

The Tunnel Incident - Oakland 1991

Ten Years After

October 3, 2001

The Hills Emergency Forum

Member Agencies:

City of Berkeley

City of El Cerrito

City of Oakland

California Department of Forestry and Fire Protection

East Bay Municipal Utility District

East Bay Regional Park District

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Table of Contents

	PG
Title Page	1
Table of Contents.....	2
Executive Summary.....	3
After Action Review.....	6
I. Preparedness.....	6
II. Communications.....	8
III. Strategy and Tactics.....	10
IV. Mutual Aid System.....	12
V. Incident Command System.....	14
VI. Evacuation.....	16
VII. Volunteers.....	17
VIII. Mop-Up.....	18
IX. Emergency Public Information.....	18
X. Emergency Management.....	19
XI. Land Use Planning.....	20
Appendix 1 Hill Emergency Forum.....	23
Appendix 1.1 HEF Accomplishments.....	25

EXECUTIVE SUMMARY

The Hills Emergency Forum (HEF) provides, through senior executive leadership of the member agencies, a sustainable framework to achieve both short and long term improvements in fire prevention mitigation, suppression and emergency planning for the wildland urban intermix area of the Oakland-Berkeley Hills. This approach of agencies coming together voluntarily to meet common goals has resulted in successes in many areas including coordinated fuel management projects, inter-agency response planning and training, legislative outreach and public information campaigns.

In the fall of 1999, the HEF requested that Steve Woodill, Chief of the Santa Clara Unit of the California Department of Forestry and Fire Protection (CDF) lead a review of progress by the member agencies in the ten years since the 1991 Tunnel Fire in the Oakland Hills. Chief Woodill requested that the Governor's Office of Emergency Services (OES) join with CDF in accomplishing this review. This report focuses on the recommendations made in the original report by OES titled "The Oakland Hills Fire - A Multi Agency Review of the October 1991 Fire in the Oakland/Berkeley Hills" dated February 27, 1992. Additionally, the "Hazard Mitigation Report" (FEMA-919-DR-CA) provided supporting documentation for land use planning issues and recommendations.

The original report is organized in sections that address operations in each arena of firefighting from training and preparedness to mop-up and demobilization. Although the focus is on firefighting organizations, public information, law enforcement and emergency management operations are also reviewed. HEF member agencies feel strongly that this anniversary is an opportunity to review its accomplishments. This provides the decision makers and the staff with a long-term view, allowing them to address the on-going issues of fire risk.

Each member agency was provided a list of the original recommendations as questions to determine the changes in the past ten-years. This report is based primarily on the responses given by each member agency. The original responses are synthesized into this report.

The fire history of this area is significant. Numerous reports and proposed action items have followed past major events. It is the observation of the authors that numerous accomplishments have been achieved, however, a significant amount of opportunities still exist to reduce fire risk. The realization that these accomplishments have enhanced the ability of first responders to face any kind of natural or manmade catastrophic incidents is apparent. The emergency management recommendations in this report could apply to all risk situations making for a more effective response.

The HEF now provides the foundation for the continuing challenges and opportunities to further reduce the fire risk in the future. The coordinated approach of the HEF is critical in addressing the many issues related to fire safety in the urban intermix.

Significant Accomplishments and Opportunities

Accomplishments:

1. Preparedness –
 - Developed legislative support on fire related issues
 - Developed fire weather monitoring system for planning and response
 - Implemented annual inter-agency wildland fire training
2. Strategy and Tactics –
 - Installed water system improvements
3. Mutual Aid System –
 - Coordinated fire responses
4. Emergency Public Information –
 - Created a public website which monitors and displays fire danger
5. Land Use Planning –
 - Demonstrated joint agency fuel hazard mitigation projects
 - Adopted appropriate fire safe ordinances
 - Developed hazard mapping system with ongoing updates
 - Developed a regional strategy for an Environmental Impact Report

Opportunities:

1. Preparedness -
 - Improve wildland fire risk awareness
 - Instill commitment to reduce fire risk
 - Include law enforcement, planning, building and roads departments at all levels in wildland fire risk solutions
2. Communications –
 - Improve the capability to meet the emergency communications needs of a large incident
3. Evacuation –
 - Review and update existing procedures
 - Develop neighborhood evacuation programs
4. Emergency Public Information –
 - Develop ways to continually inform the public about potentially threatening situations
 - Develop programs to educate the public on available fire danger information
5. Emergency Management –
 - Improve interagency coordination (planning, public works, police) before, during and after incident
6. Land Use Planning -
 - Expand fuel hazard mitigation programs on public and private lands
 - Resolve environmental conflicts that delay project implementation
 - Secure dedicated long-range funding.

In the ten years since the original report was completed, all affected agencies have made a concerted effort towards meeting the originally identified recommendations. There have been significant strides towards interagency cooperation and accomplishments. Organizations such as the Hills Emergency Forum have been a catalyst in the interagency success. Continued strong leadership by HEF senior executives, staff coordination and support complemented by emerging technologies will significantly enhance the fire safety in the East Bay Hills.

After Action Review

The questions and responses are organized according to various emergency management strategies. The first ten sections (I-X) were taken from the recommendations in the report written by the State Office of Emergency Services (OES) titled “The East Bay Hills Fire”. The last section (XI) was taken from the recommendations found in the report by Federal Emergency Management Agency (FEMA), titled “Hazard Mitigation Report for the East Bay Fire in the Oakland-Berkeley Hills”, FEMA-919-DR-CA..

I) Preparedness – Prior to the Tunnel Fire, agencies were not adequately prepared to function in interagency operations when responding to the dynamic nature of Wildland Urban Interface (WUI) fires.

- 1) Improve public safety agencies’ understanding of the national fire danger rating system. Components related to ignition, spotting potential, expected rates of spread, and fire behavior are pertinent to wildland intermix fires.

