is responsible for coordinating with the Incident Commander or Unified Command to transport debris evidence to an off-site location for sorting, processing, and evidence gathering.<sup>11</sup>

##### **13.2.3.1 DEBRIS EVIDENCE COLLECTION AND CHAIN OF CUSTODY**

The SFPW DOC Debris Management Group is responsible for working with the Incident Commander or Unified Command and with the FBI Evidence Response Team to establish and maintain a "chain of custody" for debris generated by the terrorist incident. A proper chain of



custody establishes that evidence has not been altered during collection, processing, or other handling. Failure to maintain a proper chain of custody may make evidence inadmissible in a court proceeding. In the context of a terrorist incident, chain of custody begins once debris is collected. Debris evidence is collected when it is removed from its initial location for processing. For chain of custody purposes, collection of debris evidence must be documented, as must any transport of collected debris.<sup>12</sup>

Evidence located and collected at the original site must be tagged and logged when collected at the incident site according to FBI Evidence Response Team protocols. If debris is to be transported to an off-site facility for processing, the transport must be accompanied or monitored by a law enforcement officer until it is delivered to the processing facility. Transport includes any means of moving the debris, including use of waterways. Transport documentation should contain the names of equipment and truck operators; date, time, and work zone; or other information regarding the location from which the debris is being transported. The processing site should have its own evidence-receiving area and log where incoming debris is logged.<sup>13</sup>

**NOTE:** In some cases, remaining post-incident structures must be imploded. The additional debris created by implosion also must be removed and secured. In most cases, imploded debris has no evidentiary value. However, this determination should be made by the lead law enforcement agency. Care should be taken to keep incident debris evidence and imploded debris separate.<sup>14</sup>

#### **13.2.3.2 DEBRIS CONTAMINATION**

A terrorist incident involving a non-conventional weapon of mass destruction such as a chemical, biological, radiological, or nuclear weapon poses additional, significant safety issues that must be addressed as quickly as possible. Early sampling for lab analysis must be done to identify contaminants. This, in turn aids in determining PPE and decontamination requirements and in developing safety plans regarding handling, movement, and disposal of hazardous debris.<sup>15</sup>

If needed, the FBI can assign personnel from its Hazardous Materials Response Unit and Hazardous Disaster Debris Management Materials Response Team to facilitate collection of contaminated evidence from the incident site and from any off-site debris evidence facility.<sup>16</sup>

The Incident Commander or Unified Command also may request that the Governor deploy specially-trained National Guard Civil Support Teams (CST) to support hazardous materials operations. The CST are equipped and trained to detect, collect, mitigate, and perform on-site analysis in chemical, biological, radiological, and nuclear incidents.<sup>17</sup>

Personnel working within the “hot zone,” the inner perimeter of the incident site, will likely require high levels of PPE, training, and OSHA certification. These requirements apply to all who enter the inner perimeter, including equipment operators, truck drivers, and visitors. This will significantly slow operations, as responders wearing bulky, hot PPE will tire more quickly and will require longer rehabilitation. In addition, decontamination of victims, personnel, debris, and evidence will be required.<sup>18</sup>

In addition, if debris will be transported to off-site locations for processing and investigation, the off-site facility must approve receipt of hazardous materials. In effect, the use of an off-site processing area creates a new, hazardous area requiring the same or similar safety considerations as those in place at the incident site. Moreover, debris must be appropriately



contained before transport from the inner perimeter.<sup>19</sup>

#### **13.2.3.3 HUMAN REMAINS**

As in any crime scene, human remains are considered evidence. It is important to adequately document the location of the remains and other pertinent information to assist in establishing identification and cause of death. The OCME has ultimate control and authority over human remains within CCSF. In general, the city will follow the protocols for handling of human remains set forth in the San Francisco Emergency Medical Services Agency Mass Casualty Plan and the OCME's Mass Fatality Incident Response and Management Plan.<sup>20</sup>

In addition to intact human remains, parts of bodies may be discovered after a terrorist incident. The Medical Examiner will take custody of all human remains, regardless of size. Law enforcement personnel will be assigned to the morgue to secure evidence recovered from the remains and to establish and maintain the chain of custody for that evidence.<sup>21</sup> For further discussion of handling human remains in a natural disaster, see Section 13.3, below.

#### **13.2.3.4 PERSONAL PROPERTY RECOVERY AND RELEASE**

The lead law enforcement agency, normally the FBI, will make the final decision as to what personal property items found in the debris can be cleared for return to their owners. Items that are contaminated by a hazardous substance will require further testing before clearance. Such hazardous materials clean up may be performed by contractors at the property owner's expense, with follow-up testing to ensure the items are properly decontaminated. The San Francisco Department of Public Health is responsible for reviewing test data and giving final approval for the release of any contaminated property.<sup>22</sup>

Personal property such as jewelry and money associated with human remains will be tracked by the OCME, which will provide an accounting of valuable items. Vehicles that are part of the crime scene must be processed for, and may be retained as, evidence. Before any property is removed from the scene it must be documented on official evidence or property logs.<sup>23</sup>

#### **13.2.3.5 DISPOSAL OF CLEAR DEBRIS**

The lead law enforcement agency, typically the FBI, has final authority to transition debris from an evidence status to "clear debris" status. Clear debris status means the debris is no longer considered to be evidence and may be diverted or disposed of as appropriate.<sup>24</sup> Once debris is cleared for diversion or disposal, it can be handled as CCSF would normally handle disaster debris. For further discussion of debris diversion, see Section 8, above. For further discussion of debris disposal, see Section 9, above.

### **13.3 Debris Management and Human Remains**

#### **13.3.1 Human Remains Overview**

This subsection discusses some of the processes and issues associated with recovery and disposition of human remains after a disaster. Human remains may be encountered in areas impacted by the disaster and at existing debris processing or temporary debris management sites (TDMS) where transported debris is stored, sorted, and processed. Accordingly, processes for recovering human remains in a safe, effective, and respectful manner must be incorporated into disaster debris response activities. For detailed discussion of handling human remains after a disaster, see the OCME's Mass Fatality Incident Response and Management Plan.





### **13.3.2 Health Risks Associated with Human Remains**

#### **13.3.2.1 FOR THE GENERAL PUBLIC**

There is no direct risk of contracting an infectious disease from being near human remains for members of the public or for others who are not directly involved in activities requiring handling of human remains. Though the sight and smell of decay may be distressing and unpleasant, this does not create a public health hazard. Accordingly, there is no requirement for mass burials or cremation to lower the risk of possible infectious disease transmission.<sup>25</sup> Animal remains are similar in terms of the risks posed. The safety and health requirements applicable to humans should be applied as appropriate when handling animal remains.<sup>26</sup>

#### **13.3.2.2 FOR RESPONSE PERSONNEL**

For those who must directly handle human remains, such as recovery personnel or persons identifying remains or preparing remains for burial or cremation, there can be a risk of exposure to viruses or bacteria. Human remains may contain blood-borne viruses such as hepatitis and human immunodeficiency virus (HIV), as well as bacteria that cause diarrheal diseases such as shigella and salmonella. For health and safety information for personnel handling human remains, see Appendix O, below. In addition to protecting physical safety, personnel handling human remains should be given the opportunity to participate in available critical incident stress management programs that provide psychological and emotional support.<sup>27</sup>

### **13.3.3 Handling of Human Remains**

In a natural disaster, deaths are likely to be accidents. However, even during a natural disaster, homicides and suicides may occur. The circumstances of each case must be evaluated. The OCME has ultimate control and authority over human remains. In general, CCSF will follow the protocols for handling of human remains set forth in the San Francisco Emergency Medical Services Agency Mass Casualty Plan and the OCME's Mass Fatality Incident Response and Management Plan, including the following:<sup>28</sup>

- When responders discover human remains, they will notify the OCME, and will escort the Medical Examiner to the remains for documentation and collection.
- Efforts will be made to treat the deceased with respect and to cover them, as resources and the situation permit.
- The Medical Examiner or the lead law enforcement agency must approve moving deceased patients.
- Before moving a body, the responder who found the remains or the OCME will document information on a triage tag, morgue tag, or another label to be attached to the body, which includes the following information:
  - Date, time, and location where the body was found.
  - Name or address of the decedent, if known.
  - If identified, how and when.
  - Name and phone number of the person making the identification or filling out the tag.
  - Any contamination of the body.

**NOTE:** Human remains may be contaminated with hazardous waste. Though decontamination of intact human remains may be possible, such efforts may prevent identification of the remains or



may result in a loss of evidence. Decisions regarding how to safely and effectively address these issues will be made by the Medical Examiner in consultation with the FBI and with hazardous materials professionals from the FBI, if applicable; the SFFD; and San Francisco Department of Public Health.<sup>29</sup> For further discussion of contamination issues, see Section 13.2.3.3, above.

#### **13.3.4 Personal Property Associated With Human Remains**

The OCME will make the final decision as to whether and when personal property items found in association with human remains in a non-human-caused disaster can be cleared for return to their owners. Personal property will be tracked by the OCME, which will provide an accounting of valuable items. Before any property is removed from the scene it must be documented on official evidence or property logs following OCME protocols.<sup>30</sup> For further discussion of the handling of personal property associated with human remains after a disaster, see the OCME's Mass Fatality Incident Response and Management Plan.

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## **SECTION 14: PUBLIC INFORMATION**

### **14.1 Section Overview**

This section provides information on San Francisco's public information strategy for disaster-related debris management from debris prevention through recovery. The section covers the need for a debris-related public information strategy, the goals of the public information strategy, and roles and responsibilities in implementing the strategy. The section also discusses the types of messaging needed. As part of this plan, CCSF has developed messages for use as a starting place for messaging in a debris-producing disaster.

### **14.2 Need for Public Information on Debris Management**

The public and the media are essential partners in CCSF's debris management efforts following a disaster. It is critical that CCSF keep the public informed regarding the extent and location of debris affecting the city, what the city is doing to manage the debris, and how residents and business owners can assist with debris on their properties. Without a robust and effective disaster debris public information strategy, CCSF's efforts to collect and remove debris in a timely manner may be hampered and delayed, leading to additional public health and safety threats. To address this need, CCSF has developed a public information strategy and messaging that can be adapted for use in a debris-producing disaster. For sample public information messages and press releases, see Appendix H, below.

### **14.3 Public Information Strategy**

#### **14.3.1 Goals of Public Information Strategy**

CCSF's goal in developing a public information strategy is to ensure that city residents and businesses have access to accurate, timely, and effective debris-related information before, during, and after a disaster. Implementing this strategy will allow CCSF to:

- Assist residents and businesses in preparing for and responding to a disaster so they can minimize debris-related impacts.
- Provide public health and safety information the public can use to handle disaster debris on their property in a safe manner.
- Keep the public informed of the status of debris response and recovery activities to better manage public expectations regarding the timeline for debris removal.
- Inform the public of removal, recycling, and disposal services available to manage disaster debris on private property.
- Ensure that debris is handled in a way that expedites state and federal reimbursement for debris-related costs.

#### **14.3.2 Roles and Responsibilities**

In general, public information related to disaster debris will be handled in accordance with Emergency Support Function (ESF) #15: Joint Information System Annex to the CCSF Emergency Response Plan (ERP). ESF #15 provides an overview of the systems and personnel CCSF will employ to provide disaster-related public messaging. The information provided in this section is intended to supplement the information provided in ESF #15.



#### **14.3.2.1 EOC JOINT INFORMATION SECTION**

In a disaster, the CCSF Emergency Operations Center (EOC) Joint Information Section (JIS) is responsible for developing and disseminating timely, accurate public information regarding CCSF's debris status and operations. In developing and sharing debris-related messaging, the JIS will work closely with the San Francisco Public Works (SFPW) Department Operations Center (DOC) Public Outreach Unit Leader and the DOC Debris Management Group; with PIOs from supporting departments, including the Department of Public Health (DPH), San Francisco Environment (SFE), and San Francisco Fire Department (SFFD); and with technical advisors or others providing debris-related expertise to the SFPW DOC or EOC. The JIS's responsibilities include the following:

- Validating debris-related information as it comes into the JIS.
- Developing and disseminating public messaging and press releases regarding the city's debris removal efforts and what the public can do to assist.
- Assisting the SFPW DOC PIO in setting up a public hotline to answer debris questions.
- Using social media to gather and share debris information.
- Working with local and regional communications partners to disseminate debris information through public alert notifications and traditional and social media.

The JIS operates from the Joint Information Center (JIC), located at the CCSF EOC. The JIS is managed by the Joint Information Section Chief, who reports to the EOC Manager and coordinates with the EOC Public Information Officer (PIO). For additional information on the role and responsibilities of the JIS, see ESF #15.

#### **14.3.2.2 EOC JOINT INFORMATION CENTER**

The JIC functions as CCSF's primary and authoritative source for debris-related public messaging. This will help ensure that CCSF issues consistent, accurate debris messaging in a timely manner. The JIC is a central location where PIOs from relevant city departments and partner agencies can gather to perform the public information functions of ESF #15. The JIC is typically located adjacent to the city's EOC. The JIS may also establish a virtual JIC using web-based communication platforms and conference calls or texts to communicate with PIOs and others. For additional general information on the role and responsibilities of the JIC, see ESF #15.

#### **14.3.2.3 EOC PUBLIC INFORMATION OFFICER**

The incident command structure for all disasters includes an EOC PIO who distributes information and acts as a spokesperson to keep members of the public informed regarding CCSF's debris status and operations. During a debris-producing disaster, the PIO is responsible for working with JIS personnel to:

- Act as CCSF's primary spokesperson to disseminate public messaging regarding city debris removal efforts and what the public can do to assist.
- Work with local and regional communications partners to disseminate debris information through emergency alert notifications and traditional and social media.
- Ensure the JIS works with media and regional partners to share debris information with the public.



- Validate debris-related information as it comes into the JIS.

In developing and coordinating debris-related messaging, the EOC PIO will work closely with the SFPW DOC Debris Management Group Public Outreach Unit Leader and with PIOs from other supporting departments, including DPH, SFE, the SFFD, and partner agencies. For further information on the role and responsibilities of the PIO, see ESF #15.

#### **14.3.2.4 SFPW DOC DEBRIS MANAGEMENT GROUP PUBLIC OUTREACH UNIT LEADER**

The SFPW DOC Debris Management Group has a Public Outreach Unit Leader who reports to the Debris Management Group Supervisor. The responsibilities of the Debris Management Group a Public Outreach Unit Leader include the following:

- Acting as a liaison between the SFPW DOC Debris Management Group and the EOC JIC.
- Coordinating debris-related public information with the EOC JIS and PIO.
- Informing the SFPW DOC Debris Management Group Supervisor of debris-related public concerns.
- Developing debris-related public messaging to provide the public with clear instructions and updated information on debris removal efforts and how the public can assist.
- Setting up and monitoring a debris hotline for the public to call with questions.
- When needed, accompanying Public Works crews in the field to provide debris-related public messaging.
- Using social media to gather information on debris impacts and needs and to share debris messaging.

