



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 CAL-FIRE with delivering a fire protection system that provides an equal level of protection to lands of similar type (PRC 4130). To do this, CAL-FIRE 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 CAL-FIRE 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. CAL-FIRE 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 before they become large and costly is evaluated in this assessment. The underlying assumption is that fires, successfully contained in the initial attack stages, are not the primary problem. Problem fires are the few that are costly to control or exceed suppression organization capabilities and cause damage.

Fires are grouped into "success" and "failure" categories based on various factors. The assessment groups fires by general vegetation or fuel types (planning belts). Within the fuel type, fires are further classified based on final fire size and weather conditions at the time of ignition. Each fire is classified and labeled as either a successful initial attack or a failure.

The initial attack workload assessment is displayed in the maps below and statistical data related to these maps. Initial attack points of origin are plotted and color-coded based on success/failure scores. Some of the successes and failures are not matched with weather readings and are shown on this analysis. Further validation will be conducted to match weather with the ignitions in the future. The workload can be summarized in the Quad 81st grid. Results can also be summarized into a percentage success score and displayed by Quad 81st grid. Combining fire business workload patterns with aggregated assets at risk can be useful in defining target areas for focusing Pre-fire Management project efforts.

Initial Attack Success and Failures

Analyses time period includes January 1981 through December of 2003. The following planning belt vegetation types were analyzed.

<u>Planning Belt</u>	<u>Success Rate</u>	<u>Successful I.A.</u>	<u>I.A. Failure</u>
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Santa Clara Unit
Fire Management Plan, 2008

Coastal Conifer	100%	71	0
Woodland	93%	63	5
Grass	93%	1358	104
Interior Conifer	91%	144	10
Brush	79%	27	7
Unclassified	94%	611	36

Because of changes in the GIS mapping software, better data entry, changes in the fuels layers and severe weather reporting stations and other problems were identified during last years writing and data collection of this document changes were made in those areas and the Initial Attack Success / Failure matrix is.