

17th Technical Training Series



April 3-6, 2017 · Long Beach Hyatt
200 South Pine Avenue · Long Beach, California, 90802



An aerial photograph showing a large wildfire with thick, dark smoke rising from a valley. In the foreground, the nose and wing of a firefighting aircraft are visible, flying over the smoke. The background shows a hazy, mountainous landscape under a bright sky.

CalRecycle's Wildfire Disaster Response – A Short Briefing

How does one remove material to fill four USS Nimitz Class Supercarriers from remote, rural counties that have suffered catastrophic wildfires? With no plan and no team learn the strategies and tactics that allowed CalRecycle to complete this mission.

Wildfire Disaster Learning Objectives

- Describe CalRecycle's Debris Removal Process
- Provide Operational Information
- Provide Lessons Learned
- Questions



Intro To Debris Operations

- Speakers

- Todd Thalhamer (Intro and Lessons Learned)

- B.S. from Humboldt State University in Environmental Engineering
 - Registered Civil Engineer
 - Senior Waste Management Engineer with CalRecycle for 25 years
 - 19 years of firefighting experience, Retired volunteer Lieutenant for EDH Fire

- Megan Emslander (Plans)

- William Heung (Ops)

- Alfred Worcester (Erosion and Roads)

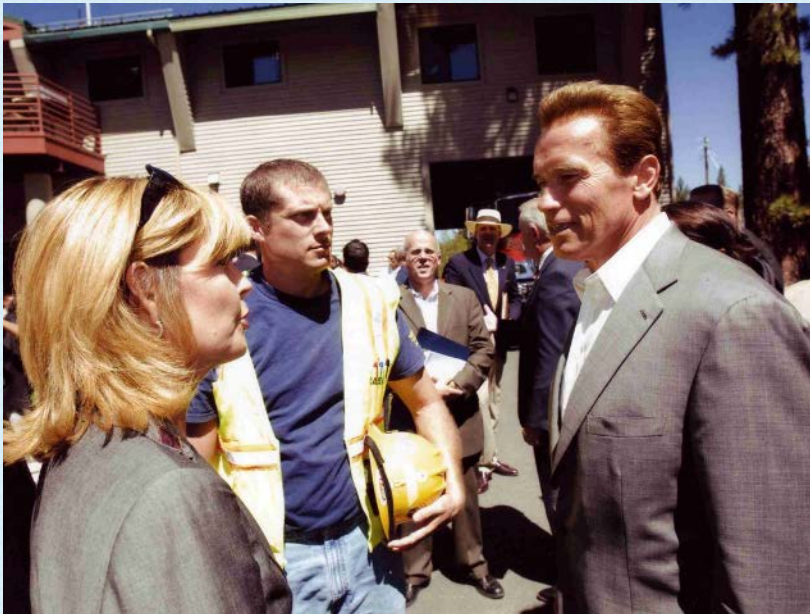
- Marcus Santillano (Final Inspections)



History - New Executive Order

On July 2, 2007, the Governor issues Executive Order S-09-07

“... that State agencies shall work with local officials to put into place and implement a comprehensive structural debris removal plan that will treat the removal of structural debris as a single organized project.”



History

- Executive Order – *comprehensive structural debris removal as a single project, suspended California Hazardous Waste regulations*
- El Dorado County – Risk and Commitment (Local OES, ROE process, DROC, EDEM)
- OES – Funding Concept and Coordination
- CalRecycle (CIWMB) – Leadership, Removal Plan, Cleanup Contractor, and Funding
- Not FEMA eligible



Coordinated Structural Debris Removal

Two Key Concepts

- Develop a program that treats the debris removal after a wildland fire as a single unified project while protecting the public and environment
- Recognized the hazards present and protected the work force and the community



Past CalRecycle Debris Disaster Operations

- Angora Fire , El Dorado County – Summer/Fall 2007 (255+ sites removed)
- San Bruno PG&E Natural Gas Line Explosion, San Mateo County – Fall 2010 (30+)
- Boles Fire, City of Weed – Fall/Winter 2014 (130+)
- Round Fire, Mono County – Winter/Spring 2015 (35+)
- Rocky/Jerusalem Fires, Lake County – Fall 2015 (55+)
- Trinity Complex Fires, Trinity County – Fall 2015 (40+)
- Butte Fire, Calaveras County – Fall/Winter 2015/16 – Spring 2016 (850+)
- Valley Fire, Lake County – Fall/Winter 2015/16 – Spring 2016 (1175+) Commercial (100+)
- Erskine Fire, Kern County – Summer 2016 (300+)
- Clayton Fire, Lake County – Fall/Winter 2016/17 (155+)

Other Notable Wildfires – No State Operations

- 49er Fire (2009) Placer County/343 Acres/76 Structures Destroyed
Structural Loss– \$40 million
- Station (2009) Los Angeles / 160,577 Acres / 209 Structures
- Ponderosa (2012) Tehama / 27,676 Acres / 133 Structures
- Rim (2013) Tuolumne / 257,314 Acres / 112 Structures
- Clover (2013) Shasta / 8,073 Acres / 196 Structures
- King (2014) El Dorado / 97,717 Acres / 80 Structures
- Soberanes (2016) Monterey / 132,127 Acres / 68 Structures
\$259 million to fight, most expensive in history
- Blue Cut (2016) San Bernardino / 37,000 Acres / 318 Structures

Coordinated Debris Program ?

