

CalCUPA FORUM Disaster Symposium  
May 27, 2022

# PROTECTING ENVIRONMENTAL HEALTH IN DISASTERS

MARK STARR, DVM, MPVM  
STATE ENVIRONMENTAL HEALTH DIRECTOR

SAUDA YERABATI, MPH  
EMERGENCY PREPAREDNESS PROGRAM MANAGER

CENTER FOR ENVIRONMENTAL HEALTH  
CALIFORNIA DEPARTMENT OF PUBLIC HEALTH

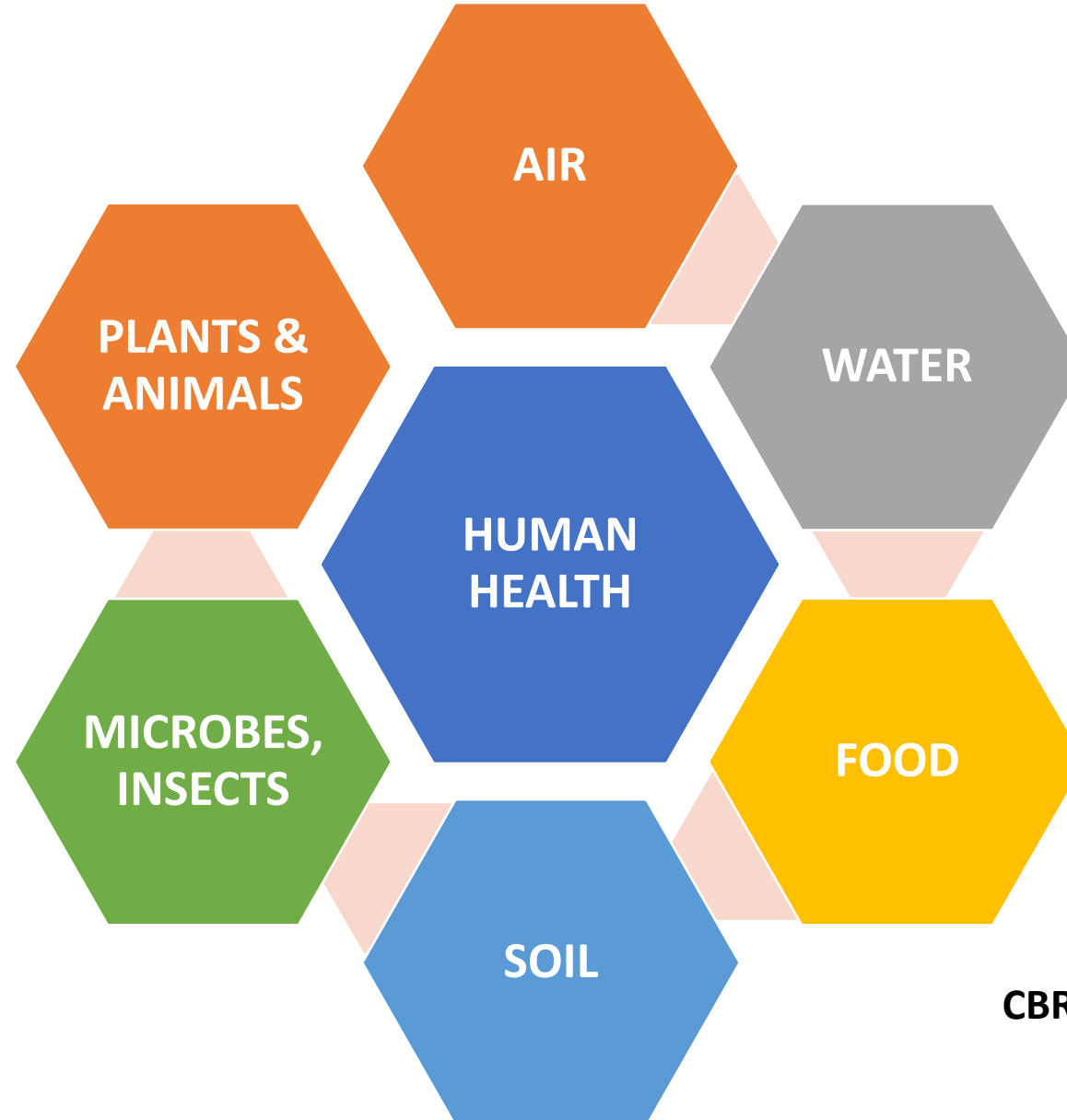


# Environmental Health Practice

**Buildings,  
housing**

**Recreational  
facilities/  
water**

**Noise**



**Industrial,  
commercial,  
residential,  
consumer,  
pharmaceutical,  
materials**

**Illicit  
substances**

**CBRN Terrorism**

# California Department of Public Health (CDPH)

- Environmental Health at CDPH
- EH at federal-state-local levels
- EH Disaster Management

# Environmental Health Resources at CDPH

## Office of the State Environmental Health Director

### **FOOD, WATER, RADIATION, GENERAL ENVIRONMENTAL HEALTH**

Regulatory, REHS program, Local EH support (Technical Assistance + Emergency Management), Lab

**Domain: Chemical, Biological, Radiological/ Nuclear**

REHS, Environmental Scientists, Microbiologists, Analytical Chemists, Research Scientists, Health Physicists

12 staff dedicated to Emergency Preparedness :1 REHS, 3 EHS/ Coordinators + 1 Health Physicist + 6 LRN-C Lab scientists + 1 Chemical Threat Coordinator

### **ENVIRONMENTAL AND OCCUPATIONAL HEALTH**

Epidemiologic surveillance, exposure assessment, outreach and education, technical guidance, research, disaster epidemiology, Lab

