

COUNTY OF SAN DIEGO

GUIDELINES FOR DETERMINING SIGNIFICANCE
AND
REPORT FORMAT AND CONTENT REQUIREMENTS

WILDLAND FIRE AND FIRE PROTECTION



LAND USE AND ENVIRONMENT GROUP

~~Department of Planning and Land Use~~
~~Planning & Development Services~~
Department of Public Works

Second Revision
August 31, 2010

_____, 2022

APPROVAL

I hereby certify that these **Guidelines for Determining Significance and Report Format and Content Requirements for Wildland Fire and Fire Protection** are a part of the County of San Diego, Land Use and Environment Group's Guidelines for Determining Significance and Technical Report Format and Content Requirements, were considered by the Director of Planning and Land Use, in coordination with the Director of Public Works, and approved by the County of San Diego Board of Supervisors on _____, .

DAHVIA LYNCH-ERIC GIBSON
Director of Planning and Land Use



Director

I hereby certify that these **Guidelines for Determining Significance and Report Format and Content Requirements for Wildland Fire and Fire Protection** are a part of the County of San Diego, Land Use and Environment Group's Guidelines for Determining Significance and Technical Report Format and Content Requirements and are hereby approved by the Deputy Chief Administrative Officer (DCAO) of the Land Use and Environment Group ~~of August, 2010 _____~~. ~~The Director of Planning and Land Use is authorized to approve revisions to these Guidelines for Determining Significance and Report Format and Content Requirements for Wildland Fire and Fire Protection, except any revisions to the Guidelines for Determining Significance presented in Chapter 4.0 must be approved by the DCAO.~~

Approved, ~~August 31, 2010~~

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~~CHANDRA WALLAR~~
~~SARAH AGHASSI~~
Deputy CAO

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Department of Public Works**

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Third Revision

EXPLANATION

These Guidelines for Determining Significance for Wildland Fire and Fire Protection (Guidelines) and information presented herein shall be used by County staff for the review of discretionary projects and environmental documents pursuant to the California Environmental Quality Act (CEQA). These Guidelines present a range of quantitative, qualitative, and performance levels for particular environmental effects. Normally, (in the absence of substantial evidence to the contrary), an affirmative response to any one Guideline will mean the project will result in a significant effect, whereas effects that do not meet any of the Guidelines will normally be determined to be "less than significant." Section 15064(b) of the State CEQA Guidelines states:

"The determination whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on factual and scientific data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

The intent of these Guidelines is to provide a consistent, objective and predictable evaluation of significant effects. These Guidelines are not binding on any decision-maker and do not substitute for the use of independent judgment to determine significance or the evaluation of evidence in the record. The County reserves the right to modify these Guidelines in the event of scientific discovery or alterations in factual data that may alter the common application of a Guideline.

LIST OF PREPARERS AND TECHNICAL REVIEWERS

THIRD REVISION –

SECOND REVISION – AUGUST 31, 2010

County of San Diego

Jeff Murphy, DPLU, Primary Author
Paul Dawson, DPLU, Contributing Author
James Pine, DPLU, Contributing Author
Ralph Steinhoff, DPLU, Technical Review
Ken Miller, DPLU, Technical Review

FPP Technical Review Panel

Robin Church, RC Biological Consulting
Rolland Crawford, Loma Linda Fire Department,
Retired, Co-Chair of the Wildland-Urban
Interface Committee, California Fire Chiefs
Association, Fire Prevention Officers Section
Kathleen Edwards, Division Chief, Pre-Fire
Division, CAL FIRE
Scott Franklin, Scott Franklin Consulting
Jim Hunt, Hunt Research Corp.

FIRST REVISION – DECEMBER 19, 2008

County of San Diego

Jeff Murphy, DPLU, Primary Author
Paul Dawson, DPLU, Contributing Author
Ralph Steinhoff, DPLU, Technical Review
Ken Miller, DPLU, Technical Review

FPP Technical Review Panel

Robin Church, RC Biological Consulting
Rolland Crawford, Loma Linda Fire Department,
Co-Chair of the Wildland-Urban Interface
Committee, California Fire Chiefs
Association, Fire Prevention Officers Section
Scott Franklin, Scott Franklin Consulting
Jim Hollingsworth, Fire Marshal, Ramona Fire
Department

FPP Technical Review Panel, continued

Cliff Hunter, Fire Marshal, Rancho Santa Fe Fire
Protection District, member of the ICC
Wildland Committee
Doug Logan, Current President of the North
County Civil Engineers and Land Surveyors
Association
Sid Morel, Fire Marshal, North County Fire
Protection District
Dennis Moser, Moser Ventures, Inc
Don Oaks, Santa Barbara County Fire
Department, Retired, Co-Chair of the
Wildland-Urban Interface Committee,
California Fire Chiefs Association, Fire
Prevention Officers Section
Thom Porter, Staff Chief, Resource
Management, CAL FIRE
Gregory Schreiner, Fire Marshal, Lakeside Fire
Protection District
Howard Windsor, Unit Chief, CAL FIRE

FPP Technical Review Panel, continued

Jim Hunt, Hunt Research Corp.
Cliff Hunter, Fire Marshal, Rancho Santa Fe Fire
Protection District, member of the ICC
Wildland Committee
Dennis Moser, Moser Ventures, Inc.
Don Oaks, Santa Barbara County Fire
Department, Retired, Co-Chair of the
Wildland-Urban Interface Committee,
California Fire Chiefs Association, Fire
Prevention Officers Section
Thom Porter, Staff Chief, Resource
Management, CAL FIRE
Mike Scott, Urban Forester, Rancho Santa Fe
Fire Protection District
Pete Scully, Battalion Chief, Border Division,
CAL FIRE

APPROVED – MARCH 19, 2007

County of San Diego

Jeff Murphy, DPLU, Primary Author
Paul Dawson, DPLU, Contributing Author
Ralph Steinhoff, DPLU, Technical Review
Ken Miller, DPLU, Technical Review

FPP Technical Review Panel

Bill Clayton, Division Chief, CDF
Robin Church, RC Biological Consulting
Rolland Crawford, Loma Linda Fire Department,
Co-Chair of the Wildland-Urban Interface
Committee, California Fire Chiefs
Association, Fire Prevention Officers Section
Scott Franklin, Scott Franklin Consulting
Jim Hollingsworth, Fire Marshal Ramona Fire
District

FPP Technical Review Panel, continued

Jim Hunt, Hunt Research Corp.
Cliff Hunter, Fire Marshal, Rancho Santa Fe Fire
Protection District, member of the ICC
Wildland Committee
Dennis Moser, Moser Ventures, Inc
Don Oaks, Santa Barbara County Fire
Department, Retired, Co-Chair of the
Wildland-Urban Interface Committee,
California Fire Chiefs Association, Fire
Prevention Officers Section
Thom Porter, Staff Chief, Resource
Management, CAL FIRE
Mike Scott, Urban Forester, Rancho Santa Fe
Fire Protection District
Pete Scully, Battalion Chief, Border Division,
CAL FIRE
Andy Vanderlaan, Former Executive Director
Western Fire Chief's Publishers of Uniform
Fire Code, Current Chair LAFCO

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List of Acronyms

ALS	Advanced Life Support
AMR	American Medical Response
BLS	Basic Life Support
CBC	California Building Code
CCR	California Code of Regulations
CAL FIRE	California Department of Forestry and Fire Protection
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFC	County of San Diego Consolidated Fire Code
CSA	County Service Area
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
FAHJ	Fire Authority Having Jurisdiction
FPD	Fire Protection District
FPP	Fire Protection Plan
FMZ	Fuel Modification Zone
IAFC	International Association of Fire Chiefs
IBC	International Building Code
IFC	International Fire Code
IPCC	Intergovernmental Panel on Climate Change
ISO	Insurance Services Office
LAFCO	Local Agency Formation Commission
LBZ	Limited Building Zone
LRA	Local Responsibility Area
MOU	Memorandum of Understanding
MWD	Municipal Water District
NEC	National Electric Code
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
PAHJ	Planning Authority Having Jurisdiction
SANDAG	San Diego Association of Governments
SRA	State Responsibility Area
UBC	Uniform Building Code
UFC	Uniform Fire Code
UMC	Uniform Mechanical Code
UPC	Uniform Plumbing Code
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WFCA	Western Fire Chiefs Association
WUI	Wildland Urban Interface

INTRODUCTION

This document provides guidance to planners, applicants, consultants, fire professionals and other interested parties for evaluating adverse environmental effects that a proposed project may have from wildland fire and establishes standards to ensure that development projects do not unnecessarily expose people or structures to a significant risk of loss, injury or death involving wildland fires. Specifically, this document addresses the following questions listed in the California Environmental Quality Act (CEQA) Guidelines:

Appendix G, VIII. Hazards and Hazardous Materials

- h) Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Appendix G, XIV. Public Services

- a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance service ratios, response times or other performance objectives for any of the public services:
 - i. Fire protection?

Appendix G, XVI. Transportation/Traffic

- e) Would the project result in inadequate emergency access?

Appendix G, XVIII. Utilities and Service Systems

- d) Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

1.0 GENERAL PRINCIPLES AND EXISTING CONDITIONS

1.1 Wildland-Urban Interface Ignition Factors

Fires can ignite naturally or be caused by people. In the montane coniferous forests of the Southwest, lightning-ignited fires are abundant and human ignitions are far less important than in lower-elevation shrublands of southern California where lightning is uncommon and humans cause most of the fires (Keeley and Fotheringham 2003). Over 95 percent of fires in southern California shrublands are started by people, which has increased fire frequency and increased the chances of ignitions during Santa Ana winds (Keeley and Fotheringham 2003). In general, more people move to the shrublands than to the forests, since most of the development in San Diego County is on the coastal plain and in the foothills. People living in the wildlands, traveling on roads built through the wildlands, and recreating in the wildlands can ignite wildland fires inadvertently. In addition, wildland fires are sometimes ignited by arsonists. All these situations create more opportunities for potential wildland fire danger to people and their structures.

Wildland fires only spread if the wildfire meets the oxygen, fuel and heat requirements for ignition and continued combustion. In wildland fires, oxygen is not limited, so the continuation of wildfire combustion relies on fuel and heat. Fuel, as mentioned above, is commonly the wildland vegetation and landscaping, but structures and accessories such as projections (i.e. decks & patio covers) can add to the fuel source. Burning fuel creates heat and heat allows fires to spread when there is sufficient fuel. Three primary means of heat transfer can result in ignition: conduction, convection and radiation.

1.1.1 Conduction

Conduction is heat transfer through a solid or from the heated surface to the interior of a solid. An example of heat conduction resulting in structure ignition would be flame impinging on the exterior metal siding of a mobile home. Like a frying pan, heat is transferred to structural components inside, resulting in ignition.

1.1.2 Convection

Convection is defined as transfer of heat by a circulating fluid – either gas or liquid. Heat rises from a wildland fire and is transferred by air currents to other objects, such as a house on a ridge top. Winds can carry heat by convection to vegetation and structures. Sufficient fuel modification zones, building setbacks from slopes and ignition-resistive construction are all important factors in limiting this risk.

