

# DARK MATTERS!



Photo courtesy of NASA Earth Observatory image by Robert Simmon

Why should we preserve the night sky? We have advanced technology to the point that we can now strike out the dark of night and replace it with a perpetual twilight. No longer do we have to fear the dark and the scary monsters that come out when the sun goes down. Why does Dark Matter anymore?

All life on Earth evolved with a natural day and night cycle, over millions of years. Night is part of life's DNA.

Appreciation of the night time sky is ingrained into our very being. Humans have been inspired by the night sky for over ten thousand years. Early humans looked at the stars and created an oral culture surrounding the constellations that has been woven into our very nature over time. We have long been inspired by the nighttime sky and that inspiration appears in mathematics, science, art, poetry, music, and religion.

If we take away the dark of night many plant and animal species will be lost; human health will be negatively impacted; our children will lose the infinite star-filled vista that fills us with a sense of mystery and wonder; and much of the culture of our distant ancestors will cease to have meaning.

As Ronald Reagan said in 1984,

If we've learned any lessons during the past few decades, perhaps the most important is that preservation of our environment is not a partisan challenge; it's common sense. Our physical health, our social happiness, and our economic well-being will be sustained only by all of us working in partnership as thoughtful, effective stewards of our natural resources.

And that includes a dark night sky.

So does Dark Matter anymore? Yes it does. And it's worth preserving and protecting.

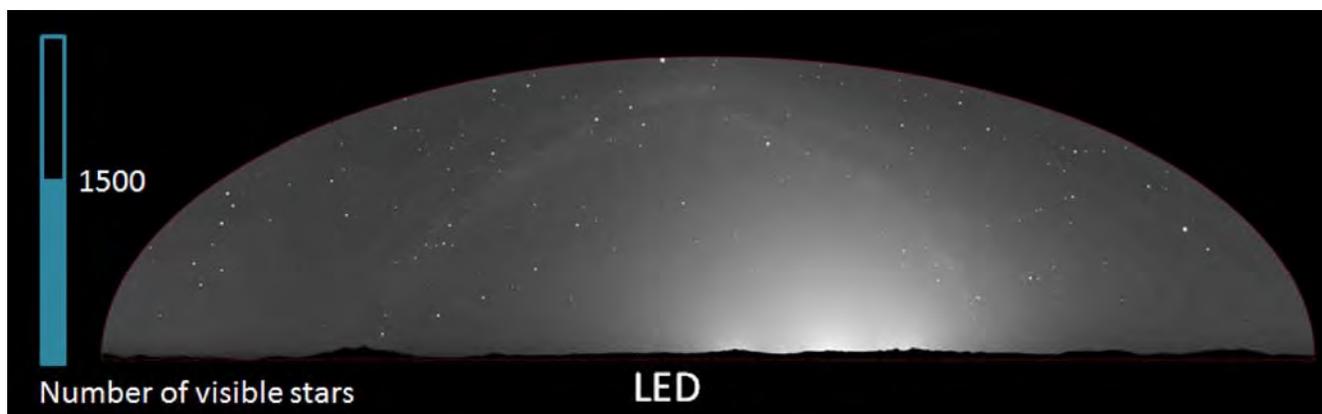


This page was last updated 9th December, 2014

# LAMP SPECTRUM AND LIGHT POLLUTION

## Color Matters!

Yellow light is night-friendly light: **Low-pressure sodium** is not just for turtles and astronomers.



Effect of changing from Low-pressure sodium to LED 4100K CCT

Sky as seen from Sunset Crater National Monument, with artificial sky glow arising from Flagstaff AZ. Hammer-Aitoff equal-area all-sky simulations by D. Duriscoe (U.S. National Park Service) and C. Luginbuhl (U.S. Naval Observatory Flagstaff Station)

The spectrum of outdoor lighting influences many aspects of **light pollution**, from glare and human health to activities of animals (notably **sea turtles**) and insects and biological processes in many organisms – a good overview of these issues can be found [here](#). The blue and green part of the spectrum especially has disproportionate impacts (see [here](#)). On this page we describe the influence on the darkness of the sky and the visibility of stars, specifically the results of new research on the visual brightness of **sky glow**.

As described on the [Outdoor Lighting Codes](#) page, to effectively limit adverse impacts of outdoor lighting, lighting codes must address the three principal aspects of lighting that increase light pollution:

1. **Shielding** of fixtures



## 2. Spectrum of lamps

### 3. Amount of light

Though the negative impacts of poorly shielded fixtures and overlighting are widely understood, the impact of lighting color is not widely known, and most lighting codes do not address lamp types. But recent research shows that white lighting (such as LED, fluorescent and metal halide) has a dramatically greater impact – lumen-for-lumen – on sky glow than the currently most common high-pressure sodium (HPS) and especially low-pressure sodium (LPS).

*Fully shielded, low-pressure sodium lighting at 50,000 lumens per acre in this Flagstaff OfficeMax parking lot – exhibits all three aspects critical to minimize sky glow, glare, and ecological impact. Recent research shows that high-pressure and low-pressure sodium lighting cause 1/3 and 1/6 the sky glow (respectively) from the typical 4100K CCT white LED or metal halide.*

Two recently published studies ([Luginbuhl et al., 2014](#); [Aubé et al., 2013](#)) have evaluated the visible sky glow brightness caused by the following lamp types:

Type	Description	Sky Glow* (relative to LPS)	Sky Glow* (relative to HPS)
LPS**	Low-pressure sodium – a nearly monochromatic yellow-orange light source used mostly in areas near astronomical observatories and sea turtle nesting beaches. 	<b>1.0</b>	<b>0.4</b>
HPS***	High-pressure sodium – A golden-yellow light source, widely used throughout the world. 	<b>2.4</b>	<b>1.0</b>
FLED****	Filtered warm-white light-emitting diode – a straw-yellow LED lamp with a filter that removes most emission with wavelength shorter than 500 nanometers. 	<b>3.6</b>	<b>1.5</b>
LED 2400K	Light-emitting diode with “correlated color temperature” (CCT) of 2400K – a “warm-white” LED. This type of LED has not seen wide use. 	<b>4.3</b>	<b>1.8</b>
LED 4100K	Light-emitting diode with CCT of 4100K – a “cool-white” LED. This is a common LED type in recent LED area lighting installations. 	<b>6.4</b>	<b>2.7</b>
LED 5100K	Light-emitting diode with CCT of 5100K – a “cool-white” LED. This also is a common LED type in recent LED area lighting installations. 	<b>7.9</b>	<b>3.3</b>



\*Ratios vary with distance and position in the sky: values shown are for 1 km distance and overhead in the sky.