**Domain: Toxic chemical exposures**

Environmental Epidemiologists, Health Educators, Toxicologists, Scientists, Industrial Hygienists, Occupational and Environmental Medicine specialists, Lab scientists

# Environmental Health Resources at CDPH

## Office of the State Environmental Health Director

### **FOOD, WATER, RADIATION, GENERAL ENVIRONMENTAL HEALTH**

Regulatory, REHS program, Local EH support (Technical Assistance + Emergency Management), Lab

**Domain: Chemical, Biological, Radiological/ Nuclear**

REHS, Environmental Scientists, Microbiologists, Analytical Chemists, Research Scientists, Health Physicists

12 staff dedicated to Emergency Preparedness :1 REHS, 3 EHS/ Coordinators + 1 Health Physicist + 6 LRN C Lab scientists + 1 Chemical Threat Coordinator

### **ENVIRONMENTAL AND OCCUPATIONAL HEALTH**

Epidemiologic surveillance, exposure assessment, outreach and education, technical guidance, research, disaster epidemiology, Lab

**Domain: Toxic chemical exposures**

Environmental Epidemiologists, Health Educators, Toxicologists, Scientists, Industrial Hygienists, Occupational and Environmental Medicine specialists, Lab scientists

# CDPH Center for Environmental Health (CEH)



Deputy Director & State Environmental Health Director

\* Emergency Preparedness, Response & Recovery



Planning, Training, Exercising, Response, Local EH Support, Technical guidance

\* Food and Drug  
\* Environmental Mgt Branch  
\* Radiological Health Branch



Regulatory, Incident/ Emergency Response, Community Guidance

\* Food and Drug Lab  
\* Water, Radiation Labs  
\* LRN-C (Lab Response Network for Chemical Threats)



Regulatory, Incident/ Emergency Response  
Community Guidance, clinical and environmental lab testing

## EH at Federal Level

CDC/NCEH +  
US EPA

## EH at State Level

CDPH + CalEPA

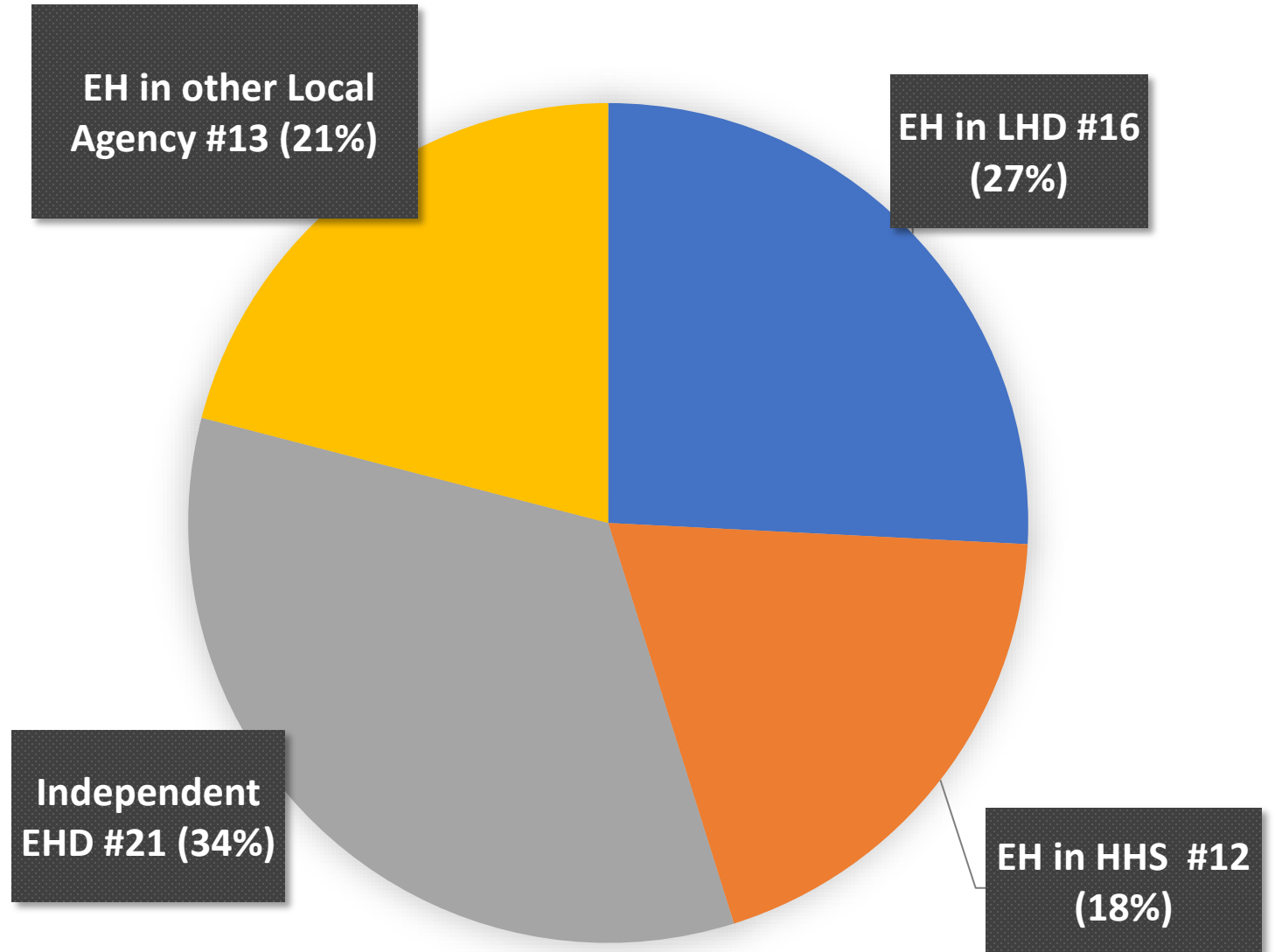
## EH at Local Level

62 jurisdictions:

- 45% Integrated with Health Department
- 34% Independent
- 21% Other local agency

55% OUTSIDE  
Local Health  
Department

## 62 LOCAL EHDs in California





# ENVIRONMENTAL HEALTH FUNCTIONS

## ESF 8 During Disasters



## ESFs that cover EH

\*EH Mutual aid is provided through ESF 8

\*For fire debris removal, ESF 8 and ESF 10 resources are frequently required together.