- Authorized only by Governor's order
- Not a defined program in statute, regulation, or policy
- CalRecycle
 - No Duty Officer / M-F 8 to 5 department
 - Very little authority to act outside a non-state declared emergency
 - No established ICS team
 - As part of its normal duties, CalRecycle will support local enforcement agencies (LEAs) with solid waste, tire, compost, household hazardous waste issues during local emergencies

Keys to a Debris Recovery Program

CalRecycle or County Lead

- If the Governor declares a State of Emergency and the California Disaster Assistance Act fund is opened, the State may:
 - Decide an imminent threat exists
 - Response is based on a **required** declaration of a Public Health Emergency by Local Health Officer
 - Designate and provide funding to State Agencies to abate and mitigate the threat
- If disaster is large enough a Presidential Declaration may open Federal funding assistance with additional resources and/or constraints.
 - Damage assessment dependent on public and private damage
 - Assistance to Individuals
 - Public Assistance Program – Assistance to Local Governments, State Governments, and Tribal Governments

LEA Responsibilities in Debris Ops

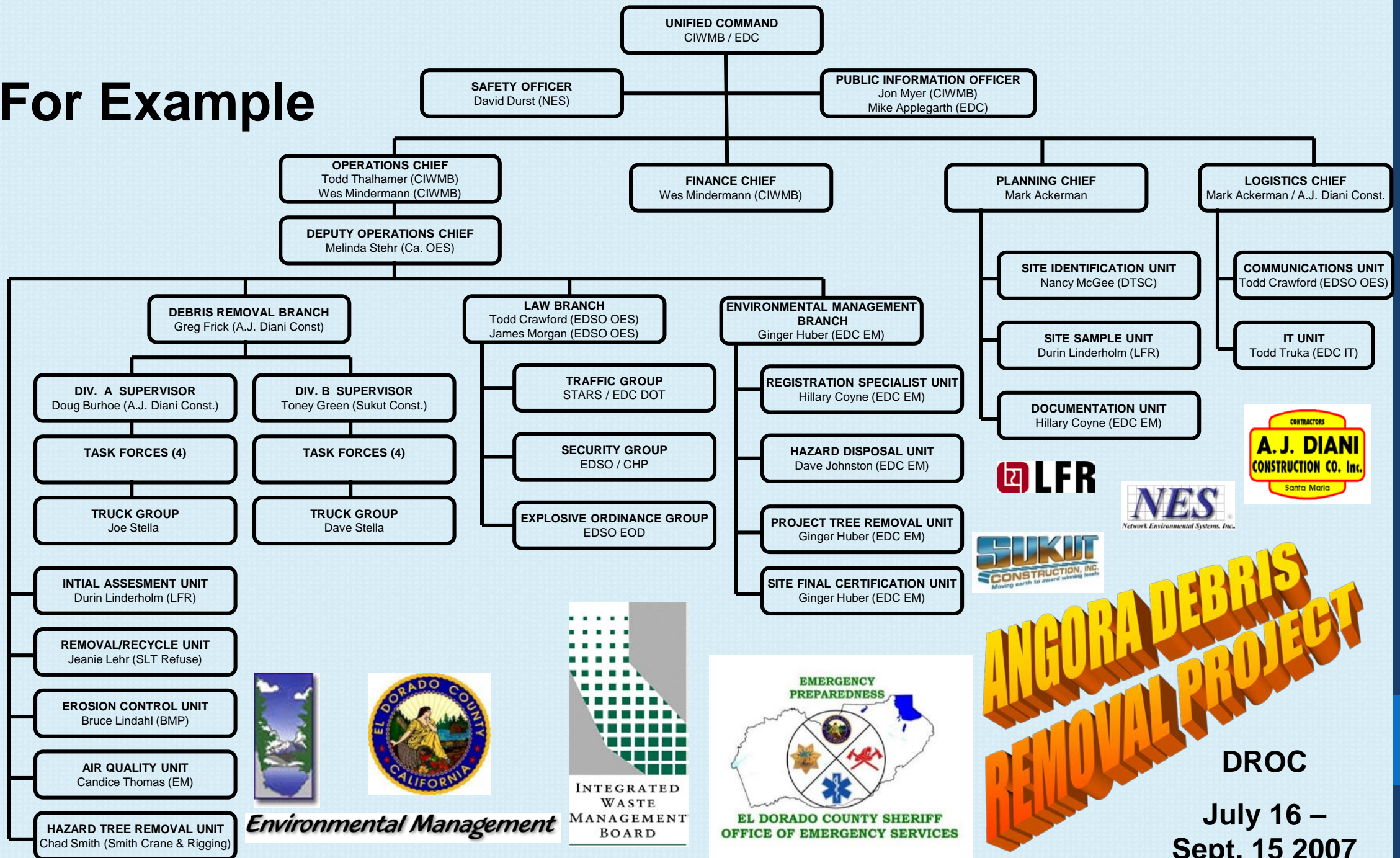
Local Disaster

- Public Meeting / Central Point to the Community
- Coordination with Local Health Officer
- Public Health Declaration
- Coordination with DTSC/US EPA for HHW sweep
- **Private Cleanup Goals (Optional)**
- Damage Assessments (Cal/Fire vs County Lists)
- Emergency Waivers
- Providing Maps via GIS
- Insight on Septic, Propane, Oil, Kerosene Tanks
- State Disaster
- Public and Private Cleanup Goals
- Right of Entry (Timeline, due date, abatements)
- Personnel at the Operations Center / Home owner interaction
- Insurance Coverage
- Damage Complaints and Final Site Approval - Sign Off

How? Use ICS – Incident Command System

- ICS is a flexible, scalable structure that provides standardized process, procedures, organizational structure and common terminology for incident management
- Management structure is built around five major response management functional areas: Command, Planning, Operations, Logistics, and Finance
- Scalable
- ICS Team – IC (County) + Ops, Plans, Finance, Logistics (CalRecycle)
 - Break into Branches and Divisions
 - Task Force Concept with Qualified Div. Supervisors

For Example



**ANGORA DEBRIS
REMOVAL PROJECT**

DROC

**July 16 –
Sept. 15 2007**

Is the Ash Hazardous or Toxic?

The ash is an immediate threat to public health and safety (source: Cal EPA)

- Residual structural ash contains concentrated amounts of **"heavy metals"**, such as arsenic, beryllium, cadmium, cobalt, copper, lead, mercury, nickel, thallium, vanadium, and zinc
- Asbestos is also present in older home sites (pre 1985 ish)
- Asbestos and Lead **very prevalent in older communities pre-1978**
- Preliminary Risk Analysis indicated health related issues with the ash from heavy metals



Personal and Personnel Exposures



Personal and Personnel Exposures



Asbestos Issues



Asbestos Issues



Health Hazards

- Can your landfill accept the waste?
- Is dry ash a problem for landfill operators?
- Do you have cleanup goals or requirements for the contractors?
- How are you going to prevent exposure to residences that are in between burned homes?



CalRecycle Protocols

- Ensure community safety
 - County/City Requirement
- Apply cleanup protocols to the state's response contractors (via ROE) and private contractors hired by the owner
- Everyone operates under a single plan

How to Protect Health and Safety

- Operations Plan
 - Wet operations with air sampling
 - Engineering controls with PPE
- Community Safety Plan
- Incident Safety Plan
- Air Monitoring
 - Site Specific
 - Community (Schools)
- Site workers in Level C
- Independent Inspections