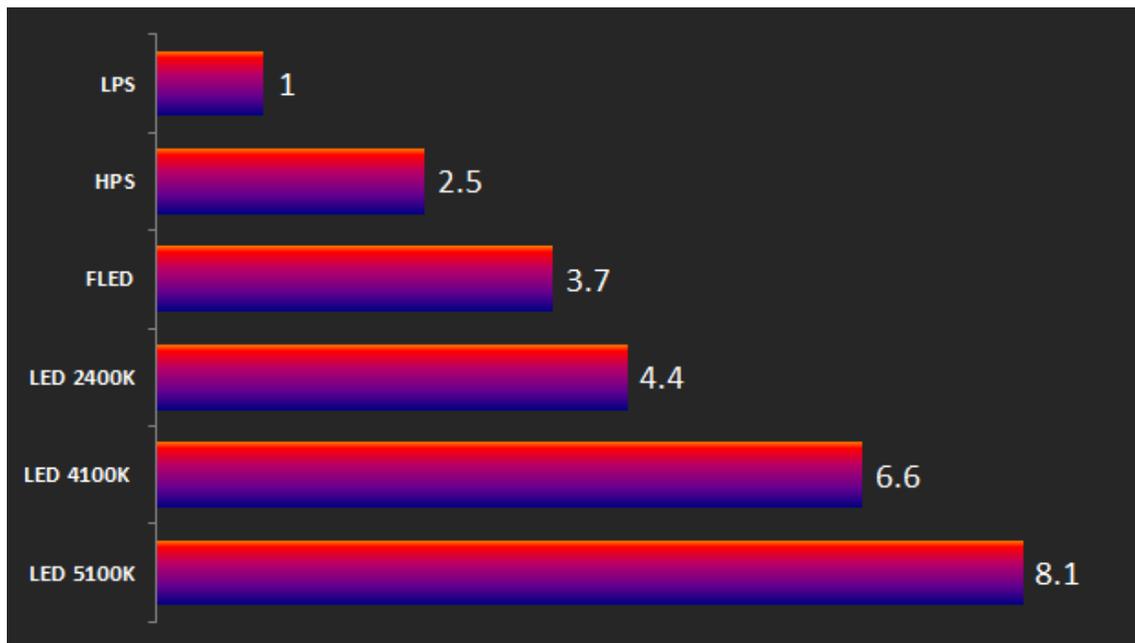
\*\*Narrow-band amber LED (NBALED; AllnGaP with peak emission at 590nm) have sky glow impacts essentially the same as LPS.

\*\*\*Some phosphor-converted amber LED (PCALED) have sky glow impacts very similar to HPS.

\*\*\*\*The filtered LED used on the island of Hawai'i is different than the FLED analyzed by Luginbuhl et al. The Hawai'iian version has an estimated sky glow impact 4.4x LPS and 1.8x HPS – very similar to the 2400K CCT LED

Due primarily to the increased sensitivity of the human eye to blue and green light at the very low brightnesses seen in the clear night sky – even in light-polluted skies – all of the LED sources cause much brighter sky glow. Sky glow from the lowest-impact commonly used LED (4100K CCT) appears nearly seven times as bright as that from an equal amount of LPS, and 2.7x times brighter than HPS. This is a dramatic effect. Even without changing light amount or shielding, switching a lighting installation from HPS to 4100K LED will increase sky glow as if the amount of HPS light had been increased 170%, or nearly doubled; if changing from LPS the sky glow brightness would increase 540%.

A focus on using lower CCT LEDs misses much of the problem, because the colors causing the greatest impact (blue-green and green) are still strong in low-CCT LEDs.



*Sky glow impacts, relative to low-pressure sodium lighting, of common outdoor lighting types.*

And brighter sky glow means fewer stars are visible. In a moderately polluted sky with artificial sky glow caused by mostly LPS outdoor lighting (here we assume the sky is 50% brighter than a natural sky at the zenith), about 2,700 stars are visible. If outdoor lighting were changed from LPS to 4100K CCT LED, the artificial component of sky glow would increase 6.6x, and total (artificial + natural) would appear 3x brighter (now the sky would be 200% brighter than a natural sky at the zenith). Instead of 2,700 stars you would now see only 1,500 stars. Simply changing the lighting type to a purportedly

“environmentally friendly” LED light – with no increase in the amount of light (in lumens, footcandles or lux) – would obscure almost half of the stars in the night sky.



Flagstaff Low-Pressure Sodium Area Lighting

The effect of switching from HPS is somewhat less dramatic, with the visual brightness of the artificial component increasing 2.7x (160%); if the example above was switching to 4100K CCT LED from HPS, the total sky brightness would increase 1.9x at zenith.

We often hear that we must use white lights (especially in recent years LEDs) because “everybody” wants or needs white light, or “nobody” likes yellow light, or that white light is better for visibility. Yet if the benefits and drawbacks of all lamp types are fairly described, many communities may choose the lower impact yellow light, as Flagstaff, Sedona, and Coconino County Arizona have.

This page was last updated 29th April, 2015

# OUTDOOR LIGHTING CODES



## Purpose

The principal purpose of most lighting codes is to limit adverse impacts arising from the production and use of outdoor lighting on the general (public) environment – that is, on the sky (**sky glow**), on other property (**glare**; **light trespass**), on the power grid (energy use and efficiency; carbon dioxide production), or on ecosystems (disturbance to animals, insects and plants). Some lighting codes focus instead or in addition on lighting “quality” on the property where the lighting is installed (illuminance, uniformity). The usual approach to regulating cross-boundary impacts is through zoning law; the approach to on-property “quality” is sometimes instead through **building codes**.