ESF #	California ESF	Environmental Health
1	Transportation	
2	Communications	
3	Construction/Engineering	
4	Fire & Rescue	
5	Management	
6	Care & Shelter	Shelter/Housing, Mass Feeding
7	Resources	
8	Public Health & Medical	All H&S hazards
9	Search & Rescue	
10	Hazardous Materials	Debris, Radiation, Toxics
11	Food & Agriculture	Food Safety
12	Utilities	
13	Law Enforcement	
15	Public Information	Public and regulated facilities messaging
16	Evacuation	
17	Volunteer/ Donation Mgt	
18	Cyber Security	

Note: EH also involved in several other ESFs

# 17 MHOAC Functions

	Environmental Health
Assessment of immediate medical needs	
Coordination of disaster medical and health resources	✓
Coordination of patient distribution and medical evaluations	
Coordination with inpatient and emergency care providers	
Coordination of out-of-hospital medical care providers	
Coordination with fire agency pre-hospital emergency medical services	
Coordination of non-fire agency pre-hospital emergency medical services	
Coordination of the establishment of temporary field treatment sites	
Health surveillance/epidemiological analyses of community health status	✓
Assurance of food safety	✓
Management of exposure to hazardous agents	✓
Provision or coordination of mental health services	
Provision of public information and protective action recommendations	✓
Provision or coordination of vector control services	✓
Assurance of drinking water safety	✓
Assurance of the safe management of liquid, solid, and hazardous waste	✓
Investigation and control of communicable diseases	✓

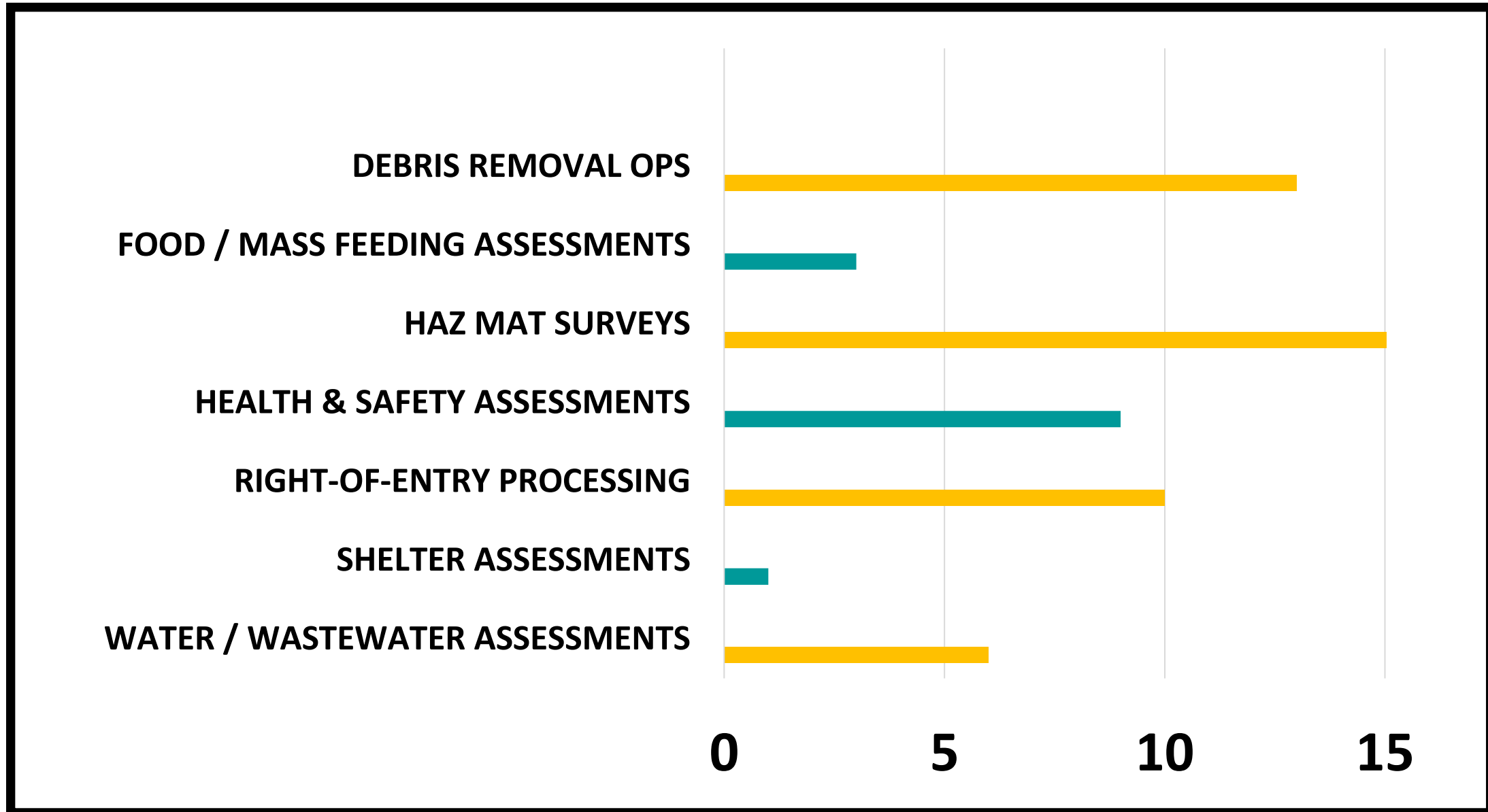
# CALIFORNIA DISASTERS

Pandemics  
Wildfires  
Severe storms  
Earthquakes  
Floods  
Deep freeze  
Landslides  
Mudslides  
El Nino