Oakland Fire Department (OKL), East Bay Regional Parks District (EBY) and El Cerrito (ECR) have adopted the Weather Information Management System (WIMS). EBY is a leader in this area with a completed fire weather plan that triggers park use restrictions, closures, dispatch levels, staffing changes and public information.

Recommendations: Member agencies to continue to standardize use of WIMS for uniform decision-making and response.

- 2) Develop local emergency action plans that deal effectively with “red flag” program. Urban fire departments with hillside/wildland intermix areas should train staff in the application of the national fire danger rating system.

All Hills Emergency Forum (HEF) members have incorporated the National Weather Service and the California Inter-agency Fire Forecast Weather Unit’s Red Flag announcements and have developed operational plans that enhance response capabilities during red flag periods.

Recommendations: Member agencies continue to utilize the red flag warning system in both planning and response. Continue to train all levels of personnel in the applicability and value of the red flag warning system.

- 3) Revise local hillside/intermix fire plans in light of the experience of October 19-20 1991. Fire hazard mitigation measures are essential.

Over the last 10 years, “Mutual Response Area” (MRA) agreements have been developed between most of the member agencies. The plans outline an increase in the number of interagency fire suppression resources responding to initial dispatches. Interagency MRA drills are held each year. The drills stress wildland fire suppression skills, public information, interagency coordination and communications.

Fire hazard mitigation issues are addressed in item XI.1.1.

Recommendations: Continue developing and improving the interagency pre-suppression planning and response capability.

- 4) Coordinate plans and mitigation measures with other jurisdictions and government levels.

All HEF members are actively participating in interagency forums including: Diablo FireSafe Council; Alameda and Contra Costa County Chiefs Associations; The East Bay Hills Vegetation Management Consortium; East Bay Remote Automated Weather Station (RAWS) and Fire Weather Coordinators Group. Additionally, the HEF has provided an excellent venue for coordinating plans and mitigation measures with other jurisdictions and government levels. HEF is comprised of local, state and federal government working together towards a common goal. Two examples of this are: 1) member agencies are sponsoring FireSafe 2001 which includes the Wildfire Interface Conference and public events and 2) the East Bay Municipal Utilities District (EBMUD) is an active member in HEF and continues to remedy the community fire flow issues. (See items III.4, 5, 6)

Recommendations: Member agencies should continue to strengthen interagency relationships by focusing on the HEF goals of assessment, mitigation, preparedness and response. Additionally, continued efforts to include other intra-governmental disciplines such as law enforcement, planning, building and roads departments are needed both at the local and state levels.

- 5) Make wildfire control a component of scheduled training programs.

Agencies in Alameda and Contra Costa Counties participate in the annual wildland training at Camp Parks. ECR includes wildland components to written and practical portions of promotional tests.

Recommendations: Agencies must continue to improve formal wildland training and practical exercises. Agencies should incorporate standardized wildland fire components into promotional processes.

II) Communications – Communications capabilities have historically been a major problem on every large incident. The lack of knowledgeable supervisory personnel has been identified as a major contributing factor to communication and coordination issues when responding to catastrophic events.

- 1) Assign a supervising fire dispatcher to be present in dispatch centers at all times. A working knowledge of the fire terminology and mutual aid procedures is important to handle complex or large emergencies.

All four dispatch centers (OKL, BER [Berkeley], ERC [Richmond Dispatch Center] and EBY) are addressing this issue. The Oakland Fire Department currently has a Battalion Chief, Communications Officer and three dispatch supervisors assigned to the Fire Dispatch Center. A minimum of one supervisor is on duty at all times. BER, ERC and EBY have joint Police/Fire dispatch centers. ERC and BER assign firefighting personnel to the communications center during major incidents. EBY has a supervisor dispatcher on duty two of the three shifts. Although all dispatch centers have addressed the need for supervisory oversight, the issue is the knowledge and capability required to address the extraordinary demands of complex situations.

Recommendation: The agencies need to recognize that their day-to-day operational procedures will not be adequate for addressing major events. Agencies should continue the training and development of dispatching and supervisory personnel to provide them the knowledge necessary to transcend from day-to-day operations to major events.

- 2) Separate fire and police dispatch functions whenever possible. This assures that the fire dispatcher is knowledgeable and paying undivided attention.

Three of the four dispatch centers are joint law enforcement/fire centers. The key issue is the knowledge and experience necessary to address these major fire incidents.

Recommendation: Continued training to ensure knowledgeable dispatch personnel react appropriately. Review current staffing levels to ensure adequate staffing.

- 3) Train fire dispatchers in terminology, mobilization of fire and support services apparatus, and air operations deployment. An ability to keep track of resources and their locations is also necessary.

Because communications centers have a high rate of personnel turnover, continual dispatcher training in Incident Command System (ICS), mutual aid, and regional dispatching procedures are essential. The four communication centers indicate they are doing continual in-service training. It is unknown what capability and or processes are used to track and allocate resources.

Recommendation: Agencies need to minimize turnover to the point where adequate training and established proficiency are not compromised by continual personnel changes. Member agencies should analyze their existing resource ordering and status keeping processes to ensure adequate capabilities during a major incident.

- 4) Train dispatchers in initiating mutual aid request and recognizing the “intent” of the mutual aid request.

The response to this question is varied. EBY indicates that daily operational interactions with other agencies provide knowledge and capability to utilize the mutual aid system. Lawrence Berkeley Lab (LBL), which relies on the Lawrence Livermore Lab (LLL) for after hours dispatch, indicates that they have fully trained fire dispatchers. Other member agencies indicate reoccurring training at some unspecified level or failed to respond to the question.

Recommendation: Continued training and use of the mutual aid system by dispatch personnel is necessary to maintain proficiency and understanding. To efficiently utilize this system the skills of dispatchers must allow them to recognize the intent. One option is to implement formal regional and/or interagency training programs for dispatch personnel.

- 5) Plan to allocate radio frequencies by function, operational division, and support services. Monitor each frequency at the command center.