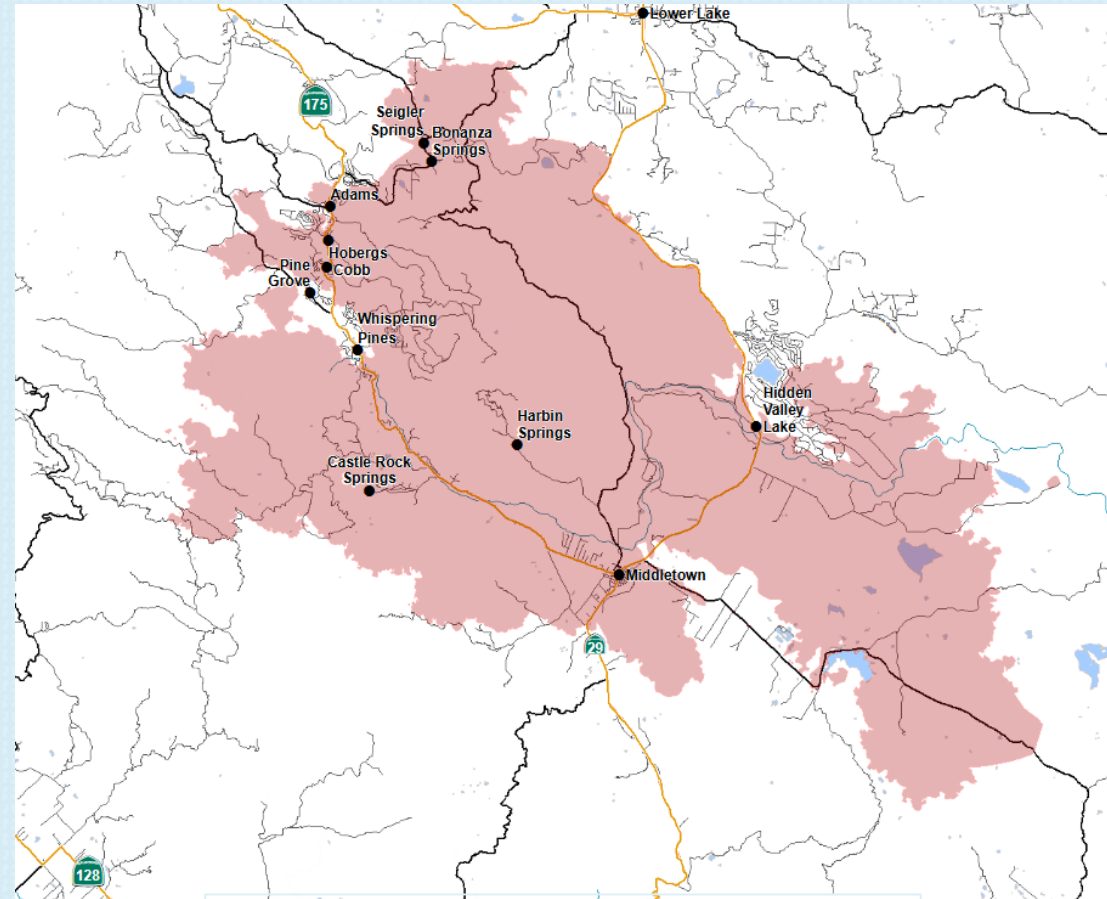
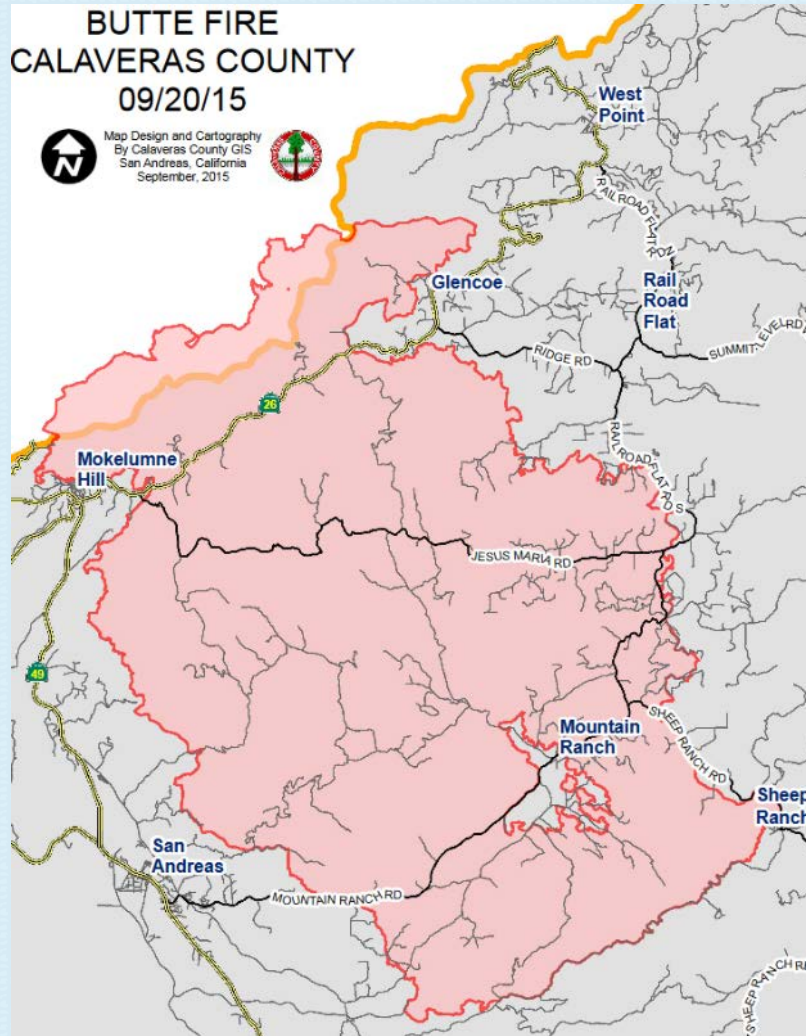