Civil Disorders  
Gas Leaks/ Explosions  
Tsunami  
Drought  
Dam Failure  
Oil Spills

- Not an inclusive list, only those disasters that caused damage that resulted in property tax relief.
- Concurrent disasters are the new norm

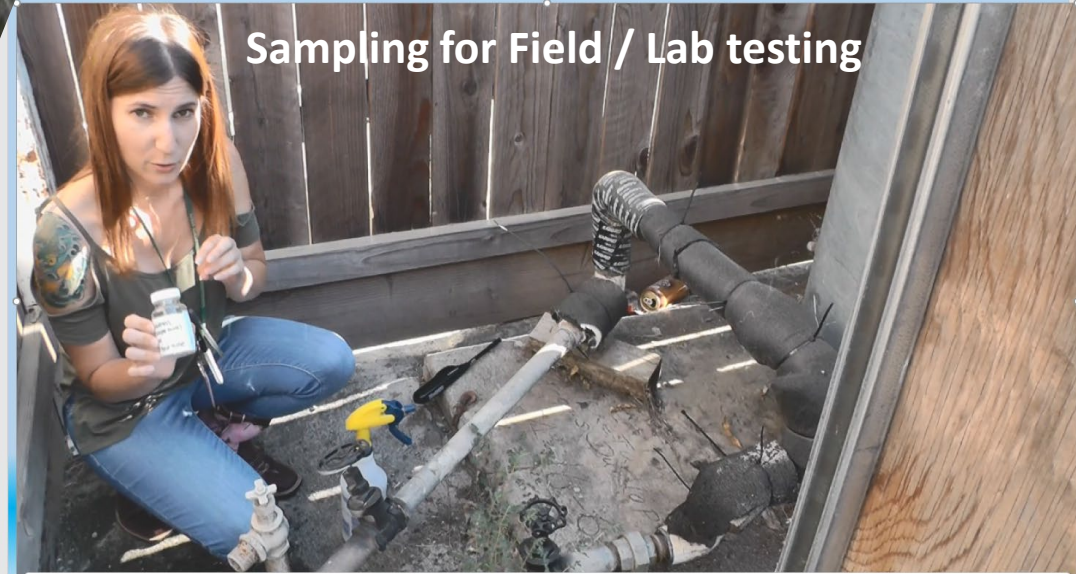
# EH Staff Deployments 2015 to 2018



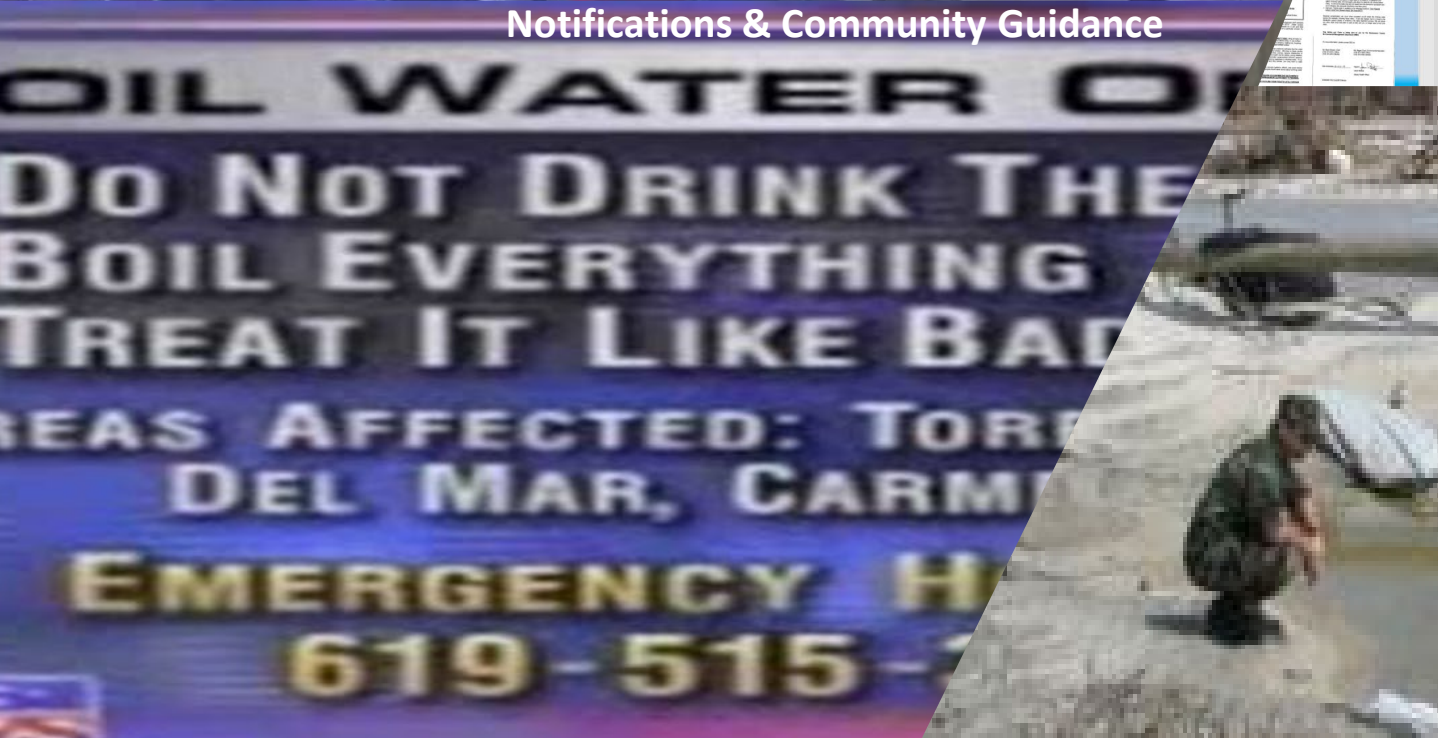
# EH DISASTER RESPONSE - DRINKING WATER



Alternative supplies



Sampling for Field / Lab testing



Notifications & Community Guidance



Assessment for contamination

**ROUTINE: Drinking Water Safety (Municipal, Permits for Private Wells, Guidance)**

# EH Functions: Safe Drinking Water After a Disaster

## **Sample EH Resource Request**

**EHS or REHS for well water  
and water system  
inspections**

**Must be familiar with  
Local Primacy Agencies**

# EH DISASTER RESPONSE - WASTE WATER MUNICIPAL SEWER OR SEPTIC



Arranging chemical toilets



Guidance on temporary solutions if sewer system is damaged or no water supply



Cleaning up sewage spills or arranging pumping due to power loss at main lift station



# EH Functions: Wastewater Assessments After a Disaster

## Sample EH Resource Request

EHS for septic and sewer  