The response to this question is fragmented. It appears that each department has developed an intra-departmental strategy for responding to the communications needs of a large incident. Most of the departments have developed some interdepartmental communication capability i.e. white frequency. OKL, EBMUD and EBY utilize the white frequency as a communication link with their cooperators. Additionally, OKL, BER and LBL have established daily check-in procedures. ECR acknowledges having operational policies and practices in place. The University of California Berkeley (UCB) and OKL adopted the 800 Mhz public safety radio system after the 1991 fire. All of these departments have developed efficient communications capabilities for normal workloads. It is unclear how the communications needs would be expanded for a large incident.

Recommendations: The member agencies develop a communications working group to determine the potential large incidents communications need. Then assess the existing interagency capability and recommend a formal communications strategy (written plan) to the HEF membership for interagency implementation.

- 6) Set up dedicated “outgoing only” telephone lines in the dispatch centers. Do not list or post the outgoing line numbers.

All member agencies have enhanced their communications capability by adding dedicated “out-going” telephone lines.

- 7) Conduct frequent interagency radio communications exercises. All fire departments in an area should participate.

All departments participate in regular tactical mutual aid exercises. These exercises often are designed to focus on field resources rather than dispatchers.

Recommendations: Continue efforts to use and develop tactical mutual aid exercises as a way to enhance interdepartmental incident response. Develop interagency dispatch drills and communications exercises to establish standard protocols for large incidents. Establish a yearly interagency dispatcher workshop focusing on interagency communications issues and opportunities.

III) **Strategy and Tactics** – The dynamic nature of a large WUI fire requires more versatile strategy and tactics than in a traditional urban environment.

- 1) Expand operational level command staff to meet recognized standards for span of control in fire fighting. One chief officer for each five to eight operational companies is optimal.

Span-of-control: the supervisory ratio of from three to seven individuals with five being established as optimum. PMS 410-1, NFES #0065

OKL operates with a span-of-control of eight to ten. LBL, ECR and EBY rely on the ICS organization to meet their on-scene management needs. Span of control for day-to-day operations remains difficult to achieve due to minimum chief officer staffing.

Recommendation: The agencies form a Regional Operations Chief Working Group to identify ways to respond sufficient command personnel to all major emergencies. Fully integrate the ICS into the daily operations of all departments to minimize the impact of reduced chief officer staffing.

- 2) Appointed a deputy chief to enhance inter-platoon coordination and to insure unity of command concepts.

OKL appointed a Deputy Chief to coordinate shift activities. Most departments coordinate shift activities through the Fire Chief or an Operations Chief.

Recommendations: Implement the recommendations as outlined in 1. above to minimize the impact of reduced senior command officer positions.

- 3) Recognize the limitations of air tankers and water-dropping helicopters. Agencies with those resources should provide all urban fire departments with guidelines for safe & effective air operations.

Annual regional training exercises include air operations safety. The California Department of Forestry and Fire Protection (CDF) and the United States Forest Service (USFS) have published training material on operations where aircraft, both fixed wing and rotary, are utilized. The EBY has two Type III multi-mission helicopters. These aircraft are used for firefighting and to orient and train cooperating agency personnel. The intention of this recommendation was to increase the awareness of ground fire fighting personnel on aircraft operations.

Recommendations: Develop programs based on National Wildfire Coordinating Group (NWCG) S-270 Basic Air Operations to increase the awareness of all firefighting personnel on air operations. The current use of large capacity heli-tankers and the increased use of aircraft generally make this a high priority item.

- 4) Develop a more expedient means of adapting hydrant outlets from 3” to 2-½ “ National Standard Thread (NST). Investigate the feasibility of installing adapters with breakaway caps.

The EBMUD completed the change over of all 6500 hydrants in the City of Oakland to 2 ½” NST in July 1998.

Recommendation: None

- 5) Upgrade the water grid sufficiently to produce a fire flow consistent with building density and size.

Water service is provided to both Alameda and Contra Costa Counties by EBMUD. The district has undertaken numerous projects to improve supply, increase fire flow (new standards set by a number of cities) and make improvements to insure an adequate water supply is maintained. Much of this work was done in conjunction with their Seismic Improvement Program. The district has worked with individual fire departments to upgrade areas of weakness. In some cases, new mains and hydrants were added where supply was non-existent or inadequate. Some local communities have entered into cost share agreements with the district to complete these projects. A major improvement project, at a cost of \$3.1 million, was undertaken in Oakland’s Rockridge district, an area that suffered heavy losses during the Tunnel Incident.

Recommendation: Continue the upgrading of the water delivery system to meet the fire flow requirements based on current and future fire service needs.

- 6) Install a permanent auxiliary pumping system for refilling all upper water zones in hill areas.

EBMUD has acquired twelve (12) portable pumping units with a capacity range of 150 to 2,000 gallons per minute for emergency deployment. All pumping plants are equipped with an emergency generator connection and a few of the 150 pumping plants have a dedicated emergency backup generator.

Recommendation: Continue efforts to meet this goal.

- 7) Maintain a list of locally available water tenders at all fire dispatch centers.

Other than agency owned equipment, fire dispatch centers do not keep status on water tenders. Most departments surveyed stated they would order water tenders through the Operational Area Fire and Rescue Mutual Aid System.

Recommendation: Fire departments develop an Operational Area and Regional Emergency Resource Directory for all resources including water tenders, agency and privately owned.

IV) Mutual Aid System – The California Fire and Rescue Service Mutual Aid System is a critical component of all large emergency management responses. The increasing demand for resources requires that response agencies thoroughly understand all components of the Mutual Aid System.

- 1) Prepare all fire service agencies for “worst case” scenarios, particularly fires, earthquakes, hazardous material and mass casualty incidents.

All fire department employees have received Standardized Emergency Management System (SEMS) and ICS training. ECR uses contract emergency planners to design realistic and useful plans and drills. Many cities have sent personnel to California Specialized Training Institute (CSTI) and Emergency Management Institute (EMI) for training in “all-risk” disaster preparedness. The addition of fire apparatus designed and equipped for wildland firefighting has enhanced the regional capability.