1.1.3 Radiation

Radiation is energy transfer that travels across space without the need for intervening medium such as air. Examples in wildfires include ignition of light combustibles in advance of the flame front, like dry fine grasses or curtains behind a window. Radiation does not require flames to strike a structure to cause ignition. The source of flame

radiation is the flame-front. Dependent on the length, height, and width of the flame- front (the leading edge of a wildland fire), and the flame duration, an unprotected structure can be ignited by radiant heat.

1.1.4 Firebrands

Firebrands are burning embers that become airborne and are blown beyond the fire front. Firebrands can be created from virtually any fuel source that is light enough to be blown upwards; however, vegetation is the most common source of firebrands. A burning structure also creates burning embers, particularly at collapse. Firebrands combine heat transfer methods of conduction and convection. Firebrands extend the boundaries of wildland fire hazard zones and present a prominent threat to structures, especially homes. Dependent on weather and the size of the ember, a firebrand can be carried far ahead of the fire front. The hazard can be worsened if structures are not ignition-resistant and cannot repel the heat of a burning ember. Flammable vegetation adjacent to (within ten feet of) a structure and other combustible materials (wood piles, combustible fences, decks, etc.) acts as a receptacle for fire brands, and will impact the structure.

1.1.5 Flame Impingement

Flame impingement, a form of heat conduction, involves heat transfer from a flame that directly strikes a structure, potentially causing ignition of the structure. Flame size and the duration of flame impingement directly affect the potential for ignition of a structure.

1.2 Defensible Space

To improve the survivability of structures in a wildland fire, fire professionals recommend using defensible space around all structures occupied by humans or domestic animals, and especially structures in the WUI. Defensible space creates a separation zone between wildlands and structures, a space where fuel is managed or modified to minimize the spread of fire to the structure and providing space for defending structures from burning vegetation. This reduces fire speed, intensity, and flame lengths, and limits the spread of a wildfire. Defensible space involves clearing flammable man-made materials, reducing flammable vegetation, spacing plants to reduce fire risks to the home, and watering, pruning and thinning the vegetation regularly. Defensible space creates a fuel modification zone (FMZ), which is not to be confused with the limited building zone (LBZ). An FMZ is a protective buffer that surrounds a structure, while an LBZ is a protective buffer that surrounds a biological open space area. The FMZ and LBZ may completely overlap, partially overlap or not touch at all (Figure 2). Figure 3 shows defensible space and the various zones required to reduce the spread of a wildfire.

Figure 2. Fuel Modification Zone and Limited Building Zone

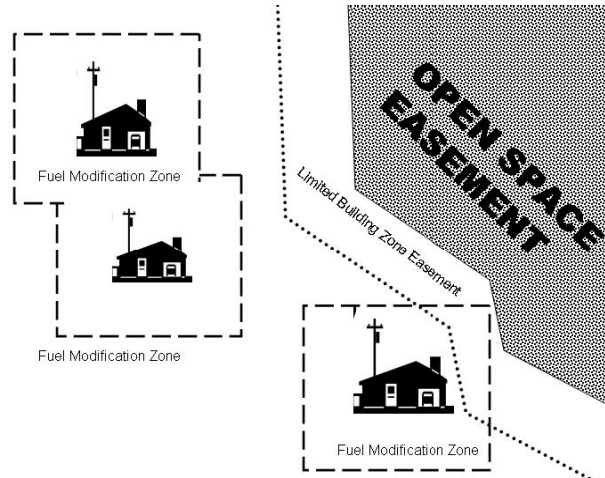
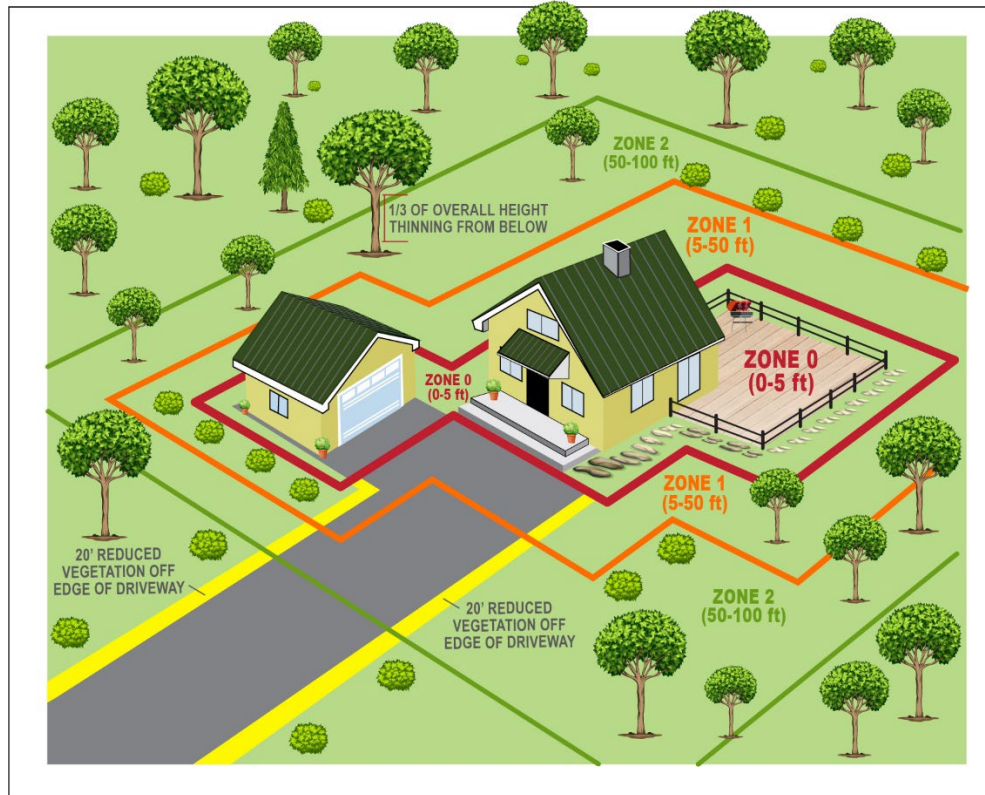


Figure 3. Fuel Modification Zone and Limited Building Zone



1.3 Defensible Structures

Wildfires are dangerous and unpredictable. In a wildfire, firefighting resources are often over-extended and may be unavailable. Defensible space alone does not ensure the safety of structures confronted by a wildfire. Many additional precautions will assist in the

survival of structures from wildland fire threats. The California Department of Forestry and Fire Protection (CAL FIRE), , San Diego County Fire Protection District, and other local fire districts can provide guidance on preparing structures for wildfire including proper landscaping practices, construction standards and techniques, adequate emergency water supply needs and access.

2.0 EXISTING REGULATIONS AND STANDARDS

A number of existing laws, regulations, policies and programs have been enacted to prevent, manage or mitigate the threat of wildland fires to public health, safety and the environment. The following discussion is an overview of the primary existing regulations that affect wildland fire in San Diego County. The regulations discussed below have been chosen for their applicability to the typical development project encountered in San Diego County and for their usefulness in assessing potential adverse project impacts as defined by the California Environmental Quality Act (CEQA), focusing on the threat these fires would pose to people or structures.

The unincorporated area of the County is served by the San Diego County Fire Protection District, other independent fire districts and CALFIRE. It is important for planners, applicants, consultants, fire professionals and other interested parties who are processing discretionary permits to understand the respective service areas and responsibilities as well as policies and procedures of the FAHJ that will eventually serve the proposed project. Communication early and often with the FAHJ throughout the entitlement process is encouraged.

2.1 Federal Regulations and Nationally Recognized Standards

[[Regulation]]

National Environmental Policy Act, [42 USC § 4321 et seq.] Federal agencies that implement the National Environmental Policy Act (NEPA) consider potential public health and safety hazards, including wildland fires, when considering the environmental impacts of proposed federal projects

[[Nationally Recognized Standard]]

International Fire Code Published by the International Code Council, it is a model code which may be adopted by a jurisdiction. It forms the basis for the current California Fire Code (CCR Title 24 part 9) The International Fire Code (IFC) is the underlying nationally recognized code that sets standards and requirements to safeguard against the threat fires may pose to public health, safety, and the environment. The IFC, when adopted by a jurisdiction, regulates the planning, construction and maintenance of development in all areas.

[[Nationally Recognized Standard]]

International Wildland-Urban Interface Code Published by the International Code Council, it is a model code addressing wildfire issues. It has not been adopted by the State of California or by the County of San Diego. It may be used as a reference for subjects not addressed within the California and County Fire Codes.

[[Nationally Recognized Standard]]

National Fire Protection Association Standards (<http://nfpa.org/codes> (Title 9, Divisions 1, 2 and 6, San Diego County Code of Regulatory Ordinances). Following the October 2003 and fall 2007 wildfires, assessments were made of damaged and destroyed homes in an effort to identify areas where codes could be strengthened in order to enhance the chances of a structure surviving a wildfire. As a result, in February 2008, the County amended the Building Code to include strengthened ignition-resistive construction requirements, modifying the previous two-tiered system and requiring “enhanced” standards for all new construction.

County Consolidated Fire Code (Based on Title 9, Division 6, Chapter 1 of the County Code)

<https://www.sandiegocounty.gov/content/dam/sdc/sdcfa/documents/prevention/2020-County-Consolidated-Fire-Code-FINAL.pdf>. The County Consolidated Fire Code incorporates local fire district fire codes as ratified by the Board of Supervisors into a single document. The County Consolidated Fire Code is the current fire regulations approved by the Board of Supervisors that apply in the various fire districts.

Memorandum of Understanding Agreement between the United States Department of Interior Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), CAL FIRE, San Diego County Fire Chief’s Association and the Fire District’s Association of San Diego County (<http://www.sdcounty.ca.gov/dplu/Resource/docs/3~pdf/MemoofUnder.pdf>). The MOU was created to establish guidelines by which CAL FIRE and local fire districts can continue to engage in fuel management activities and the USFWS and CDFG can assess, minimize, and account for potential adverse impacts to habitats and species from such

activities.

[[Regulation]]

Combustible Vegetation and Other Flammable Materials Ordinance (now the [Defensible Space for Fire Protection Ordinance](#)), San Diego County Code of Regulatory Ordinances, section 68.401 et seq., Removal of Combustible Vegetation and Other Flammable Materials. This ordinance finds that the accumulation of combustible materials, as defined, on private property creates a fire hazard and may be injurious to the health, safety, and general welfare of the public. The ordinance finds that the presence of such materials is a public nuisance, which must be abated in accordance with the provisions of this ordinance.

3.0 TYPICAL ADVERSE EFFECTS

Two types of adverse effects are typically associated with wildland fires: the immediate effects that occur during a wildland fire and the effects that occur in the aftermath. During a wildfire, people and structures are exposed to risk of loss, injury or death. Assessing and ranking the level of risk is always relative; unwise human action, for example, could be life-threatening even with all other factors at reasonable levels.