## Legal Issues

The legal basis for regulating the use of private property in the U.S. was originally based in the common law concept of “nuisance.” Under common law, it is recognized that persons are entitled to “use and enjoyment” of their lands. If one property owner uses their land in a way that interferes with the use and/or enjoyment of another, the affected party may be entitled to a legal claim of nuisance and mitigation of its cause. Zoning laws or codes extend and improve the nuisance concept by providing proactive notice that certain uses are prohibited or limited on the basis of the cross-boundary impacts. Lighting codes, when enacted as part of zoning

(the most common practice), are thus generally not concerned with aspects of lighting design that do not directly relate to cross-boundary impacts (e.g. illumination levels on the property where the lighting is installed).

## Technical Aspects

To address the cross-boundary impacts of lighting use, three principal aspects regarding the design of lighting hardware or systems are critical:

1. **Shielding** of fixtures
2. **Spectrum** of light sources
3. **Amount** of light

Though all three factors are important, the relative importance in limiting adverse impacts is generally ranked as shown. **Shielding:** Research shows that full shielding can reduce **sky glow** by 50% to over 90% when compared to a typical mix of partially shielded and unshielded lighting<sup>1</sup>. As shielding dramatically reduces **glare** and **light trespass** as well, it is and should be the highest priority in lighting codes. **Spectrum:** Specification of yellow light sources (high-pressure sodium and PC-amber LED, or low-pressure sodium and AlInGaP “narrow-band” amber LED) for the majority of lighting uses can reduce sky glow by 70% to almost 90% when compared to white sources such as metal halide, fluorescent and LED<sup>2</sup>. **Amount:** Finally, reasonable limitations on the total lighting (lumen) amount reduce the frequency and degree of careless and/or competitive over-lighting. Lumen caps of 50,000 – 100,000 lumens per acre have been shown in a study in Flagstaff<sup>3</sup> to reduce average lighting amounts (and thus all light pollution impacts) by 25% to 70% compared to average un-capped commercial lighting practice, and in particular applications such as service station canopy lighting by 90% or more.

1. Luginbuhl, C.B., et al., 2009, *Lighting and Astronomy*: see our [Measuring and Modeling Sky Glow Light Pollution](#) page

2. Luginbuhl et al., 2014; Aubé et al., 2013: see our [Lamp Spectrum and Light Pollution](#) page

3. Luginbuhl et al., 2009, *From the Ground Up I: Light Pollution Sources in Flagstaff, Arizona*: see our [Measuring and Modeling Sky Glow Light Pollution](#) page

## Benefits

The implication of these figures is clear – lighting complying with good shielding, spectral and amount standards can have dramatically less adverse impacts on the sky and other properties.

Choosing minimum reductions from the ranges described above (i.e. 50% due to shielding, 70% due to spectrum, and 25% due to lighting amount), sky glow can easily be reduced 90% – to 1/10th that seen without regulation. Similar dramatic reductions can be achieved for other adverse impacts such as glare and trespass. And all this is achieved with no compromise to utility or safety. There is much to be gained from lighting codes.

As an often critical matter in the application and enforcement of lighting codes where community legal, lighting design, and enforcement resources or expertise are nearly always very limited, lighting codes based on easily quantifiable aspects of lighting use most directly related to cross-boundary impacts are much more efficient, requiring much less expertise and fiscal resources to administer. The codes offered as models below specify shielding, lamp type and amount standards that are demonstrated to be easily and effectively interpreted, applied and enforced without specialized technical training. Lighting codes using lighting design measures such as illumination levels or illumination uniformity are much more difficult to administer, require technical expertise to interpret, implement and enforce, and do not directly address light pollution impacts of general community concern.

Though the standards necessary to achieve good light pollution control are conceptually simple, writing a technically accurate and effective lighting code is not simple. If your community is seeking effective solutions to the problems created by common careless lighting practice, we highly recommend using a code such as listed below that has been tested and found technically sound and effective.

## Model Lighting Codes

### Before you use another Model Lighting Code...

In 1989 innovative lighting codes were developed for Flagstaff and Coconino County that, in addition to effective standards for shielding and lamp type, were the first to restrict the amount of light permitted (per acre) in outdoor lighting installations. Their intent is to encourage lighting practices and systems that will:

- minimize artificial sky glow, glare, and light trespass;
- conserve energy and resources while maintaining night time safety, utility, security, and productivity; and
- curtail the degradation of the nighttime visual environment.

These lighting codes remain the only codes demonstrated through research and critical dark-sky analysis to actually reduce sky glow light pollution. If your community seeks to protect dark skies, the Flagstaff Dark Skies Coalition strongly recommends using these codes – particularly the Flagstaff and Coconino County codes or models based on them.

(see the updated [Pattern Outdoor Lighting Code v2.0 July, 2010](#).)

These codes work. The critical general limits of 100,000 and 50,000 lamp lumens-per-acre (equivalent to about 70,000 and 35,000 fixture lumens-per-acre) and practical shielding standards have been in place for over twenty years. Hundreds of developments have been successfully built, including service stations, auto dealers, and national retail franchises (Home Depot, OfficeMax, Staples, Target, WalMart SuperCenter, Best Buy, Kohl's, etc.).

Other codes offered by the lighting industry and other authorities in dark sky protection in collaboration with the lighting industry have not been shown to assure real protection. Critically, [analysis](#) by C. Luginbuhl at the US Naval Observatory of the June 2010 draft of the Joint IES-IDA Model Lighting Ordinance<sup>4</sup> (MLO) indicated that this “model” would not improve dark skies. An updated soon-to-be-published analysis by the same author of the final [Joint IES-IDA Model Lighting Ordinance](#), indicates that the MLO remains critically deficient, allowing substantially greater light pollution than these northern Arizona codes and, in most cases, greater light pollution than produced by even unregulated outdoor lighting. The IES-IDA MLO does not effectively address shielding or lighting amounts, and does not address lamp spectrum at all.

Note: Though there are dozens of lighting codes around the US that establish lumens per acre limits following the pattern of these local innovative lighting codes, the Flagstaff Dark Skies Coalition cannot recommend any of these as guides. Most or all have been substantially modified with the frequent introduction of lighting technical, legal and other errors; many have dramatically raised the lumen caps to the point where there will be no effective improvement over otherwise unregulated lighting. Any community using one of the codes recommended here as a base for their code should modify these codes with extreme caution. The [IDA Outdoor Lighting Code Handbook](#) provides good general guidance and background for anyone seeking to effectively tailor a lighting code to meet local priorities.

