

Santa Clara Unit  
Fire Management Plan, 2005

Game wildlife	Public welfare Environment	Critical habitats and species locations based on input from California Department of Fish and Game and other stakeholders
Infrastructure	Public safety Public welfare	Infrastructure for delivery of emergency and other critical services (e.g. repeater sites, transmission lines)
Ecosystem Health	Environment	Ranking based on vegetation type/fuel characteristics

The assets at risk were evaluated to the 450-acre scale within the Santa Clara Unit. The Department for purposes of manageability has designated the 450-acre scale. The 450-acre cells have been designated as Quad 81<sup>st</sup>. This designation is based on the sectioning of a USGS 7.5 minute quadrangle map broken down into a 9x9 grid pattern; the result is squares of 450 acres. Fire plan assessments have been made at the Q81st level, for instance, each Q81st in Santa Clara Unit has a ranking applied to it for Level of Service (LOS), Assets at Risk (AAR), fuel hazards, etc. The Santa Clara unit has 5472 of these Q81 cells. While updating the asset values during this planning cycle the unit's staff found approximately three quarters of these cells had not been assigned the base numeric value to allow the calculator to assign the proper values. The unit is working with the Fire and Resource Assessment Program GIS analysts and Sacramento Fire Plan staff to automate this procedure to streamline the entire process. These updates should be available for use in time for the next annual review due in June of 2005.

Fire protection resources are limited, primarily by budget constraints. Therefore, these resources should be allocated, in part, based on the magnitude of the assets. The assets are ranked, high, medium and low, as to their susceptibility to wildfire. The ranking is scaled to the Q81st and transferred to GIS maps. The map overlays have been evaluated by Unit staff through a series of meetings, through which identification of the areas with the highest combined asset values, map overlays and fire risk will be targeted for fire management activities. The scores for the various assets at risk were given a 1 (low) score out of a possible 9.999 (high) except for the following assets: Game wildlife, historical buildings, housing/structures, and ecosystem health were all given scores of 0 as the data is not yet available or in different stages of validation at a state level. Infrastructure, non-game wildlife, range scores were given a score of 2 and timber was given a 3 (See priority areas in the Santa Clara Unit fire plan). Many factors are involved in target area identification, including political climate of the region and suppression cost reductions.

The process of explicitly enumerating assets at risk also helps to identify who benefits from those assets. It is a premise of the California Fire Plan, on which this plan is structured, that those who benefit from the protection of an asset should pay for that protection.



**General Description of the Current Fire Problem**

The Santa Clara Unit does not fight fire alone. The Unit has local government agreements administered by the Unit. The Unit also cooperates fully with federal and local government firefighting agencies in addition to the Governor's Office of Emergency Services. This cooperation is formally defined and

authorized in interagency agreements. These include Federal agencies, the Master Mutual Aid Agreement, and local fire control agencies through mutual aid and cooperative agreements, in the form of mutual threat zones, with all of the city and county fire departments within the five counties. These cooperative efforts of the fire service providers comprise the entire fire protection delivery system within Santa Clara Unit.

### **Level Of Service Rating**

The legislature has charged the Board of Forestry and CDF with delivering a fire protection system that provides an equal level of protection to lands of similar type (PRC 4130). To do this, CDF needs an analysis process that will define a level of service rating that can be applied to the wildland areas in California to compare to the level of fire protection being provided. The rating is expressed as the percentage of fires that are successfully attacked. Success is defined as those fires that are controlled before unacceptable damage and cost are incurred.

California has a complex fire environment and CDF data on assets at risk to damage from wildfire is incomplete. These factors combine to make it very difficult to develop a true performance-based fire protection planning system. CDF has resorted to prescription-based fire protection planning (travel times of firefighting resources to incidents, report times for the detection system, the same acreage goal statewide, etc.) as a way to overcome the complexity of the issues. Prescription-based planning is possible but tends to oversimplify some issues. Prescription standards also make it difficult to integrate the interrelationships of various fire protection programs, such as the value of fuel-reduction programs in reducing the level of fire protection effort required.

The following approximation method is proposed to overcome these shortcomings and allow the unit to proceed with a damage-plus-cost analysis of fire protection performance. This is a relative system, attempting to measure the relative impact of fire on the various assets at risk. At the same time, this process produces a level of service rating (LOS). The rating can be used to describe fire protection services to "civilian stakeholders". The level of service rating also provides a way to integrate the contribution of various program components (fire prevention, fuels management, engineering and suppression) toward the goal of keeping damage and cost within acceptable limits. It is important to reiterate that this system is relative system and that the ratings are only approximations. In this system, a fire may be considered a failure based on the firefighting resource draw and size of fire, however, the final fire size and assets protected may have been a true success based on firefighting activities in extreme fire weather conditions.

The Level of Service (LOS) rating is a ratio of successful fire suppression efforts to the total fire starts, a method to measure initial attack success and failure rates throughout the Unit and is based on fire sizes. The LOS uses a Geographic Information System (GIS) that overlays a 20-year history of wildfires onto a map and derives the average annual number of fires by size, severity of burning and assets lost from data entered in the Departments Emergency Activity Reporting System. This data provides a LOS rating, in terms of a success and failure calculation.

Success Rate equals the annual number of fires extinguished by initial attack (relatively small sized) divided by the total number of fires. If all the fires in a given fuel type are extinguished in small acreages that is considered a 100% success rate for that fuel type (planning Belt)

The result is an initial attack success rate in percentage of fires by vegetation type and area. Success is defined as those fires that are controlled before unacceptable damage and cost are incurred and where initial attack resources are sufficient to control wildfires.

The Fire Plan Ignition Workload Assessment map is designed to show effectiveness of the suppression organization in meeting the initial attack fire workload. The attempt at controlling fires