Since the level and type of risk can vary from project to project, prioritizing the project deficiencies (or combination of deficiencies) that create the biggest risk is difficult. In general, however, the following circumstances can result in increased fire related risks to people and structures (not listed in any particular order):

- Projects located adjacent to and within the WUI and/or that incorporate large open space preserves within the project design;
- High population and density in the WUI;
- Responses of people during a wildland fire (human behavior);

- Emergency response services (fire stations, equipment and personnel) that are inadequate to serve the project;
- Development projects that are previously built without ignition-resistive construction, interior fire sprinklers, and/or sufficient water supply (volume) and pressure;
- Inadequate access and evacuation options;
- Roadside fuel management along roads;
- Insufficient maintenance of access roads, signage, gates; and
- Lack of appropriate landscaping restrictions, including monitoring and maintenance, FMZs, and periodic fuel management monitoring.

A wildfire's aftermath typically leaves land scorched and exposed. Until the land rehabilitates, the exposed soils may contribute to adverse environmental impacts including air and water pollution and unstable soils conditions (mudslides). The end result of uncontrolled wildfire also includes debris from burned homes, some of which can be highly toxic, and can adversely impact the environment by polluting local waterways (streams and rivers).

4.0 GUIDELINES FOR DETERMINING SIGNIFICANCE

Section 15382 of the State CEQA Guidelines states that a significant effect on the environment means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air and water. **An affirmative response to any one of the following Guidelines will generally be considered a significant impact related to Wildland Fire and Fire Protection as a result of the project, in the absence of evidence to the contrary:**

- 1. The project cannot demonstrate compliance with all applicable fire codes.***
- 2. A comprehensive Fire Protection Plan has been accepted, and the project is inconsistent with its recommendations.***
- 3. The project does not meet the emergency response objectives identified in the Public Facilities Element of the County General Plan or offer feasible alternatives that achieve comparable emergency response objectives.***

The significance guidelines listed above have been selected for the following reasons:

The **first** guideline for determining significance is based on compliance with existing SRA Fire Safe Regulations and County Consolidated Fire Code. Examples of regulatory requirements that a project will be required to meet include the California Code of

Regulations and County Consolidated Fire Code. Given the complexity of wildland fire regulation and the numerous agencies that have regulatory responsibility related to wildland fires, applicable regulations will be determined on a project-by-project basis. Due to the potential severity of impacts from fire in wildland areas, the existing laws are stringent and regulate many aspects of wildland fire and their hazards, including building standards, fuel modification, water availability/flow, and/or access.

Any project that does not show compliance with regulatory codes or does not include a valid risk assessment for the project site may result in a potentially significant impact of wildland fire hazard.

The **second** guideline for determining significance is based on compliance with the requirement that an FPP be accepted by the FAHJ and County, when required. Because the applicable regulatory requirements for a project will differ based on use type and extent of the WUI, all discretionary projects that result in an increase in housing units or occupancy shall be required to prepare a FPP to assess a project's compliance with current regulatory codes and ensure that impacts resulting from wildland fire hazards are adequately mitigated. If the project is located within a High or Very High Fire Hazard Severity Zone as identified in the map adopted by the State Fire Marshal, a FPP shall be prepared, reviewed, and accepted by the FAHJ and County prior to approval of the project.

The FPP is similar in concept to a Technical Report as authorized in the Fire and Building Codes. The FPP is prepared by a wildland fire behavior and fire code expert for review by the County and FAHJ. A Technical Report, which focuses on fire code and other fire protection issues for a specific industrial, commercial or special risk occupancy, should accompany a FPP if a complex fire code issue makes it necessary. A Technical Report should be separate from, yet coordinated with, related provisions of the FPP. The County PDS maintains a list of persons currently authorized to prepare FPPs for projects within its jurisdiction.

As part of an FPP, applicants shall include modeling of fire behavior in mature vegetation on and near the site (Fire Behavior Modeling) for **projects located within a High and/or Very High Fire Hazard Severity Zones**. The Fire Behavior Model will evaluate a worst-case scenario wildland fire based on site topography, fuel loads, atmospheric conditions, and fire intensity. From the results of the model, combined with the consultant's expertise, minimum fuel modification and brush clearance distances can be determined to ensure relatively safe building sites. These fuel-modeling programs are widely accepted and used throughout the firefighting profession as a planning tool. The models were developed by expert fire- research scientists, but do not provide a total analysis of the threat. Modeling program limitations must be taken into consideration. Fire behavior history and professional experience may require greater or lesser requirements for individual projects, and such justification should be clearly articulated in the FPP.

The fire model gives general guidance and typically calculates behavior under worst-case weather conditions over time. Any project that would not be consistent with the consultant/fire authority's recommendations based on the Fire Behavior Modeling, fire

history, and personal experience or expertise for that site may result in a potentially significant impact and may present significant risk of loss, injury or death.

The **third** guideline for determining significance is based on the need to have adequate fire services available in order to provide sufficient emergency response in the event of a wildfire or other emergency. Applicants are required to submit a Project Facility Availability Form (PDS Form #399F) that is completed and signed by the Fire Authority Having Jurisdiction (FAHJ) prior to formally submitting the project application to the County if the permit application requires Form #399F. The FAHJ will review the project and determine whether existing fire services are adequate to serve the project. A Project Facility Availability Form that shows that a project is not located within the fire district boundaries and is not eligible for service, does not meet the travel time requirements specified under the County's General Plan, is unable to implement the required FMZ, or is unable to provide adequate water fire flow and pressure may result in a potentially significant impact and may present significant risk of loss, injury or death. Travel time is determined by measuring the most direct reliable route from the nearest fire station obligated to respond to the site to the most remote portion of the project with consideration given to safe operating speeds for heavy fire apparatus and the types of roads being used and neighborhoods traveled. Fire agencies typically encourage use of major roads versus traveling through private residential neighborhoods. Travel time does not include reflex or reaction time, or on- scene size-up and set-up prior to attacking the fire, all of which are critical precursors of actual fire fighting. Travel time may be calculated by using NFPA 1142 Table C.11 (b), SANDAG layering, GIS software travel time mapping, actual emergency travel time run data, or actual driving tests using fire apparatus. Deference is typically given to the FAHJ.

Any project that is unable to secure adequate fire services from the FAHJ may result in a potentially significant impact and may present significant risk of loss, injury or death.

4.1 FIRE PROTECTION PLANS

An FPP is a document that describes the level of fire hazard that would affect or be caused by a proposed development and the methods proposed to minimize that hazard. The FPP also evaluates the consistency of the proposed project with applicable fire protection regulations. In order to minimize hazards and meet fire code requirements, the FPP may include recommendations that involve limitations on future land use on the subject property, building construction standards, vegetation management, access improvements, installation of fire suppression facilities, and other design measures. The FPP must include measures to address the specific location, topography, geology, level of flammable vegetation and climate of the proposed project site. The FPP must be prepared consistent with applicable fire codes and be accepted by the FAHJ and County. The plan must demonstrate compliance with the applicable fire code or how the measures proposed to reduce fire hazards are adequate to meet the intent of the code. The following elements must be addressed in a FPP required as part of the review of a discretionary permit application:

- Emergency Services - Availability and Travel Time;
- Access for emergency services and evacuation of residents (primary and, if

- required, additional access);
- Firefighting Water Supply;
- Fire Sprinkler System;
- Ignition Resistant Construction; and,
- Defensible Space, Ornamental Landscaping and Vegetation Management

Each of these design considerations is detailed below and includes discussions on relevant federal, state and local codes and the standards that are used to ensure compliance with the regulations. Failure to comply with either the fire code/regulations or the standards may result in a potentially significant impact. Refer to section 2 “Report Format and Content Requirements Wildland Fire and Fire Protection”.

4.2 PLAN ACCEPTANCE PROCESS

FPP preparers should work with the local FAHJ. Once the plan is prepared and submitted to the local fire agency, it will be reviewed for compliance with all applicable ordinances and regulations. If practical difficulties in achieving compliance have been identified and modifications or alternate methods are proposed, they must also be evaluated by the FAHJ. If the FAHJ determines that the plan is incomplete or inadequate, it should be sent back to the preparer with a letter explaining why. If the plan proposes modifications due to practical difficulties in meeting the code requirements, the FAHJ should determine whether to grant a modification. If the FAHJ approves a modification, the FAHJ should send a letter to the applicant and PDS finding that special individual reasons make compliance with the strict letter of the code impracticable, the proposed modification complies with the intent and purpose of the code and provides the same practical effect, and the modification does not lessen health, life and fire safety requirements. The FAHJ must include an explanation for each finding.

Concurrent with the process at the local FAHJ, the County PDS will also review the plan. The plan will be reviewed for completeness and code compliance. If the plan is found to be complete, code compliant and to have been accepted by the FAHJ, an acceptance letter will be prepared. If the plan is found to be incomplete, to be inconsistent with code requirements or not to have been accepted by the FAHJ, PDS will not accept the plan.

The County Consolidated Fire Code includes a procedure for appealing the decision of the FAHJ relating to the application of the applicable fire code.

The County will make every effort to provide sufficient time for the FAHJ to review and comment on the proposed project and associated Fire Protection Plan. If comments are not received from the FAHJ in a timely manner, PDS will assume that the FAHJ has no comments on the proposed Fire Protection Plan. PDS will advise the final decision-making body of the FAHJ’s failure to comment on the Fire Protection Plan.

5.0 STANDARD MITIGATION AND PROJECT DESIGN CONSIDERATIONS

To effectively mitigate wildland fire hazards in Southern California, a multi-lateral approach that involves federal, state, and local governments and fire agencies is usually

necessary. Collectively, the County and fire agencies work together to prevent the loss of life in wildland fires; prevent the ignition of structures by wildland fires; prevent the encroachment of wildland fire upon communities; prevent a wildland-caused structural conflagration; prevent the spread of a structure fire to the wildland; and to limit the size of wildland fires.

Wildland fire mitigation measures and design considerations used in the planning and land use approval process vary depending on the wildland characteristics of the site and surrounding area. In order to allow this flexibility in project design, many wildland fire regulations are written using language that is often subject to interpretation (e.g. water supply may consist of reservoirs, pressure tanks, elevated tanks, water mains or other fixed systems ...) as opposed to codes that are absolute (e.g. "Class "A" roofing material shall be required"). This may allow some projects with unique geographic and topographic conditions to adequately mitigate wildland fire risks through project design.

5.1 Emergency Services

Fire protection and emergency services are among the most vital and basic of community needs. Firefighters, who are generally the first responders to disasters, must be prepared to respond quickly and effectively to all types of emergencies, including wildland fires. For this reason, the provision of adequate facilities for fire protection and emergency services is fundamental to protecting the health, safety and general welfare of the residents of San Diego County.

5.1.1 Emergency Fire Response

5.1.1.1 Applicable Codes/Regulations

San Diego County General Plan

5.1.1.2 Applied Standards

Projects must comply with the emergency travel time requirements specified in the County General Plan. Travel time is defined as the estimated time it will take for a responding agency to reach the furthest structure in a proposed development project. Travel time is determined by measuring the safest, most direct, appropriate and reliable route between the fire station and the project with consideration given to safe operating speeds for heavy fire apparatus. Travel time does not include reflex or reaction time, or on-scene size-up and set-up prior to attacking the fire, all of which are critical precursors to actual firefighting. Travel time may be calculated by using NFPA 1142 Table C.11(b), SANDAG layering, PDS-GIS software travel time mapping, actual emergency travel time run data or actual driving tests. If the travel time determined in the FPP is less than the travel time determined by the FAHJ, the travel time determined by the FAHJ shall take precedence.