4. Though the IDA-IES MLO states (pg. 4) that it was “developed as a joint under-taking by the Illuminating Engineering Society and the International Dark-Sky Association,” of the nine members of the “joint task force” responsible for the MLO's development, seven are directly associated with the lighting industries, including both of the co-chairs and three of five nominally representing IDA. It seems obvious to FDSC that regulations to protect night skies and the public from the deleterious effects of outdoor lighting should be informed by responsible lighting practices, but should not be writ-

ten by the lighting industry.

## Some Very Good Codes and Information

### Cities

**Flagstaff AZ Lighting Code** [*IDA International Dark-Sky City*] (updated Nov 2011) Official Title Flagstaff Zoning Code, Chapter 10-50 Division 10-50.70, and parts of Chapters 10-20 (Administration, Procedures and Enforcement), 10-50.100 (Sign Standards), and 10-80 (Definitions)

**Cottonwood Lighting Code** (adopted/amended 2000) Official Title: City of Cottonwood Zoning Ordinance, Section 408; link: unofficial copy)

**Sedona Lighting Code** [*IDA International Dark-Sky City*] (adopted/amended 2001) Official Title: Sedona Land Development Code, Article 9, Subsection 911.01; link: City of Sedona website

### Counties

**Coconino County AZ Lighting Code** (adopted/amended 2001) Official Title: Coconino County Zoning Ordinance, Chapter 17

## Lighting Ordinance Reference Materials

**Ordinances for Regulating Outdoor Lighting Practices** (Illinois Coalition for Responsible Outdoor Lighting)

**IDA Outdoor Lighting Code Handbook**

**Updated Pattern Outdoor Lighting Code v2.0**

**Typical Lumen Outputs and Energy Costs for Outdoor Lighting**

**Digital Billboard Luminance Recommendations**

**Lumen Outputs for "Neon" Lighting**

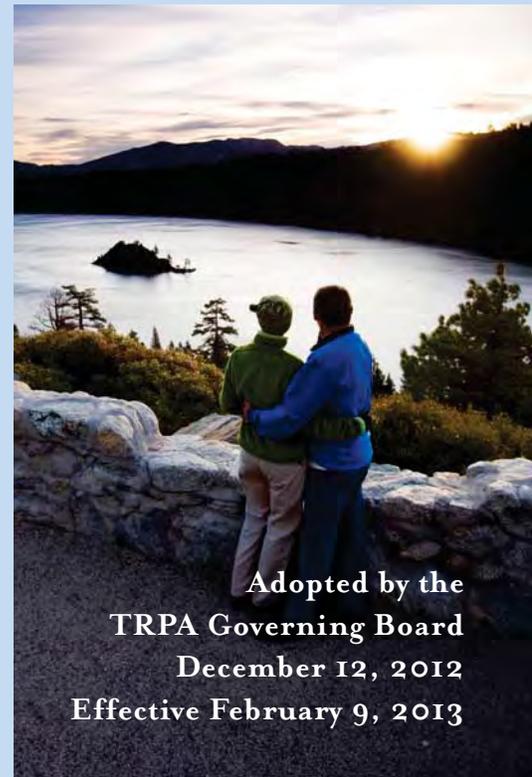
This page was last updated 22nd March, 2015



# REGIONAL PLAN

TAHOE REGIONAL PLANNING AGENCY

|| *Lake Tahoe*



Adopted by the  
TRPA Governing Board  
December 12, 2012  
Effective February 9, 2013



# CHAPTER 2

## Land Use Element

**A**rticle V(c)(1) of the Tahoe Regional Planning Agency Bi-State Compact calls for a *"land use plan for the integrated arrangement and general location and extent of, and the criteria and standards for, the uses of land, water, air, space and other natural resources within the region, including but not limited to indication or allocation of maximum population densities and permitted uses."*

In general, the Land Use Element sets forth the fundamental land use philosophies of the Regional Plan, including: the direction of development to the most suitable locations within the Region; maintenance of the environmental, economic, social, and physical well-being of the Region; and coordination of the Regional Plan with local, state, and federal requirements.

The Land Use Element includes the following Subelements: Land Use, Housing, Community Design, Noise, Natural Hazards, Air Quality, and Water Quality.

## LAND USE

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The Tahoe Regional Planning Agency Bi-State Compact calls for development of a Regional Plan that establishes a balance, or equilibrium, between the natural environment and the manmade environment. The TRPA has established environmental threshold carrying capacities that define the capacity of the natural environment and set specific environmental performance standards related to land use. The thresholds, however, do not define the maximum buildout, densities, permitted uses, or other land use criteria for the manmade environment; this is the function of the Regional Plan.

It is the intent of this Subelement to establish land use goals and policies that will ensure the desired equilibrium and attain and maintain the environmental thresholds within a specific time schedule.

### GOAL LU-1

#### **RESTORE, MAINTAIN, AND IMPROVE THE QUALITY OF THE LAKE TAHOE REGION FOR THE VISITORS AND RESIDENTS OF THE REGION.**

Lake Tahoe is a unique natural resource in a spectacular natural setting. It is truly one of the natural treasures of the United States. The long-term economic and natural health of the Region depends on the maintenance of this unusual quality. While previous land use planning efforts have concentrated on regulating the quantity of permitted development, this plan emphasizes an improvement in the quality of development in the Region and in the quality of the natural environment.

#### **POLICIES:**

##### **LU-1.1 THE PRIMARY FUNCTION OF THE REGION SHALL BE AS A MOUNTAIN RECREATION AREA WITH OUTSTANDING SCENIC AND NATURAL VALUES.**

The economic health of the Region depends on a viable tourist and recreation-oriented environment. It is the intent of this Regional Plan, among other things, to encourage development that enhances these values.

##### **LU-1.2 REDEVELOPING EXISTING TOWN CENTERS IS A HIGH PRIORITY.**

Many of the Region's environmental problems can be traced to past and existing development which often occurred without recognition of the sensitivity of the area's natural resources.