assessments + oversee  
cleanup

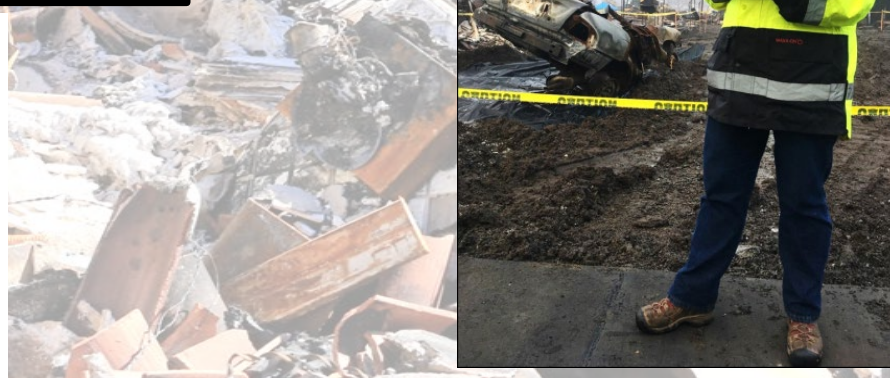
# EH DISASTER RESPONSE - DEBRIS



## PHASE I

### **Hazardous Waste**

- Household Hazwaste
- Illegal hazmat
- Combustion products
- Dead animals



- ## PHASE II
- **Debris /ash** –monitor characterization, collection, transport, disposal
  - **Soil** contamination/ cleanup
  - **Air** quality monitoring

RESIDUAL SOLID WASTE, HOUSEHOLD HAZWASTE, HOUSING/ BUILDING H&S

# EH Functions: Disaster Debris Management

**Sample  
EH Resource Request**

**REHS or EHS,  
HAZWOPER trained for  
Phase I / Phase II**

# EH DISASTER RESPONSE

## - FOOD SAFETY



Monitoring Mass Feeding Operations



Assessments, sampling for lab testing, guidance and notification



Closing or Modifying permits to keep stores and restaurants open

### Social Distancing at Lunch Trucks

- No dining
- No condiment table
- Stay 6 feet away from others



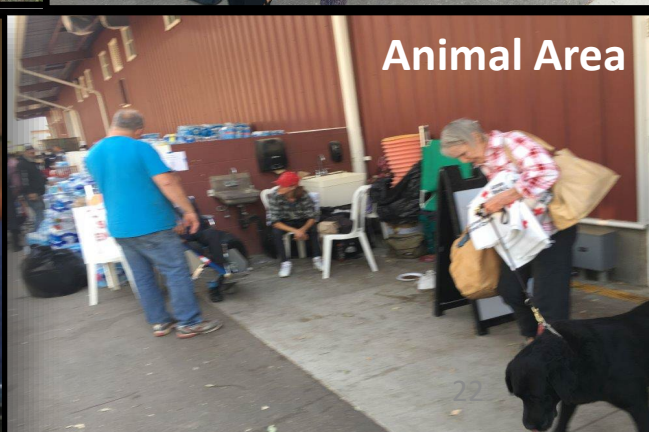
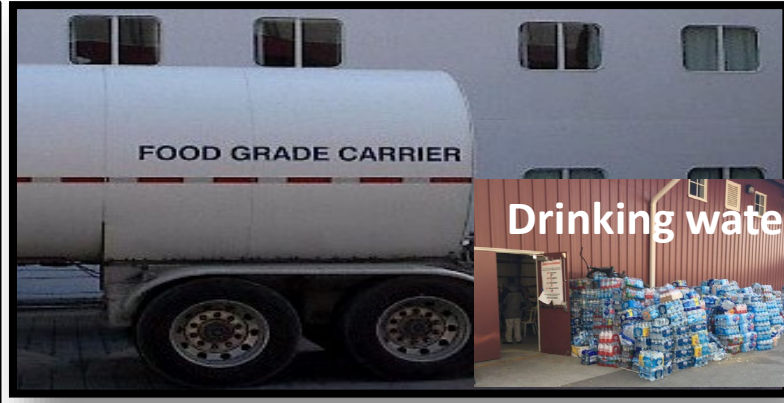
SACRAMENTO Environmental Management Department  
Protecting Public Health and the Environment