### **14.3.3 Public Information Strategy During an Incident**

#### **14.3.3.1 EARLY MESSAGING AND ACTIVATION OF JIS**

After a debris-generating disaster, CCSF will need to issue critical public information in a timely and accurate way regarding what has happened, actions the city is taking in response, and what the city asks the public to do. Initially, public messaging and alerts about the disaster will likely be issued by the San Francisco Department of Emergency Management (DEM) Duty Officer in consultation with the DEM Manager on Call. The DEM Duty Officer, EOC Manager, or DEM PIO will activate the JIS, which will initially be staffed by the DEM External Affairs team.<sup>1</sup>

As soon as possible after a disaster occurs, the JIS, in consultation with the SFPW DOC Debris Management Group Public Outreach Unit Leader, will begin issuing debris-related messaging and press releases as needed given the circumstances presented by the disaster. Early messaging may include:

- The debris impacts caused by the disaster, and general guidance on any life safety or other health issues presented by debris.
- General information on the steps the city is taking to address debris, such as beginning debris clearance efforts on critical routes.
- Any steps the city asks the public to take regarding debris.

Sample debris-related messaging is provided in Appendix H, below.





#### **14.3.3.2 DEVELOPMENT OF A DEBRIS PUBLIC INFORMATION STRATEGY**

As part of developing the Debris Operations Plan (Debris OP) for specific incidents, the SFPW DOC Debris Management Group Public Outreach Unit Leader will work with the EOC PIO and JIS to create a more detailed debris-related public information strategy for the incident. The public information strategy will be based on debris information gathered by the SFPW DOC and the EOC, including:

- Assessments from the SFPW DOC Debris Management Group regarding the type, magnitude, and location of disaster debris impacts in the city.
- Locations where disaster debris poses an immediate, significant threat to public safety or health, requiring public information to protect the public and support safe handling of debris.
- The priorities for debris collection and removal as determined by the SFPW DOC, EOC Manager, and Policy Group.
- The collection methods the city will use to assist residents in removing debris from private property, and the anticipated schedule and locations for debris collection efforts.

The strategy should cover the following topics, at a minimum:

- Information to be disseminated.
- Steps CCSF will ask the public to take to assist with debris collection and removal.
- Timeline for issuing media releases and public messaging regarding debris clearance, collection, and removal efforts.
- Dissemination strategies and platforms to be used for debris information, such as media releases, AlertSF, web sites, 311, social media sites, television, and radio.
- Roles and responsibilities in carrying out the strategy.

For further discussion of information dissemination strategies, see Section 14.3.3.3, below. For further discussion of the Debris OP, see Section 4.4, above. For further discussion of debris collection and removal, see Section 6, above.

#### **14.3.3.3 PUBLIC INFORMATION DISSEMINATION STRATEGY**

The JIS and SFPW DOC may use a number of methods and platforms for sharing debris information with the public after a disaster. These methods will include some combination of the following, depending on the needs of the incident and on available resources:

- Emergency Alerts: AlertSF, CCSF Alert, Wireless Emergency Alerts (WEA), the Emergency Alert System (EAS), and the San Francisco Outdoor Public Warning System (OPWS), which is a system of outdoor sirens with voice capability located around the city.
- Social Media: Platforms that may be used include Twitter, Facebook, and Nextdoor.
- Traditional Media: Through the use of press releases, media advisories, frequently asked questions (FAQs), press conferences, media briefings, and media availabilities.
- Web: Providing updates through the DEM web site, [sfdem.org](http://sfdem.org); [SF72.org](http://SF72.org); San Francisco 311 web site; a recovery-specific website set up by CCSF; other web-based sites; or web-based applications (apps).
- Phone apps: If appropriate, CCSF may provide native apps built for use on mobile phones



that share debris and other disaster information with the public. The existing 311 phone app may also be used as a place to post debris-related information and accept reports from the public on debris issues they encounter, including illegal debris dumping.

- Door hangers and utility bill inserts.
- Telephone debris hotline: The JIS and the SFPW DOC Debris Unit PIO will work with 311 to establish a hotline to answer debris-related questions and as a place to report illegal debris dumping.
- Community meetings: CCSF may host public forums to address debris collection and removal plans and what the city needs from the public, especially in heavily-impacted neighborhoods.
- Debris Information Center: The JIS and the SFPW DOC Debris Unit PIO may activate a roving Debris Information Center that provides debris information to affected neighborhoods before debris collection begins in that area, to assist in educating the public on how to separate and prepare debris for collection.

#### **14.3.3.4 ACCESSIBLE MESSAGING**

It is critical that CCSF disseminate debris messaging that is accessible to all members of the public, including people with disabilities and access and functional needs. Accessibility of public information refers to whether individuals can receive and understand messages. To ensure accessibility in its public information, CCSF will:

- Create messages that are free of jargon, acronyms, abbreviations, of other phrases that are hard to understand.
- Provide both text and audio to explain images or maps that are included in messages, so recipients who are blind or have low vision can understand the meaning of what is being shown graphically.
- Ensure that messages are delivered in multiple formats (see Section 14.3.3.3, above).
- Issue messages in English and in other languages spoken by a substantial percentage of the city's population, as required by the San Francisco Language Access Ordinance.<sup>2</sup> The CCSF Language Access Ordinance currently requires translation in Chinese (both Cantonese and Mandarin), Spanish, and Tagalog.

Sample debris-related messaging is provided in Appendix H, below.

### **14.3.4 Specific Debris Public Information Needs**

#### **14.3.4.1 DEBRIS REMOVAL STATUS UPDATES**

Beginning as soon as possible after the disaster occurs and continuing through completion of major debris operations, CCSF should keep the public apprised of city efforts doing during debris response and recovery by providing frequent debris status updates. Providing debris status updates is important for a number of reasons, including:

- Helping the public understand the magnitude of the debris work to be done.
- Managing public expectations regarding the timeline for debris removal.
- Helping the public understand why the city needs their help to remove disaster debris in a timely and an effective way.



In general, updates should include brief information regarding:

- The types of debris issues the city faces.
- Areas of the city most affected by debris.
- A description of what the city is doing to address debris issues; and, when available, schedules or estimated timelines for response. Successive updates should provide information on the status of the city's debris efforts.
- What the city asks the public to do to assist with debris efforts.

Sample debris-related status messaging is provided in Appendix H, below.

#### **14.3.4.2 LIFE OR HEALTH SAFETY INFORMATION**

It is extremely important that CCSF provide the public with debris-related life and health safety messages. Such messaging may include information regarding:

- Hazardous waste found in debris, such as asbestos, lead, sewage, oil spills, and chemical releases.
- Household hazardous waste (HHW) typically found in homes or businesses.
- Other life safety issues posed by debris, such as downed or leaning trees, heavily-damaged buildings or other structures, or the presence of unexploded ordinance.

Life and health safety information can be provided as part of status updates, or as a stand-alone product, or both, depending on the circumstances. Such messaging should include:

- Information describing the nature of the danger or threat.
- What the city is doing, or plans to do, about it.
- What the public can do to minimize the danger or threat.

Sample public information messaging regarding life or health safety is included in Appendix H, below. For further discussion of HHW, see Section 14.3.4.3, below. For further information regarding health and safety issues associated with debris management, see Section 11, above.

#### **14.3.4.3 DEBRIS COLLECTION INFORMATION**

Debris collection and removal activities can be achieved more efficiently and safely if CCSF enlists the public's assistance by communicating with residents as early as possible, certainly before collection begins. Debris collection-related steps that CCSF may ask the public to assist with include the following:

- If CCSF employs curbside debris collection, asking the public to separate debris into the major types before setting it out for pick-up on the public ROW (see Section 3.2, above).
- Segregating household hazardous waste for separate pick-up, drop-off, or self-hauling.
- Segregating recyclable materials to maximize recycling and reduce the amount of debris going to landfills.
- Avoiding placing debris on sidewalks or curb ramps used by people with disabilities or access and functional needs; or on or near fire hydrants, which can be damaged when debris is collected.
- Avoiding illegal dumping. FEMA will not provide Public Assistance funding for cleanup of illegally-dumped disaster debris.



It is also important to provide business owners with information regarding how to handle debris removal from commercial premises. As with removal of debris from private property, debris removal from commercial property generally is not eligible for Public Assistance reimbursement. Moreover, removal of debris placed on the public ROW by commercial properties is not eligible for Public Assistance reimbursement unless pre-approved by FEMA.<sup>3</sup> For further discussion of Public Assistance eligibility for debris removal, see Section 6.5, above. Sample public information messaging regarding debris collection and removal are included in Appendix H, below.

#### Curbside Collection

For curbside collection to work properly, the SFPW DOC and EOC JIS must develop and share information with residents well before collection begins and preceding each collection date regarding:

- The types of debris to be collected and the number of passes to be made for each type.
- The schedule for placing each type of debris on the ROW for collection.
- The need to sort debris before placing it on the public ROW.
- The consequences of failure to sort debris before placing it on the public ROW.
- Where to place debris on the public ROW.

Sample public information messaging for use in curbside collection are included in Appendix H, below.

#### Drop-Off Collection

For drop-off collection to work properly, the SFPW DOC and EOC JIS must develop and share information with residents well before drop-off begins regarding:

- Locations of drop-off bins or collection centers.
- The types of debris that can be dropped off.
- The schedule for placing each type of debris at the drop-off location.
- Hours of operation of public drop-off areas.
- If applicable, the need to sort debris before placing it in drop-off bins.
- Any health or safety issues to be aware of, and how to address those issues.

Sample public messaging regarding drop-off collection is included in Appendix H, below.

#### Household Hazardous Waste Information

For household hazardous waste (HHW) collection to work properly, the SFPW DOC and EOC JIS must develop and share information with residents well before collection begins regarding:

- The types of HHW residents may have in their homes.
- The type of HHW collection method or methods to be used and the schedules for each.
- The need to avoid mixing HHW with other debris or with their normal CCSF solid waste collection.
- How to segregate and prepare HHW for collection or disposal.

Sample public information messaging on HHW collection is included in Appendix H, below.



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## **SECTION 15: PLAN MAINTENANCE**

### **15.1 Section Overview**

This section describes the process for maintaining the Disaster Debris Management Plan. It identifies how the plan will be updated, and discusses the importance of training and exercises to enhance understanding and execution of the plan. The section also discusses after-action review of the plan following an exercise or an actual debris-producing disaster.

### **15.2 Annex Updates**

The San Francisco Department of Emergency Management (DEM) is responsible for maintenance, revision, and distribution of this plan. Every two years, in coordination with city partners with critical roles and responsibilities during a debris-producing disaster, DEM will assess the need for revisions to the Disaster Debris Management Plan based on the following considerations:

- Changes to city, state, or federal ordinances, laws, regulations, requirements, or organization.
- Lessons learned through exercises or actual incidents.
- Development of new tools, procedures, or research that require changes in the plan.

DEM will maintain a record of amendments and revisions as well as executable versions of all plan documents. DEM is also responsible for distributing the plan to all applicable agencies.

### **15.3 Plan Implementation**

#### **15.3.1 Training and Exercises**

Training and exercises provide an important means of implementing the plan. Training on and exercising the plan allow emergency responders and decision-makers to become familiar with and to test and evaluate the procedures, facilities, and systems they are expected to use in a debris-producing incident. The city will evaluate the effectiveness of the Disaster Debris Management Plan using training and exercises to determine whether the plan will promote successful debris management following a disaster. Training and exercises will be conducted every two years at a minimum to maintain readiness, and will include relevant city departments and, if possible, representatives from partners such as the California Governor's Office of Emergency Services, the California Environmental Protection Agency, California Department of Resources Recycling and Recovery, the California Department of Transportation, the US Army Corps of Engineers, and the US Coast Guard.

#### **15.3.2 After-Action Review and Corrective Action**

After every exercise or actual debris-producing incident, DEM is responsible for working with its partners to complete an After Action Report (AAR)/Improvement Plan (IP). The AAR/IP has two components: The AAR captures observations and recommendations based on incident objectives associated with relevant core capabilities and tasks. The IP also identifies specific corrective actions, assigns them to responsible parties, and establishes target dates for their completion.



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## SECTION 16: AUTHORITIES AND REFERENCES

### 16.1 Authorities

Below is a partial list of authorities; see also the environmental and historic preservation authorities listed in Section 12, above.

#### 16.1.1 Federal

Americans with Disabilities Act of 1990, as amended, 42 U.S. Code §§ 12101 et seq.  
Federal Public Assistance Regulations, 44 Code of Federal Regulations §§ 206.200 et seq.  
Homeland Security Act of 2002, Pub. L. 107–296, as amended, 6 U.S. Code §§ 101 et seq.  
Presidential Policy Directive (PPD)-8: National Preparedness, <http://www.dhs.gov/presidential-policy-directive-8-national-preparedness>.  
National Incident Management System (NIMS), 3rd ed., October 2017, <https://www.fema.gov/media-library/assets/documents/148019>.  
National Response Framework, 3rd ed., June 2016, <https://www.fema.gov/media-library/assets/documents/117791>.  
FEMA, *Public Assistance Program and Policy Guide*, FP-104-009-2, April 2018, <https://www.fema.gov/media-library/assets/documents/111781>.  
Robert T. Stafford Disaster Relief and Emergency Assistance Act, Pub. L. 93-288, as amended, 42 U.S. Code §§ 5121 et seq.  
33 U.S. Code §§ 1251 et seq., 1321 (water pollution prevention and control).  
42 U.S. Code §§ 5170 et seq., 6901 et seq., 9601 et seq., 11001 et seq.  
2 C.F.R. Part 200 (federal procurement regulations).  
40 C.F.R. §§ 61.140 et seq., 82.154 et seq., 258.2 et seq., 268.45, 300.5, 300.20.

#### 16.1.2 State

California Disaster Assistance Act, California Government Code §§ 8680 et seq.  
California Disaster Assistance Act Regulations, 19 California Code of Regulations (Cal. Code Regs.) §§ 2900 et seq.  
California Disaster and Civil Defense Master Mutual Aid Agreement, <http://www.caloes.ca.gov/PlanningPreparednessSite/Documents/CAMasterMutAidAgreement.pdf>.  
California Emergency Services Act, California Government Code §§ 8550 et seq.  
Standardized Emergency Management System Regulations, 19 California Code of Regulations (Cal. Code Regs.) §§ 2400 et seq.  
Cal. Harbors & Navigation Code § 523(a)(1), (3), (5), (6)  
Cal. Health & Safety Code § 25218.1(e).  
Cal. Pub. Resources Code §§ 25100 et seq., 40050 et seq., 41780.01, 42167, 43202 et seq.  
Cal. Veh. Code §§ 360, 22651, 22654.  
14 Cal. Code Regs. §§ 17210–17210.9, 18094.0, 18794.2, 18808.7 et seq.