To correct this, environmentally beneficial redevelopment and rehabilitation of identified Centers is a priority.

##### **LU-1.3 THE PLAN SHALL SEEK TO MAINTAIN A BALANCE BETWEEN ECONOMIC/SOCIAL HEALTH AND THE ENVIRONMENT.**

### GOAL LU-2

#### **DIRECT THE AMOUNT AND LOCATION OF NEW LAND USES IN CONFORMANCE WITH THE ENVIRONMENTAL THRESHOLD CARRYING CAPACITIES AND THE OTHER GOALS OF THE TAHOE REGIONAL PLANNING AGENCY BI-STATE COMPACT.**

**POLICIES:**

**LU-2.1 THE REGIONAL PLAN ADOPTED BY THE AGENCY SHALL SPECIFY THE TOTAL ADDITIONAL DEVELOPMENT WHICH MAY BE PERMITTED WITHIN THE REGION, NOT TO EXCEED THE LIMITATIONS SET FORTH BELOW.**

The Environmental Impact Statement prepared for this plan analyzed impacts based on defined development parameters which are integrated into this plan. It is the intent of this policy to ensure that these limitations are incorporated, both individually and cumulatively, into the Land Use Element. These limitations shall be expressed in appropriate land use regulations, such as zoning, use limitations, floor area limitations, allocation limits and other such regulations. For the purposes of this plan, regulated development is categorized as residential, tourist accommodation, commercial, recreation, public service, and resource management.

Residential: Each undeveloped legal parcel existing on August 17, 1986, unless otherwise restricted, has a development right of one residential unit, except where additional development rights are acquired pursuant to the Implementation Element.

The status of development rights that existed on August 17, 1986 is outlined in the table below:

<b>Development Rights Inventory (as of October 24, 2012)*</b>	
Residences Developed before 1987	40,865
<b>Total Development Rights in 1987</b>	<b>18,690</b>
Development Rights Acquired 1987-2011	8,360
Development Rights Developed or Allocated to Jurisdictions 1987-2011	6,087
<b>Total Development Rights Remaining</b>	<b>4,243</b>
Remaining on Buildable Parcels	2,791
Remaining on Marginal Parcels	765
Remaining on Unbuildable Parcels	535
Banked Development Rights	152
*Note: All statistics are estimates and are not regulatory	

Tourist Accommodation: There is a limited need for additional tourist accommodation units. Based on demonstrated need, projects may be permitted additional units as specified within a Community Plan, Ski Area Master Plan or a Conforming Area Plan and as provided for in the Implementation Element.

Commercial: The amount of additional commercial development is based on the estimated needs of the Region. Commercial development may be permitted as specified in Plan Area Statements, Community Plans, other Specific Plans or Master Plans, or a Conforming Area Plan.

Recreation: Additional recreation uses may be permitted only as specified within Plan Area Statements, Community Plans, other Specific Plans or Master Plans, or a Conforming Area Plan. The total capacity of additional outdoor recreational facilities for the Region shall not exceed 6,114 persons at one time (PAOTs) for overnight facilities, 6,761 PAOTs for summer day use facilities, and 12,400 PAOTs for winter day use facilities. (See Recreation Element for more detail.)

Public Service: Additional public service development shall be limited to those projects needed to serve the other development permitted by this plan. (See Public Service Element for more detail.)

Resource Management: Resource Management activities pertaining to the utilization, management, or conservation of natural resources shall be limited to those activities that are consistent with policies of this plan and of other adopted plans.

**LU-2.2 NO NEW DIVISIONS OF LAND SHALL BE PERMITTED WITHIN THE REGION WHICH WOULD CREATE NEW DEVELOPMENT POTENTIAL INCONSISTENT WITH THE GOALS AND POLICIES OF THIS PLAN.**

This policy does not consider the following divisions of land to be inconsistent when the result does not increase the development potential permitted by this plan:

- A. Division of land for the purposes of conveying a portion thereof to a governmental agency, public entity, or public utility.
- B. Division of land for the purposes of creating cemetery lots.
- C. Division of land ordered by a federal or state court of competent jurisdiction as a result of bona fide, adversary legal proceedings to which the Agency is a party. Any such division of land or approval of any other project or action resulting from such legal proceedings shall be pursuant to an evaluation of the effect of such division or approval upon the Regional Plan, the environmental thresholds, and other requirements of the Bi-State Compact. Based on the above evaluation, appropriate adjustments to the Regional Plan shall be made.
- D. A modification to an existing subdivision or a lot line adjustment or lot consolidation, which does not result in any increase in development potential, or in present or potential land coverage or density, and shall not have an adverse impact upon the health, safety, general welfare or environment of the Region.
- E. Conversion of an existing structure, to a stock cooperative, community apartment, condominium, or any other form of divided interest; which conversion does not result in any increase in development potential, or in present or potential land coverage or density, and will not have an adverse impact upon the health, safety, general welfare or environment of the Region.
- F. Redivision, adjustment, or consolidation, of parcels within an existing urban area, as part of a TRPA approved redevelopment plan that does not increase development potential region-wide.
- G. Division of land through condominiums, community apartments, or stock cooperatives within an existing urban area in conjunction with the approval of a project associated with an approved transfer of development, or otherwise in accordance with the provisions of this plan. In order to subdivide a project under this provision, the project itself shall

be approved prior to the approval of the division and in no case shall the division result in a greater amount, a different location, or a greater rate of development than otherwise permitted by this plan.

- H. Division of land through air space condominiums in two resort recreation designated areas with the approval of a project associated with an approved transfer of development. In order to subdivide a project under this provision, the project itself shall be approved prior to the approval of the division and in no case shall the division result in a greater amount, a different location or a greater rate of development than otherwise permitted by this plan. Subdivisions shall be limited to air space condominium divisions with no lot and block subdivisions allowed, development shall be transferred from outside the area designated as resort recreation, and transfers shall result in the retirement of development.