# EH Functions: Food Safety After a Disaster

**Sample  
EH Resource Request**

**Food Safety Specialist  
for monitoring mass  
feeding at shelter**

# EH Functions: Shelter Safety



# EH Functions: Shelter Health & Safety

## Sample EH Resource Request

EHS or REHS to do  
shelter assessment for  
suitability  
for opening

# And sometimes

## Sample EH Resource Request

REHS with Hazwoper 40 hours required for Debris Management, well and septic inspections; must have familiarity with LPAs



# EH in Disasters - Summary

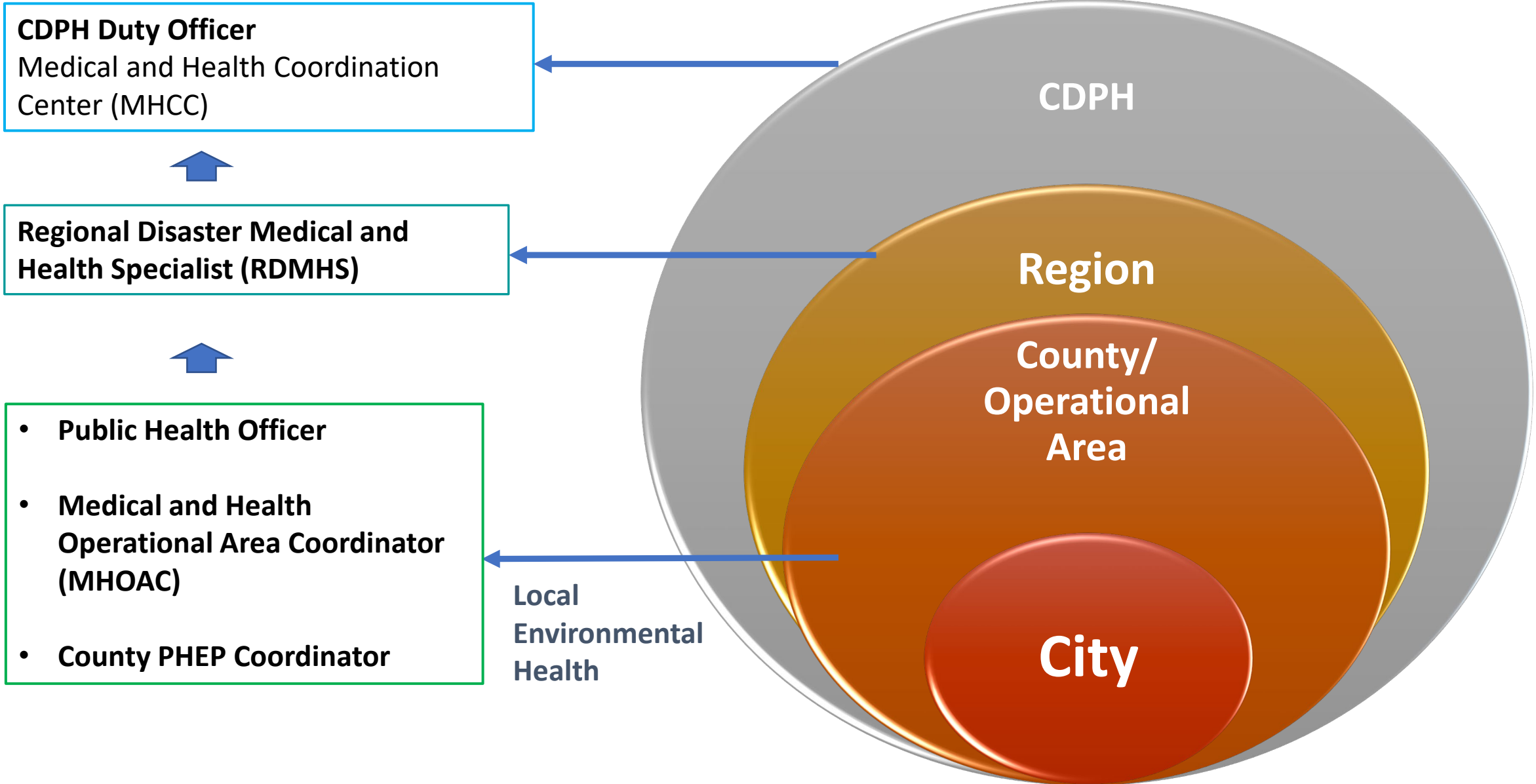
**Protects public health**

**Prevents and mitigates harm from physical, CBRN hazards**

- Health and safety assessments and monitoring
- Provides alternatives: safe drinking water, sanitation
- Assures food safety, sheltering/ housing
- Public guidance, messaging
- Remediation of CBRN and debris mgt (CDPH coordinates resource requests and provides guidance; local EH manages/ oversees)
- Vector control