#### 16.1.3 Local

San Francisco Board of Supervisors (1999). Resolution No. 385-99. Retrieved from [https://sfenvironment.org/sites/default/files/policy/sfe\\_zw\\_disaster\\_debris\\_recycling\\_ord.pdf](https://sfenvironment.org/sites/default/files/policy/sfe_zw_disaster_debris_recycling_ord.pdf) (directing the city to maximize reuse and recycling of disaster debris).  
San Francisco Board of Supervisors (2006). Ordinance No. 27-06. Retrieved from



[https://sfenvironment.org/sites/default/files/fliers/files/cd\\_ordinance.pdf](https://sfenvironment.org/sites/default/files/fliers/files/cd_ordinance.pdf).

San Francisco Administrative Code, Chapter 6.

San Francisco Administrative Code, Chapter 7.

San Francisco Administrative Code, Chapter 21.

San Francisco Administrative Code, Chapter 91.

San Francisco City Charter, Article II, § 2.107; Article III, § 3.100.

San Francisco Environment Code §§ 1400 et seq., 1900 et seq.

San Francisco Health Code §§ 315, 1131.

San Francisco Planning Code §§ 1007 et seq.

San Francisco Public Works Code §§ 2.4.4, 2702.

San Francisco Transportation Code §§ 8.1, 501.

## **16.2 Applicable Plans**

### **16.2.1 CCSF Plans**

City and County of San Francisco Emergency Response Plan (ERP) (2010).

Emergency Support Function (ESF) Annexes to the ERP:

ESF #1: Transportation Annex (2014).

ESF #3: Public Works and Engineering Annex (2013).

Appendix to ESF 3: Post Disaster Safety Assessment Guide (2016).

ESF #4: Firefighting Annex (2009).

ESF #5: Emergency Management Annex (2015).

ESF #6: Mass Care, Housing and Human Services Annex (2014).

ESF #7: Logistics Annex (2016).

ESF #9: Urban Search and Rescue Annex (2010).

ESF #10: Oil and Hazardous Materials Response Annex (2009-2010).

ESF #11: Animal Response Annex (2013).

ESF #12: Water and Utilities Annex (2009).

ESF #15: Joint Information System Annex (2015).

San Francisco Office of the Chief Medical Examiner, Mass Fatality Incident Response and Management Plan (2014).

### **16.2.2 Regional Plans**

Bay Area Urban Area Security Initiative, San Francisco Bay Area Regional Emergency Coordination Plan (RECP) (2008).

RECP Fire and Rescue Subsidiary Plan (2008).

RECP Hazardous Materials Subsidiary Plan (2008).

RECP Law Enforcement and Coroner/Medical Examiner Subsidiary Plan (2008).

RECP Logistics Subsidiary Plan (2008).

RECP Regional Catastrophic Earthquake Logistics Response Plan (2014).

RECP Recovery Subsidiary Plan (2008).

RECP Transportation Subsidiary Plan (2008).



### 16.2.3 State Plans and Guidance

California Environmental Protection Agency (CalEPA), *Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions Pursuant to a State or Local Emergency Proclamation* (2011).

California Governor's Office of Emergency Services (Cal OES), *State of California Emergency Plan* (2017).

Emergency Function 3, Construction and Engineering Annex, Executive Summary (2013).

California Department of Resources Recycling and Recovery (CalRecycle), *Integrated Waste Management Disaster Plan: Guidance for local government on disaster debris management* (1997).

California Department of Fish and Wildlife Office of Spill Prevention and Response, *California State Oil Spill Contingency Plan* (2017).

### 16.2.4 Federal Plans

FEMA, *California Cascadia Subduction Zone Earthquake and Tsunami Response Plan* (2013).

FEMA, *San Francisco Bay Area Earthquake Readiness Response Plan* (2008).

National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations Part 300, <https://www.ecfr.gov/cgi-bin/text-idx?SID=f7cd5cf77fe84292d78d1ac1edf92a95&mc=true&node=pt40.28.300&rgn=div5>.

Sector San Francisco Area Contingency Plan (ACP) (2014), <https://www.wildlife.ca.gov/OSPR/Preparedness/SF-Spill-Contingency-Plan>.

### 16.3 References

California Department of Toxic Substances Control (DTSC). "Household Hazardous Waste." Accessed July 23, 2018. <http://www.dtsc.ca.gov/HazardousWaste/UniversalWaste/HHW.cfm>.

California Department of Transportation (Caltrans). "Construction Contract Standards." Accessed July 23, 2018. <http://www.dot.ca.gov/des/oe/construction-contract-standards.html>.

Caltrans. *San Francisco Bay Area Freight Mobility Study*, by Cambridge Systematics, Inc. Sacramento, CA, 2014. [http://www.dot.ca.gov/hq/tpp/offices/ogm/regional\\_level/FR3\\_SFBAFMS\\_Final\\_Report.pdf](http://www.dot.ca.gov/hq/tpp/offices/ogm/regional_level/FR3_SFBAFMS_Final_Report.pdf).

California Environmental Protection Agency (CalEPA). "Fact Sheet: Protecting Public Health from Home and Building Fire Ash." September 2015. <https://oehha.ca.gov/media/downloads/public-information/report/fireash.pdf>.

CalEPA. *Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions Pursuant to a State or Local Emergency Proclamation*. Sacramento, CA, 2011. <https://calepa.ca.gov/wp-content/uploads/sites/62/2016/10/Disaster-Documents-2011yr-GuideRemoval.pdf>.

Cal OES. "Debris Estimating." February 2015. <http://www.caloes.ca.gov/RecoverySite/Documents/Debris%20Estimating%20Flyer%20February%202015.pdf>.

Cal OES. *Disaster Debris Management Manual*. Sacramento, CA, 2014. <http://www.caloes.ca.gov/RecoverySite/Documents/Debris%20Management%20Manual%20-%20July%202014%20Rev.pdf>.

California Natural Resources Agency, Department of Water Resources, Division of Safety of Dams. *Dams Within Jurisdiction of the State of California*. Sacramento, CA, 2017. [http://www.water.ca.gov/damsafety/docs/Dams%20by%20County\\_Sept%202017.pdf](http://www.water.ca.gov/damsafety/docs/Dams%20by%20County_Sept%202017.pdf).



- CalRecycle. Permit Toolbox. Guidance: Emergency Waiver of Standards. Accessed July 23, 2018. <http://www.calrecycle.ca.gov/SWFacilities/Permitting/Guidance/Stdswaiver.htm>.
- Center for Disease Control and Prevention (CDC). Natural Disasters and Severe Weather, "Interim Health Recommendations for Workers Who Handle Human Remains After a Disaster." Accessed July 23, 2018. <https://www.cdc.gov/disasters/handleremains.html>.
- CDC. Disability and Health, "Key Findings: Prevalence of Disability and Disability Type among Adults, United States – 2013." Map: State-level percentage of any disability among adults 18 years of age or older (2013 BRFSS). Accessed July 23, 2018. <https://www.cdc.gov/ncbddd/disabilityandhealth/features/key-findings-community-prevalence.html>.
- City and County of San Francisco Office of the Controller. *Financial Records Retention and Destruction Policy*. San Francisco, CA, 2017.
- Cox, Wendell. "America's Densest Cities," *Huffington Post*, September 26, 2014. [https://www.huffingtonpost.com/wendell-cox/americas-densest-cities\\_b\\_5888424.html](https://www.huffingtonpost.com/wendell-cox/americas-densest-cities_b_5888424.html).
- Cox, Wendell. newgeography, "San Francisco's Abundant Developable Land Supply." October 20, 2017. <http://www.newgeography.com/content/005773-san-franciscos-abundant-developable-land-supply>.
- Department of Homeland Security. Office of Inspector General. *FEMA's Oversight and Management of Debris Removal Operations* (OIG-11-40). Washington, DC, 2011. [https://www.oig.dhs.gov/assets/Mgmt/OIG\\_11-40\\_Feb11.pdf](https://www.oig.dhs.gov/assets/Mgmt/OIG_11-40_Feb11.pdf)
- Federal Emergency Management Agency (FEMA). *Debris Estimating Field Guide*. FEMA-329. Washington, DC, 2010. [https://www.fema.gov/pdf/government/grant/pa/fema\\_329\\_debris\\_estimating.pdf](https://www.fema.gov/pdf/government/grant/pa/fema_329_debris_estimating.pdf).
- FEMA. *Debris Removal from Private Property Fact Sheet*. Washington, DC, 2016. <http://www.fema.gov/media-library-data/1465341702161-843b1b2c99bb28e058f6350f36919151/FactSheetDebrisRemovalPrivateProperty2016.pdf>.
- FEMA. *Procurement Guidance for Recipients and Subrecipients Under 2 C.F.R. Part 200 (Uniform Rules)*. Washington, DC, 2016. <https://www.fema.gov/media-library-data/1466525379386-2a9382db5b667def50cf9f2f7b482ee8/FEMAProcurementUnderGrantsFieldManualSupplementFinal.pdf>.
- FEMA. "Public Assistance Alternative Procedures Pilot Program for Debris Removal, Frequently Asked Questions." <https://www.fema.gov/alternative-procedures>.
- FEMA. "Public Assistance: Frequently Asked Questions." Accessed July 23, 2018. <https://www.fema.gov/public-assistance-frequently-asked-questions#T02>.
- FEMA. *Unified Federal Environmental and Historic Preservation Review Guide for Federal Disaster Recovery Assistance Applicants*. Washington, DC. Accessed July 23, 2018. [https://www.fema.gov/media-library-data/1440713845421-9bdb5c0c8fe19ab86d97059ccb26e3b4/UFR\\_Applicant\\_Guide\\_Final\\_508.pdf](https://www.fema.gov/media-library-data/1440713845421-9bdb5c0c8fe19ab86d97059ccb26e3b4/UFR_Applicant_Guide_Final_508.pdf).
- Field, E.H. & 2014 Working Group on California Earthquake Probabilities. *UCERF3: A New Earthquake Forecast for California's Complex Fault System*. U.S. Geological Survey 2015–3009 Denver, CO, 2014. <https://dx.doi.org/10.3133/fs20153009>.
- Joint Chiefs of Staff. *Countering Weapons of Mass Destruction*. Joint Publication 3-40. Washington, DC, 2014. [http://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3\\_40.pdf](http://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_40.pdf).
- Kim, J., Deshmukh, A & Hastak, M. *Selecting a Temporary Debris Management Site for Effective Debris Removal*. 10th International Conference of the International Institute for Infrastructure



- Resilience and Reconstruction 214–218. Purdue University, West Lafayette, IN, 2014. <https://docs.lib.purdue.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1019&context=i3r2>.
- U.S. Library of Congress. Congressional Research Service. *Managing Disaster Debris: Overview of Regulatory Requirements, Agency Roles, and Selected Challenges*, by Linda Luther. RL34576. 2011. <https://fas.org/sgp/crs/misc/RL34576.pdf>.
- Reed, S. Albert. *The Conflagration in San Francisco: Special Report to the National Board of Underwriters Committee of Twenty*. April 1906. <http://www.oac.cdlib.org/ark:/13030/hb8t1nb6f4/?order=3>.
- San Francisco Department of Public Health, Emergency Medical Services Agency. *City and County of San Francisco Mass Casualty Incident Plan*. San Francisco, CA, 2014. [https://www.sfdph.org/dph/files/EMS/Policy-Protocol-Manuals/EMS-AGENCY-POLICY-MANUAL\\_eff\\_%20Jan%2030-2017v2.pdf](https://www.sfdph.org/dph/files/EMS/Policy-Protocol-Manuals/EMS-AGENCY-POLICY-MANUAL_eff_%20Jan%2030-2017v2.pdf).
- San Francisco Environment (SFE). "Household Hazardous Waste Disposal." Accessed July 23, 2018. <https://sfenvironment.org/article/household-hazardous-waste-disposal>.
- SFE. "Zero Waste - Frequently Asked Questions (FAQs)." Accessed July 23, 2018. <https://sfenvironment.org/zero-waste-faqs>.
- Virtual Museum of the City of San Francisco. San Francisco Fire Department, "Report on the Operations of the San Francisco Fire Department Following the Earthquake and Fire of October 17, 1989." San Francisco, CA, 1990. <http://www.sfmuseum.org/quake/index.html>.
- San Francisco Planning Department. *2016 San Francisco Commerce & Industry Inventory*. Accessed July 23, 2018. [http://default.sfplanning.org/publications\\_reports/Commerce\\_Industry\\_Inventory\\_Report\\_2016.pdf](http://default.sfplanning.org/publications_reports/Commerce_Industry_Inventory_Report_2016.pdf).
- San Francisco Planning Department. "Historic Preservation FAQs." Accessed July 23, 2018. <http://sfplanning.org/historic-preservation-faqs>.
- Scathorn, Charles R. *The ShakeOut Scenario Supplemental Study: Fire Following Earthquake*. U.S. Geological Survey Circular 1324. Washington, DC, 2008. [https://books.google.com/books/about/The\\_ShakeOut\\_Scenario\\_Supplemental\\_Study.html?id=mDGrFAw5zqYC](https://books.google.com/books/about/The_ShakeOut_Scenario_Supplemental_Study.html?id=mDGrFAw5zqYC).
- Tellus Institute. *More Jobs, Less Pollution: Growing the Recycling Community in the U.S.* Boston, MA, 2011. <http://www.tellus.org/tellus/publication/more-jobs-less-pollution-growing-the-recycling-economy-in-the-u-s>.
- U.S. Census Bureau. "Quick Facts: San Francisco County, California." <https://www.census.gov/quickfacts/table/PST045216/06075>.
- U.S. Department of Commerce, National Oceanic and Atmospheric Administration, & National Weather Service. "Tsunami Frequently Asked Questions." Accessed July 23, 2018. <http://wcawc.arh.noaa.gov/?page=tsunamiFAQ>.
- U.S. Department of Labor, Occupational Health and Safety Administration (OSHA). "Waste/Debris Removal and Reduction, Debris Collection, Recommendations Specific to Hazards Associated with Debris Collection." Accessed July 23, 2018. <https://www.osha.gov/SLTC/etools/hurricane/debris-collection.html#index>.
- U.S. Department of Transportation, Federal Highway Administration. Special Federal-Aid Funding, Emergency Relief Program. Accessed July 23, 2018. <http://www.fhwa.dot.gov/programadmin/erelief.cfm>.
- U.S. Environmental Protection Agency (US EPA). *Planning for Natural Disaster Debris* (EPA-530-K-08-



001). Washington, DC, 2008. <https://www.epa.gov/homeland-security-waste/guidance-about-planning-natural-disaster-debris>.

Wilson, Rick I. & Miller, Kevin M. *Tsunami Emergency Response Playbooks and FASTER Tsunami Height Calculation: Background Information and Guidance for Use*. California Geological Survey Special Report 236. Sacramento, CA, 2014. [ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sr/sr\\_236/CGS\\_Special\\_Report\\_236.pdf](ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sr/sr_236/CGS_Special_Report_236.pdf).