**LU-2.3 BUILDINGS, WHETHER CONFORMING OR NONCONFORMING, WHICH ARE DAMAGED OR DESTROYED BY FIRE OR OTHER SIMILAR CALAMITY, MAY BE REPAIRED OR REBUILT WITH NO REQUIREMENT FOR REDUCTION IN COVERAGE OR HEIGHT BY WAY OF FEE OR OTHERWISE. THIS POLICY APPLIES ONLY IF THE BUILDING IS RECONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE ORIGINAL STRUCTURE AND, WITH NO INCREASE IN FLOOR AREA, LAND COVERAGE, HEIGHT, OR VOLUME. OTHER PROVISIONS GENERALLY APPLICABLE TO REHABILITATION OR RECONSTRUCTION OF BUILDINGS SHALL APPLY. THIS POLICY IS SUBJECT TO THE NATURAL HAZARDS SUBELEMENT. SPECIAL PROVISIONS SHALL APPLY TO BUILDINGS IN THE SHOREZONE, LAKEWARD OF THE HIGHWATER LINE.**

**LU-2.4 STRUCTURES, LEGALLY EXISTING AS OF THE EFFECTIVE DATE OF THIS PLAN, BUT WHICH, BY VIRTUE OF THEIR DESIGN OR LOCATION, ARE PROHIBITED, ARE CONSIDERED NONCONFORMING AND SUBJECT TO THE FOLLOWING POLICIES:**

- A. Nonconforming structures may be maintained or repaired. Maintenance and repair shall be defined in implementing ordinances.
- B. Nonconforming structures may not be enlarged, replaced, or rebuilt without the approval of TRPA. Such approval shall occur through direct TRPA review, through the conformance review process for Area Plans, or through Memorandum of Understanding with applicable governments and shall be based on criteria set forth in implementing ordinances to ensure that:
  - i. the activity shall not increase the extent of nonconformity; and
  - ii if the structure is subject to a specific program of removal or modification by TRPA, the activity shall not conflict with that program.

**LU-2.5 USES, LEGALLY EXISTING AS OF THE EFFECTIVE DATE THIS PLAN, BUT WHICH ARE NOW PROHIBITED, ARE CONSIDERED NONCONFORMING AND SUBJECT TO THE FOLLOWING POLICIES:**

- A. Nonconforming uses may continue as they exist except where specifically subject to a program of removal or modification.
- B. Nonconforming uses may not be modified, expanded, or intensified, nor resumed following a significant interruption without the approval of TRPA. Such approval shall occur through direct TRPA review, through the conformance review process for Area Plans, or through Memorandum of Understanding with applicable governments and shall be based on criteria

set forth in ordinances to ensure that:

- i. the activity shall not increase the extent of nonconformity.
- ii. the activity shall not make it more difficult to attain and maintain environmental threshold carrying capacities.
- iii. the use is otherwise consistent with applicable Plan Area Statements and Community Plans.

C. Additional rules regarding excess land coverage are set forth in this Land Use Subelement, Policies LU-2.11 and 2.12.

**LU-2.6 USES OF THE BODIES OF WATER WITHIN THE REGION SHALL BE LIMITED TO OUTDOOR WATER-DEPENDENT USES REQUIRED TO SATISFY THE GOALS AND POLICIES OF THIS PLAN.**

This policy is intended to promote the use of waters of the Region for water-dependent outdoor recreation and to protect the scenic and natural qualities of such waters. Plan Area Statements or conforming Area Plans shall detail the specific policies.

**LU-2.7 RESTORATION AND REHABILITATION SHALL BE A HIGH PRIORITY FOR IMPROVING ENVIRONMENTAL QUALITY AND COMMUNITY CHARACTER OF AREAS DESIGNATED FOR REDIRECTION BUT NOT INCLUDED IN A REDEVELOPMENT PLAN.**

The Regional Plan calls for improvement of environmental quality and community character in redirection areas through restoration and rehabilitation. Implementation of rehabilitation and restoration strategies shall be by ordinance.

**LU-2.8 THE PROVISIONS SET FORTH IN ARTICLE VI (d) THROUGH VI (i) OF THE BI-STATE COMPACT APPLY TO TRPA REGULATION OF STRUCTURES HOUSING GAMING.**

**LU-2.9 ALLOWABLE LAND COVERAGE IN THE TAHOE REGION SHALL BE SET FORTH IN ACCORDANCE WITH THE LAND CAPABILITY DISTRICT CLASSIFICATION METHODOLOGY AND DISTRICT BASED LAND COVERAGE LIMITATIONS SET FORTH IN "THE LAND CAPABILITY CLASSIFICATION OF THE LAKE TAHOE BASIN, CALIFORNIA-NEVADA, A GUIDE FOR PLANNING, BAILEY, 1974."**

This policy limits allowable impervious land coverage associated with new development. These policies set allowable land coverage by applying the recommended Bailey land coverage coefficients to specifically defined and related areas. In some instances, provisions are made to allow additional coverage by transfer. The transfer programs shall operate by a direct offset method. In addition, land capability is one of the basic factors in determining the suitability of lands for development and appropriateness of land uses.

**LU-2.10 ALLOWED BASE LAND COVERAGE FOR ALL NEW PROJECTS AND ACTIVITIES SHALL BE CALCULATED BY APPLYING THE BAILEY COEFFICIENTS, AS SHOWN BELOW, TO THE APPLICABLE AREA WITHIN THE PARCEL BOUNDARY, OR AS OTHERWISE SET FORTH IN A, B, AND C OF THIS POLICY.**

LAND CAPABILITY DISTRICT	MAXIMUM ALLOWED LAND COVERAGE
1a	1 percent
1b	1 percent

1c	1 percent
2	1 percent
3	5 percent
4	20 percent
5	25 percent
6	30 percent
7	30 percent

- A. In the case of subdivisions approved by TRPA in conformance with the coefficients coverages assigned to individual lots shall be the allowed base coverage for those lots. A list of such TRPA-approved subdivisions appears in *Attachment 2*
- B. In the case of existing planned unit developments (PUDs) not in conformance with the coefficients, the coefficients shall apply to the entire project area minus public rights-of-way, and the allowed base coverage shall be apportioned to the individual lots or building sites, and common area facilities. A list of such PUDs appears in *Attachment 3*
- C. After December 31, 1988, for vacant residential parcels evaluated under the Individual Parcel Evaluation System (IPES), the allowable base land coverage shall be a function of a parcel's combined score under the IPES criteria for relative erosion hazard and runoff potential as correlated with the above coefficients and applied to the designated evaluation area.