Recommendation: Develop annual “tabletop exercises” to exercise command and control systems. Worst-case scenarios should include Weapons of Mass Destruction (WMD) problems.

- 2) Increase the response speed and capability of California’s mutual aid systems.

Individual departments participate in their respective county mutual aid plans. MRAs have been established in high hazard areas to provide an initial response from multiple fire agencies. “Threat Zones” have been identified to speed the response of CDF to high-risk areas adjacent to State Responsibility Areas (SRA).

The EBMUD, working with the State Office of Emergency Service (OES), developed the Water Agency Response Network (WARN). The agreement now includes 185 water utilities statewide. A web-based program maintains the status of equipment available for deployment in an emergency.

Recommendation: Continue the programs outlined above. Develop operations plans that include county (Operational Area) and regional responses for fire, law enforcement, emergency medical and emergency management personnel.

- 3) Improve inter-regional alert protocols.

Improvements have been made in Alameda County. Inter-regional alert protocols have not been written. The Region II Fire and Rescue Coordination Center in St. Helena notifies the Operational Areas of major fire activity.

Recommendation: Insure that Operations and Communication Plans include inter-regional alert protocols and personnel are familiar with their use.

- 4) Hold more frequent mutual aid mobilization exercises. Design them to be real-time.

Agencies conduct MRA exercises two or three times per year. Intra-county strike teams are dispatched to emergencies on a routine basis. Agencies recognize that this is ongoing need.

Recommendation: Continue to hold Operational Area mutual aid mobilization exercises. Conduct field exercises in conjunction with “table top” exercises to increase coordination between field and Emergency Operation Centers (EOC).

- 5) Include a designated strike team leader in all prearranged strike team assignments.

Strike Team Leaders (STL) are pre-identified. Battalion Chiefs are expected to be STL qualified. Many are fully qualified in this position and have gained experience while deployed on out-of-county assignments.

Recommendation: All fire departments must continue to provide their pre-designated strike team leader information to their respective operational area.

- 6) Begin moving requested resources immediately.

Based on availability, resource requests are filled on an immediate need basis. Most agencies have pre-designated apparatus for mutual aid dispatch.

Recommendation: Insure that Operations Plans include clear descriptions of “Initial Attack”, “Immediate Need”, and “Planned Need” resource request procedures. Develop policies and practices that insure that resources are dispatched when requested.

- 7) All fire departments should plan for receiving mutual aid from many participants. Include in plans reporting, staging, deployment, supporting and demobilization protocols.

Using the basic ICS structure, most agencies have developed plans to receive mutual aid.

Recommendations: In conjunction with #4 above, develop full-scale exercises that require agencies to plan for receiving large mutual aid resource requests. Conduct exercises that require Incident Management Teams (IMT) to set up check-in, staging, operations, logistics, support and demobilization functions. Send non-fire personnel to annual wildland exercises to work as trainees in support functions.

- 8) Make exercises for wildland/structural fires part of the regular training schedule. Interagency, multiple company exercises should be held yearly.

Since 1994, agencies in both counties have participated in the annual multi-agency wildland exercise held at Camp Parks. Other smaller exercises are held prior to fire season. EBMUD sponsors a prescribed fire exercise on their property.

Recommendations: In addition to Wildland training exercises held annually, conduct full-scale exercises in hill area locations. Utilize resources from outside the community to increase awareness. Incorporate MRA drills into these exercises.

- 9) Establish automatic mutual aid, boundary drops, and interagency response for mutual threat zones, including multi-disciplinary incidents.

Fire Departments have designed programs, i.e. MRA, to address these issues. Some areas have response plans that include boundary drops. Comprehensive inter-county plans, following the State Fire and Rescue Mutual Aid Plan are being developed. Most wildland and high-rise exercises do not include other disciplines. Law enforcement and Emergency Medical Services (EMS) are included in airport exercises, held every other year, at the Oakland Airport.

Recommendation: Continue to develop and implement intra-county response plans that include boundary drops. Plans should include law enforcement and EMS responders and interface with city, county and state emergency management systems.

- 10) Familiarize all personnel with protocols, procedures and terminology for requesting air support.

As a part of ICS training, personnel are familiarized with proper protocols for ordering air resources.

Recommendation: Continue to conduct specific training for fire operations and dispatch personnel in proper procedures, ICS terminology and protocols for requesting specific Kinds and Types of firefighting aircraft. Develop Dispatch Procedures Guides to ensure that requests for firefighting aircraft are processed in a timely manner. Dispatch centers should be aware of aircraft availability. Refer to item III.3.

V) Incident Command System - ICS is the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure with responsibility for the management of assigned resources. The increased demand for interagency operations requires that a common system be used for all emergencies.

- 1) Provide training to all local emergency response personnel in the ICS system. Personnel outside emergency services should also be trained in the areas of logistics and finance.

All agencies have adopted SEMS. Training and implementation for fire and non-fire personnel varies in the agencies surveyed. Most have conducted ICS 100 and 200 level classes for firefighters, and ICS 300 and 400 level classes for Chief Officers. Once again, the use of the county IMT has increased awareness in command and general staff positions. Most fire agencies do not have qualified Finance Section personnel.

Recommendation: Utilize all available resources to continue ICS training and certification. The California Incident Command Certification System should be used as the standardized reporting system.

- 2) Schedule increased interdepartmental drills in ICS.

Fire departments participate in MRA drills, regional wildland exercises and other training opportunities to promote the use of ICS. The agencies surveyed recognize the need for additional ICS position training-

Recommendations: Incorporate ICS into day-to-day operations. Fire departments should continue ICS position training and increase the depth of personnel assigned to IMTs. Utilize full-scale field and tabletop exercises to enhance interagency ICS training.

- 3) Reduce incompatibility in communications systems at all levels, and between local and state agencies.

Departments in the Bay Area have a variety of radio communications systems, including 800 Mhz. Most departments with 800 Mhz systems have added VHF radios to apparatus that respond on mutual aid responses. EBY has added 800 Mhz scanners to monitor radio traffic in Oakland, Alameda County, and Richmond.