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## ENDNOTES

### Section 2: Plan Overview

<sup>1</sup> E.H. Field and 2014 Working Group on California Earthquake Probabilities, *UCERF3: A New Earthquake Forecast for California's Complex Fault System, Fact Sheet 2015-3009* (U.S. Geological Survey, Reston, VA, 2015), 4, accessed May 10, 2018, <https://pubs.usgs.gov/fs/2015/3009/>.

<sup>2</sup> See San Francisco Department of Emergency Management, *Hazus-MH Summary Report: Impacts to San Francisco from M7.9 Earthquake on Northern San Andrea Fault* (San Francisco, CA, 2017), 12 (estimating 6 million tons of construction and demolition debris).

<sup>3</sup> Linda Luther, *Managing Disaster Debris: Overview of Regulatory Requirements, Agency Roles, and Selected Challenges* (Congressional Research Service, Washington, DC, 2011), Summary, accessed May 10, 2018, <https://www.fas.org/sfp/crs/misc/RL34576.pdf>.

<sup>4</sup> California Governor's Office of Emergency Services (Cal OES), *Disaster Debris Management* (Mather, CA, July 2014), 7, accessed May 10, 2018, <http://www.caloes.ca.gov/RecoverySite/Documents/Debris%20Management%20Manual%20-%20July%202014%20Rev.pdf>.

<sup>5</sup> Cal OES, *Disaster Debris Management*, 7.

<sup>6</sup> Federal Emergency Management Agency (FEMA), *Public Assistance Program and Policy Guide (PAPPG)*, FP 104-009-2 (Washington, DC, 2018), 45, accessed July 23, 2018, [https://www.fema.gov/media-library-data/1515614675577-be7fd5e0cac814441c313882924c5c0a/PAPPG\\_V3\\_508\\_FINAL.pdf](https://www.fema.gov/media-library-data/1515614675577-be7fd5e0cac814441c313882924c5c0a/PAPPG_V3_508_FINAL.pdf).

<sup>7</sup> Department of Homeland Security, *FEMA's Oversight and Management of Debris Removal Operations*. OIG-11-40 (Office of Inspector General, Washington, DC, 2011), 1, accessed May 10, 2018, [https://www.oig.dhs.gov/assets/Mgmt/OIG\\_11-40\\_Feb11.pdf](https://www.oig.dhs.gov/assets/Mgmt/OIG_11-40_Feb11.pdf).

<sup>8</sup> See FEMA, *PAPPG*, Appendix D, Debris Management Plan Job Aid, 175.

<sup>9</sup> See S.F. Admin. Code § 7.5.

### Section 3: Incidents and Assumptions

<sup>1</sup> CalRecycle, *Integrated Waste Management Disaster Plan*, 2-10.

<sup>2</sup> See Tom Graham, "City of Hills," *San Francisco Chronicle*, November 7, 2004, accessed July 23, 2018, <http://www.sfgate.com/entertainment/article/CITY-OF-HILLS-With-50-plus-hills-it-s-no-2676064.php>.

<sup>3</sup> Wendell Cox, "America's Densest Cities," *Huffington Post*, November 26, 2014, accessed July 23, 2018, [https://www.huffingtonpost.com/wendell-cox/americas-densest-cities\\_b\\_5888424.html](https://www.huffingtonpost.com/wendell-cox/americas-densest-cities_b_5888424.html).

<sup>4</sup> U.S. Census Bureau, Quick Facts, Population, San Francisco, California, accessed June 21, 2018, <https://www.census.gov/quickfacts/fact/table/sanfranciscocitycalifornia,sanfranciscocountycalifornia/PST045217#viewtop>.

<sup>5</sup> Wendell Cox, Newgeography, "San Francisco's Abundant Developable Land Supply," July 23, 2018, <http://www.newgeography.com/content/005773-san-franciscos-abundant-developable-land-supply>.

<sup>6</sup> San Francisco Planning Department, *2016 San Francisco Commerce & Industry Inventory* (San Francisco, CA, 2017), 2, 25, accessed July 23, 2018, <http://commissions.sfplanning.org/cpcpackets/2016CII.pdf>.

<sup>7</sup> See U.S. Census Bureau, Quick Facts, Housing, San Francisco, California, accessed June 21, 2018, <https://www.census.gov/quickfacts/fact/table/sanfranciscocitycalifornia,sanfranciscocountycalifornia/PST045217#viewtop>.

<sup>8</sup> See California Department of Transportation, *San Francisco Bay Area Freight Mobility Study* (Sacramento, CA, 2014), ES-13, [http://www.dot.ca.gov/hq/tpp/offices/ogm/regional\\_level/FR3\\_SFBAFMS\\_Final\\_Report.pdf](http://www.dot.ca.gov/hq/tpp/offices/ogm/regional_level/FR3_SFBAFMS_Final_Report.pdf).

<sup>9</sup> See San Francisco Bay Railroad, accessed November 30, 2017, <http://www.sfbayrail.com/>.

<sup>10</sup> See S.F. Transportation Code § 501(a), (b).

<sup>11</sup> See S.F. Transportation Code § 501(a), (c).

<sup>12</sup> INRIX Global Traffic Scorecard, Interactive Ranking & City Dashboards, accessed November 24, 2017, <http://inrix.com/scorecard/#>.

<sup>13</sup> See California Department of Toxic Substances Control (DTSC), EnviroStor Site Search, accessed May 15, 2018, <http://www.envirostor.dtsc.ca.gov/>.





<sup>14</sup> U.S. Department of Health & Human Services, TOXMAP FAQ, accessed November 24, 2017, <https://toxmap.nlm.nih.gov/toxmap/faq/2009/08/what-are-the-superfund-site-npl-statuses.html>.

<sup>15</sup> DTSC, EnviroStor Site Search, accessed May 15, 2018, <http://www.envirostor.dtsc.ca.gov/>.

<sup>16</sup> City and County of San Francisco, DataSF, SF Housing Data Hub, accessed October 24, 2017, <https://housing.datasf.org/data-browser/housing-stock-and-occupancy/housing-age/>.

<sup>17</sup> CalEPA, "Fire Response and Recovery."

<sup>18</sup> CalEPA, "Fact Sheet: Protecting Public Health from Home and Building Fire Ash" (2015), accessed October 18, 2017, <https://calepa.ca.gov/wp-content/uploads/sites/34/2016/10/Disaster-Documents-FireAsh.pdf>; CalEPA, *Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions Pursuant to a State or Local Emergency Proclamation* (Sacramento, 2011), 3, accessed October 18, 2017, <https://calepa.ca.gov/wp-content/uploads/sites/34/2016/10/Disaster-Documents-2011yr-GuideRemoval.pdf>.

#### Section 4: Disaster Debris Coordination

<sup>1</sup> See Cal. Govt. Code § 8607(a).

<sup>2</sup> San Francisco Public Works (SFPW), "Emergency Department Operations Center, Organizational Chart & Team Descriptions" (San Francisco, CA, 2017), 7.

<sup>3</sup> See SFPW, "Emergency Department Operations Center, Organizational Chart & Team Descriptions," 7.

<sup>4</sup> See SFPW, "Emergency Department Operations Center, Organizational Chart & Team Descriptions," 7; SFPW and DOE, "SFPW and DOE Emergency Operations, Post Disaster Debris Management Group Team Guide" (San Francisco, CA, 2012), 4.

<sup>5</sup> See FEMA, *PAPPG*, 48.

<sup>6</sup> See Cal. Pub. Resources Code § 43209.

<sup>7</sup> See CalRecycle, "Local Enforcement Agency (LEA) Central: Contacts, Waste Permitting, Compliance and Mitigation Division Staff Assignments by County, Key Contacts," accessed June 21, 2018, [www.calrecycle.ca.gov/LEA/CountyAssign.asp](http://www.calrecycle.ca.gov/LEA/CountyAssign.asp).

<sup>8</sup> S.F. Health Code § 315; Cal. Pub. Resources Code §§ 43202, 43203(a).

<sup>9</sup> Cal. Pub. Resources Code § 43209.

<sup>10</sup> 14 Cal. Code Regs. § 17210.2(b).

<sup>11</sup> 14 Cal. Code Regs. § 17210.2(a).

<sup>12</sup> See 33 U.S. Code § 1321(c)(1), (2); FEMA, *PAPPG*, 52.

<sup>13</sup> FEMA, *National Disaster Recovery Framework* (2nd ed.) (Washington, DC, 2016), 5, [https://www.fema.gov/media-library-data/1466014998123-4bec8550930f774269e0c5968b120ba2/National\\_Disaster\\_Recovery\\_Framework2nd.pdf](https://www.fema.gov/media-library-data/1466014998123-4bec8550930f774269e0c5968b120ba2/National_Disaster_Recovery_Framework2nd.pdf).

<sup>14</sup> See California Department of Resources Recycling and Recovery (CalRecycle), *Integrated Waste Management Disaster Plan* (Integrated Waste Management Board, Sacramento, CA, 1997), Section 8, <http://www.calrecycle.ca.gov/Publications/Documents/LocalAsst/31097006.pdf>; FEMA Emergency Management Institute (EMI), *Debris Management Planning for State, Tribal, Territorial and Local Officials*, E0202 Student Manual (October 2016), Unit 4.

<sup>15</sup> See FEMA, *Debris Estimating Field Guide*, FEMA-329 (Washington, DC, 2010), [https://www.fema.gov/pdf/government/grant/pa/fema\\_329\\_debris\\_estimating.pdf](https://www.fema.gov/pdf/government/grant/pa/fema_329_debris_estimating.pdf).

<sup>16</sup> FEMA, *PAPPG*, 39; see 42 U.S. Code § 5165b; 44 C.F.R. § 207.2; 2 C.F.R. §§ 200.56, 200.412.

<sup>17</sup> FEMA, *PAPPG*, 39.

<sup>18</sup> Cal OES, "Debris Estimating," 1, accessed May 15, 2018, <http://www.caloes.ca.gov/RecoverySite/Documents/Debris%20Estimating%20Flyer%20February%202015.pdf>.

<sup>19</sup> FEMA, *Debris Estimating Field Guide*, 1.

<sup>20</sup> See FEMA, *Debris Estimating Field Guide*, accessed July 12, 2018, [https://www.fema.gov/pdf/government/grant/pa/fema\\_329\\_debris\\_estimating.pdf](https://www.fema.gov/pdf/government/grant/pa/fema_329_debris_estimating.pdf).

<sup>21</sup> USGS, Earthquake Hazards Program, "ShakeMaps," accessed July 12, 2018, <https://earthquake.usgs.gov/data/shakemap/>.

<sup>22</sup> FEMA, *Debris Estimating Field Guide*, 2.



- <sup>23</sup> See FEMA, *PAPPG*, Appendix D: Debris Management Plan Job Aid, 179.
- <sup>24</sup> 44 C.F.R. § 206.221(b).
- <sup>25</sup> Cal OES, *Disaster Debris Management*, 104.
- <sup>26</sup> FEMA, *PAPPG*, 30.
- <sup>27</sup> FEMA, *PAPPG*, 30; see also FEMA, *Procurement Guidance for Recipients and Subrecipients Under 2 C.F.R. Part 200 (Uniform Rules)* (Washington, DC, 2016), <https://www.fema.gov/media-library-data/1466525379386-2a9382db5b667def50cf9f2f7b482ee8/FEMAProcurementUnderGrantsFieldManualSupplementFinal.pdf>.
- <sup>28</sup> See 2 C.F.R. § 200.110.
- <sup>29</sup> FEMA, *PAPPG*, 30–31.
- <sup>30</sup> 2 C.F.R. § 200.318(a).
- <sup>31</sup> See 2 C.F.R. § 200.318.
- <sup>32</sup> 2 C.F.R. § 200.319(a); FEMA, *Procurement Guidance for Recipients and Subrecipients*, V-1.
- <sup>33</sup> 2 C.F.R. § 200.321(a). For a list of affirmative steps that must be taken, see 2 C.F.R. § 200.321(b).
- <sup>34</sup> 2 C.F.R. § 200.319(a).
- <sup>35</sup> FEMA, *Procurement Guidance for Recipients and Subrecipients*, II-6.
- <sup>36</sup> Cal OES, *Disaster Debris Management*, 105.
- <sup>37</sup> See FEMA, “Procurement Disaster Assistance Team,” accessed June 22, 2018, <https://www.fema.gov/procurement-disaster-assistance-team>.
- <sup>38</sup> See 40 U.S. Code §§ 3141 et seq.
- <sup>39</sup> FEMA, *PAPPG*, 33.
- <sup>40</sup> 2 C.F.R. § 200.320.
- <sup>41</sup> See 2 C.F.R. § 200.320; 48 C.F.R. § 2.101(b).
- <sup>42</sup> 2 C.F.R. § 200.320(a).
- <sup>43</sup> 2 C.F.R. § 200.320(b); see 48 C.F.R. § 2.101(b).
- <sup>44</sup> 2 C.F.R. § 200.320(b).
- <sup>45</sup> 2 C.F.R. § 200.320(c).
- <sup>46</sup> 2 C.F.R. § 200.320(c)(1).
- <sup>47</sup> See 2 C.F.R. § 200.320(c)(2).
- <sup>48</sup> 2 C.F.R. § 200.320(d)(1)–(4).
- <sup>49</sup> 2 C.F.R. § 200.320(f).
- <sup>50</sup> See S.F. Admin. Code §§ 6.1 (definition of department head), 6.2, 6.60(a).
- <sup>51</sup> See S.F. Admin. Code § 6.60(b).
- <sup>52</sup> See S.F. Admin. Code § 6.60(d).
- <sup>53</sup> See S.F. Admin. Code § 6.60(e).
- <sup>54</sup> See S.F. Admin. Code § 6.2.
- <sup>55</sup> See S.F. Admin. Code § 21.15(a)–(c).
- <sup>56</sup> S.F. Admin. Code § 21.01.
- <sup>57</sup> S.F. Charter, Art. III, § 3.100(14).
- <sup>58</sup> See FEMA, *PAPPG*, 30; 2 C.F.R. §§ 200.317–200.326; FEMA, *Procurement Guidance for Recipients and Subrecipients Under 2 C.F.R. Part 200 (Uniform Rules)* (Washington, DC, June 21, 2016), <https://www.fema.gov/media-library-data/1466525379386-2a9382db5b667def50cf9f2f7b482ee8/FEMAProcurementUnderGrantsFieldManualSupplementFinal.pdf>.
- <sup>59</sup> FEMA, *Procurement Guidance for Recipients and Subrecipients*, II-6.
- <sup>60</sup> FEMA, *Procurement Guidance for Recipients and Subrecipients*, <https://www.fema.gov/media-library-data/1466525379386-2a9382db5b667def50cf9f2f7b482ee8/FEMAProcurementUnderGrantsFieldManualSupplementFinal.pdf>.
- <sup>61</sup> California Disaster and Civil Defense Master Mutual Aid Agreement, accessed May 3, 2017, <http://www.caloes.ca.gov/PlanningPreparednessSite/Documents/CAMasterMutAidAgreement.pdf>.