The method of calculation of allowed land coverages shall be detailed in the implementing ordinances consistent with the above policy.

**LU-2.11 THE ALLOWED COVERAGE IN POLICY LU-2.10 MAY BE INCREASED BY TRANSFER OF LAND COVERAGE WITHIN HYDROLOGICALLY RELATED AREAS UP TO THE LIMITS AS SET FORTH IN THIS POLICY:**

**SPECIAL PROVISIONS FOR ADDITIONAL COVERAGE, SUCH AS EXCEPTIONALLY LONG DRIVEWAYS, PERVIOUS COVERAGE, PUBLIC TRAILS AND ACCESS FOR THE DISABLED, MAY ALSO BE ALLOWED. ORDINANCES SHALL SPECIFICALLY LIMIT AND DEFINE THESE PROGRAMS.**

**LAND COVERAGE MAY BE TRANSFERRED THROUGH PROGRAMS THAT ARE FURTHER DESCRIBED IN THE IMPLEMENTATION ELEMENT.**

The intent of the land coverage transfer programs is to allow greater flexibility in the placement of land coverage. Such programs include the use of land banks, lot consolidation, land coverage restoration programs, and transfer programs based on the calculation of land coverage on non-contiguous parcels. The coverage transfer programs allow for coverage over base coverage to be permitted and still be consistent with the soils threshold and *Goal LU-2* of this Subelement.

- A. Single Family Residential: The maximum land coverage allowed (Base + Transfer) on a parcel through a transfer program shall be as set forth below:

Parcel Size (Square Feet)

Land Coverage

0 - 4,000	Base Land Coverage as Set Forth in <i>Policy LU-2.10</i>
4,001 - 9,000	1,800 sq. ft.
<u>Parcel Size (Square Feet)</u>	<u>Land Coverage</u>
9,001 - 14,000	20 percent
14,001 - 16,000	2,900 sq. ft.
16,001 - 20,000	3,000 sq. ft.
20,001 - 25,000	3,100 sq. ft.
25,001 - 30,000	3,200 sq. ft.
30,001 - 40,000	3,300 sq. ft.
40,001 - 50,000	3,400 sq. ft.
50,001 - 70,000	3,500 sq. ft.
70,001 - 90,000	3,600 sq. ft.
90,001 - 120,000	3,700 sq. ft.
120,001 - 150,000	3,800 sq. ft.
150,001 - 200,000	3,900 sq. ft.
200,001 - 400,000	4,000 sq. ft.

For lots in planned unit developments, the maximum coverage allowed (Base + Transfer) shall be up to 100 percent of the proposed building envelope but shall not exceed 2,500 square feet. Lots in subdivisions with TRPA-approved transfer programs may be permitted the coverage specified by that approval.

- B. Facilities in Centers: Except as provided in Subsections A, F, I, J and K of this Policy, the maximum coverage (Base + Transfer) allowed on a parcel through a transfer program shall be 70 percent of the land in capability districts 4 - 7, provided such parcel is within a Center of a Conforming Area Plan. Coverage transfers to increase coverage from the base coverage up to the maximum coverage allowed shall be at a ratio of 1:1 for coverage transfers from sensitive lands. For transfer of coverage from non-sensitive lands, coverage shall be transferred at a gradually increasing ratio from 1:1 to 2:1, as further specified in the Code of Ordinances.
- C. Commercial and Mixed Use Facilities in a Community Plan: The maximum coverage (Base + Transfer) allowed on an existing undeveloped parcel through a transfer program, shall be 70 percent of the land in capability districts 4 - 7, provided the parcel is within an approved community plan. For existing developed parcels, the maximum land coverage allowed is 50 percent. Coverage transfers to increase coverage from the base coverage up to the maximum coverage allowed, shall be at a ratio of 1:1 for coverage transfers from sensitive lands. For coverage transfers from non-sensitive lands, coverage shall be transferred at a gradually increasing ratio from 1:1 to 2:1, as further specified in the Code of Ordinances.
- D. Tourist Accommodation Facilities, Multi-Residential Facilities of 5 Units or More, Public Service Facilities, and Recreational Facilities in a Community Plan: The maximum coverage (Base + Transfer) allowed on a parcel through a transfer program shall be 50 percent of the land in capability districts 4 - 7, provided such parcel is within an approved community

plan. The coverage transfer ratio to increase coverage from the base coverage to 50 percent shall be at a ratio of 1:1.

- E. Other Multi-Residential Facilities: The maximum coverage (Base + Transfer) allowed on a parcel through a transfer of coverage programs shall be the amounts set forth in Subsection A, above.
- F. Linear Public Facilities and Public Health and Safety Facilities: Such public facilities defined by ordinance and whose nature requires special consideration, are limited to transferring the minimum coverage needed to achieve their public purpose.
- G. Public Service Facilities Outside a Community Plan or Center: The maximum coverage (Base + Transfer) allowed on a parcel through a transfer program shall be 50 percent land coverage provided TRPA determines there is a demonstrated need and requirement to locate such a facility outside a Community Plan or Center, and there is no feasible alternative which would reduce land coverage.
- H. Other Facilities Outside of Community Plans and Centers, Facilities Within Community Plans Before the Community Plan is Approved, and Facilities within Centers before Conforming Area Plans are approved: Other than the exceptions in Subsections A, E, F, and G, the maximum land coverage allowed shall be the base land coverage as set forth in Policy LU-2.10.
- I. Notwithstanding Subsection A above, when existing development is relocated to Centers and the prior site is restored and retired, non-conforming coverage may be maintained with the relocation as long as the new site is developed in accordance with all other TRPA Policies and Ordinances.
- J. Conforming Area Plans may include a comprehensive coverage management system as an alternative to the parcel level coverage requirements outlined in Subsection A-H above. In order to be found in conformance with the Regional Plan, the comprehensive coverage management system shall reduce coverage overall, reduce coverage in land capability districts 1 and 2 compared to the parcel level limitations in the Regional Plan and Code of Ordinances and not increase allowed coverage within 300 feet of Lake Tahoe (excluding those areas landward of Highways 28 and 89 in Kings Beach and Tahoe City Town Centers within that zone).
- K. Additional land coverage limitations shall be implemented within 300 feet of Lake Tahoe, as further described in the Code of Ordinances.