Recommendation: Fire departments should incorporate the guidelines outlined in ICS 420-1, Appendix A, FIRESCOPE Radio Communications.

- 4) Include in ICS training and drills opportunities to learn and practice the transition from single resource to multi-agency incident. Both command and support staff benefit from working on this complex set of procedures.

Full-scale exercises, with wildland and high-rise, are held 1 to 3 times per year. Some of these exercises include the transition from single resource to multi-agency operations. Most agencies realize that they have to maintain ongoing training programs to accomplish these goals.

Recommendations: See # 2 Above. Conduct annual, full-scale exercises that begin with single agency response, then develop into a multi-agency situation and then expand into "disaster" proportions. A Multi-Agency Coordination System (MACS) should be incorporated into tabletop exercises.

- 5) Design exercises to allow all officers to gain experience in all operational roles.

Some chief officers participate in their county IMTs. Most have not had the opportunity to develop operational skills in all command and general staff positions.

Recommendation: Utilize practical exercises to provide position training. Include trainees on all IMTs.

- 6) Include a communications function in the ICS structure.

OKL has assigned a Battalion Chief as the Communications Officer. Only a few departments have personnel certified as Communications Unit Leaders and Incident Dispatchers.

Recommendation: Train personnel to ICS Communications Unit Leader level. Utilize the FIRESCOPE Communications Specialist Group (north) for technical advice and support.

- 7) Plan for early information/intelligence gathering and procedure for sharing with Emergency Operations Center and media.

Each agency's Emergency Operations Plans (EOP) provide for sharing information from field operations to the agency EOC and then to the city, county or region EOCs. Most EOPs provide for public information officers at incidents, media centers and the EOC. Information is then disseminated to the media.

Recommendation: Train and staff the intelligence positions in the EOC. See item IX for public information discussion and recommendations.

VI) Evacuation – In potentially catastrophic situations the need to move large numbers of citizens out of harms way can become paramount. It is the responsibility of law enforcement to carry out evacuation procedures in coordination with other emergency response personnel. It is the responsibility of the individual citizen to understand their role in evacuation plans.

- 1) Clarify in each jurisdiction which agencies have statutory authority to order and supervise evacuation.

In most jurisdictions following SEMS guidelines, law enforcement has the lead role in evacuation. This function is coordinated from the EOC(s) of the involved communities. SEMS provides for coordination at each level (city/county/region) to be performed at the next level EOC.

Recommendations: Review Emergency Operating Plans. Exercise this function during full-scale drills.

- 2) Equip all fire vehicles with loudspeakers so that firefighters can inform citizens of the need for evacuation.

Police and fire vehicles are equipped with public address systems.

Recommendation: Completed

- 3) Schedule information exchanges among all operational level fire and police personnel from all jurisdictions in a mutual threat zone. Discuss local procedures, authority, and automatic mutual aid agreements.

Mutual Aid Region Advisory Committee (MARAC) meets quarterly in OES Region II. The EBMUD has established a Fire Agency Forum to exchange information with the fire departments in their district. County Fire and Police Chiefs meet independently on a monthly basis. Fire departments in Alameda County have established MRAs. County fire chiefs are developing intra-county automatic mutual aid programs.

Recommendations: Include command level law enforcement officers in all MRA exercises.

- 4) Use the emergency Broadcast System (EBS) and Emergency Digital Information System (EDIS) to its fullest benefit.

Emergency Alerting System (EAS) and EDIS are utilized by most jurisdictions. This includes monthly testing and annual drills. Contra Costa County's emergency notification system has been used in a number of refinery emergencies. The City of Oakland is scheduled to implement a citywide emergency alerting system in 2002.

Recommendations: Expand the use of these systems by HEF members.

- 5) Conduct public information campaigns throughout California on Evacuation issues

The various agencies have emergency/disaster plans that include evacuation procedures. The LBL conducts employee evacuation drills on an annual basis. Public information campaigns on evacuation procedures need to be conducted.

Recommendations: Local law enforcement has this responsibility. Individual neighborhoods should develop evacuation plans.

VII) Volunteers - The need to safely utilize spontaneous volunteers in a fire situation is well recognized. The challenge is to utilize untrained but well intended citizens. In the early stages of a major fire this can become problematic. Many departments have had success with specially trained volunteers to assist fire department staff.

- 1) Plan and prepare to deal with and use spontaneous volunteers and resources early in an incident.

OKL and BER have developed plans to deal with spontaneous volunteers. LBL and UCB have developed formal volunteer programs for employees with training components. ECR indicates on-going efforts. EBY has an extensive volunteer program, however, it doesn't appear that there is a procedure for dealing with spontaneous volunteers.

Recommendation: Member agencies review the existing spontaneous volunteer programs and develop a standardized policy and program.

- 2) Create an organizational element in fire departments to manage and use voluntary resources.

OKL, BER, EBY ECR LBNL, and UCB provide leadership by incorporating volunteer programs into their organizations.

Recommendations: Continue to explore ways volunteers can be effectively used to augment existing personnel and resources.

- 3) Develop a policy in every emergency organization to promote and use volunteers.

All member agencies have stated that they have a volunteer policy.

Recommendation: Informally share successful approaches between agencies in using volunteers.

VIII) **Mop-up** – The critical act of making a wildfire safe after it is controlled. This includes thoroughly extinguishing or removing burning material along or near the control line or in the total fire area if conditions warrant.

- 1) Make wildland fire mop-up techniques a component of scheduled training.

Wildland fire mop-up is integrated into all training programs.

Recommendation: Continue existing levels of training and utilize new technology as it becomes available.

IX) **Emergency Public Information** – The importance of an organized, trained public information capability has been recognized by all member agencies. Upon review of the 1991 OES East Bay Hills report, Item X., Emergency Public Information Section, it appears that there is still a strong need to develop ways to keep the public informed during initial phases of an incident. This is especially important to allow dispatchers to focus their efforts on response rather than dealing with public concerns.