<sup>62</sup> S.F. Admin. Code § 7.2.

<sup>63</sup> Public Works Mutual Aid Agreement, "PWMAA Home," accessed August 21, 2018, <http://www.ladpw.org/dsg/pwmaa/>.

<sup>64</sup> Cal. Gov. Code § 8596(d).

<sup>65</sup> See 44 C.F.R. § 206.208(a); FEMA, *PAPPG*, 35.

<sup>66</sup> See 44 C.F.R. § 206.208(c)(2).

<sup>67</sup> 44 C.F.R. § 206.208(c)(1).

<sup>68</sup> FEMA, *PAPPG*, 35.

<sup>69</sup> 44 C.F.R. § 206.208(c)(2).

<sup>70</sup> FEMA, *Public Assistance Alternative Procedures Pilot Program Guide for Debris Removal*, 1–2; 42 U.S. Code § 5189f(e)(2).

<sup>71</sup> FEMA, *PAPPG*, 45.

<sup>72</sup> FEMA, *Public Assistance Alternative Procedures Pilot Program Guide*, 2, 4.

<sup>73</sup> Cal OES, Debris Management, accessed August 1, 2018, <http://www.caloes.ca.gov/cal-oes-divisions/recovery/disaster-mitigation-technical-support/technical-assistance/debris-management>.

<sup>74</sup> FEMA, *PAPPG*, 45–46. In general, an award becomes obligated once orders are placed for property and services, contracts and sub-awards are made, or similar transactions occur that require payment by CCSF using award funds during the same or a future period. See Grants.gov, Grant Terminology, accessed April 30, 2017, <http://www.grants.gov/web/grants/learn-grants/grant-terminology.html#O>.

<sup>75</sup> See FEMA, *PAPPG*, 46.

<sup>76</sup> See 42 U.S. Code § 12102(1).

<sup>77</sup> Cal. Govt. Code § 8593.3(b).

<sup>78</sup> U.S. Census Bureau, "Quick Facts: San Francisco County, California," accessed July 5, 2018, <https://www.census.gov/quickfacts/fact/table/sanfranciscocountycalifornia,US/PST120217>.

<sup>79</sup> Center for Disease Control and Prevention, Disability and Health, "State Profile Data for California," accessed July 5, 2018, <https://www.cdc.gov/ncbddd/disabilityandhealth/impacts/california.html>.

## Section 5: Emergency Debris Clearance and Initial Debris Assessment

<sup>1</sup> See 44 C.F.R. § 206.223(a)(3).

<sup>2</sup> 44 C.F.R. § 206.223(a)(3).

<sup>3</sup> FEMA, *PAPPG*, 20–21.

<sup>4</sup> See 23 U.S. Code § 125(d)(3).

<sup>5</sup> U.S. Department of Transportation, Federal Highway Administration, Special Federal-Aid Funding, Emergency Relief Program, accessed November 1, 2017, <http://www.fhwa.dot.gov/programadmin/erelief.cfm>.

<sup>6</sup> See Cal. Veh. Code §§ 360, 22654(e).

<sup>7</sup> See Cal. Veh. Code §§ 360, 22651(b).

<sup>8</sup> San Francisco Transportation Code § 8.1(a)(2); see Cal. Veh. Code §§ 22651(b), 22654(c).

<sup>9</sup> See Cal. Veh. Code §§ 360, 22654(c).

<sup>10</sup> Cal. Harbors & Navigation Code § 523(a)(1), (3), (5), (6)

<sup>11</sup> FEMA, *PAPPG*, 53.

<sup>12</sup> FEMA, *PAPPG*, 54.

<sup>13</sup> See 2 C.F.R. § 200.320(c), (d).

<sup>14</sup> See 2 C.F.R. § 200.319(a).

<sup>15</sup> See 2 C.F.R. § 200.320(f).

<sup>16</sup> 2 C.F.R. § 200.320(f)(2).

<sup>17</sup> See S.F. Admin. Code §§ 6.1 (definition of department head), 6.2, 6.60(a).

<sup>18</sup> See S.F. Admin. Code § 6.60(e).

<sup>19</sup> FEMA, *Procurement Guidance for Recipients and Subrecipients*, II-6.

<sup>20</sup> FEMA, Public Assistance: Frequently Asked Questions, last modified March 7, 2017,



<https://www.fema.gov/public-assistance-frequently-asked-questions#T02>.

<sup>21</sup> 2 C.F.R. § 200.318(j)(1).

<sup>22</sup> 2 C.F.R. § 200.318(j)(2).

<sup>23</sup> FEMA, *PAPPG*, 32.

<sup>24</sup> 2 C.F.R. § 200.318(j)(2).

<sup>25</sup> FEMA, Public Assistance: Frequently Asked Questions, accessed May 11, 2018, <https://www.fema.gov/public-assistance-frequently-asked-questions#T02>.

<sup>26</sup> FEMA, Public Assistance: Frequently Asked Questions.

## Section 6: Debris Collection and Removal

<sup>1</sup> See S.F. Public Works Code §§ 2.4.4, 2702.

<sup>2</sup> FEMA, *PAPPG*, 54–56; Cal OES, “Debris Management Assistance” flyer, February 2015.  
<http://www.caloes.ca.gov/RecoverySite/Documents/Debris%20At-a-Glance%20Feb%202015.pdf>.

<sup>3</sup> 19 Cal. Code Regs. § 2925(a)(1).

<sup>4</sup> 19 Cal. Code Regs. § 2925(a)(1).

<sup>5</sup> 19 Cal. Code Regs. § 2925(c).

<sup>6</sup> FEMA, *PAPPG*, 45.

<sup>7</sup> FEMA, *PAPPG*, 45–46.

<sup>8</sup> FEMA, *PAPPG*, 55.

<sup>9</sup> See, e.g., San Francisco Board of Supervisors Resolution No. 385-99 (San Francisco, 1999), [https://sfenvironment.org/sites/default/files/policy/sfe\\_zw\\_disaster\\_debris\\_recycling\\_ord.pdf](https://sfenvironment.org/sites/default/files/policy/sfe_zw_disaster_debris_recycling_ord.pdf) (directing the city to maximize reuse and recycling of disaster debris).

<sup>10</sup> See CalRecycle, *Integrated Waste Management Disaster Plan*, Section 8; FEMA, EMI, *Debris Management Planning*, Unit 4.

<sup>11</sup> See CalRecycle, *Integrated Waste Management Disaster Plan*, 3-12.

<sup>12</sup> See San Francisco Board of Supervisors Ordinance No. 27-06 (San Francisco, CA 2006), [https://sfenvironment.org/sites/default/files/fliers/files/cd\\_ordinance.pdf](https://sfenvironment.org/sites/default/files/fliers/files/cd_ordinance.pdf); S.F. Environment Code Chapter 14, Construction and Demolition Debris Recovery Ordinance.

<sup>13</sup> FEMA, *PAPPG*, 44.

<sup>14</sup> FEMA, *PAPPG*, 44.

<sup>15</sup> Cal. Health & Safety Code 25218.1(e); see FEMA, *PAPPG*, Appendix D, Debris Management Plan Job Aid, 176.

<sup>16</sup> See Department of Toxic Substances Control (DTSC), “Household Hazardous Waste,” accessed December 1, 2017, <http://www.dtsc.ca.gov/HazardousWaste/UniversalWaste/HHW.cfm>.

<sup>17</sup> See SF Environment, Household Hazardous Waste Disposal, accessed March 7, 2017, <https://sfenvironment.org/article/household-hazardous-waste-disposal>.

<sup>18</sup> US Environmental Protection Agency (US EPA), *Planning for Natural Disaster Debris*, EPA-530-K-08-001 (Washington, DC, 2008), 20, <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P1004PRS.txt>.

<sup>21</sup> California Environmental Protection Agency (CalEPA), *Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions Pursuant to a State or Local Emergency Proclamation* (Sacramento, CA, 2011), 5, <https://www.calepa.ca.gov/files/2016/10/Disaster-Documents-2011yr-GuideRemoval.pdf>.

<sup>22</sup> See 42 U.S. Code § 7671g(b), (c); 40 C.F.R. §§ 82.154 et seq.

<sup>23</sup> See Cal. Health & Safety Code § 25211.1.

<sup>24</sup> See Cal. Public Resources Code § 42167.

<sup>25</sup> See Cal. Health & Safety Code § 25100 et seq.

<sup>26</sup> FEMA, *PAPPG*, Appendix D, 176.

<sup>28</sup> See Cal. Govt. Code §§ 8680 et seq.

<sup>29</sup> 19 Cal. Code Regs. § 2925(a)(1).

<sup>30</sup> 19 Cal. Code Regs. § 2925(c).

<sup>31</sup> See 19 Cal. Code Regs. § 2925(a)(2) (referring to Cal OES Secretary; this position was eliminated in 2013, though duties are performed by Cal OES Director).



<sup>32</sup> FEMA, *PAPPG*, 54.

<sup>33</sup> 42 U.S. Code §§ 5170b, 5173.

<sup>34</sup> FEMA, *Debris Removal from Private Property Fact Sheet* (Washington, DC, May 2016), 1, <http://www.fema.gov/media-library-data/1465341702161-843b1b2c99bb28e058f6350f36919151/FactSheetDebrisRemovalPrivateProperty2016.pdf>.

<sup>35</sup> 44 C.F.R. § 206.224(a).

<sup>36</sup> FEMA, *PAPPG*, 55; FEMA, *Debris Removal from Private Property Fact Sheet*, 1.

<sup>37</sup> FEMA, *PAPPG*, 54.

<sup>38</sup> FEMA, *PAPPG*, 54–56.

<sup>39</sup> FEMA, *PAPPG*, 54; FEMA, *Debris Removal from Private Property Fact Sheet*, 1.

<sup>40</sup> FEMA, *PAPPG*, 54.

<sup>41</sup> FEMA, *PAPPG*, 55.

<sup>42</sup> 42 U.S. Code § 5173(a); 44 C.F.R. § 206.224(b); FEMA, *PAPPG*, 54.

<sup>43</sup> 44 C.F.R. § 206.224(a)(1)–(3).

<sup>44</sup> FEMA, *PAPPG*, 44, n. 163.

<sup>45</sup> FEMA, *PAPPG*, 54.

<sup>46</sup> FEMA, *PAPPG*, 55.

<sup>47</sup> FEMA, *Debris Removal from Private Property Fact Sheet*, 2; FEMA, *PAPPG*, 55.

<sup>48</sup> FEMA, *PAPPG*, 55.

<sup>49</sup> FEMA, *PAPPG*, 55.

<sup>50</sup> S.F. Health Code § 1131(d).

<sup>51</sup> See S.F. City Charter, Art. II, § 2.107.

<sup>52</sup> See S.F. Admin. Code § 7.6(a)(1); Cal. Gov. Code § 8630(a).

<sup>53</sup> See Cal. Gov. Code § 8630(a).

<sup>54</sup> FEMA, *PAPPG*, 55.

<sup>55</sup> See FEMA, *PAPPG*, 55.

<sup>56</sup> See FEMA, *Debris Removal from Private Property Fact Sheet*, 2.

<sup>57</sup> See 42 U.S. Code § 5155(a).

<sup>58</sup> FEMA, *PAPPG*, 55.

<sup>59</sup> FEMA, *PAPPG*, 44, 55.

<sup>60</sup> FEMA, *PAPPG*, 55; see FEMA, *PAPPG*, 59.

<sup>61</sup> FEMA, *PAPPG*, 74.

<sup>62</sup> FEMA, *PAPPG*, 75.

<sup>63</sup> 44 C.F.R. § 206.224(a)(4).

<sup>64</sup> FEMA, *PAPPG*, 58 n. 180.

<sup>65</sup> FEMA, *PAPPG*, 52.

<sup>66</sup> FEMA, *PAPPG*, 53.

<sup>67</sup> FEMA, *PAPPG*, 53.

<sup>68</sup> See 33 U.S. Code § 1321(c)(1), (2).

<sup>69</sup> FEMA, *PAPPG*, 51–52.

<sup>70</sup> See 40 C.F.R. §§ 300.5, 300.20(a)(1).

<sup>71</sup> See 33 U.S. Code § 1321(a)(16); 40 C.F.R. §§ 300.5, 300.20(a)(2).

<sup>72</sup> FEMA, *PAPPG*, 52.

<sup>73</sup> FEMA, *PAPPG*, 52.

<sup>74</sup> FEMA, *PAPPG*, 52.

<sup>75</sup> FEMA, *PAPPG*, 52.

<sup>76</sup> FEMA, *PAPPG*, 53. For more on the Emergency Watershed Protection Program, see



<https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/>. For more on RIP, see <http://www.nws.usace.army.mil/Portals/27/docs/Levees/Levee%20Safety/6.%20Rehabilitation%20and%20Inspection%20Program.pdf>.

<sup>77</sup> See San Francisco Building Code Chapter 13B (2016); San Francisco Environment Code Chapter 14.

<sup>78</sup> FEMA, "Public Assistance Alternative Procedures Pilot Program for Debris Removal, Frequently Asked Questions" (Washington, DC, June 28, 2015), 4, <https://www.fema.gov/media-library-data/1441992743624-b9629b5da09995bdbc927576c439a50a/PAAPDebrisRemovalFAQs508.pdf>.

<sup>79</sup> CalEPA, *Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions*, 10.

<sup>80</sup> CalEPA, *Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions*, 12.

<sup>81</sup> CalEPA, *Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions*, 10.

<sup>83</sup> See FEMA, *PAPPG*, 55, 130.

<sup>84</sup> FEMA, *PAPPG*, 55.

<sup>85</sup> See 2 C.F.R. § 200.319(a).

<sup>86</sup> See 2 C.F.R. § 200.320(c), (d).

<sup>87</sup> See 2 C.F.R. § 200.320(f).

<sup>88</sup> 2 C.F.R. § 200.320(f)(2).

<sup>89</sup> FEMA, *PAPPG*, 159.

## Section 7: Temporary Debris Management Sites

<sup>1</sup> CalRecycle, *Integrated Waste Management Disaster Plan*, 4-1.

<sup>2</sup> See Cal. Pub. Resources Code § 41780.01.

<sup>3</sup> See S.F. Environment Code § 1402(b) (construction and demolition debris).

<sup>4</sup> See S.F. Environment Code §§ 1901 et seq. (mandatory recycling of refuse).

<sup>5</sup> S.F. Environment Code § 1400(D), (I).

<sup>6</sup> CalRecycle, Solid Waste Information System entry for Recology Hay Road facility, accessed on May 23, 2017, <http://www.calrecycle.ca.gov/SWFacilities/Directory/Detail/List?NAME=Recology&OPSTATUS=Active&REGSTATUS=Permitted>.

<sup>7</sup> See Zanker Recycling, "About Us," accessed May 23, 2017, <http://www.zankerrecycling.com/zanker-facilities/about-us/>.