2015 Fire Storm Summary

CalRecycle Operations – All simultaneously

1. Trinity County
2. Lake County (Rocky/Jerusalem Fires)
3. Calaveras County
4. Lake County (Valley Fire)

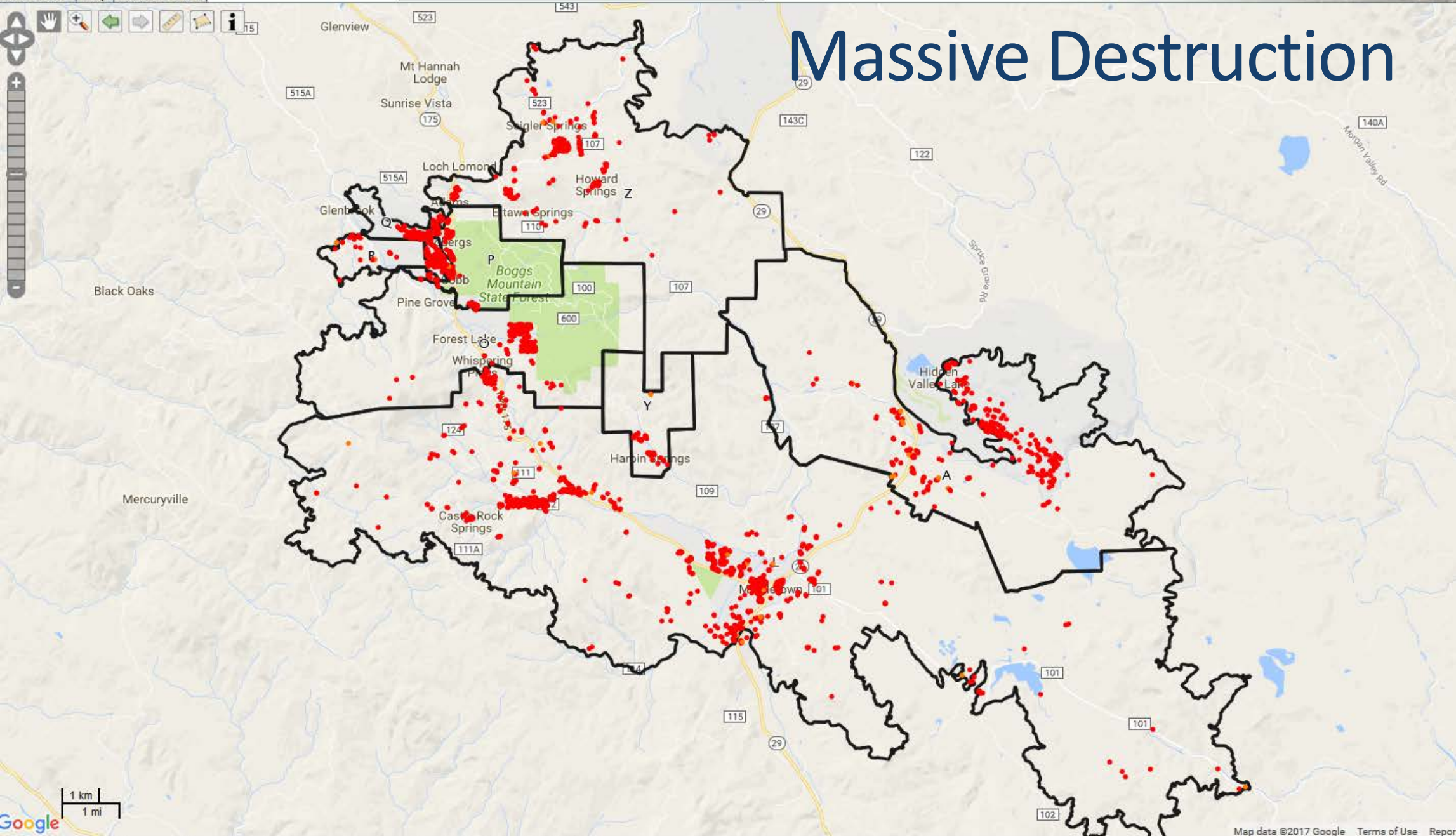
Butte and Valley Fires (147,000 Acres/229 sq mi)



SF City and County – 47 sq mi
Lake Tahoe – 191 sq mi



Massive Destruction



By the Numbers

2014 to 2016 Debris Ops

Tons Removed	635,417
Waste Diversion	25.2 Percent
Cost	\$261 Million



CalRecycle Wildfire Disaster Debris Operations 2014 to 2016*

	City of Weed	Mono County Round Fire	Trinity County	Lake County Rocky and Jerusalem	Lake County Valley	Lake County Valley Commercial	Calaveras County Butte	Kern County Erskine	Lake County Clayton
Sites Cleaned	134	37	42	(43 AJ) 56	1,191	6 (100+)	852	302	157
Tonnage Collected	30,691.00	9,763.19	1,855.24	8153.66	244,801.09	18,129.58	237,080.00	50,445.52	34,497.57
Truck Trips	N/A	N/A	N/A	988	23,519	2,030	28,146	3,248	3,666
% Diverted	28.2%	18.0%	9.7%	33.9%	30.0%	34.4%	15.0%	37.0%	21.0%
Estimated Cost	\$7.3 M	\$2.5 M	\$2 M	\$4.5 M (AJ)	\$92 M	\$6.9 M	\$117 M	\$18.5 M	\$10.5 M
FEMA Assistance	No	No	No	No	Yes	Unknown	Yes	No	No

* Contractor data.