NOTE: Stations that are seasonal (not open all year) or staffed with volunteers without legal responsibility to respond to emergencies, should not be used for determining

consistency with travel time requirements of the County General Plan.

Where projects exceed these time requirements, the Director of PDS may, upon concurrence with the FAHJ, accept mitigation measures. Acceptable mitigation may include, but is not limited to:

- Alternative construction methods and measures not otherwise required;
- Automatic Aid agreement(s);
- Upgrading existing facilities or infrastructure;
- Constructing new facilities; or
- Implementing a long-term binding agreement aimed at reducing the response time to acceptable limits

Proposed mitigation should be implemented prior to implementation of the discretionary permit (prior to recordation of the final map for subdivisions and prior to issuance of building permits or use and reliance for use permits/site plans).

If a modification is proposed, the requirements of the County Consolidated Fire Code specific to modifications apply. Documentation of mitigation should appear not only in the FPP, but also in the files of the FAHJ as prescribed in the Fire Code.

5.2 Fire Access Roads

Developments with inadequate access (e.g. long roads with a single access point, roads over steep grades, improper road surfaces, and/or narrow roads) significantly contribute to the inability to effectively evacuate residents during a disaster (wildfire, earthquake, or flood) and provide necessary emergency access for fire, ambulance, or law enforcement personnel.

5.2.1 Maximum Length of Dead-End Roads

5.2.1.1 Applicable Codes/Regulations

County Consolidated Fire Code [This code language coincides with the dead-end requirements found in the California Code of Regulations, Title 14, section 1273.09 (Dead-End Roads)]

5.2.1.2 Applied Standards

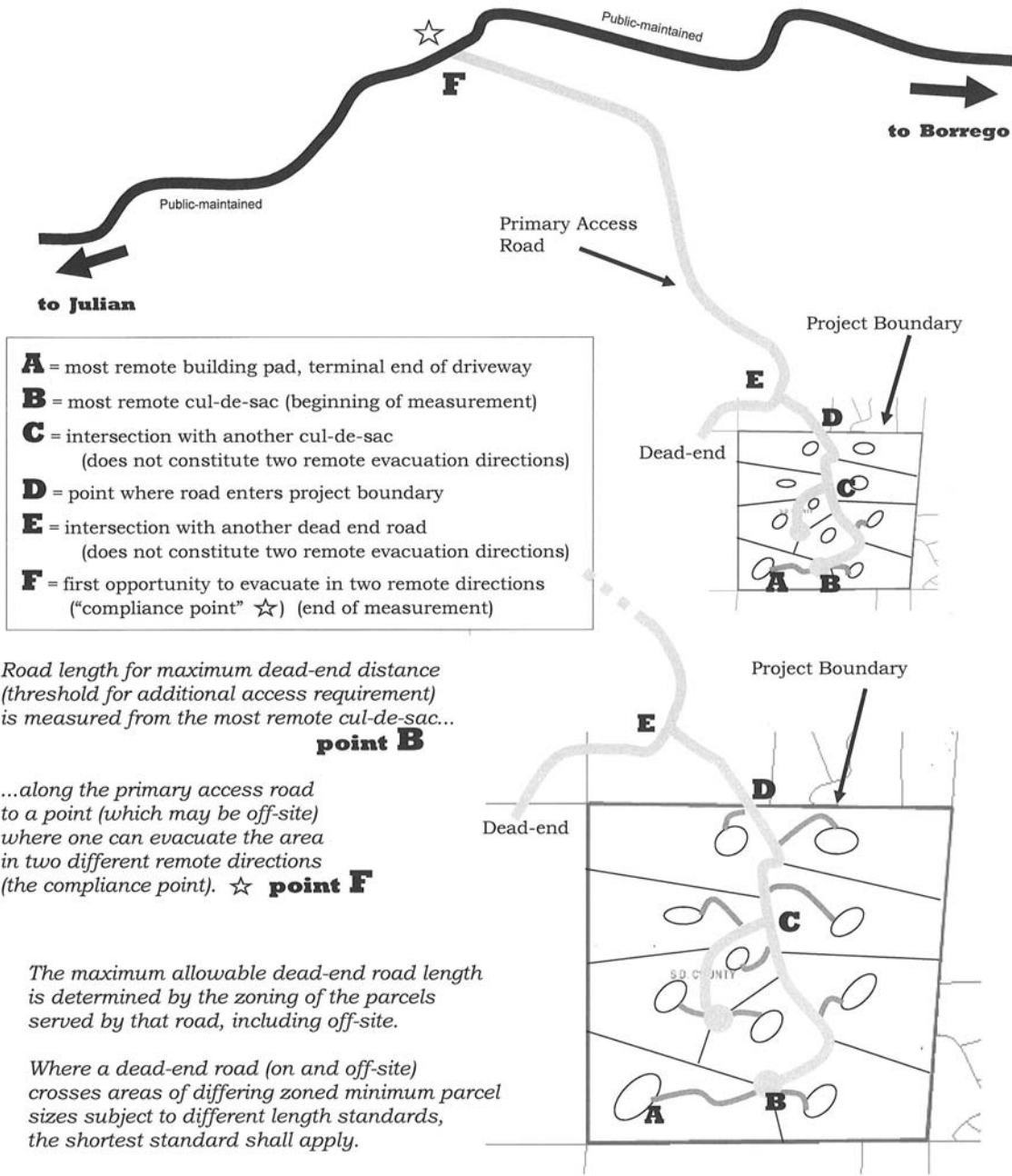
The intent of limiting the allowable length of a dead-end road is to ensure that firefighters have access flexibility to deal with changing dynamics in wildfires and other emergencies, and that civilians have safe, reliable and known evacuation alternatives during emergencies.

In part, the concept of dead-end road regulations relates to limiting the number of persons attempting to evacuate on the road and to limit the time needed for safe evacuation. Steep, narrow and winding roads delay evacuation. Long dead-end roads in rural wildland areas place people and emergency personnel at increased risk. The following general standards apply to projects that utilize dead-end roads.

- Road length is measured from the beginning of the primary access road at a point where one can evacuate in two different directions (which may be off-site), measured to the end of the most remote cul-de-sac. Refer to Figure 3 for guidance on measuring dead-end road length.
- Projects with an access road that exceeds the regulations for dead-end roads should first consider providing an alternate means of access and egress before resorting to other possible alternatives (section 5.7 and 5.8).
- An important factor in evaluating existing and proposed access roads is road connectivity. When feasible, projects should extend on-site roads to the edge of the property for possible future connectivity.
- In order to ensure that necessary access to the project site remains available in perpetuity, the applicant needs to provide evidence that a permanent and reliable right of access has been obtained. These rights would generally be in the form of an easement that runs with the land.
- Access may be proposed over tribal lands held in trust only if the Tribe waives its sovereign immunity and allows the Tribe to be sued in state court to enforce the right of access over the tribal lands. The requirement to waive sovereign immunity does not apply if the Bureau of Indian Affairs grants the access rights.
- Security (privacy) gates or other types of barricades are generally discouraged as they can obstruct civilian egress and responder ingress during a fire emergency. However, in certain circumstances, gates can be allowed if they provide a rapid and reliable means of firefighter ingress and unobstructed egress for civilian evacuation as determined by the FAHJ. For example, entry gates positioned at the entrance to a subdivision must provide for rapid entry by emergency responders. The rapid opening of the gate for responders may be activated by personnel stationed at the gate on a 24-hour basis, emergency vehicle traffic signal pre-emption strobe detectors, close proximity public safety radio transmissions, battery back-up with "lock open" on power failure, or key-

operated electric override switch. In all cases, exiting from the subdivision through the gated entry should be unobstructed and not require any activation measures unless the FAHJ assumes responsibility to activate the gate during times of emergency. All gates must comply with County Consolidated Fire Code.

Figure 3
Guidance for Determining Primary Access Road Length



- A** = most remote building pad, terminal end of driveway
- B** = most remote cul-de-sac (beginning of measurement)
- C** = intersection with another cul-de-sac
 (does not constitute two remote evacuation directions)
- D** = point where road enters project boundary
- E** = intersection with another dead end road
 (does not constitute two remote evacuation directions)
- F** = first opportunity to evacuate in two remote directions
 ("compliance point" ☆) (end of measurement)

Road length for maximum dead-end distance
 (threshold for additional access requirement)
 is measured from the most remote cul-de-sac...
point B

...along the primary access road
 to a point (which may be off-site)
 where one can evacuate the area
 in two different remote directions
 (the compliance point). ☆ **point F**

The maximum allowable dead-end road length
 is determined by the zoning of the parcels
 served by that road, including off-site.

Where a dead-end road (on and off-site)
 crosses areas of differing zoned minimum parcel
 sizes subject to different length standards,
 the shortest standard shall apply.

5.2.2 Fire Access Road Width

5.2.2.1 Applicable Code/Regulations

County of San Diego Department of Public Works Public & Private Road Standards, and County Consolidated Fire Code

5.2.2.2 Applied Standards

The minimum width identified in the code section above should not be obstructed at any time. Parking should be outside the required fire access road width. The exception allowance under the code is often considered for reductions in width for a short section where extreme topographic constraints make it impossible to obtain the minimum required width or where impacts to sensitive biological resources can be avoided. **Any exception allowance under the code shall be replaced with an alternative measure that provides the same practical effect.** This finding should be supported by the Director of Public Works, the FAHJ and the County Fire Marshal on the basis of extreme topographic or biological constraints.

5.2.3 Fire Access Road Grade

5.2.3.1 Applicable Code/Regulations

County Consolidated Fire Code

5.2.3.2 Applied Standards

Full compliance with the code.

Exceptions would be considered where full compliance with the standard could not be achieved because of extremely steep terrain. **Any exception allowance under the code shall be replaced with an alternative measure that provides the same practical effect.**

5.2.4 Fire Access Road Surface Type

5.2.4.1 Applicable Code/Regulations

County Consolidated Fire Code

5.2.4.2 Applied Standards

Full compliance with the code.

5.3 Water

Providing adequate water supply, volume and pressure, is crucial in fighting not only wildland fires, but smaller scale residential fires as well. History has shown that most fire related responses are to residential fires. In some cases, however, residential fires escape the confines of the house and become wildfires. As such, it is important that water resources are adequate to meet the volume and flow needs to properly fight fires either at an individual home or the surrounding neighborhood. A municipal water supply (waterlines and hydrants) is always preferable to on-site tanks.

5.3.1 Inside Water District

5.3.1.1 Applicable Code/Regulations

County Consolidated Fire Code

5.3.1.2 Applied Standards

Full compliance with the code. For water main extensions, the measurement of distance to the water main should be taken from the existing main to the nearest portion of the subject parcel (to the property line), not to the proposed hydrant location.

5.3.2 Outside Water District

5.3.2.1 Applicable Code/Regulations

County Consolidated Fire Code

5.3.2.2 Applied Standards

Full compliance with the code. Structures or clusters of structures substantially greater than roughly 5,000 square feet should provide additional water storage.