<sup>8</sup> See Kim, Jooho, Deshmukh, Abhijeet and Hastak, Makarand, "Selecting a Temporary Debris Management Site for Effective Debris Removal," 10th International Conference of the International Institute for Infrastructure Resilience and Reconstruction, Purdue University (West Lafayette, IN, 2014), 215–216.

<sup>9</sup> See S.F. Admin. Code § 7.6(b)(1), (2).

<sup>10</sup> See S.F. Charter § 2.107.

<sup>11</sup> FEMA, *PAPPG*, 78.

<sup>12</sup> See FEMA, *PAPPG*, 46.

<sup>1</sup> See Cal. Pub. Resources Code § 40124.

<sup>2</sup> See Cal. Pub. Resources Code § 40180.

<sup>3</sup> S.F. Environmental Code § 1902(v).

<sup>4</sup> CalRecycle, "State of Disposal in California" (Sacramento, CA, 2016), 10, accessed July 19, 2018, <http://www.calrecycle.ca.gov/Publications/Documents/1556/201601556.pdf>.

<sup>5</sup> See Cal. Pub. Resources Code § 40191(a).

<sup>6</sup> See Cal. Pub. Resources Code § 40191(b).

## Section 8: Disaster Debris Diversion

<sup>7</sup> Conversation between Alex Dmitriew, Commercial Zero Waste Coordinator, San Francisco Environment, and Zanker Recycling, June 19, 2017.

<sup>8</sup> CalRecycle, *Integrated Waste Management Disaster Plan*, 17-7.

<sup>9</sup> See San Francisco Environment, "Zero Waste - Frequently Asked Questions (FAQs)," accessed June 9, 2017, <https://sfenvironment.org/zero-waste-faqs>; FEMA, *Public Assistance Debris Management Guide* (rescinded), 83.





<sup>10</sup> Tellus Institute, *More Jobs, Less Pollution: Growing the Recycling Community in the U.S.* (Boston, MA, 2011), 35, <http://www.tellus.org/tellus/publication/more-jobs-less-pollution-growing-the-recycling-economy-in-the-u-s>.

<sup>11</sup> See San Francisco Board of Supervisors Res. No. 385-99 (1999), [https://sfenvironment.org/sites/default/files/policy/sfe\\_zw\\_disaster\\_debris\\_recycling\\_ord.pdf](https://sfenvironment.org/sites/default/files/policy/sfe_zw_disaster_debris_recycling_ord.pdf).

<sup>12</sup> See Cal. Pub. Resources Code § 40052.

<sup>13</sup> See Cal. Pub. Resources Code §§ 40050 et seq.

<sup>14</sup> See Cal. Pub. Resources Code §§ 40059.1(1), 41780(a)(2).

<sup>15</sup> See Cal. Pub. Resources Code § 41780.01.

<sup>16</sup> See 14 Cal. Code Regs. § 18094.0(a).

<sup>17</sup> See 14 Cal. Code Regs. § 18794.1(d)(2).

<sup>18</sup> See 14 Cal. Code Regs. §§ 18094.0, 18794.2(g)(2).

<sup>19</sup> See 14 Cal. Code Regs. § 17210.1(h).

<sup>20</sup> CalRecycle, Local Government Central Disaster Waste Guidelines, "Procedures for Submitting Disaster Waste Disposal Reduction Claims," accessed July 19, 2018, <http://www.calrecycle.ca.gov/LGCentral/Library/Disaster/Procedures.htm>.

<sup>21</sup> San Francisco Board of Supervisors Res. No. 385-99 (1999), [https://sfenvironment.org/sites/default/files/policy/sfe\\_zw\\_disaster\\_debris\\_recycling\\_ord.pdf](https://sfenvironment.org/sites/default/files/policy/sfe_zw_disaster_debris_recycling_ord.pdf).

<sup>22</sup> S.F. Environment Code § 1400(D), (I).

<sup>23</sup> See S.F. Environment Code §§ 1400 et seq. (construction and demolition debris).

<sup>24</sup> S.F. Environment Code § 1402(a).

<sup>25</sup> S.F. Environment Code § 1405(a)(i).

<sup>26</sup> S.F. Environment Code § 1402(a).

<sup>27</sup> S.F. Environment Code § 1409. For current list of CCSF-registered facilities, see <https://sfenvironment.org/construction-demolition-resources>.

<sup>28</sup> See S.F. Environment Code §§ 1901 et seq. (mandatory recycling of refuse).

<sup>29</sup> S.F. Environment Code § 1903.

<sup>30</sup> S.F. Environment Code § 1902(x).

<sup>31</sup> FEMA, *PAPPG*, 56.

<sup>32</sup> FEMA, *PAPPG*, 48.

<sup>33</sup> FEMA, *PAPPG*, 48.

<sup>34</sup> FEMA, *PAPPG*, 48–49.

<sup>35</sup> FEMA, *PAPPG*, 49.

<sup>36</sup> FEMA, *PAPPG*, 49.

<sup>37</sup> FEMA, *PAPPG*, 49.

<sup>38</sup> FEMA, *PAPPG*, 49.

<sup>39</sup> FEMA, *Public Assistance Alternative Procedures Debris Removal Standard Operating Procedures*, 6.

<sup>40</sup> See San Francisco Environment, "Zero Waste - Frequently Asked Questions (FAQs)," accessed July 19, 2018, <https://sfenvironment.org/zero-waste-faqs>.

<sup>41</sup> See CalRecycle, *Integrated Waste Management Disaster Plan*, 3-8.

<sup>42</sup> See CalRecycle, *Integrated Waste Management Disaster Plan*, 2-15.

<sup>43</sup> See CalRecycle, *Integrated Waste Management Disaster Plan*, 2-15.

<sup>44</sup> See CalRecycle, *Integrated Waste Management Disaster Plan*, 2-15. For Caltrans specifications, see <http://www.dot.ca.gov/des/oe/construction-contract-standards.html>.

<sup>45</sup> Caltrans, "Construction Contract Standards," accessed June 12, 2017, specifications, see <http://www.dot.ca.gov/des/oe/construction-contract-standards.html>.

<sup>46</sup> SFPW, "Standard Specifications and Plans," accessed July 20, 2018, <https://sfpublicworks.org/services/standards-specifications-and-plans>.

<sup>47</sup> See CalRecycle, *Integrated Waste Management Disaster Plan*, 2-15.





<sup>48</sup> See CalRecycle, *Integrated Waste Management Disaster Plan*, 2-16–2-17.

<sup>49</sup> CalRecycle, “California Materials Exchanges (CalMAX),” accessed July 20, 2018, <https://www.calrecycle.ca.gov/CalMAX/>.

<sup>50</sup> CalRecycle, “Recycling Market Development Zones (RMDZ), Zone Administrator Contacts,” accessed July 20, 2018, <http://www.calrecycle.ca.gov/RMDZ/Reports/Zones/Contact.aspx>.

<sup>51</sup> CalRecycle, *Integrated Waste Management Disaster Plan*, 2-19.

<sup>52</sup> See CalRecycle, *Integrated Waste Management Disaster Plan*, 2-20–2-21.

<sup>53</sup> CalRecycle, *Integrated Waste Management Disaster Plan*, 2-21.

<sup>54</sup> CalRecycle, *Integrated Waste Management Disaster Plan*, 2-21.

<sup>55</sup> FEMA, *PAPPG*, 49.

<sup>56</sup> FEMA, *PAPPG*, 36.

<sup>57</sup> See CalRecycle, *Integrated Waste Management Disaster Plan*, 3-8.

<sup>58</sup> See CalRecycle, *Integrated Waste Management Disaster Plan*, 3-22.

<sup>59</sup> See 14 Cal. Code Regs. §§ 18808.7(b)(6), 18809.7(d), 18810.7(c), 18811.7(c).

<sup>60</sup> See 14 Cal. Code Regs. § 17210.5; see also CalRecycle, Permit Toolbox, “Guidance: Emergency Waiver of Standards,” accessed July 23, 2018, <http://www.calrecycle.ca.gov/SWFacilities/Permitting/Guidance/Stdswaiver.htm>.

<sup>61</sup> See CalRecycle, *Integrated Waste Management Disaster Plan*, 3-39.

## Section 9: Debris Disposal

<sup>1</sup> See US EPA, *Planning for Natural Disaster Debris*, 10.

<sup>2</sup> See California Department of Toxic Substances Control, “Household Hazardous Waste,” accessed July 20, 2018, <http://www.dtsc.ca.gov/HazardousWaste/UniversalWaste/HHW.cfm>.

<sup>3</sup> See San Francisco Board of Supervisors Res. No. 385-99 (1999), [https://sfenvironment.org/sites/default/files/policy/sfe\\_zw\\_disaster\\_debris\\_recycling\\_ord.pdf](https://sfenvironment.org/sites/default/files/policy/sfe_zw_disaster_debris_recycling_ord.pdf).

<sup>4</sup> CalRecycle, “Landfills,” accessed July 20, 2018, <http://www.calrecycle.ca.gov/swfacilities/landfills/>.

<sup>5</sup> See 40 C.F.R. § 258.2.

<sup>6</sup> See 40 C.F.R. § 261.3 (hazardous waste defined).

<sup>7</sup> See 40 C.F.R. § 258.2 (industrial solid waste defined).

<sup>8</sup> See CalRecycle, *Integrated Waste Management Disaster Plan*, 2-20–2-21.

<sup>9</sup> US EPA, *Planning for Natural Disaster Debris*, 31.

<sup>10</sup> US EPA, *Planning for Natural Disaster Debris*, 31.

<sup>11</sup> US EPA, *Planning for Natural Disaster Debris*, 31.

<sup>12</sup> US EPA, *Planning for Natural Disaster Debris*, 31.

<sup>13</sup> FEMA, *PAPPG*, 57.

<sup>14</sup> FEMA, *PAPPG*, 56.

<sup>15</sup> FEMA, *PAPPG*, 56.

<sup>16</sup> FEMA, *PAPPG*, 56–57.

<sup>17</sup> US EPA, *Planning for Natural Disaster Debris*, 29.

<sup>18</sup> See 14 Cal. Code Regs. §§ 17210–17210.9.

<sup>19</sup> S.F. Health Code § 315.

<sup>20</sup> 14 Cal. Code Regs. § 17210.2(c).

## Section 10: Monitoring Debris Operations

<sup>1</sup> Cal OES, *Disaster Debris Management*, 86; FEMA, *PAPPG*, 57.

<sup>2</sup> See 2 C.F.R. § 200.328(a).

<sup>3</sup> FEMA, *PAPPG*, 57.

<sup>4</sup> See FEMA, *PAPPG*, 57, 132–133.

<sup>5</sup> FEMA, *PAPPG*, 57.



<sup>6</sup> FEMA, *PAPPG*, 57.

<sup>7</sup> See EMI, *Debris Management Planning for State, Tribal, Territorial and Local Officials*, 6-5, 6-6.

<sup>8</sup> See EMI, *Debris Management Planning for State, Tribal, Territorial and Local Officials*, 6-6.

<sup>9</sup> See 44 C.F.R. § 206.205(b)(1).

<sup>10</sup> See EMI, *Debris Management Planning for State, Tribal, Territorial and Local Officials*, 6-7.

<sup>11</sup> See EMI, *Debris Management Planning for State, Tribal, Territorial and Local Officials*, 6-7.

<sup>12</sup> FEMA, *PAPPG*, 57.

<sup>13</sup> FEMA, *PAPPG*, 57.

<sup>14</sup> See FEMA, *PAPPG*, 57.

<sup>15</sup> FEMA, *PAPPG*, 57.

<sup>16</sup> FEMA, *PAPPG*, 57.

<sup>17</sup> FEMA, *Public Assistance Debris Monitoring Guide* (FEMA 327), October 2010, Appendix B, Sample Debris Monitoring Forms, 47, [https://www.fema.gov/pdf/government/grant/pa/fema\\_327\\_debris\\_monitoring.pdf](https://www.fema.gov/pdf/government/grant/pa/fema_327_debris_monitoring.pdf).

<sup>18</sup> See 2 C.F.R. § 200.333; FEMA, *PAPPG*, 140; City and County of San Francisco, Office of the Controller, Financial Records Retention and Destruction Policy (San Francisco, 2017), Attachment A, 1/10.

<sup>19</sup> See FEMA, *Public Assistance Debris Monitoring Guide*, Appendix B, Sample Debris Monitoring Forms.

## Section 11: Health and Safety Considerations

<sup>1</sup> U.S. Department of Labor, Occupational Health and Safety Administration (OSHA), "Waste/Debris Removal and Reduction, Debris Collection, Recommendations Specific to Hazards Associated with Debris Collection," accessed July 20, 2018, <https://www.osha.gov/SLTC/etools/hurricane/debris-collection.html#index>.

<sup>2</sup> See 29 C.F.R. § 1910.120 (Occupational Safety and Health Administration Hazardous Waste Operations or HAZWOPER requirements); 8 Cal. Code Regs. § 5192.

<sup>3</sup> See California Environmental Protection Agency (CalEPA), *Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions Pursuant to a State or Local Emergency Proclamation* (Sacramento, CA, 2011), 6, <https://calepa.ca.gov/wp-content/uploads/sites/62/2016/10/Disaster-Documents-2011yr-GuideRemoval.pdf>.

<sup>4</sup> See 42 U.S. Code §§ 11001 et seq.

<sup>5</sup> For purposes of this plan, hazardous material is a general term intended to mean hazardous substances, pollutants, and contaminants as defined in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. Part 300, and Cal. Health & Safety Code § 25316. Hazardous materials include chemical substances accidentally or intentionally released, which because of their quantity, concentrations, or physical or chemical characteristics, pose a significant present or potential hazard to human health and safety or to the environment if released into the community. See Cal. Health & Safety Code § 25411(c)(3).

<sup>6</sup> CalEPA, *Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions*, 5.

<sup>7</sup> CalEPA, *Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions*, 5.

<sup>8</sup> CCSF *Emergency Response Plan, ESF #10, Oil and Hazardous Materials Response* (San Francisco, 2010), 11.

<sup>9</sup> *ESF #10, Oil and Hazardous Materials Response Part A: Land Response*, 3.

<sup>10</sup> CalEPA, *Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions*, 7–8.

<sup>11</sup> 40 C.F.R. §§ 61.140 et seq.

<sup>12</sup> *ESF #10, Oil and Hazardous Materials Response Part A: Land Response*, 3–4.

<sup>13</sup> FEMA, *PAPPG*, 51.

<sup>14</sup> FEMA, *PAPPG*, 170; see 42 U.S.C. §§ 6901 et seq.

<sup>15</sup> 42 U.S. Code §§ 9601 et seq.

<sup>16</sup> CalEPA, *Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions*, 8.

<sup>17</sup> See 42 U.S. Code § 9604.

<sup>18</sup> 33 U.S. Code §§ 1251 et seq.