Big Numbers - Removal Totals

- 500,010 tons of debris removed from the Valley and Butte
- One Nimitz Class aircraft carrier weighs 110,233 US tons
- 75 Task Forces removed about 5 Carriers in 6 months
- 53,000 loads to landfills
- \$215 million
- Valley - 1000 homes removed in 100 days



Operations and Plans



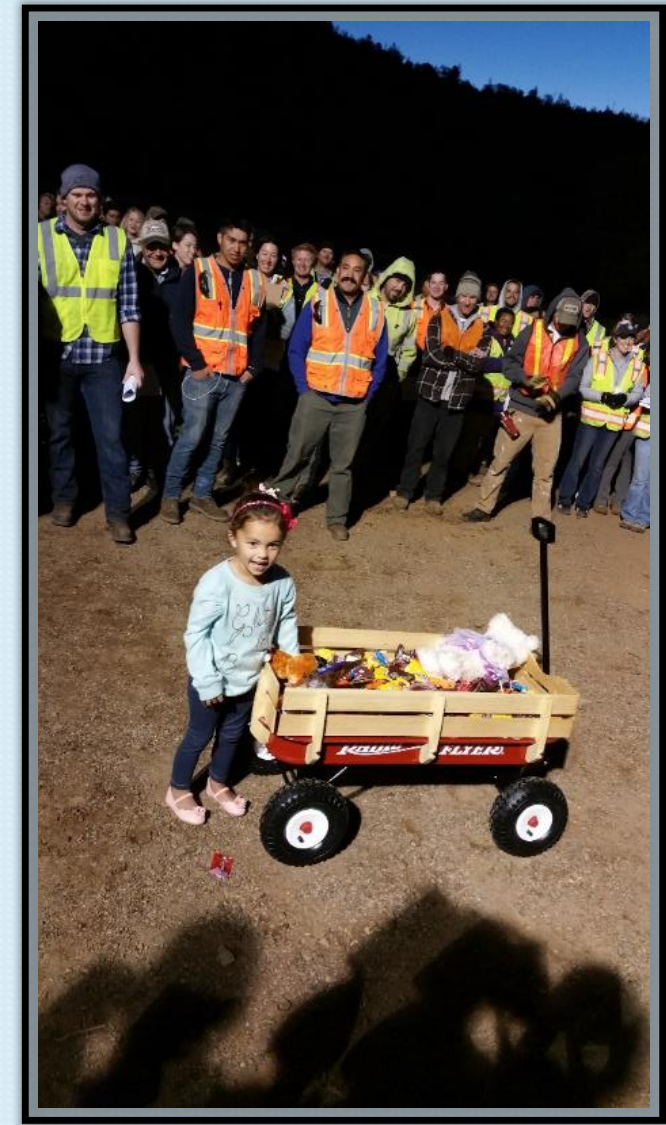
Lessons Learned (L²)



L² – Early Guidance to Reduce Exposure Hazards



L² – Operational Within Days



L² - Largest Debris Issue?

- Handling Asbestos Containing Waste
 - No exemption
 - Mixed regulatory guidance, changing regulations, new regulations
- Asbestos NESHPA Program
 - Demo and renovation notification
- Non-Delegated vs Delegated Air Districts
 - Amador, Butte, Calaveras, Colusa, El Dorado, Glenn, Imperial, Lassen, Mariposa, Nevada, Placer, Plumas, Shasta, Sierra, Siskiyou, Sutter, Tehama, Tuolumne, Yuba
- Different Plans for Adjacent Counties