- 1) Dispatch a trained Public Information Officer (PIO) immediately to any major incident. Give public information provision a high priority.

All member agencies realize the value of an effective media and public information program. All member agencies, as a minimum, dispatch a representative to function as a PIO to potentially major incidents

- 2) Include a team of PIO's in the emergency response plan for every city and county.

The question missed the essence of the issue that was brought forward in the 1991 report. The original report identified a need for a large team of public information specialists (25-30) to staff all levels of the information process required to provide accurate timely information. The key is to keep the public adequately informed in a rapidly changing, potentially life threatening situation. This aside, PIOs are included as members of incident management teams.

Recommendation: Develop some way to continually inform the public about potentially threatening situations that may require them to take action to keep them out of harms way. This includes using technologies that were not available 10 years ago such as public information websites that could provide real time information.

- 3) Equip the PIO team with a mobile and EOC information center, complete with staff, phones, and fax machines.

Although all member agencies have designated information centers, the goal of having mobile facilities has not been met.

Recommendation: To re-evaluate the need for mobile facilities.

- 4) Plan to provide media reporters with access to information, whether by phone or by entrance to the disaster area.

All member agencies are aware of the necessity of providing PIOs for larger more complex incidents. It is the primary responsibility of PIOs to facilitate the access to the information for reporters.

Recommendation: Continue to provide adequate training of PIOs and develop a standardized approach to facilitate access to information.

- 5) Train law enforcement personnel from all cities in recognizing the access rights of media representatives.

Access rights for media representatives as outlined in the California Penal Code Section 409.5 is part of routine law enforcement training programs.

Recommendation: Continued training to ensure all emergency management personnel recognize and understand the rights of the media.

X) Emergency Management – As a result of the 1991 Tunnel Fire, the Standardized Emergency Management System (SEMS) was implemented by the State of California. This system is mandated for use by all agencies in the State of California.

- 1) Enhance multi-discipline coordination, particularly between fire, law, and emergency services agencies at all levels.

Agencies participate regularly in disaster planning and exercises in their respective operational areas and within OES Region II. Departments respond on a daily basis with law enforcement and EMS personnel. Cooperation and coordination are supported by the ICS, especially common communications, integrated command staff, and shared resources.

Recommendation: Utilize ICS and SEMS at all levels.

- 2) OES should develop formal mutual aid procedures for emergency services personnel.

All agencies participate in the California OES Emergency Manager Mutual Aid System (EMMA).

Recommendation: Completed.

XI) Land Use Planning – Land Use planning is the basis from which most Wildland Urban Interface issues can be complicated or mitigated. The key to dealing with potentially catastrophic WUI fire is through pre-suppression planning. This includes, but is not limited to: appropriate infrastructure design, building construction and fuel hazard reduction.

1) Develop vegetation management programs in the Oakland-Berkeley Hills.

To identify short and long term plans to reduce fuel loading within existing high hazard areas.

All agencies have developed vegetation management programs. They are having varying levels of success in implementing elements of these programs. Previously, each member agency had approached the environmental documentation process individually with limited success. As a result, they have agreed to a regional strategy that includes all member agencies. This unique effort will result in a single Environmental Impact Report (EIR).

The East Bay Hills Fire Study Area Geographic Information System (GIS) is an interactive computer program developed to analyze fire hazard on a landscape scale. The GIS is used for charting vegetation types, fuel model, development stage, crowning potential, slope class, flame lengths, rate of spread, heat per area and ignition potential rating. This information is used for regional work plan development.

Recommendation: Continue to pursue a comprehensive vegetation management strategy for the entire East Bay Hills area regardless of jurisdiction and develop dedicated ongoing hazard mitigation funding.

.1 Existing development -- Adopt ordinances requiring compliance with uniform Fire Codes or standards similar to Public Resources Code (PRC) 4290 and 4291.

Member agencies have adopted similar or more restrictive ordinances. As an example, OKL has adopted Municipal Code 15.12.040 Uniform Fire Code Appendix II-A, "Suppression and Control of Hazardous Fire Areas" Section 16(a) amended which adopts PRC 4291 type fuels hazards reduction standards.

Recommendation: Continue to evaluate and adopt appropriate ordinances.

.2 Wildlands -- Vegetation in wildlands should be managed for wildlife habitat and slope protection in addition to fire protection.

There as been a lot of work in this area. HEF developed a Fuels Management Plan (FMP) in 1996. The plan and the required environmental quality regulations reviews address wildlife habitat and slope protection.

Recommendation: Continue to comply with state and federal law and policies.

- .3 Areas subject to development/rebuilding – Rebuilding and other new development in similar hillside areas of the city should meet standards similar PRC 4290 and 4291 while protecting existing riparian zones.

In the rebuilding of the Tunnel Fire area utilities were under-grounded, the water delivery system was upgraded and some access roads were widened. As in the answer above, riparian zones have protections through the state and federal laws and policies.

Recommendation: Continue to comply with state and federal law and policies.

- 2) Insure that fire protection agencies and water utilities are incorporated into planning stages involving land use and new development decisions in high hazard areas.

This goal is achieved throughout the EBMUD service area with regard to selecting fire flows and appropriate storage for the flow and duration. In all low-pressure situations, each fire agency is notified in writing to ensure appropriate consideration is given at the building and occupancy permit stages.

Recommendation: Continue the current notification process.

- 3) Local government should not waive Substantive provisions of local, state, or federal codes, specifications, standards or environmental assessment requirements during reconstruction.

The lack of response to this question indicates that this is not solely a fire department issue as much as it is an issue for local government generally and building departments specifically. While the fire department plays an integral role in compliance with uniform fire codes and PRC 4291, it's the policy makers that dictate the degree to which local ordinances will be adopted and enforced.

Recommendation: In fire prone areas, risk and hazard need to be formally addressed if there is going to be any mitigation of future loss of life and property to interface fire. It behooves all jurisdictions to fully embrace appropriate fire ordinances and codes.