5.4 Ignition-Resistive Building Construction and Fire Protection Systems

Following the October 2003 wildfires, and again after the firestorm of fall 2007, the County assessed damaged and destroyed homes in an effort to identify areas where building codes could be strengthened to enhance the chances of a structure surviving a wildfire. As a result, in June 2004, and again in January 2008, the County amended the Fire Code and Building Code to improve the chances of a structure surviving a wildland fire.

5.4.1 Ignition-Resistant Construction

5.4.1.1 Applicable Code/Regulations

County Building Code, and County Consolidated Fire Code

5.4.1.2 Applied Standards

Full compliance with the code/regulations

5.5 Defensible Space, Ornamental Landscaping and Vegetation Management

History has shown through structural losses experienced in the Witch Creek, Harris, Rice, Poomacha, Cedar, Paradise, Otay, Harmony, Viejas, Gavilan, Pines Fires, Cocos, West, Lilac, Border Fire, and Valley Fires, that defensible space is a critical factor of structure survival. By ensuring defensible space around structures, firefighting teams are provided a line of defense to protect homes and other valued assets at risk of wildland fires. In February 2004, the Board of Supervisors adopted amendments to the County's Combustible Vegetation and Other Flammable Materials Ordinance (now the Defensible Space for Fire Protection Ordinance) in an effort to reduce the build-up of combustible vegetation and require adequate fuel modification around structures. The Defensible Space for Fire Protection Ordinance was last updated in October of 2021.

5.5.1 Defensible Space and Setback from Property Line

5.5.1.1 Applicable Code/Regulations

Defensible Space for Fire Protection Ordinance;

Chapter 4 of Division 8 of Title 6 of the San Diego County Code;
County Consolidated Fire Code

5.5.1.2 Applied Standards

All structures designed for sheltering or enclosing people, animals, or property must be surrounded by 100 feet of defensible space, whereby all flammable vegetation or other combustible growth is managed to reduce the threat from wildfires.

The County and FAHJ may reduce or increase the required defensible space depending upon unique site characteristics. For example:

- 1) The defensible space should typically be accommodated within the boundaries of the project. However, where it is determined that practical difficulties make it infeasible to do that, offsite areas could be included, provided that offsite fuel

modification is assured by an enforceable easement from the neighboring property owner or another legally enforceable mechanism.

- 2) Normally, defensible space will surround the immediate building area. However, a FMZ surrounding the entire development area may be considered on a project by project basis.
- 3) Any project that is required to prepare and implement a full FPP may also be required to prepare a **Fire Behavior Model** that evaluates a worst-case scenario wildfire based on site topography, weather and vegetation. The modeling, combined with the consultant/fire authority's expertise may result in the consultant proposing greater or lesser buffers to minimize building and occupant safety risks. Under no circumstances shall the FMZ be less than 30 feet wide.

Additionally, all ornamental landscaping needs to be consistent with County's Landscape Ordinance and Landscape Design Manual. Projects requiring landscape plans should clearly identify the type of plant materials, locations and spacing of plant materials, and irrigated and non-irrigated landscaping. The landscape consultant may recommend in the text the inclusion or exclusion of specific varieties for review by the County landscape architect.

Maintenance requirements and suggestions for landscaping within defensible space areas are provided in:

- County Consolidated Fire Code (<https://www.sandiegocounty.gov/content/dam/sdc/sdcfa/documents/prevention/2020-County-Consolidated-Fire-Code-FINAL.pdf>)
- "Fire, Defensible Space *and* You..." (http://sdcountry.ca.gov/dplu/fire_resistant.html);
- "Fire-safe Landscaping Can Save your Home" (<http://www.sdcounty.ca.gov/oes/docs/fswy12.pdf>); and
- The California Native Plant Society's "Native Plant Landscaping to Reduce Wildfire Risk" (<http://www.cnpsd.org/fire/ReduceFireRisk.pdf>).
- "Ready, Set, Go" (<http://www.readyforwildfire.org/>)

5.6 Alternatives to the Standards

Due to unique site characteristics, there may also be combinations of site/project improvements and opportunities that make adequate mitigation achievable when standards cannot be met. The standards listed below are considered a "starting point". Nothing in these standards precludes a FAHJ and/or the County from identifying other measures that would adequately mitigate unique site characteristics/conditions. **Any exceptions under the code shall be replaced with an alternative measure that provides the same practical effect.**

- The type and number of fire apparatus available to serve the project are reliable,

well-staffed and redundant. Examples include multiple engines with full-time career or reserve staff, with travel times approximating the “first-in” engine.

- Adequate funding is legally committed in perpetuity to the fire authority for staffing inspections, enforcement and educational programs.
- Vegetation around the access and project has low fire-carrying potential and flame length.
- The project is supported with a public water system with fire hydrants along access roads at distances and with at least a fire flow of 2,500 gallons per minute.
- An adequate FMZ separates the project and open space areas.
- The project is located in a developed area or an area with long-standing agricultural operations.
- The project provides funding in perpetuity to support adequate fire agency staffing for fire suppression, fire code enforcement and community safety education. An example would be the establishment of a Community Facilities District to assist in the long-term funding of fire district operations and management.
- An on-going discretionary permit that runs with the property that includes conditions that regulate activities/operations. An example would be a Major Use Permit or an Administrative Permit.
- Adequate road widening and improved road surfacing that generally improves the access to the subject property and surrounding uses.
- Security (privacy) gates or other types of barricades are generally discouraged as they can obstruct civilian egress and responder ingress during a fire emergency. However, in certain circumstances, gates can be allowed if they provide a rapid and reliable means of firefighter ingress and unobstructed egress for civilian evacuation as determined by the FAHJ. Refer to section 5.2.1.2 of these guidelines.

5.6.1 Required Findings for Alternatives to Standards

Certain site-specific situations may make the strict adherence to the County Consolidated Fire Code either impracticable or infeasible. If a modification is proposed, the requirements of the County Consolidated Fire Code specific to modifications apply. The fire code official is authorized to approve a modification to the fire code requirements when the proposed modification is supported by the following “findings”:

- Special circumstances make the strict letter of the code impracticable;
- The modification is in compliance with the intent and purpose of the code, and provides the same practical effect;

- Such modification does not lessen health, life, and fire safety standards;
- Specific section(s) for which a modification is requested;
- Material facts supporting the need for a modification;
- Details of the modification or mitigating measure proposed, and if applicable, a map showing the proposed location of the modification or mitigation measures;
- The modification is documented in the FPP and separated provided to the FAHJ.

5.6.2 Scenarios where Acceptable Alternatives are Unlikely

There may be situations where a combination of site conditions/constraints, such as those listed below, are so severe that it is unlikely that sufficient mitigation could be provided. In such scenarios, projects may result in a significant impact.

- Project site is surrounded by large wildland areas with little existing or planned surrounding development.
- The primary access road is substandard with no proposal to adequately/reasonably improve it.
- Project site is surrounded by steep slopes and significant topographical constraints that could intensify fire behavior or limit fire suppression operational flexibility.
- Legal access rights have not been obtained for the primary access road and any necessary secondary access road.
- Fire stations available to serve the project site are located substantial distances from the project site such that response by multiple units is significantly delayed.
- The available water supply for fire suppression is limited to tanks, pools or ponds that have limited capacity and require pumping operations

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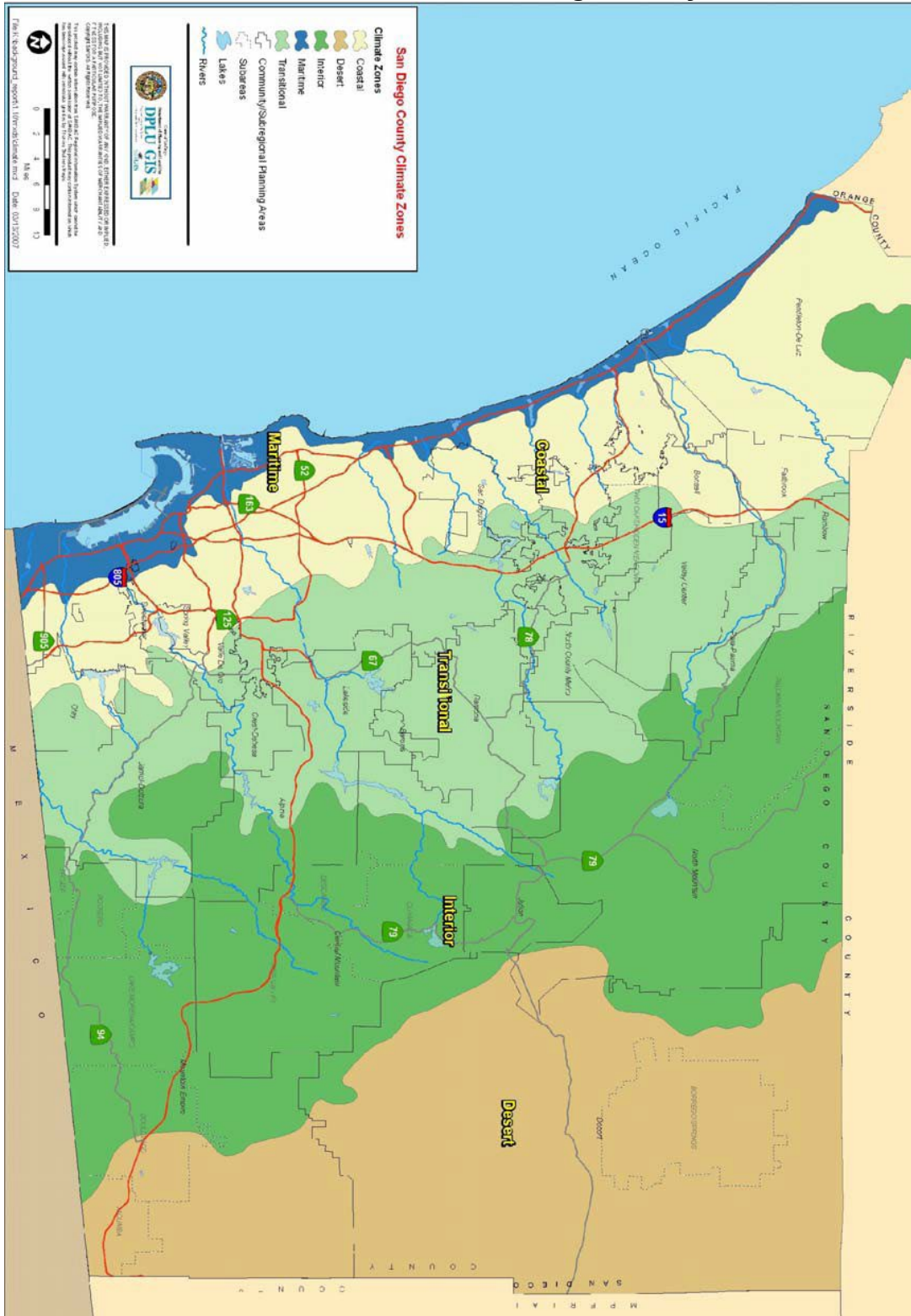
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Figure 1
Climate Zones in San Diego County



[ATTACHMENT A]

DEFINITIONS

Defensible space – An area either natural or man-made, where material capable of allowing a fire to spread unchecked has been treated, cleared or modified to slow the rate and intensity of advancing wildfire. This will create an area for increased safety for emergency fire equipment and evacuating or sheltering civilians in place and a point for fire suppression to occur.