**Promotes recovery, permits reopening and rebuilding**

# Requesting Resources for EH Disaster Response



<b>Resource Request: Medical and Health</b>		<b>FIELD/HCF<sup>2</sup> to Op Area</b>		<b>RR MH (11AUG11)</b>		
1. Incident Name:		2a. DATE:	2b. TIME:			
3. Requestor Name, Agency, Position, Phone / Email:			2c. Requestor Tracking #: (Assigned by Requesting Entity)			
4a. Describe Mission/Tasks:		4b. Delivery/Reporting/Staging Information:				
5. ATTACH ADDITIONAL ORDER SHEETS, IF NEEDED <input type="checkbox"/>		GENERAL: SUPPLY/EQUIPMENT <input type="checkbox"/>	PERSONNEL <input type="checkbox"/>	OTHER <input type="checkbox"/>		
<b>6. ORDER SUPPLY/EQUIPMENT/PERSONNEL REQUEST DETAILS</b>						
ITEM #	<b>DETAILED SPECIFIC ITEM DESCRIPTION:</b>				Quantity Requested	Expected Equipment/ Staff Duration of Use:
	<b>Supplies/Equipment</b> (R: Drug Name, Dosage Form, UNIT OF USE PACK or Quantity, Prod Info Sheet, In-House PQ, etc.) Medical Supplies: Item name, Size, Brand, etc. General Supplies/Equipment: Food, Water, Generators) <b>Personnel</b> (Be specific: List Probable Duties, Required License, Specific Experience (ED/ICU/OR, Hospital/Clinical, etc.) <b>Other</b> (Mobile Field Hospital, Ambulance Strike Team, Alternate Care Supply Cache, Facility-Tent, Trailer, Size, etc.)					
7. Requesting entity must confirm that these 3 requirements have been met prior to submission of request						
<input type="checkbox"/> Is the resource(s) being requested nearly exhausted or exhausted?						
<input type="checkbox"/> Entity is unable to obtain resources within a reasonable time frame (based upon priority level indicated) from vendors, contractors, MOU/MQA's, department, or corporate office providers?						
<input type="checkbox"/> Entity is unable to obtain resource from other non-traditional sources?						

# ESF 8 Resource Request Form

**NOTE!** MHOAC signature needed.

\*Coordinate with local Office of Emergency Services (OES)

Resource Request: ESF 8 Medical and Health								Op Area (MHOAC) to Region/State		
ENVIRONMENTAL HEALTH PERSONNEL REQUEST DETAILS								Fulfillment		
Item#	Priority Level High Medium Low	Personnel Type Needed Team Lead CUPA HS (Gen/ Sp) HS (Gen/ Sp)	Number of this Type of Personnel Needed	Program Area Experience Needed (Food, Water, Housing, CUPA/ HazMat, USTs, etc.)	Certificates Required (40-hr HAZWOPER, ICS 100,200,300,400,700,800, EHTER, etc.)	Date Needed (Start Date)	Number of Days Needed	Approved	Filled	Tracking or Mission #
1										
2										
3										
4										
5										
Deployment/Mission Details (Indicate the Activities the Requested Personnel Will Be Conducting):										
Staging Details (Indicate Address Where Personnel are to Report):						Report to POC (Indicate Name, Title, Contact Information):				
Lodging Provided?	Food/Water Provided?	Government or Private Vehicle Needed?	Go-Kit and Field Equipment Needed?		Personal Protective Equipment (PPE) Needed?					
YES___ NO___	YES___ NO___	YES___ NO___	YES___ NO___		YES___ NO___					
	NO___	Number / Type Needed:	What Is Needed:		PPE Level Needed:					
Requested by:						Date:				