<sup>19</sup> See 33 U.S. Code § 1321(c)(1), (2); FEMA, *PAPPG*, 51.

<sup>20</sup> FEMA, *PAPPG*, 170.

<sup>21</sup> See Cal. Bus. & Prof. Code § 7058.7.



<sup>22</sup> 22 Cal. Code Regs. § 66263.11(a).

<sup>23</sup> Cal. Veh. Code §§ 32000 et seq.

<sup>24</sup> Cal. Health & Saf. Code § 25160(b)(1), (b)(1)(B). For further information on the uniform manifest form, see [https://www.dtsc.ca.gov/IDManifest/Manifests.cfm#buying\\_manifest\\_forms](https://www.dtsc.ca.gov/IDManifest/Manifests.cfm#buying_manifest_forms).

<sup>25</sup> California Department of Toxic Substances Control, "Hazardous Waste Manifest Information," accessed August 20, 2018, <https://www.dtsc.ca.gov/IDManifest/Manifests.cfm>.

<sup>26</sup> Cal. Health & Saf. Code § 25160(b)(1).

<sup>27</sup> FEMA, *PAPPG*, 51.

<sup>28</sup> See FEMA, *PAPPG*, 51.

<sup>29</sup> CalEPA, *Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions*, 8–9.

<sup>30</sup> FEMA, *PAPPG*, 51.

## Section 12: Environmental, Preservation, and Other Regulatory Compliance

<sup>1</sup> FEMA, *PAPPG*, 45.

<sup>2</sup> See FEMA, *Unified Federal Environmental and Historic Preservation Review Guide* (Washington, DC, 2014), 6, accessed May 10, 2018, [https://www.fema.gov/media-library-data/1440713845421-9bdb5c0c8fe19ab86d97059ccb26e3b4/UFR\\_Applicant\\_Guide\\_Final\\_508.pdf](https://www.fema.gov/media-library-data/1440713845421-9bdb5c0c8fe19ab86d97059ccb26e3b4/UFR_Applicant_Guide_Final_508.pdf).

<sup>3</sup> FEMA, *PAPPG*, 8; see 2 C.F.R. § 200.300(a).

<sup>4</sup> See FEMA, Emergency Management Institute (EMI), Independent Study-253.A, "Overview of FEMA's Environmental and Historic Preservation Review," Lesson 1, <https://training.fema.gov/is/courseoverview.aspx?code=is-253.a>.

<sup>5</sup> FEMA, "Unified Federal Environmental and Historic Preservation Review: Fact Sheet for FEMA Public Assistance," accessed May 10, 2018, [https://www.fema.gov/media-library-data/1421770639704-3b4f239055de25c462f436f570b099c1/PA\\_Fact\\_Sheet\\_Sent\\_to\\_FEMA\\_121614.pdf](https://www.fema.gov/media-library-data/1421770639704-3b4f239055de25c462f436f570b099c1/PA_Fact_Sheet_Sent_to_FEMA_121614.pdf).

<sup>6</sup> FEMA, Unified Federal Environmental and Historic Preservation Review, "Resources for Applicants," accessed May 10, 2018, <https://www.fema.gov/environmental-historic-preservation/resources-applicants>.

<sup>7</sup> FEMA, *Unified Federal EHP Review Guide*, Appendix C, accessed May 10, 2018, [https://www.fema.gov/media-library-data/1440713845421-9bdb5c0c8fe19ab86d97059ccb26e3b4/UFR\\_Applicant\\_Guide\\_Final\\_508.pdf](https://www.fema.gov/media-library-data/1440713845421-9bdb5c0c8fe19ab86d97059ccb26e3b4/UFR_Applicant_Guide_Final_508.pdf).

<sup>8</sup> See FEMA, *PAPPG*, 43–44; FEMA, "EHP Resources for Applicants," accessed July 20, 2018, <https://www.fema.gov/environmental-historic-preservation/resources-applicants#>; Cal OES, Disaster Relief, "Environmental Rules," accessed July 20, 2018, [http://www.caloes.ca.gov/RecoverySite/Documents/CalOES\\_Environmental\\_Rules\\_020817.pdf](http://www.caloes.ca.gov/RecoverySite/Documents/CalOES_Environmental_Rules_020817.pdf).

<sup>9</sup> FEMA, *Unified Federal EHP Review Guide*, Appendix E.

<sup>10</sup> FEMA, United Federal Review Library, Federal EHP Point of Contact List, accessed July 20, 2018, <https://www.fema.gov/media-library/assets/documents/98911>.

<sup>11</sup> Cal OES, Cal OES Divisions, "Environmental – Historic," accessed July 20, 2018, <http://www.caloes.ca.gov/cal-oes-divisions/recovery/disaster-mitigation-technical-support/technical-assistance/environmental-historic>.

<sup>12</sup> FEMA, *Unified Federal EHP Review Guide*, Appendix E.

<sup>13</sup> FEMA, United Federal Review Library, Federal EHP Point of Contact List, accessed July 20, 2018, <https://www.fema.gov/media-library/assets/documents/98911>.

<sup>14</sup> See 42 U.S. Code §§ 4321 et seq.

<sup>15</sup> See 54 U.S. Code §§ 300101 et seq.

<sup>16</sup> 16 U.S. Code §§ 1531 et seq.

<sup>17</sup> See 42 U.S. Code §§ 7401 et seq.

<sup>18</sup> 33 U.S. Code §§ 1251 et seq.

<sup>19</sup> FEMA, *PAPPG*, 45.

<sup>20</sup> FEMA, *Unified Federal EHP Review Guide*, Appendix E.

<sup>21</sup> See 42 U.S. Code §§ 4321 et seq.

<sup>22</sup> See 42 U.S. Code § 4332(2)(C).

<sup>23</sup> See 42 U.S. Code § 5159; FEMA, Office of Environmental Planning and Historic Preservation, "Environmental



and Historic Preservation (EHP) Fact Sheet: Debris Removal Activities,” accessed July 20, 2018, [https://www.fema.gov/media-library-data/1396353617543-9548bdf862dd6549d966ec86a7eda657/4\\_Debris+Removal+Activities\\_Final+clean+11+12+12\\_508.pdf](https://www.fema.gov/media-library-data/1396353617543-9548bdf862dd6549d966ec86a7eda657/4_Debris+Removal+Activities_Final+clean+11+12+12_508.pdf).

<sup>24</sup> See 42 U.S. Code § 5159; 44 C.F.R. § 10.8(c)(1).

<sup>25</sup> See 54 U.S. Code §§ 300101 et seq.

<sup>26</sup> See 54 U.S. Code § 306108.

<sup>27</sup> See 54 U.S. Code § 306108 (Section 106).

<sup>28</sup> 54 U.S. Code § 30030.

<sup>29</sup> FEMA, “National Historic Preservation Act, 1966 as Amended (2000),” accessed July 18, 2018, <https://www.fema.gov/national-historic-preservation-act-1966-amended-2000>.

<sup>30</sup> National Park Service, National Register of Historic Places, Digital Archive, accessed July 20, 2018, <https://npgallery.nps.gov/NRHP/SearchResults/46ae56a5c6e149bba61f876b9bba8841?view=list>.

<sup>31</sup> San Francisco Planning Department, Historic Preservation FAQs, accessed July 20, 2018, <http://sf-planning.org/historic-preservation-faqs#faq2>.

<sup>32</sup> 16 U.S. Code §§ 1531 et seq.

<sup>33</sup> FEMA, *PAPPG*, Appendix A, Environmental and Historic Preservation Compliance, 166.

<sup>34</sup> 16 U.S. Code § 1532(6).

<sup>35</sup> 16 U.S. Code § 1532(20).

<sup>36</sup> U.S. Fish & Wildlife Service (USFWS), “Environmental Conservation Online System (ECOS), Species by County Report,” accessed July 20, 2018, <https://ecos.fws.gov/ecp0/reports/species-by-current-range-county?fips=06075>.

<sup>37</sup> See US Fish and Wildlife Service, ECOS Environmental Conservation Online System, accessed July 20, 2018, Lists by county: <https://ecos.fws.gov/ecp/>. Maps: <https://ecos.fws.gov/ecp/report/table/critical-habitat.html>.

<sup>38</sup> See 42 U.S. Code §§ 7401 et seq.

<sup>39</sup> FEMA, “Clean Air Act,” accessed July 20, 2018, <https://www.fema.gov/clean-air-act-caa-1990-amended>.

<sup>40</sup> FEMA, “Clean Air Act.”

<sup>41</sup> 33 U.S. Code §§ 1251 et seq.

<sup>42</sup> See 33 U.S. Code § 1251(a).

<sup>43</sup> See 33 U.S. Code § 1344(a).

<sup>44</sup> FEMA, *PAPPG*, Appendix A, Environmental and Historic Preservation Compliance, 166–167.

<sup>45</sup> See California Water Boards, “401 Water Quality Certification and Wetlands Program,” accessed July 23, 2018, [https://www.waterboards.ca.gov/water\\_issues/programs/cwa401/](https://www.waterboards.ca.gov/water_issues/programs/cwa401/).

<sup>46</sup> See 42 U.S. Code §§ 6901 et seq.

<sup>47</sup> FEMA, *PAPPG*, Appendix A, Environmental and Historic Preservation Compliance, 167; see 40 C.F.R. §§ 239.1 et seq.

<sup>48</sup> FEMA, *PAPPG*, Appendix A, Environmental and Historic Preservation Compliance, 167.

<sup>49</sup> California Department of Toxic Substances Control (DTSC), “Resource Recovery Control Act – RCRA,” accessed July 23, 2018, <http://www.dtsc.ca.gov/LawsRegsPolicies/RCRA.cfm>.

<sup>50</sup> See Exec. Order No. 11,988, 42 Fed. Reg. 26951 (May 24, 1977); 44 C.F.R. § 9.2(b)(1)-(2); FEMA, “Executive Order 11988: Floodplain Management,” accessed August 7, 2017, <https://www.fema.gov/executive-order-11988-floodplain-management>. Note: “EO 11988” refers to current EO 11988, as amended by EO 13690, 80 Fed. Reg. 6425, January 30, 2015.

<sup>51</sup> 44 C.F.R. § 9.2(b)(3)-(11).

<sup>52</sup> See Exec. Order No. 11990, 42 Fed. Reg. 26961 (May 24, 1977).

<sup>53</sup> See Exec. Order No. 11990, 42 Fed. Reg. 26961, § 7(c).

<sup>54</sup> See California Water Quality Monitoring Council, “What laws, regulations, and policies protect the wetlands?” accessed July 23, 2018, [https://mywaterquality.ca.gov/eco\\_health/wetlands/improvements/regulations.html](https://mywaterquality.ca.gov/eco_health/wetlands/improvements/regulations.html).

<sup>55</sup> See Exec. Order No. 12898, 59 Fed. Reg. 32 (February 16, 1994).

<sup>56</sup> Exec. Order No. 12898, § 1-1.

<sup>57</sup> Cal. Public Res. Code §§ 21000 et seq.



<sup>58</sup> Cal. Fish & Game Code §§ 2050 et seq.

<sup>59</sup> Cal. Public Res. Code §§ 21000 et seq.

<sup>60</sup> See Cal. Public Res. Code § 21080.

<sup>61</sup> See, e.g., Cal. Public Res. Code § 21080(b).

<sup>62</sup> Cal. Fish & Game Code §§ 2050 et seq.

<sup>63</sup> See Cal. Fish & Game Code § 2052.

<sup>64</sup> Cal. Fish & Game Code § 2062.

<sup>65</sup> Cal. Fish & Game Code § 2067.

<sup>66</sup> Cal. Health & Safety Code §§ 39000 et seq.

<sup>67</sup> See Cal. Health & Safety Code § 39001.

<sup>68</sup> Cal. Health & Safety Code § 39003.

<sup>69</sup> See Cal. Health & Safety Code § 39001; California Air Resources Board (CARB), California Air Basin Map, accessed August 18, 2017, <https://www.arb.ca.gov/ei/maps/statemap/abmap.htm>.

<sup>70</sup> Cal. Health & Safety Code §§ 39002, 40000.

<sup>71</sup> Cal. Health & Safety Code § 40200.

<sup>72</sup> See S.F. Environment Code §§ 100 et seq.

<sup>73</sup> S.F. Environment Code §§ 1400 et seq.

<sup>74</sup> S.F. Environment Code § 1400.

<sup>75</sup> S.F. Environment Code § 1400(B).

<sup>76</sup> S.F. Environment Code § 1400(D).

<sup>77</sup> See S.F. Environment Code §§ 1901 et seq. (mandatory recycling of refuse).

<sup>78</sup> S.F. Environment Code § 1903.

<sup>79</sup> See S.F. Planning Code Art. 10 & 11.

<sup>80</sup> See San Francisco Planning Department, "Historic Preservation FAQs," accessed August 16, 2017, <http://sf-planning.org/historic-preservation-faqs#faq4>.

<sup>81</sup> See S.F. Planning Code §§ 1110-1116; San Francisco Planning Department, "Historic Preservation FAQs."

<sup>82</sup> S.F. Planning Code § 1007.

<sup>83</sup> S.F. Planning Code § 1007.

<sup>84</sup> S.F. Planning Code § 1007.

<sup>85</sup> S.F. Planning Code § 1118.

### Section 13: Additional Considerations

<sup>1</sup> See 28 C.F.R. § 0.85(l).

<sup>2</sup> Cal OES, *Disaster Debris Management*, Appendix B, Debris Removal From a Crime Scene, 119.

<sup>3</sup> 28 C.F.R. § 0.85(l).

<sup>4</sup> Cal OES, *Disaster Debris Management*, Appendix B, 120.

<sup>5</sup> Cal OES, *Disaster Debris Management*, Appendix B, 119.

<sup>6</sup> Cal OES, *Disaster Debris Management*, Appendix B, 119–120.

<sup>7</sup> See San Francisco Office of the Chief Medical Examiner (OCME), Mass Fatality Incident Response and Management Plan (San Francisco, CA, 2014), 21–22.

<sup>8</sup> OCME, Mass Fatality Incident Response and Management Plan, 23.

<sup>9</sup> Cal OES, *Disaster Debris Management*, Appendix B, 123.

<sup>10</sup> Cal OES, *Disaster Debris Management*, Appendix B, 120–121.

<sup>11</sup> Cal OES, *Disaster Debris Management*, Appendix B, 121.

<sup>12</sup> Cal OES, *Disaster Debris Management*, Appendix B, 123.

<sup>13</sup> Cal OES, *Disaster Debris Management*, Appendix B, 123.

<sup>14</sup> Cal OES, *Disaster Debris Management*, Appendix B, 124.

<sup>15</sup> Cal OES, *Disaster Debris Management*, Appendix B, 124.



<sup>16</sup> Cal OES, *Disaster Debris Management*, Appendix B, 120–121.

<sup>17</sup> Cal OES, *Disaster Debris Management*, Appendix B, 124.

<sup>18</sup> Cal OES, *Disaster Debris Management*, Appendix B, 124.