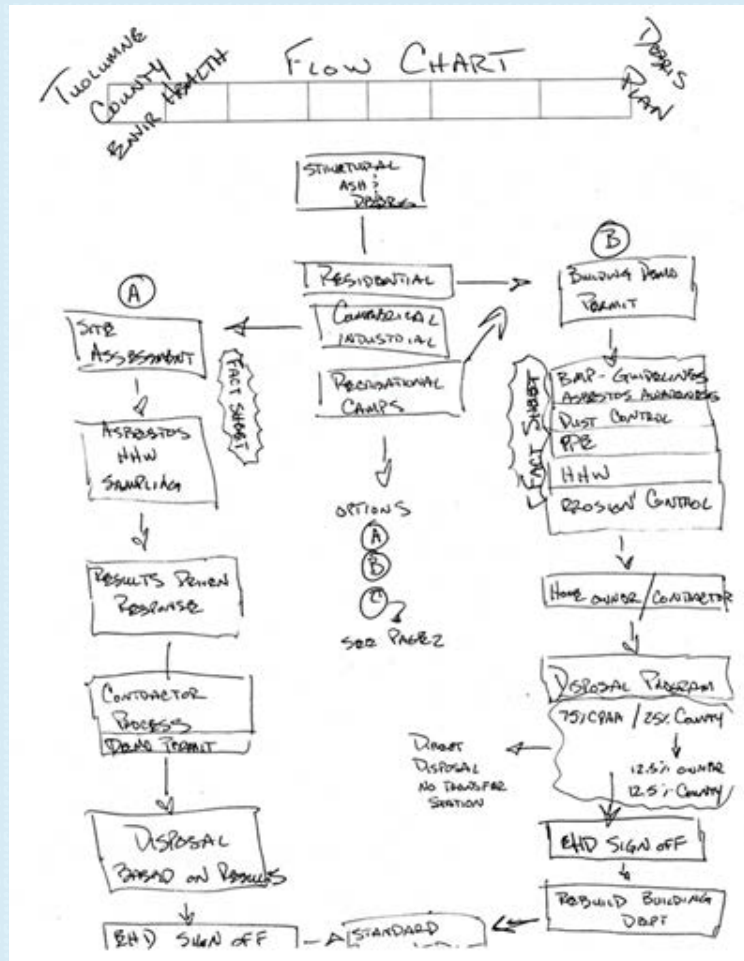


L² - Communication during disaster is limited ... wait!

Date	Incident Days Butte/Valley	Structures Reported Destroyed by Cal Fire	
		Butte Fire	Valley Fire
September 12, 2015	+3/0	15	0
September 14, 2015	+5/+2	214	400
September 19, 2015	+10/+7	626	888
September 22, 2015	+12/+10	901	1,910

Butte Fire: 70,868 acres (111 sq. miles) Valley Fire: 76,067 acres (119 sq. miles)

L² - Do you have a plan?