• EH-specific RESOURCE REQUESTING FORM

• CCDEH 2021

\*Note: CDPH plans to create similar discipline-specific forms in the future

# EH RESOURCE TYPING

## CCDEH 2021

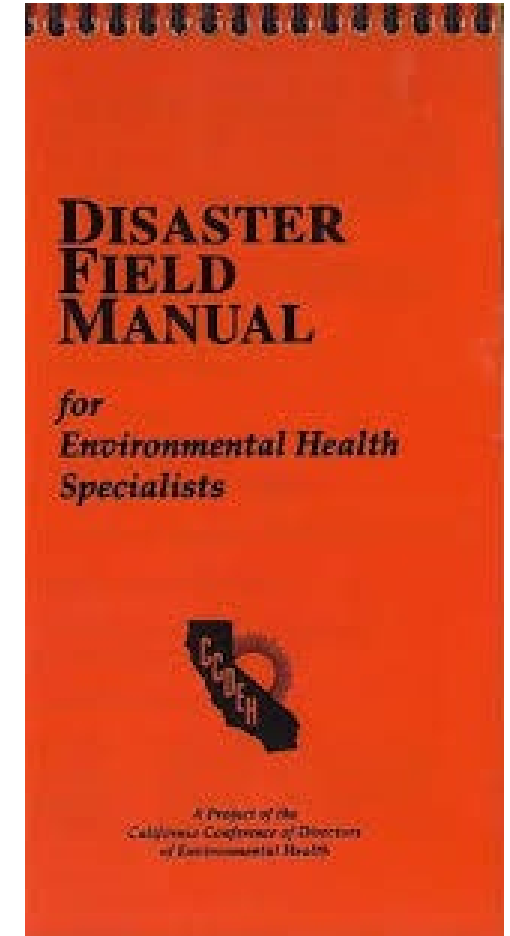
Environmental Health Resource Typing						
PERSONNEL QUALIFICATIONS						
Component	Team Leader	CUPA /Haz Mat Specialist	REHS-Generalist	REHS-Specialist	EHS-Generalist	EHS-Specialist
Description	Supervises EH Team of 6-7 EH/ REHS staff	Assess hazmat threats for household hazardous waste or CUPA	Assess potential public health threats; performs variety of EH functions to	Asses threats or risks from one specific area; performs specialty EH functions to mitigate threats or make	Performs variety of EH functions	Performs EH function in one specific area
Deployment Duties/Tasks	Field Assignment: Leader of Field Team for Phase I (haz mat sweeps), Phase II (debris removal), or General EH field assignment work.	Field Assignment: Phase I household haz waste sweeps, regulated haz materials/waste facilities assessments, Phase II Debris Removal operations, etc.	Field Assignment: Health & Safety Assessments of Mass Feeding, Emergency Shelters, Food Facilities, Drinking Water, Wastewater, etc.	Field Assignment: Food safety, Drinking Water, Wastewater, CUPA/ HazMat, etc.	Non-field Assignment: Right-of-Entry (ROE) processing, Local Assistance Center (LAC), Public Information Officer (PIO) functions, etc.	Field Assignment: Food safety, Drinking Water, Wastewater, etc.
Certification	CA REHS	n/a	CA REHS	CA REHS	n/a	n/a
Resources	Introduction to SEMS	Introduction to SEMS	Introduction to SEMS	Introduction to SEMS	Introduction to SEMS	Introduction to SEMS
	ICS-100 Basic ICS	ICS-100 Basic ICS	ICS-100 Basic ICS	ICS-100 Basic ICS	ICS-100 Basic ICS	ICS-100 Basic ICS
	ICS-200 Single Resource	ICS-200 Single Resource	ICS-200 Single Resource	ICS-200 Single Resource	n/a	n/a
	ICS-300 Intermediate ICS	n/a	n/a	n/a	n/a	n/a
	ICS-400 Adv ICS for Complex Incidents					
Required Training	IS-700 Intro to NIMS	IS-700 Intro to NIMS	IS-700 Intro to NIMS	IS-700 Intro to NIMS	IS-700 Intro to NIMS	IS-700 Intro to NIMS
	IS-701 Multi-agency coordination	n/a	n/a	n/a	n/a	n/a
	IS-800 National Response Framework	IS-800 National Response Framework	IS-800 National Response Framework	IS-800 National Response Framework	IS-800 National Response Framework	IS-800 National Response Framework
	EHTER Awareness	EHTER Awareness	EHTER Awareness	EHTER Awareness	n/a	n/a
	40-hour HAZWOPER	40-Hour HAZWOPER	n/a	n/a	n/a	n/a
Recommended Training	Psychological First Aid (PFA)	Psychological First Aid (PFA)	Psychological First Aid (PFA)	Psychological First Aid (PFA)	Psychological First Aid (PFA)	Psychological First Aid (PFA)
	EHTER X (Operations)	EHTER X (Operations)	EHTER X (Operations)	EHTER X (Operations)	n/a	n/a
	ICS-400 Adv ICS for Complex Incidents	ICS-400 Adv ICS for Complex Incidents	ICS-400 Adv ICS for Complex Incidents	ICS-400 Adv ICS for Complex Incidents	ICS-400 Adv ICS for Complex Incidents	ICS-400 Adv ICS for Complex Incidents
	First Aid/CPR	First Aid/CPR	First Aid/CPR	First Aid/CPR	n/a	n/a
Work Experience	5 years as REHS	2 years as CUPA/Haz Mat	3 years as REHS	2 years as REHS	Experience in multiple EH disciplines (Q- #of years?)	Specialized experience in EH discipline (Q- #of years?) + additional as needed e.g. public information
	2 years as supervisor	n/a	Experience in multiple EH disciplines;	1 year in area of special expertise		
	1 full-scale exercise or actual incident response experience	incident response experience, household hazardous waste	Field work experience required	Field work experience required		

# EH Resource Requests: Lessons Learned from Recent Incidents

- Local EH covers a wide spectrum of ESFs while continuing routine operations
- Mutual Aid complicated due to:
  - EH active in Recovery phase when state EOCs may not be activated
  - 55% of local jurisdictions not integrated with PH
  - Multiple pathways (CCDEH regions, ESF 8, CalOES-CalEPA, etc.)
  - Lack of pre-disaster agreements
  - Cost considerations if no state or federal declaration
  - Resource requests not going through local EOC
  - **Debris Management particularly challenging**
    - Complex resource needs – e.g. EHS or REHS for managing Phase 1/ Phase 2 + have experience with drinking water and septic/ wastewater programs
    - Access to Fire CUPA resources
    - Need Health Emergency declaration for Phase 1
- Limited preparedness funds for EH

# Environmental Health Preparedness

- CCDEH Disaster Field Manual for Environmental Health Specialists
- Resource Typing
- Response Teams
- EHTER Awareness Course
- EHTER Operations Course



# Best Practices for Requesting EH Resources

**EH Resource requests should be signed by MHOAC**

**Coordinate with LOCAL EOC or OES Rep**

**Determine realistic needs**

**Be specific**

**For questions/ concerns with ESF 8 process, contact CDPH Duty Officer at (916) 328-3605**



# Key Takeaways – EH Emergency Management

**#1**

Environmental Health mutual aid is requested through ESF 8

**#2**

CDPH Manages ESF 8 response

**#3**

Health Emergency Declaration is critical for Phase I debris removal operations

**#4**

Resource requests should be signed by MHOAC

**#5**

Always coordinate through Local OES

**#6**

For debris mutual aid, ESF 10 may be required  
\* to expedite, follow standard protocols

# Contact Us

[mark.starr@cdph.ca.gov](mailto:mark.starr@cdph.ca.gov)

## **General Questions**

Center for Environmental Health Emergency Preparedness Team

[cehept@cdph.ca.gov](mailto:cehept@cdph.ca.gov)

## **Public Health Emergencies**

CDPH 24/7 Duty Officer: 916-328-3605