Fire authority having jurisdiction (FAHJ) – The designated entity providing enforcement of fire regulations as they relate to planning, construction and development. This entity may also provide fire suppression and other emergency services.

Fuel modification zone – A strip of land where combustible vegetation has been thinned, modified or both and partially or totally replaced with approved drought-tolerant, fire-resistant and/or irrigated plants to provide an acceptable level of risk from vegetation fires. Fuel

modification reduces radiant and convective heat, thereby reducing the

amount of heat exposure on the roadway or structure and providing fire suppression forces a safer area in which to take action.

Hazardous fire area – Any geographic area mapped by the State or local jurisdiction as a high, or very high fire hazard area, or as set forth by the FAHJ that contains the type and condition of vegetation, topography, weather, and structure density to potentially increase the

possibility of vegetation conflagration fires shall be considered a hazardous fire area.

Structure – A residence and attached garage, building or related facility that is designed primarily for human habitation or buildings designed specifically to house farm animals. Decking, fences, and similar facilities are not considered structures for the purposes of establishing the limits of the fuel modification zone. Sheds, gazebos, and detached garages less than 250 square feet which are located within the fuel modification zone, shall be designed, constructed and placed such that they do not require the fuel modification zone to be increased beyond that required for the primary structures on the property.

Vegetation Maintenance – The long-term proper care and upkeep of trees in order to reduce the flammability of a tree species. Maintenance includes, but is not limited to, the pruning and removal

of dead twigs, leaves or fronds and branches.

Wildland fuel – Any timber, brush, grass, or other flammable vegetation, living or dead, standing or down, that is not classified as ignition-resistive.

Wildland-urban interface – The area where structures and other human developments meet or intermingle with undeveloped wildland (as defined in the County Consolidated Fire Code and County Building Code.)

[Attachment B]

SUMMARY OF REVISIONS

Guidelines for Determining Significance and Report Format and Content Requirements for Wildland Fire and Fire Protection were originally approved on March 19, 2007. The following is a summary of revisions made since original document approval.

Third Revision, XXXXXXXX

- Updated to incorporate changes to the County Consolidated Fire Code
- Clarified that a Fire Protection Plan is required for any projects located within High/Very High Fire Hazard Zones
- Clarified that any waivers of standards shall be replaced with an alternative measure that provides the same practical effect
- Various editorial changes

Second Revision, August 31, 2010

- Updated to incorporate changes to the County Consolidated Fire Code
- Improved standards for dead end roads
- Improved standards for Shelter-in-Place
- Various editorial changes

First Revision, December 19, 2008

- Updated to incorporate changes to the Fire Code and the Building Code
- Updated to change California Department of Forestry (CDF) to CAL FIRE
- Added standards for dead end roads
- Various editorial changes

COUNTY OF SAN DIEGO
REPORT FORMAT AND CONTENT REQUIREMENTS
WILDLAND FIRE AND FIRE PROTECTION



LAND USE AND ENVIRONMENT GROUP

**Planning & Development Services
Department of Public Works**

Third Revision

PURPOSE

The purpose of this document is to describe the format and content of a Fire Protection Plan. These guidelines apply to maps, spreadsheets and reports completed for all privately initiated discretionary projects reviewed by the Department of Planning and Land Use. These guidelines are designed to:

- Ensure the quality, accuracy and completeness of reports and to aid in staff's ability to review reports/assessments in a consistent manner
- Provide enough information to make appropriate planning decisions and to make determinations regarding conformance with applicable regulations
- Increase the efficiency of the environmental review process and to avoid unnecessary time delays

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1.0 INTRODUCTION

The Fire Protection Plan (FPP) shall follow the formats and guidance in this document. The overall length of the FPP and the amount of information included will vary depending on the size and scope of the project, the combustible vegetation threat, the unique topographical/geographical conditions of the site, and the type of emergency response (i.e. fire or medical). Following the submittal of a discretionary project, the County's Scoping Letter may require that one or more of the following be submitted:

- FPP (Full Report)
A FPP shall be prepared for projects located within High and/or Very High Fire Hazard Severity Zones as identified in the map adopted by the State Fire Marshal, except where an FPP (Letter Report) is authorized. A FPP may be required in other areas, for large projects or where the site has topographic, geographic, and/or combustible vegetation conditions that require detailed review and analysis.
- Fire Fuel Assessment (Fire Behavior Model)
Fire Behavior Modeling shall be conducted for projects located within High and/or Very High Fire Hazard Severity Zones as identified in the map adopted by the State Fire Marshal, and may be required in other areas in conjunction with a FPP (Full Report) for large projects and/or projects with high fuel loads and/or steep topography.
- FPP (Letter Report)
A FPP – Letter Report can be authorized by the County for projects that are located within State Responsibility Areas and limited to infill projects with virtually no wildlands in the immediate vicinity. A FPP – Letter Report shall not be allowed for a project located within a High and/or Very High Fire Hazard Severity Zone as identified in the map adopted by the State Fire Marshal. The FPP – Letter Report fulfills the requirements of the County Consolidated Fire Code and may be prepared by the project applicant or the applicant's representative. The FPP – Letter Report is a simple narrative documenting site information and fire code compliance, and is not intended to require the services of a Fire Consultant. If, upon review of the FPP – Letter Report, code issues are determined to be unresolved or inadequately addressed, a FPP Full Report will be required.

1.1 General Guidelines for Writing a Fire Protection Plan

Contents

- The overall content of an FPP is outlined in the County Consolidated Fire Code.

Format

- Unless an exception is granted by the County, every draft FPP shall have the components described in this Report Format and Content Requirements document.

- **DOCUMENTS THAT DO NOT CONTAIN ALL OF THE MANDATORY SECTIONS DESCRIBED IN THIS DOCUMENT WILL NOT BE ACCEPTED AS COMPLETE BY COUNTY STAFF UNLESS AN EXCEPTION IS APPROVED BY THE DIRECTOR OF PLANNING & DEVELOPMENT SERVICES (PDS).**
-

Electronic Format

- Any draft text submitted electronically to the County for comment and review shall be formatted in Microsoft Word (2003 version or later). Staff may also request draft text to be submitted in PDF files. The electronic submission of draft text should be placed on a CD.

Document Length

- The length of the draft FPP must be kept to the absolute minimum. The document shall be only as long as required to accurately convey the pertinent fire code issues and to contain the level of analysis required to legally comply with the CEQA. Extraneous and "filler" material must always be omitted from the FPP.

Editorial Matters

- The draft FPP must be properly edited for correct format, spelling, grammar, page numbering, internal consistency and other editorial matters. It must also be consistent with project submittals. The draft FPP must be prepared in a clear format, written in clear language for review and understanding by decision-makers and the public (see CEQA Guidelines, § 15140). Complex and extremely analytical materials must be summarized and simplified, with the details and harder to comprehend materials placed in the technical appendices.
- The draft FPP must be written in a factual and objective manner. The document must provide a good-faith effort of full disclosure (e.g. if code requirements are not met, that information must be stated, accompanied by proposed mitigation measures).
- The draft FPP must cite all documents used in its preparation including, the section number of any relevant codes or regulations. Other documents may be incorporated by reference, provided that the referenced document is summarized in the draft FPP and is made available for public inspection at a public place identified in the draft FPP, which shall include a County office.

1.2 General Guidance and Key Compliance Points for Preparing a Fire Protection Plan

- Include only information that is directly pertinent to the FPP. Do not include extraneous, surplus, and anecdotal information.
- Instead of simply referring to "County Policy ...," specify whether the cited document is an official Board of Supervisors Policy, a Departmental Policy, or an informal policy or practice.
- Use consistent terminology. For example, do not refer to "Fire Behavior Model" in one section of the report and "Fire Model" in another.

- Present discussion and analysis with a tone that is professional, academic and impartial, rather than argumentative or project advocacy.
- Where other documents are incorporated by reference, explain the purpose for doing so and briefly describe or summarize the part or parts incorporated. The reference should be placed in the applicable narrative sections.
- Provide factual SUPPORT and RATIONALE for all conclusions stated.
- Check the accuracy of all factual statements. For example, do not state that a County regulation sets forth a particular requirement if, in fact, it does not.
- With the exception of the FPP – Letter Report, reports should be technical in nature.
- Reports should be concise and written in a professional manner suitable for peer review. Staff may reject reports based on quality if the report is written in such a manner that a timely and accurate review cannot be completed.
- Attached plot plans and maps must be to standard engineering scale and contain a north arrow and both number and bar scales. A scale of *1" = 160 feet*, or *1" = 80 feet* would not be acceptable. When maps are reduced, they must be scalable by using a standard engineering scale (e.g. 1" = 10' (or 100) thru 60' (or 600') in 10 foot intervals). Irrespective of scale, all maps and plot plans must be **clearly legible** to County staff.
- In draft copies of the report, all changes made in response to staff comments must be shown in strikeout/underline form. "Strikeout/underline" draft and "clean" copies should be submitted simultaneously. Final copies of the report must be clean, with all editing marks removed.
- The Draft FPP will be reviewed for technical accuracy and completeness by a County Fire Code Specialist and the fire district's Fire Marshal, if appropriate. The plan is considered to be draft until County staff determines the report to be complete.
- The FPP shall use mandatory, not permissive language, as the document will be binding on the project if the project is approved.

2.0 REPORT FORMATS

2.1 FPP (Full Report) Outline

BINDER COVER & COVER PAGE

The Cover Page of the FPP shall include the following information:

- Project common name
- Project applications numbers. Must include all associated discretionary permit numbers (e.g. TM XXXX, TPM XXXXX, ZAPXX-XXX) and the environmental log number (Log No. XX-XX-XXX)
- Date of the original report, followed by the date(s) of all iterations
- Principal author's name, firm name and address
- Signature of principal author
- Project applicants' names and addresses
- A statement that reads: "*Prepared for the County of San Diego*"
- Color photo of the project site

TABLE OF CONTENTS AND HEADINGS

The table of contents must follow the order and format outlined in this document. Page numbers should be assigned when possible. Titles of each attachment/appendix should be listed in the order in which they are found in the document. The Table of Contents must be formatted in the following manner:

CHAPTER I. CHAPTERS SHALL BE SPECIFIED BY NUMBER AND SHALL BE PRESENTED IN BOLD AND IN ALL CAPS

I.I First level subchapters shall be specified by number and shall be presented in upper and lower case, bold, and underlined

I.I.I Second level subchapters shall be specified by number and shall be presented in upper and lower case, and bold.

I.I.I.I Third level subchapters shall be specified by number and shall be presented in upper and lower case, italics, and bold.

EXECUTIVE SUMMARY

The purpose of the Executive Summary is to provide a quick reference for the public and decision-makers. Therefore, the language should be less technical than that used in the remainder of the document and should be no more than one page in length. The Executive Summary should include a brief summary of the project, the topographic/geographic and combustible vegetation conditions/challenges of the site and surrounding areas, existing fire related services, potential project impacts/issues and proposed mitigation. The summary should include a brief discussion of anticipated fire behavior in the vicinity, based in part on fire behavior modeling (expanded in the body of the FPP). No information should be provided in the summary that is not further explained elsewhere in the document.