<sup>19</sup> Cal OES, *Disaster Debris Management*, Appendix B, 124.

<sup>20</sup> San Francisco Department of Public Health, Emergency Medical Services Agency, *City and County of San Francisco Mass Casualty Incident Plan* (San Francisco, CA, 2014), 8–9, [https://www.sfdph.org/dph/files/EMS/Policy-Protocol-Manuals/EMS-AGENCY-POLICY-MANUAL\\_eff\\_%20Jan%2030-2017v2.pdf](https://www.sfdph.org/dph/files/EMS/Policy-Protocol-Manuals/EMS-AGENCY-POLICY-MANUAL_eff_%20Jan%2030-2017v2.pdf).

<sup>21</sup> Cal OES, *Disaster Debris Management*, Appendix B, 125.

<sup>22</sup> See Cal OES, *Disaster Debris Management*, Appendix B, 125–126.

<sup>23</sup> See Cal OES, *Disaster Debris Management*, Appendix B, 126.

<sup>24</sup> See Cal OES, *Disaster Debris Management*, Appendix B, 123.

<sup>25</sup> Center for Disease Control and Prevention (CDC), “Interim Health Recommendations for Workers Who Handle Human Remains After a Disaster,” accessed July 23, 2018, <https://www.cdc.gov/disasters/handleremains.html>.

<sup>26</sup> CDC, “Interim Health Recommendations for Workers Who Handle Human Remains After a Disaster.”

<sup>27</sup> CDC, “Interim Health Recommendations for Workers Who Handle Human Remains After a Disaster.”

<sup>28</sup> San Francisco Department of Public Health, Emergency Medical Services Agency, *City and County of San Francisco Mass Casualty Incident Plan* (San Francisco, CA, 2014), 8–9, [https://www.sfdph.org/dph/files/EMS/Policy-Protocol-Manuals/EMS-AGENCY-POLICY-MANUAL\\_eff\\_%20Jan%2030-2017v2.pdf](https://www.sfdph.org/dph/files/EMS/Policy-Protocol-Manuals/EMS-AGENCY-POLICY-MANUAL_eff_%20Jan%2030-2017v2.pdf).

<sup>29</sup> See Cal OES, *Disaster Debris Management*, Appendix B, 125.

<sup>30</sup> See Cal OES, *Disaster Debris Management*, Appendix B, 126.

#### Section 14: Public Information

<sup>1</sup> San Francisco Department of Emergency Management (DEM), ESF #15: Joint Information System Annex (San Francisco, CA, 2015), 21.

<sup>2</sup> See S.F. Admin. Code §§ 91.5, 91.9.

<sup>3</sup> FEMA, *PAPPG*, 44.





## GLOSSARY OF KEY TERMS

**Applicant:** As used in the federal Public Assistance Program, eligible applicants include local and state governments, Indian tribes or authorized tribal organizations, and private nonprofit organizations or institutions.

**Chipping:** The process of reducing woody material, such as lumber, and vegetative debris through mechanical means into small pieces for use as mulch or fuel.

**Clean Air Act (CAA):** Federal law established to protect and improve the nation's air quality and the ozone layer.

**Clean Water Act (CWA):** Federal law established to restore and maintain the chemical, physical, and biological integrity of the nation's waters by regulating the discharge of pollutants.

**Collection Center:** Common area located on public property for communal collection of debris.

**Construction and Demolition Debris (C&D):** Damaged components of buildings and structures such as lumber and wood, gypsum wallboard, glass, metal, roofing material, tile, carpeting and floor coverings, window coverings, pipe, concrete, fully-cured asphalt, equipment, furnishings, and fixtures.

**Debris:** Items and materials broken, destroyed, or displaced by a natural or human-caused disaster. Types of disaster debris include vegetative; construction and demolition (C&D); electronic waste; hazardous waste; white goods; soil, mud, sand; vehicles and vessels; putrescent and infectious waste; and chemical, biological, radiological and nuclear-contaminated waste.

**Debris Clearance:** Moving debris from public roadways to the road shoulder to clear a path for vehicles providing emergency lifesaving services following a disaster.

**Debris Collection:** Gathering debris from the public right-of-way or other public areas preparatory to processing, diverting, or disposing of the debris.

**Debris Removal:** Transporting debris to locations where it can be processed, recycled, composted, reused, repurposed, or reduced in volume, with disposal of the remainder in a safe, proper manner.

**Demolition:** The act or process of reducing a structure to a collapsed state.

**Department Operations Center (DOC):** The physical location where a city department exercises agency-level authority over field personnel or Incident Commanders, and ensures continuity of departmental functions. The DOC is also responsible for coordinating with the jurisdiction's emergency operations center.

**Diversions:** Preventing debris from entering landfills through methods such as recycling, composting, repurposing, reuse, and reduction.

**Electronic Waste (E-waste):** Electronic waste is consumer products that include a printed circuit board or a visual display screen and contain hazardous materials such as lead, cadmium, nickel,





and zinc. Examples of e-waste include televisions, computers, cell phones, and other electronic devices.

**Emergency Operations Center (EOC):** The physical location where a local jurisdiction or operational area coordinates information and resources needed to support on-scene incident management.

**Endangered Species Act (ESA):** Federal law prohibiting Federal actions that cause unnecessary harm to species listed as threatened or endangered, or the destruction or adverse modification of the habitat for these species.

**Force Account Labor:** Labor performed by the applicant's permanent, full time, or temporary employees.

**Hazardous Waste:** Waste with properties that make it potentially harmful to human health or to the environment. Hazardous waste is regulated under the federal Resource Conservation and Recovery Act (RCRA) as well as various state laws.

**Household Hazardous Waste (HHW):** Household products that can catch fire, react, or explode under certain circumstances or that are corrosive or toxic, such as paint, cleaners, oils, batteries, and pesticides. These products may contain hazardous ingredients and require special care during disposal.

**Infectious Waste:** Waste capable of causing infections in humans, such as animal waste; human blood and blood products; medical waste; pathological waste; and discarded needles, scalpels, or broken medical instruments.

**Legal Responsibility:** In the context of Public Assistance reimbursement for debris management, the jurisdiction seeking reimbursement must have either jurisdiction over the area impacted or must have legal authority to conduct the work related to the request for Public Assistance reimbursement.

**Mitigation:** Activities designed to reduce or eliminate the impact of a disaster. Mitigation measures may be implemented before, during, or after an incident.

**Monitoring:** In the context of debris operations, actions taken by applicants to document eligibility and reasonableness of expenses during debris activities to ensure the work is eligible for Public Assistance reimbursement.

**National Environmental Policy Act (NEPA):** Law requiring federal agencies to follow a specific planning process to ensure decision-makers are aware of, and the general public is fully informed about, the environmental consequences of a federally funded action. Statutory exclusions from the NEPA planning review process are allowed under the Stafford Act for debris clearance, debris removal, and demolition of unsafe structures.

**National Historic Preservation Act (NHPA):** Law requiring federal agencies to take into account the effects of their activities on historic properties and to provide the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings.



**Preliminary Damage Assessment (PDA):** Assessment by a team composed of Federal Emergency Management Agency (FEMA), state, and local representatives to determine the magnitude and impact of damage from an incident. The results of the PDA are used to determine if the situation is beyond the combined capabilities of local and state resources, requiring supplemental federal assistance.

**Presidential Disaster Declaration:** Formal action by the president, at the request of the governor of an affected state, to make the state eligible for major disaster or emergency assistance under the Stafford Act.

**Private Nonprofit (PNP) Organization:** Organization that is tax-exempt under Section 501(c)(3) of the Internal Revenue Code and owns or operates facilities providing services typically performed by a government agency.

**Public Assistance:** Federal program authorized by the Stafford Act to provide financial assistance to local, state, and tribal governments, and certain types of private nonprofit organizations, so they can assist communities in responding to and recovering from major disasters or emergencies declared by the president. The Public Assistance Program is coordinated by FEMA, under the aegis of the Department of Homeland Security.

**Public right-of-way (ROW):** The area in, on, and along public sidewalks, streets, courts, and alleys, from property line to property line, which are owned by the city and are dedicated to public use.

**Recycling:** The process of separating and collecting materials that otherwise would be treated as waste, processing and remanufacturing of these items into new products, followed by use of the recycled products.

**Reduction:** Any action that causes a net decrease in the generation of solid waste.

**Right-of-Entry:** As used by FEMA, the document by which a property owner confers to an eligible applicant or its contractor the right to enter onto private property for a specific purpose without committing trespass.

**Robert T. Stafford Disaster Relief and Emergency Assistance (Stafford) Act:** Law authorizing federal assistance to supplement local, state, and tribal disaster response and recovery efforts.

**Solid Waste:** Any garbage or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material resulting from industrial, commercial, mining, agricultural operations, or community activities.

**State Historic Preservation Officer (SHPO):** In cooperation with federal agencies, SHPOs are responsible for directing and conducting a comprehensive statewide survey of historic properties and maintaining inventories of such properties in accordance with the National Historic Preservation Act. The SHPO is also responsible for advising and assisting local, state, and federal local governments in carrying out their historic preservation responsibilities.



**Temporary Debris Management Site (TDMS):** Location where debris may be loaded onto a form of transport, sorted, or processed. Closure of a TDMS requires returning the location to its previous state.

**Tipping Fee:** A fee, based on weight or volume dumped, charged by landfills or other waste management facilities to cover operating and maintenance costs. The fee also may include amounts to cover the cost of closing the current facility or opening a new facility.

**Tribal Historic Preservation Officer (THPO):** THPOs are officially designated by a federally-recognized Indian tribe to assume some or all of the duties of the SHPO on tribal lands. THPOs help federal agencies comply with the National Historic Preservation Act and other federal laws to deliver needed services to tribal communities on large projects.

**White Goods:** Discarded household appliances such as refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, and water heaters.



## ACRONYMS AND ABBREVIATIONS

AADT	average annual daily traffic
AAR	After Action Report
ACM	asbestos-containing material
ADA	Americans with Disabilities Act
ARB	California Environmental Protection Agency Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BFP	San Francisco Fire Department Bureau of Fire Prevention
CAA	Clean Air Act
C&D	construction and demolition debris
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CalMAX	California Materials Exchange
Cal OES	California Governor's Office of Emergency Services
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CALWARN	California Water and Wastewater Agency Response Network
CAT	City Attorney
CCAA	California Clean Air Act
CCSF	City and County of San Francisco
CCSFAlert	City and County of San Francisco Alert (city partner alerting system)
CDAA	California Disaster Assistance Act
CDC	Centers for Disease Control and Prevention
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CESA	California Endangered Species Act
CFC	Chlorofluorocarbons
CFR	Code of Federal Regulations
CHWM	California Hazardous Waste Manifest
CNRA	California Natural Resources Agency
CON	San Francisco Controller's Office
CST	National Guard Civil Support Team
CWA	Clean Water Act
DBI	San Francisco Department of Building Inspection
DCU	Debris Coordination Unit
DDMP	Disaster Debris Management Plan
Debris OP	Debris Operations Plan
DEM	San Francisco Department of Emergency Management
DFA	Direct Federal Assistance



DFW	Department of Fish and Wildlife
DMG	Debris Management Group
DOC	Department Operations Center
DOP	Debris Operations Plan
DPH	San Francisco Department of Public Health
DRU	Debris Removal Unit
DTSC	California Department of Toxic Substances Control
EA	environmental assessment
EAS	Emergency Alert System
E-Waste	electronic waste
EHP	environmental and historic preservation
EIR	environmental impact report
EIS	environmental impact statement
EMAC	Emergency Management Assistance Compact
E.O.	Executive Order
EOC	Emergency Operation Center
ERFO	Emergency Relief for Federally Owned Roads (Program)
ERP	Emergency Response Plan
ESA	Endangered Species Act
ESC	Emergency Services Coordinator
ESF	Emergency Support Function
FBI	Federal Bureau of Investigation
FCO	Federal Coordinating Officer
FHWA	Federal Highway Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GSA	General Services Agency
HASP	Health and Safety Plan
Hazmat	hazardous materials
Hazus-MH	Hazards US-Multihazard
HW	hazardous waste
HHW	Household Hazardous Waste
ICS	Incident Command System
IDMTF	Interagency Debris Management Task Force
IP	Improvement Plan
JFO	Joint Field Office
JIC	Joint Information Center
JIS	Joint Information Section
LEA	Local Enforcement Agency
LRA	Local Responsibility Area



M	Magnitude
MMAA	California Disaster and Civil Defense Master Mutual Aid Agreement
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NIMS	National Incident Management System
NRCS	Natural Resources Conservation Service
NWS	National Weather Service
OAK	Oakland International Airport
OCA	San Francisco Office of Contract Administration
OCME	San Francisco Office of the Chief Medical Examiner
OEHHA	CalEPA, Office of Environmental Health Hazard Assessment
OER	CalEPA, Air Resources Board, Office of Emergency Response
OPWS	Outdoor Public Warning System
OSHA	US Department of Labor, Occupational Safety and Health Administration
OSPR	Department of Fish & Wildlife, Office of Spill Prevention and Response
PA	Public Assistance
PAH	polycyclic aromatic hydrocarbon
PAPPG	Public Assistance Program and Policy Guide
PCB	Polychlorinated Biphenyl
PDA	Preliminary Damage Assessment
PDR	Production/Distribution/Repair
PIO	Public Information Officer
PNP	Private Nonprofit
Port	Port of San Francisco
PPE	personal protective equipment
PWMAA	Public Works Mutual Aid Agreement
RA	Regional Administrator
RCRA	Resource Conservation and Recovery Act
REOC	Regional Emergency Operations Center
RIP	Rehabilitation and Inspection Program
RMDZ	Recycling Market Development Zone
ROW	right-of-way or rights-of-way
RPD	San Francisco Recreation and Park Department
RCRRG	Roadway Clearance and Route Recovery Group
SEMS	Standardized Emergency Management System
SFE	San Francisco Department of the Environment
SFFD	San Francisco Fire Department
SFHA	Special Flood Hazard Area





SFMTA	San Francisco Municipal Transportation Agency
SFO	San Francisco International Airport
SFPUC	San Francisco Public Utilities Commission
SFPW	San Francisco Public Works
SHPO	State Historic Preservation Officer
SJC	Mineta San Jose International Airport
SOC	State Operations Center
SWRCB	State Water Resources Control Board
T&M	time and materials
TDMS	temporary debris management site
THPO	Tribal Historic Preservation Officer
TIDA	Treasure Island Development Authority
UCERF3	Uniform California Earthquake Rupture Forecast 3
UFR	United Federal Review
USACE	United States Army Corps of Engineers
US EPA	United States Environmental Protection Agency
USCG	U.S. Coast Guard
U.S. Code	United States Code
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WEA	Wireless Emergency Alerts
WGCEP	Working Group on California Earthquake Probabilities
WMD	weapon of mass destruction
WSR	Waste Shipment Record
WUI	wildland urban interface