- 4) Adopt most recent edition of the Uniform Building Code (UBC). Berkeley and Oakland should also adopt, in those areas designed as High Hazard Fire Areas, more restrictive building ordinances (spelled out in 1980 Fire Safe Guides).

All cities have adopted the more restrictive provisions of the building code.

Recommendation: Continue to adopt the most recent versions of the Uniform Building Code that are appropriate for High Hazard Fire Areas.

- 5) The cities of Berkeley and Oakland should adopt an ordinance that requires, as a minimum, Class C roof coverings. The cities should adopt more stringent requirements (Class A) for areas identified as High hazards. Wood roof coverings materials thus would not be allowed in areas designated as high hazard or greater.

The cities of Berkeley and Oakland have adopted ordinances requiring Class A roof coverings in High Hazard Fire Areas.

Recommendation: None



HILLS
EMERGENCY
FORUM

What is the Hills Emergency Forum (HEF):

The HEF is a consortium created to provide a leadership structure to facilitate a broad and cooperative approach among eight local governing organizations for fire prevention mitigation, suppression and emergency planning for the urban-wildland intermix area of the Oakland-Berkeley hills.

Members include the City of Berkeley, the City of Oakland, the City of El Cerrito, the East Bay Municipal Utility District, the East Bay Regional Park District, Lawrence Berkeley National Laboratory, and the University of California. The original letter of intent signed October 19, 1993 by chief executives and renewed in October 1999. The California Department of Forestry and Fire Protection was recently invited to become a member.

Mission and goals

"The mission of the Hills Emergency Forum is to coordinate the collection, assessment and sharing of information on East Bay hills fire hazards and further, to provide a forum for building interagency consensus on the development of fire safety standards and codes, incident response and management protocols, public education programs, multi-jurisdictional training, and fuel reduction strategies."

The primary mission of the HEF is to provide a sustainable framework for interagency communication, joint planning and coordinated response to the needs of our various constituents. The organization's goals have been developed over the years and are grouped into the four areas of Assessment, Mitigation, Preparedness and Response

Organizational Structure

The Hills Emergency Group: HEF members include the City Managers of Berkeley, Oakland, and El Cerrito; the General Managers of East Bay Municipal Utility District and East Bay Regional Park District; Deputy Director of Lawrence Berkeley National Laboratory and Vice Chancellor of Business Administration Services at University of California, Berkeley.

The Staff Liaison Committee: The HEF's administrative component -- the Staff Liaison Committee (SLC) -- is comprised of representatives from all member agencies. The SLC is responsible for developing and monitoring progress on the Forum's annual workplan, analyzing HEF policy issues for agency executives, identifying issues for possible legislative support, and coordinating the HEF annual public meeting.

Two subcommittees are activated by the SLC as needed to address specific issues -- the East Bay Fire Chiefs (EBFC) and the Vegetation Management Consortium (VMC).

East Bay Fire Chiefs

EBFC consists of the chief officers from fire departments in Alameda and Contra Costa Counties and representatives of allied agencies, such as the California Department of Forestry (CDF). It aims to standardize equipment and training for the two counties, assure coordinated responses to major incidents, and educate the East Bay community about wildland fire safety. Fire Chiefs from the East Bay meet on a regular basis in conjunction with the Alameda and Contra Costa County Chiefs.

Vegetation Management Consortium

The VMC includes representatives from the East Bay cities, other public agencies and utilities, who have a stake in fire safety and fuel management in the East Bay hills. Its focus is fire-hazard reduction through vegetation management strategies.

HEF Current Projects

CDF/ CDC Conservation Camp

Alameda and Contra Costa Counties are two of the few counties in the state that do not contain a CDF/ CDC Conservation Camp. These work crews have been used successfully on several local fuel mitigation projects in the East Bay. In January 2001 the HEF requested additional information about the study, which has not yet been released. The HEF members are particularly interested in the findings of this study, as they relate directly to their local responsibility areas, ability to mitigate hazards and to respond to disasters

Vegetation Management Almanac for the East Bay Hills

The document was designed to promote native plant and wildlife habitat when conducting vegetation management for fire hazard reduction into the urban-wildland intermix zone. The almanac includes information on making decision, vegetation management techniques, and the timing of treatments. Available at the Tilden Nature Center for \$25.

Regional EIR for Fire Mitigation

At the October 2000 meeting the HEF directed staff to discuss the concept of undertaking an Environmental Impact Report (EIR) to cover all the member lands and to identify potential funding sources. Members of the Staff Liaison Group have discussed possible approaches to developing a regional EIR for vegetation management on the HEF member lands. They also met with state legislators and others to discuss possibilities for funding. Using a tiered approach, the regional document will serve as a template with each agency adopting the relative portions.

Regional Assessment by CDF/ OES

To prepare for the 10th anniversary of the 1991 fire, a regional assessment of what has been done in the past 10 years, as well as problems, stumbling blocks and strategies for solutions related to fire safety in the East Bay Hills. Each agency was requested to provide background information to CDF and OES for their review. A report will be prepared for release in October 2001.

2001 California Wildfire Conference and Public Events

A diverse working group has been meeting on a monthly basis to plan for a conference and public events during October of 2001. The conference and public awareness events in the East Bay Hills will bring together East Bay Hills residents with members of the fire service, government officials, academicians and the media for the purpose of empowering people and agencies to break the cycle of repetitive loss.