Chapter 1. INTRODUCTION

Every FPP shall include the following introductory language:

This FPP has been prepared for the (*insert common name of the project here*). The purpose of the FPP is to assess the potential impacts resulting from wildland fire hazards and identify the measures necessary to adequately mitigate those impacts. As part of the assessment, the plan has considered the property location, topography, geology, combustible vegetation (fuel types), climatic conditions, and fire history. The plan addresses water supply, access (including secondary/emergency access where applicable), structural ignitability and fire resistive building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, and vegetation management. The plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect one or more at-risk communities and essential infrastructures. The plan recommends measures that property owners will take to reduce the probability of ignition of structures throughout the area addressed by the plan.

1.1 Project Location, Description and Environmental Setting

1.1.1 Project Location

Discuss the project location in the local and regional context. Include a copy of the site plan/plot plan with topographical overlay. If the subject site is adjacent to steep topography or dangerous fuels, additional mapping information may be required. Identify if the project is located within a High or Very High Fire Hazard Severity Zone.

1.1.2 Project Description

Provide a very detailed description of the project, including all on-site and off-site components. An 8.5"x11" or 11"x17" copy of the proposed subdivision map/plot plan must be attached to the report as a numbered figure(s). The project description should be as detailed as possible and, at a minimum, include the following information (additional information may be required):

- Size of project site and area proposed for development.

- Purpose and scale of proposed uses associated with the project, such as residential development or recreational camping.
- Proposed structures (size, location, purpose, etc.).
- Location of all easements, including those for biological open space, steep slopes, riparian areas, limited building zones, utilities and roads.
- Proposed or potential uses within open space or riparian areas.
- Off-site improvements, such as for roads or utility extensions, and brief analysis of existing off-site road conditions (e.g. width, grade, and paving).

1.1.3 Environmental Setting

Describe the physical characteristics of the subject site and surrounding areas. At a minimum, the Environmental Setting section must include the following information:

- Dates of all site inspections/visits conducted
- Topography
- Vegetation (type and density)
- Fuel loads
- Fire history for the area
- Elevation
- Climate (general and seasonal)
- Public and private ownership of land in the vicinity, particularly any preserved lands adjacent or contiguous to the site
- A description of the existing land uses on site and on surrounding lands

Chapter 2. GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE

Detailed guidelines for the determination of significance are identified in section 4.0 of the Wildland Fire and Fire Protection Guidelines for Determining Significance. This section of the FPP must list those thresholds as described under section 4 and explain how the project complies with those thresholds.

Chapter 3. ANTICIPATED FIRE BEHAVIOR IN THE VICINITY

The applicant should provide a fairly brief narrative of anticipated fire behavior in the project vicinity in terms of fuels, terrain, weather, and intensity, both before and after mitigation (if any). This narrative should include a brief summary of fire behavior modeling results, and set the tone for project analysis and mitigation measures that follow. This is the appropriate chapter in which to review fire history.

Chapter 4. ANALYSIS OF PROJECT EFFECTS

This section must include an evaluation of project compliance with the Significance Guidelines listed in section 2.0, above. The project must be analyzed to identify potential adverse impacts and to identify adequate mitigation measures for impacts resulting from wildland fire hazards. At a minimum, an analysis must include an evaluation of the following areas:

4.1 Adequate Emergency Services

This section of the report must discuss the following:

- Fire jurisdiction providing service, location of the nearest fire station obligated to respond, and its emergency responsibility
- Travel distance and travel time (include methodology used)
- Compliance/non-compliance with the San Diego County General Plan
- First alarm response to wildland fire and to structure fire

4.2 Fire Access

The analysis must include a description of the existing off-site and proposed on-site road network, including the following:

- Main/additional access
- Road widths, angles of approaches/departures, obstructions (gates), fire lane marking and turnarounds, including analysis of off-site roads from a public-way and all deviations from fire code requirements
- Road grades and surface improvements
- On-going road maintenance (identify entity responsible and private funding mechanism)
- Compliance/non-compliance with codes/regulations and significance standards

4.3 Water

4.3.1 For projects inside a public or private water district:

- Provide a copy of the Water Service Availability Form along with a map that shows existing and proposed hydrant locations and spacing
- Fire flow in mains in wildland areas for new development must be a minimum 2,500 GPM, unless reduced by the fire authority having jurisdiction, consistent with code
- Compliance/non-compliance with codes/regulations and significance standards

4.3.2 For projects outside a Public or Private Water District:

- Demonstrate compliance with County Consolidated Fire Code

4.4 Ignition-Resistant Construction and Fire Protection Systems

- County Building Code specifies construction standards for all structures located within the WUI areas. Provide a list of the structures and their uses and clearly identify proposed deviations from applicable sections of the applicable codes. Justification must be provided for alternatives to code requirements; DO NOT simply repeat the code.
- Identify fire sprinkler requirements.

4.5 Fire Fuel Assessment

- Summarize the wildland and non-native fuels on and adjacent to the site and their potential threat of burning, prior to Vegetation Management.

4.6 Fire Behavior Modeling

- Summarize fire behavior modeling results, linking the results to fuel assessment and defensible space. (Details, such as data input and output, should be presented in the Technical Appendices.)

4.7 Defensible Space and Vegetation Management

This section of the report must:

- Provide an overview of flammable vegetation within and adjacent to the project site (type and density, and location relative to specific lots)
- Identify Fuel Modification Zones (with dimensions) for building pads and access roads and link to Fire Fuel Assessment, Fire Behavior Modeling.
- Include vegetation management (clearing) practices that will be implemented during the life of the project and the organization responsible for maintenance.
- Identify how boundaries of vegetation management zones will be permanently identified in the field.
- Identify plant species that are proposed as part of new landscaping, if known.
- Demonstrate compliance/non-compliance with codes/regulations and significance standards.

4.8 Cumulative Impact Analysis

This and other projects may have a cumulative impact on the ability to protect residents from wildfires. This project and other development in the area will increase the population in the rural areas, which may increase the chances of a wildfire and increase the number of people and structures exposed to risk of loss, injury or death.

Explain how the project and other proposed development in the area may contribute to this cumulative impact and what mitigation measures are proposed to address this impact (e.g. establishing/participating in a Community Facility District, project compliance with or exceeding codes/standards).

Chapter 5. MITIGATION MEASURES AND DESIGN CONSIDERATIONS

Briefly describe proposed mitigation measures and design considerations. For each measure, state the impact being mitigated. Some mitigation measures MAY require additional details or analysis of potential impacts.

Chapter 6. CONCLUSION

For each significant impact, determine if the proposed mitigation measures have reduced the significance level to “less than significant” in accordance with the stated Significance Guidelines and, if so, explain why.

Chapter 7. LIST OF PREPARERS AND PERSONS AND ORGANIZATIONS CONTACTED

Provide a list of preparers, noting each person included on the County list of approved consultants. Note that the principal author must be on the County list or the report will not be accepted.

Chapter 8. REFERENCES

Include a list of all references used in the report (not personal references for the preparer.)

TECHNICAL APPENDICES

The Table of Contents for the Appendices must list each document attached to the report in the order in which it is included. The following documents must be included in the report, either in the text (if size is appropriate) or as an appendix:

- Site Map/Plot Plan with topography overlay
- Aerial photo of site and immediate vicinity – with property lines shown
- Photos of the site at ground level
- Fire Model
- Completed and signed form “PDS #399F – Project Facility Availability Form for Fire” (if required for the specific permit application)

2.2 Fire Behavior Model

Summary Narrative

As part of the Fire Behavior Model, a Summary Narrative must be included that provides an overview of the assumptions and findings. Please ensure that the narrative includes discussion of wind compression, spotting potential, fire location/direction, assessment of neighboring fuel beds, and topographical impacts. The language should be less technical than that used in the Fire Model Report and should be no more than one page in length.

Use of Model Inputs - Caveat

The Fire Behavior Model is a tool for fire authorities to estimate the behavior of fire that is moving towards a structure given certain assumptions. The Fire Behavior Model is only an estimate and not designed to replace eye-witness accounts or the experience of the local FAHJ who is familiar with wildland fire behavior.

The standard weather parameters that are discussed below are designed to provide local FAHJ and fire consultants with a generally accepted set of model inputs to ensure overall fire modeling consistency for certain fuel types. The inputs are not stagnant and will constantly be revised and amended as additional information becomes available and modeling software changes. The County will post changes to these standard weather parameters on the PDS website as the changes occur. Before finalizing modeling inputs, fire consultants must contact the local FAHJ to confirm that the model inputs proposed are reasonably accurate for the area being considered.

Note that BehavePlus is not the only recognized fire model that is available; it is identified in this report only because it is a model currently most used by fire consultants. Three fuel models are listed as a comparison of fire behavior values under BehavePlus, but other recognized models may be used. Use of these alternative models will be accepted if the consultant provides documentation that supports and justifies the assumptions that are used.

Model Inputs – Historical Background

The requirement to submit a Fire Protection Plan for development in wildland areas has demonstrated a need for a generally accepted set of weather parameters for extreme fire conditions during summer time and Santa Ana fire weather patterns.

Analysis of 44 years of weather data (1961-2005) from the USDA Forest Service's Weather Information Management System (WIMS) provides a sampling of weather patterns across San Diego County. The County is divided into five climate zones from the coast to the desert. (Climates of San Diego County, Agricultural Relationships, University of California, Agricultural Extension Service, and U.S. Weather Bureau.) Daily afternoon weather observations were manually taken at selected fire stations across the county between 1961 and the early 1990's. Remote Automated Weather Stations (RAWS) replaced manual observations beginning in 1992. <http://famweb.nwcg.gov/weatherfirecd/>

Fire Family Plus software (USDA Forest Service) was used to summarize and analyze historical daily fire weather observations and to compute fire danger indices based on the National Fire Danger Rating System (NFDRS).

Weather data from April 15th through December 31st was chosen to represent the general limits of the fire season. Fires have occurred between January 1st and April 14th, but while dangerous fire weather conditions occur during this period, they typically are not as severe as September and October weather conditions. Including winter weather records would dilute the data and add numerous winter storms that require manual interpretation. Summer fire conditions were derived from records beginning on June 15th and ending September 15th.

Maximum wind speed data was checked for reasonableness by comparing speed with surrounding stations. Winds associated with winter storms were identified by cross checking with precipitation and relative humidity observations and then excluded. Santa Ana wind season is assumed to start on September 15th. Wind speed is measured at 20 feet above the ground and averaged for at least 10 minutes.

Maximum wind speed was calculated by taking the difference between the maximum recorded wind speed and the 99th percentile wind speed, adding this difference to the 99th percentile wind, adding 10 percent for a safety margin, and rounding the answer up. This had the effect of throwing out the outliers while including the highest reasonable winds. A table showing days with winds over the 99th percentile is included for each zone. Peak wind for each zone is the highest recorded wind by a RAWS during the Cedar fire (October 26, 2003).

The program for calculating fire behavior and spread requires temperature and relative humidity ranges as inputs. Temperature ranges of 90°-109°F and relative humidities of 5%-9% are reasonable for most areas of the county under Santa Ana conditions.

