



FEMA

HM PA
F ST DR: PDM07
Project # 29
OES #: 000-92294
A G H
M P S
Doc Date: 10-1-09

October 1, 2009

Mr. Frank McCarton
Governor's Authorized Representative
California Emergency Management Agency
3650 Schriever Ave.
Mather, CA 95655



Re: Response to Request for Information — PDM09-PJ14 Ref NO9-1568
PDMC-PJ-09-CA-2009-001, Mt Sutro Edgewood Avenue
PDMC-PJ-09-CA-2007-010, Mt Sutro South Ridge — PDM09-PJ29 Ref NO9-1569
Vegetation Management (Wildfire Risk Reduction) Projects
Subgrantee: University of California, San Francisco

Dear Mr. McCarton:

On July 21, 2009, the Department of Homeland Security's Federal Emergency Management Agency transmitted a Request for Information to the California Emergency Management Agency (Cal EMA) regarding the subject proposals. Your office forwarded this request to the University of California at San Francisco (UCSF), and UCSF provided a response letter, dated August 10, 2009, which was subsequently forwarded to, and received by, FEMA on September 3, 2009. FEMA has reviewed the letter prepared by UCSF and is providing a response and subsequent requests. This letter generally addresses the purpose and need for action, the effectiveness of the proposed projects, and appropriate alternatives to the proposed projects, which are required for FEMA's compliance with the National Environmental Policy Act (NEPA). Please note, however, that FEMA may later require additional information to complete its environmental and historic compliance process.

UCSF must clarify and provide supporting documentation for the statements and claims made in its August 10, 2009, response letter in order to strengthen its arguments for the need as well as the efficacy of the proposed projects. Specifically, UCSF will need to provide the following:

- An accurate, informed, and robust argument regarding the purpose and need for the projects,
- A complete profile of the wildfire hazard in the Sutro Forest,
- A clear analysis of how the built environment is vulnerable to a wildfire hazard in the Sutro Forest,
- A clear description of the anticipated effectiveness of the proposed projects in mitigating the wildfire hazard to the identified vulnerable built environment, and

- A clear description of potential alternative actions that could also mitigate the wildfire hazard to the identified vulnerable built environment.

UCSF needs to provide information in a clear and concise manner, including appropriate citations. UCSF needs to supply applicable and appropriate quantified data to support its claims. All analyses and claims made by UCSF need to be reproducible and verifiable by FEMA (or the general public) should FEMA determine it necessary to conduct its own independent analyses. Reports described by UCSF that were not a part of the original grant applications must be provided.

1. Clarify the Wildfire Hazard

In its response to provide a clarification of the wildfire hazard, UCSF inaccurately interprets a map, provides inadequate details regarding the history of wildfires in the Sutro Forest, and provides a simplistic and ineffective comparison of the wildfire hazard in the Sutro Forest to the hazard in other areas that have burned in the San Francisco Bay area. UCSF states that "the San Francisco Department of Emergency Management has adopted a CDF Wildfire Hazard Map as part of its Hazard Mitigation Plan, which confirms that the proposed project sites are in fact very high wildfire hazard areas." This conclusion represents an inaccurate interpretation of the referenced map. Not only does the text of the Hazard Mitigation Plan that references this map state that the map illustrates only the extent and not the probability of a wildfire, the text on the actual map specifies that fuel ranks classify areas based not on hazard potential but on existing vegetation and anticipated fire behavior in that vegetation type. As explained by Dave Sapsis (CDF Fire and Resource Assessment Program (FRAP) Wildland Fire Scientist), "Fuel rank is only one of the two components used to get to future threat. The other is rotation rank which is an estimator for future burn probability." The map provided by UCSF illustrates expected wildfire behavior, but omits any estimate of fire likelihood, and because fuel ranks do not correlate directly to the full profile of a wildfire hazard, the map cannot be used to identify the hazard. A complete profile of the wildfire hazard in the Sutro Forest will require the input of information on the probability for an area to experience appropriate conditions to promote a wildfire (ignition and weather/climate). The FRAP "Draft Fire Hazard Severity Zones in LRA" (FHSZ) map for the County of San Francisco more aptly characterizes the actual wildfire hazard in the County and City of San Francisco. As described by Dave Sapsis:

FHSZ differs from fire threat in the way fire probabilities were used, the way fuel systems were modeled for potential not current conditions, and how fuel systems influence the areas around them. Fire threat is a measure of in situ hazard, and doesn't include the influence of adjacent areas (either via flame spread or firebrands). This makes sense since fire threat was designed to characterize wildland fuel hazards, and FHSZ was designed to include those areas (as potential) and adjacent urbanized WUI [Wildland Urban Interface] areas as well.

The 2007 FHSZ map shows the Sutro Forest to have a "Moderate" wildfire hazard. In the 2007 FHSZ map, "Moderate" is the lowest of the three fire hazard severity zones. The 2007 FHSZ maps can be viewed at this website,
http://www.fire.ca.gov/fire_prevention/fhsz_maps/fhsz_maps_sanfrancisco.php.

If UCSF disputes the "Moderate" fire hazard severity zone given by FRAP for the Sutro Forest, UCSF may provide its own site-specific analysis of the wildfire hazard for the Sutro Forest. Specifically, UCSF will need to identify the ignition source, measure the fuel load, and analyze the capacity for the fuel to ignite across the Sutro Forest given existing fuel moisture and weather conditions. Additionally, if UCSF prefers to match the modeling integrity of the FRAP mapping effort, it must model potential fuels over a 30 to 50 year time horizon.

UCSF briefly described previous fires that occurred in the Sutro Forest. An examination of past hazard events is an important step in profiling and characterizing a potential hazard condition, and therefore UCSF must provide adequate detail about these previous events for this historic information to be relevant to current conditions. The source material of previously documented fires must be provided, and ideally, this would include details about where the fires occurred, the fire ignition sources, the time of year of each fire, and a list of structures that were damaged. Additionally, UCSF must provide an estimate of the successional stage of the Sutro Forest during each fire event and an analysis of the relevance of these previous fires to current forest conditions.

UCSF also mentioned reports of a fire that occurred approximately 20 years ago and two additional fires that occurred in the past decade. These fire events must be described in more detail to demonstrate that the nature of the fires (ignition source, cause, extent, season of fire) is relevant to the current condition of the Sutro Forest.

In its response letter, UCSF relates its wildfire hazard to previous wildfires that occurred in the San Francisco Bay area, specifically one that occurred "in Marin County along the coast" and a fire that occurred on Angel Island in 2008. For the wildfire hazard conditions at Sutro Forest to be compared to these two fires, UCSF must demonstrate the similarities between Angel Island, the referenced "Marin County" fire, and the Sutro Forest in terms of the hazard, i.e. ignition threats, weather conditions, forest type, etc.

2. Clarify the Risk to the Built Environment

FEMA understands that the built environment adjacent to the Sutro Forest is extensive and dense and includes several medical facilities, residential housing, transit infrastructure, and a large teaching college and research facility. However, UCSF must provide a more clear description and complete analysis of the vulnerability of the built environment to a wildfire in the Sutro Forest.

To improve its vulnerability analysis, UCSF must inventory the built environment, describe the methodology of its vulnerability analysis, describe data limitations, provide an exposure analysis to the hazard, summarize the impacts of the hazard, and describe likely land use and development trends that may affect the vulnerable built environment in the future. The analysis must address the vulnerable general building stock, critical and non-critical facilities, major utilities, and transportation infrastructure. This analysis must include vulnerability to a wildfire anywhere in the Sutro Forest, not just at the proposed project sites. It would be useful to describe the built environment in three geographic locations throughout the analysis: 1.) within the Sutro Forest, 2.) immediately adjacent to the forest, and 3.) in the vicinity of the forest.