For Further Information see our website at www.-ehs.lbl.gov/hills/main.htm

HEF Contributions to Regional Fire Safety Since the 1991 Tunnel Fire

Assessment -

- ❖ Evaluation of Fire Hazard throughout Hills - compliance with AB 337 Bates Bill
 - ◆ Expansion of designated Fire Hazard Areas in Berkeley, El Cerrito & Oakland
 - ◆ Hazardous Fuel Assessment Data Sets & Fire Modeling
 - GIS development of High Hazard Areas
 - Additional Hazard Assessments & Refined Mapping
 - Farsite Modeling of Potential Wildland Fires
 - ◆ Assessment of city path systems and identification of improvements to key paths
- ❖ Water system improvements
 - ◆ District wide seismic retrofits
 - ◆ Auxiliary fire fighting water sources - Cragmont tank
 - ◆ Water main extension on from Park Hills to County Line in Tilden Regional Park
 - ◆ Hydrant testing program (water pressure testing)
 - ◆ Multi-agency Assessment of Above Ground System Hose (water delivery)
- ❖ Fire Department
 - ◆ Consolidation Studies
 - ◆ Annual assessment of fire response operation plans
 - ◆ Fire Management Zones and Strategies

Prevention/ Mitigation

- ❖ Interagency Coordination
 - ◆ Hills Emergency Forum and Staff Liaison Committee activity since 1993
 - ◆ Interagency Education & Awareness (Longhorn Borer Beetle, Pine Pitch Canker, Sudden Oak Death Syndrome, EBMUD Fire Atlas)
 - ◆ Alliances with Other Groups (Mt. Diablo Firesafe Council, Statewide Water Agency Response Network)
- ❖ Legislative Outreach (AB337 Very High Fire Hazard Areas (Bates), SB-1841 Standardized Emergency Management System (SEMS)(Petris), support for AB 1853/1122 Local Preparedness Fund (Machado), AB 325, CDF Work Camp)
- ❖ Research participation: UC Berkeley Graduate School of Public Policy - "The Hills Emergency Forum: Adapting to Meet the Future", UC Davis Division of Agriculture and Natural Resources - "Wildland Fire: Examining the Interrelationships of Natural and Social Systems.:
- ❖ Fuel Hazard Mitigation
 - ◆ Projects on public lands
 - Expanded, Coordinated Goat Grazing Contracts "Goat cartel" & Multiple Vendors
 - Specialized Equipment for Fuel Removal (Slash buster, feller-buncher for eucalyptus removal)
 - Hand crews removing fuel
 - Prescribed Fires
 - Hazardous vegetation removal along improved pathways

- ◆ Municipal inspection programs on private property for compliance with new and revised fire safety codes, inspections, enforcement/ abatement process, and dumpster/ chipper programs
- ❖ Public Education
 - ◆ Media information (media conference and fire briefings, media releases, training)
 - ◆ Firescape Landscaping brochure and demonstration gardens programs (Berkeley & Oakland)
 - ◆ Safety Fairs
 - ◆ Video("Fire and the Urban Wildland Transition (BFD)," EB League of Women Voter's East Bay Edition - Emergency Preparedness segment", Public Service Announcements)
 - ◆ Web site www-ehs.lbl.gov/hills/main.htm
 - ◆ Neighborhood group meetings
 - ◆ East Bay Hill Fire Hazard Mitigation and Vegetation Management Plan
 - ◆ Vegetation Management Almanac for the East Bay Hills

Preparedness

- ❖ Fire Department, Operations
 - ◆ New Fire Stations & Seismic Retrofit of existing stations
 - North Hills Fire Station (Fire Season)
 - Grass Valley Fire Station (Staffed year round)
 - Berkeley Hill Fire Station (planning phase)
 - ◆ New Fire Apparatus and storage space for those apparatus
 - 4 by 4 mini-pumpers with foam capabilities
 - Dirt bikes for fire warning and evacuation in hill area
 - Water Tenders
 - Type III engines
 - Compressed Air Foam units
 - Additional bays added to existing Stations for new equipment storage
 - ◆ County wide apparatus unique numbering system
 - ◆ Coordination with Interagency Fire Department Retreats
 - ◆ Training – Inter agency activities
 - ◆ Equipment – protective clothing & specialized fire fighting equipment
 - ◆ Review of street width and on street parking in hill areas and identification of emergency access issues.
- ❖ Bond Issue for retrofit programs Measure 'G' (Berkeley) and Measure "I" (Oakland)
 - ◆ Funding of improvements to water supply
 - ◆ Communications/ Dispatch
 - ◆ Retrofit of Essential Facilities
 - ◆ Standardized Hydrant Connections
 - ◆ Above Ground Hose System
- ❖ Red Flag Weather
 - ◆ Weather forecasting - RAWs Stations and local critical fire weather declarations
 - ◆ Critical Fire Weather Patrols and Increase Staffing Levels
 - ◆ Critical Fire Weather Closures of Parks
- ❖ Citizen Preparedness

- ◆ Citizen Training Programs in Berkeley, El Cerrito & Oakland(CERT, NEAT, CORE,)
- ◆ Training in use of 1610 Emergency Radio
- ◆ Evacuation programs coordinated with Police Department & Neighborhood Watch

Response

- ❖ Coordinated Response
 - ◆ Mutual aid agreements
 - Fire Agency Mutual Aid Agreements
 - Water Agency Response Network
 - ◆ Automatic aid agreements between Fire Departments
- ❖ Standardization Emergency Management System (SEMS)
 - ◆ Helicopter Response, Infrared and Water drop Capabilities.
- ❖ Communications
 - ◆ Upgrades to radio systems
 - ◆ Police patrol cars have radios of adjacent jurisdictions (Berkeley, UCB, Oakland)
- ❖ Emergency Operations Centers

Needs Not Yet Provided For

- ❖ Increased awareness and commitment to wildland fire safety issues
 - ◆ Coordination with other Departments (planning, public works, police)
 - ◆ Dedicated funding - Sources to replace dedicated funding from Fire Prevention Assessment Districts (lost due to Proposition 218).
 - Fuel removal workforce and equipment
 - Increased staffing on high fire days
- ❖ Communications: addressing major events, conformance with ICS 420-1
- ❖ Evacuation - public information campaigns
- ❖ Reduction of fuel loads (both vegetation and structures)
 - ◆ Resolution of conflicts between environmental issues and vegetation reduction
 - ◆ Ongoing update of hazard assessments
- ❖ Portable Water Supply System