The Burning Index graph is included for reference. It represents the relative difficulty of controlling a wildfire and is calculated from temperature, wind, relative humidity, fuel (vegetation) moisture and wind.

Actual weather records may be used in lieu of these numbers if they can be demonstrated to be representative of the actual site, recorded by a recognized system, and represent at least five years of data.

Table 1
BEHAVE Plus 5.0.1
Worst case sustained winds (10 minute average and peak) Fuel Model 1 at 50% slope

Zone	Period	Temperature	Relative Humidity	Sustained Wind Speed	Burning Index (99%)	Rate of Spread Feet/min	Flame length
Maritime	Summer	70-89°F	30-34%	17 mph	41	300	8
	Santa Ana	90-109°F	5-9%	18 mph	64	470	10
	Peak	90-109°F	5-9%	22 mph	-	550	11
Coastal	Summer	90-109°F	10-14%	19 mph	57	430	9
	Santa Ana	90-109°F	0-4%	21 mph	112	600	12
	Peak	90-109°F	0-4%	26 mph	-	730	13
Transitional	Summer	90-109°F	10-14%	19 mph	119	430	9
	Santa Ana	90-109°F	5-9%	28 mph	145	730	13
	Peak	90-109°F	5-9%	41 mph	-	730	13
Interior	Summer	90-109°F	5-9%	18 mph	153	470	10
	Santa Ana	90-109°F	5-9%	24 mph	168	730	13
	Peak	90-109°F	5-9%	56 mph	-	730	13
Desert	Summer	90-109°F	5-9%	18 mph	153	470	10
	Santa Ana	90-109°F	5-9%	24 mph	168	730	13
	Peak	90-109°F	5-9%	56 mph	-	730	13

Table 2
BEHAVE Plus 5.0.1
Worst case sustained winds (10 minute average and peak) Fuel Model 4 at 50% slope

Zone	Period	Temperature	Relative Humidity	Sustained Wind Speed	Burning Index (99%)	Rate of Spread Feet/min	Flame length
Maritime	Summer	70-89°F	30-34%	17 mph	41	480	47
	Santa Ana	90-109°F	5-9%	18 mph	64	620	56
	Peak	90-109°F	5-9%	22 mph	-	700	60
Coastal	Summer	90-109°F	10-14%	19 mph	57	989	50
	Santa Ana	90-109°F	0-4%	21 mph	112	740	61
	Peak	90-109°F	0-4%	26 mph	-	870	65
Transitional	Summer	90-109°F	10-14%	19 mph	119	615	54
	Santa Ana	90-109°F	5-9%	28 mph	145	1100	73
	Peak	90-109°F	5-9%	41 mph	-	1600	87
Interior	Summer	90-109°F	5-9%	18 mph	153	620	56
	Santa Ana	90-109°F	5-9%	24 mph	168	870	66
	Peak	90-109°F	5-9%	56 mph	-	2400	105
Desert Chaparral	Summer	90-109°F	5-9%	18 mph	153	620	56
	Santa Ana	90-109°F	5-9%	24 mph	168	870	66
	Peak	90-109°F	5-9%	56 mph	-	2400	105

**Table 3
BEHAVE Plus 5.0.1**

Worst case sustained winds (10 minute average and peak) Fuel Model 10* at 50% slope

Zone	Period	Temperature	Relative Humidity	Sustained Wind Speed	Burning Index (99%)	Rate of Spread Feet/min*	Flame length*
Maritime	Summer	70-89°F	30-34%	17 mph	41	-	-
	Santa Ana	90-109°F	5-9%	18 mph	64	-	-
	Peak	90-109°F	5-9%	22 mph	-	-	-
Coastal	Summer	90-109°F	10-14%	19 mph	57	-	-
	Santa Ana	90-109°F	0-4%	21 mph	112	-	-
	Peak	90-109°F	0-4%	26 mph	-	-	-
Transitional	Summer	90-109°F	10-14%	19 mph	119	-	-
	Santa Ana	90-109°F	5-9%	28 mph	145	-	-
	Peak	90-109°F	5-9%	41 mph	-	-	-
Interior	Summer	90-109°F	5-9%	18 mph	153	30	10
	Santa Ana	90-109°F	5-9%	24 mph	168	40	11
	Peak	90-109°F	5-9%	56 mph	-	100	17
Desert	Summer	90-109°F	5-9%	18 mph	153	-	-
	Santa Ana	90-109°F	5-9%	24 mph	168	-	-
	Peak	90-109°F	5-9%	56 mph	-	-	-

* Surface Fire Only. Behave does not model crown fires in timber fuel types

2.3 FPP – Letter Report Outline

The FPP – Letter Report is for project applicants who are processing minor projects that have little to no anticipated risk of loss, injury or death involving wildland fires. Discretionary permits that may qualify for a FPP – Letter Report include projects that are located within the State Responsibility Areas and are “infill” projects with virtually no wildlands in the immediate vicinity. The FPP – Letter Report may be prepared by the applicant or the applicant’s representative, instead of a fire consultant. However, the applicant may employ the services of a fire consultant to prepare a Letter Report FPP. The FPP Letter Report preparer does not have to be on the County’s approved list of consultants.

If upon review of the completed FPP - Letter Report, the County determines that code issues are unresolved or inadequately addressed or the project cannot comply with required conditions that are specified in the “Project Exposure to Wildland Fires” section below, the project does not qualify for a FPP – Letter Report, and a FPP – Full Report will be required. The FPP R must be prepared by a consultant currently approved by the County for such reports, and must follow the prescribed format.

The FPP – Letter Report must be written in the following format. Guidance on how to complete certain sections of the report is shown in *(italics)*. Questions on how to complete the form can be directed to (858) 694-2960.

(Date)

County of San Diego
Planning & Development Services (PDS)
5510 Overland Avenue, Suite 310
San Diego, CA 92123
Department of Planning and Land Use
5201 Ruffin Road, Suite B
San Diego, CA 92123

(Local Fire Agency/District Having Jurisdiction)

(Address)

(City, State, Zip)

SUBJECT: FIRE PROTECTION PLAN – LETTER REPORT

(Project Common Name)

(Project Application Number – e.g. TPM #####)

(Assessor Parcel Numbers e.g. ###-###-##-00)

This FPP – Letter Report is submitted pursuant to the County Consolidated Fire Code, to address the adverse environmental effects that a proposed project may have from wildland fire and to provide mitigation of those impacts to ensure that the project does not expose people or structures to a significant risk of loss, injury or death involving wildland fires.

PROJECT DESCRIPTION

(Briefly describe the project being proposed – acreage, parcel size range (e.g. “24.5 acre parcel in A-72 zone divided into four 4.0 to 6.5 acre residential lots”)

ENVIRONMENTAL SETTING

1. **Location:** *(give the community where the project is located [e.g. Fallbrook] and describe the character of the area that surrounds the subject property , i.e. how it is currently developed)*
2. **Topography:** *(generally identify the terrain of the site and adjacent properties (e.g. land is generally flat immediately off Access Street for 100 yards followed by rolling hills. Unusually high steep terrain can be found in the northwestern corner of the site and beyond)*
3. **Geology:** *(describe any geological features that might affect access roads or building pad design, or increase or reduce wildfire potential on the site.)*
4. **Flammable Vegetation:** *(discuss the type and density of vegetation – this information is typically available in the project Biology Report. If a Biology Report is not required for your project, generally describe the types of plants that are found on the property and the density of vegetation.)*
5. **Climate:** *(identify general climate and seasonal events – e.g. “coastal or west sloping valley or mountainous or desert climate – subject to Santa Ana wind events, flash flooding”, etc.)*

PROJECT EXPOSURE TO WILDLAND FIRES

1. **Water Supply:** *(Describe how water is going to be supplied to the project. NOTE: If the project is outside the boundaries of a water district, include the following language in this section of the FPP – Letter Report: “All proposed structures shall have a water tank, with size, location and fire department connection (FDC) consistent with the County and Consolidated Fire Code.”*

If the project is inside the boundaries of a water district, a copy of the Service Availability Form for water must be attached to this FPP – Letter Report. Furthermore, include the following language in this section of the FPP – Letter Report: “Hydrants shall be located along fire access roadways as determined by the Fire Marshal to meet operational needs, at intersections, at cul-de-sacs, and at intervals pursuant to the County Consolidated Fire Code. Required fireflow in water main is 2500 gallons per minute.

2. Fire Access Roads

Location. *(Describe the location of all access roads and the number of parcels that will access each road, include development pads and driveways). Explain how the primary access road complies with the distance thresholds specified under the County Consolidated Fire Code.*

Width: *(Describe the width of all access roads. NOTE: All fire access roads including driveways must be improved to a minimum 16' width all-weather surface suitable for travel by 50,000 lb. fire apparatus. Fire access roads serving more than two single-family dwellings shall be a minimum 24' wide with all-weather surface suitable for travel by 50,000 lb. fire apparatus.*

Vertical Clearance: *(Include a statement that "minimum vertical clearance of 13 feet 6 inches must be maintained for the entire required width of fire access roads".)*

Grade: *(Describe the maximum grade in percent for the roads and driveways. NOTE: Grades greater than 15% are not permitted without mitigation; grades greater than 20% are prohibited.)*

Surface: *(Describe the surface improvements for all roads and driveways. Be specific rather than quoting this entire code section).*

3. **Setback from Property Lines:** *(The minimum setback from any property line in high hazard areas is 30 feet (even though Zoning Setback may be less). Exceptions may be allowed if parcels are smaller than one acre, upon review and approval from the FAHJ and County. Minimum setback from property lines abutting national forests, open space preserves, and designated riparian areas is 100 feet. The applicable statement must appear in this section, and any such forest, preserve or riparian areas must be identified.)*
4. **Building Construction:** *(The Report must include the following statement: "All structures shall comply with the ignition-resistive construction requirements: Wildland-Urban Interface areas of Chapter 7A of the County Building Code.")*
5. **Fire Protection Systems:** *(The Report must include the following statement: "All habitable structures and attached garages shall have residential fire sprinklers per County Code or County Consolidated Code requirements.")*
6. **Defensible Space:** *(The Report must include the following statement: "A minimum 100-foot Fuel Management Zone will be established and maintained around all structures over 250 square feet in size. No off-site clearing is required or authorized.")*
7. **Vegetation Management:** *(The Report must include the following statement: "Prescribed Defensible Space (fuel management zones) will be maintained by the property owners at least annually or more often as needed. Boundaries of fuel*

management zones will be clearly and permanently marked. Plants used in the Defensible Space will be from an approved fire resistant planting materials list that is maintained by County of San Diego, Department of Planning and Land Use.”)

8. **Fire Behavior Computer Modeling:** Based on preliminary evaluation by the County Fire Marshal, Computer Fire Behavior Modeling is not required for this **FPP – Letter Report**-(Note: Contact the Fire Authority Having Jurisdiction [FAHJ] to confirm).

Prepared By (Signature) ¹	Date	Printed Name	Title
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Property Owner (Signature) ¹	Date	Printed Name
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¹ The FPP – Letter Report will not be accepted without original signatures.