Valley Incident Debris Removal Project

10/29/15



Incident Action Plan



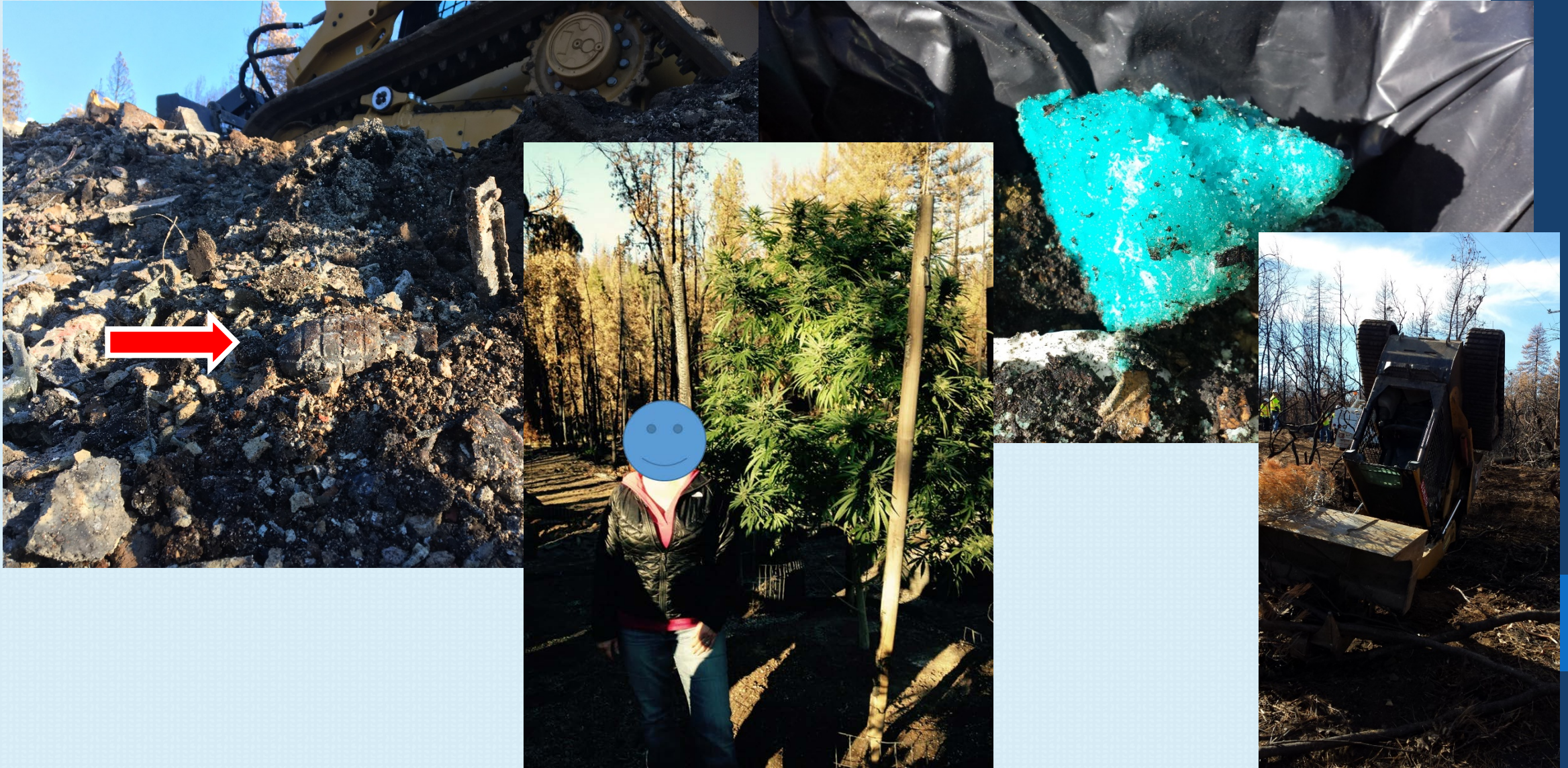
CalRecycle

L² - Do you have contingencies plans?

- UXO
- Access
- Radiological Monitoring
- Dead Animals
- Recovered memories
- Hand Dug Wells and UST
- New Sites???
- Communications



L² – Expect the Unexpected



L² – Limited Access (Beast Bridge 80,000 lbs)



L² - New Sites (Mercury)



L² – Know Your Community (Hand Dug Wells)



L² -Trust but Verify (Commercial Trucking Inspections)



WHY?



L² - Largest Risk is Truck Safety



L² - Truck Safety



L² – Know 911 Procedures

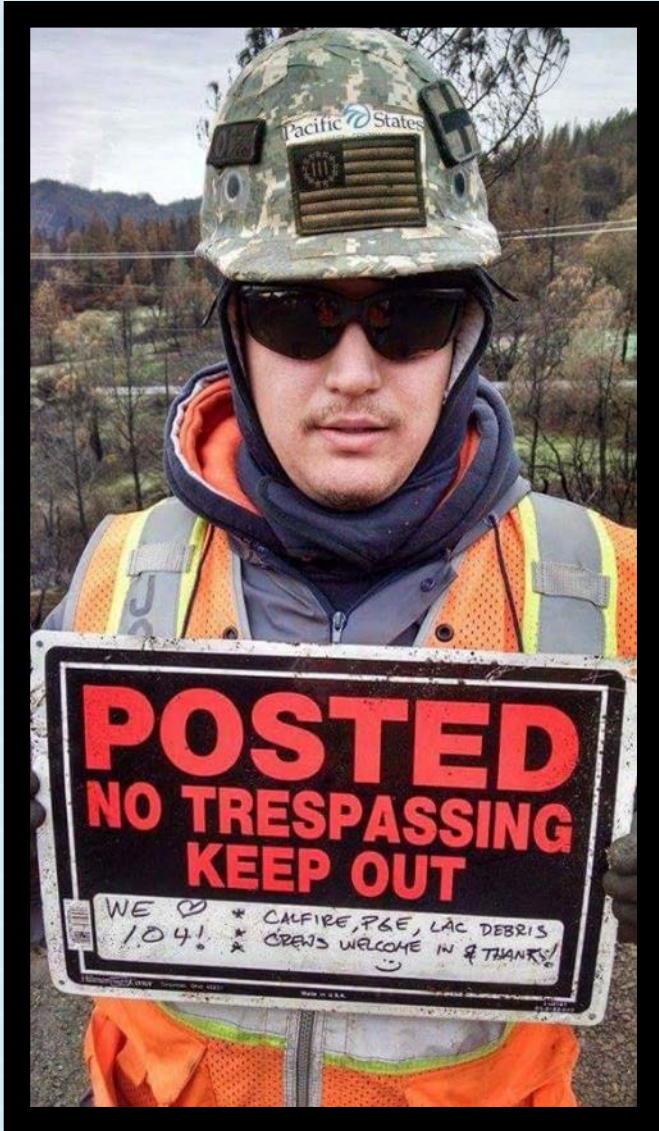
With and Without Cell Reception



L² - Winter is Coming for Ops



L² - Community Psychology and Impacts



L² - Leadership and Clear Crew Missions



L² - Why do this?

Hello Todd,

I have heard nothing but amazement and appreciation for the cleanup job that you all did to remove the wreckage; fast, not roaring around, sprinkling the roads and so on. There's always a person or persons at the center of great or bad deeds, and it seems you might be among those who created such a kind ending to a terrible situation. Just wanted to convey great thanks.

Peggy Bauhaus

Raymond Neutra



THANK
YOU



QUESTIONS?