**LU-2.12 REHABILITATION, RECONSTRUCTION, AND UPGRADING OF THE EXISTING INVENTORY OF STRUCTURES, OR OTHER FORMS OF COVERAGE IN THE TAHOE REGION, ARE HIGH PRIORITIES OF THE REGIONAL PLAN. TO ENCOURAGE REHABILITATION AND UPGRADING OF STRUCTURES, THE FOLLOWING POLICIES SHALL APPLY:**

- A. Repair or reconstruction of buildings damaged or destroyed by fire or other calamity subject to Policy LU-2.3 of this subelement is exempt from this policy.
- B. Reconstruction, rehabilitation, modification, relocation, or major repair of structures or coverage other than as specified in *Subsection A* above may be allowed, provided such use is allowed under this Land Use Subelement. For parcels with existing coverage in excess of the Bailey

Coefficients, a land coverage mitigation program shall be set by ordinance, which shall provide for the reduction of coverage in an amount proportional to the cost of the repair, reconstruction, relocation, rehabilitation, or modification, and to the extent of excess coverage. To accomplish these reductions, property owners shall have at least the following options:

- i. reducing coverage on-site;
  - ii. reducing coverage off-site;
  - iii. paying a rehabilitation fee in lieu of on-site or off-site coverage reduction in an amount established by Agency ordinance to help fund a land bank program established to accomplish coverage reductions;
  - iv. lot consolidation with a contiguous parcel or lot line adjustment to reduce the percentage of excess coverage on the resulting parcels; or
  - v. any combination of the foregoing options.
- C. Existing development in Centers with excess coverage may earn multi-residential bonus units, tourist accommodation bonus unit and bonus commercial floor area for removing and retiring excess coverage onsite.
- D. Existing coverage may be relocated within a parcel provided it is relocated to areas of equal or superior environmental capability consistent with *Subsection B* above.
- E. TRPA shall maintain a rehabilitation fee schedule that is adequate to carry out an effective land coverage banking program, equitably divides the costs to the public and private sectors, and has the minimum possible deterrent effect on the Regional Plan goal of encouraging rehabilitation, reconstruction, and upgrading of the existing inventory of structures. The rehabilitation fee schedule shall be updated annually.
- F. In approving repair, reconstruction, rehabilitation, modification, or relocation of structures or other coverage, the Agency shall also apply other relevant standards, including installation and maintenance of Best Management Practices or compliance with the design review guidelines.

### **GOAL LU-3**

**PROVIDE TO THE GREATEST POSSIBLE EXTENT, WITHIN THE CONSTRAINTS OF THE ENVIRONMENTAL THRESHOLD CARRYING CAPACITIES, A DISTRIBUTION OF LAND USE THAT ENSURES THE SOCIAL, ECONOMIC, AND ENVIRONMENTAL WELL-BEING OF THE REGION.**

The Tahoe Regional Planning Agency Bi-State Compact and extensive public testimony call for TRPA, along with other governmental and private entities, to safeguard the well-being of those who live in, work in, or visit the Region.

#### **POLICIES:**

**LU-3.1 ALL PERSONS SHALL HAVE THE OPPORTUNITY TO UTILIZE AND ENJOY THE REGION'S NATURAL RESOURCES AND AMENITIES.**

**LU-3.2 NO PERSON OR PERSONS SHALL DEVELOP PROPERTY SO AS TO ENDANGER THE PUBLIC HEALTH, SAFETY, AND WELFARE.**

Persons who develop property in the Region must ensure that their

development conforms to the Goals and Policies Plan, all TRPA regulations and all applicable local, state, and federal laws pertaining to public health, safety and welfare.

**LU-3.3 DEVELOPMENT IS PREFERRED IN AND DIRECTED TOWARD CENTERS, AS IDENTIFIED ON THE REGIONAL LAND USE MAP. CENTERS SHALL HAVE THE FOLLOWING CHARACTERISTICS:**

- 1) A concentration of non-residential and mixed-use development at a higher intensity than exists in other areas of the Region.
- 2) Existing or planned transit service.
- 3) Highway access.
- 4) Infill and redevelopment opportunities.
- 5) Capacity for receiving transfers of development rights and relocations of existing development.
- 6) Existing or planned housing in the vicinity.
- 7) Existing or planned street designs with continuous sidewalks, paths and other infrastructure that promotes walking, bicycling and transit use so as to encourage mobility without use of private vehicles.

**LU-3.4 EXISTING DEVELOPMENT PATTERNS IN RESIDENTIAL NEIGHBORHOODS OUTSIDE OF CENTERS AND ENVIRONMENTALLY-SENSITIVE LANDS SHOULD BE MAINTAINED WITH NO SIGNIFICANT CHANGE.**

**LU-3.5 DEVELOPMENT IS DISCOURAGED IN AND DIRECTED AWAY FROM ENVIRONMENTALLY-SENSITIVE LANDS AND AREAS FURTHEST FROM NON-RESIDENTIAL SUPPORT SERVICES. THESE AREAS ARE FURTHER DEFINED IN OTHER PLAN POLICIES.**

**LU-3.6 TRPA SHALL RESERVE A PORTION OF THE AVAILABLE DEVELOPMENT ALLOCATIONS AND RESIDENTIAL BONUS UNITS TO PROMOTE THE TRANSFER OF DEVELOPMENT RIGHTS FROM SENSITIVE LANDS TO CENTERS.**

**LU-3.7 TRPA SHALL MAINTAIN A PORTION OF THE AVAILABLE DEVELOPMENT ALLOCATIONS AND RESIDENTIAL BONUS UNITS TO PROMOTE THE TRANSFER OF DEVELOPMENT RIGHTS FROM OUTLYING RESIDENTIAL AREAS TO CENTERS.**

**LU-3.8 TRPA SUPPORTS SENSITIVE LAND AND DEVELOPMENT RIGHT ACQUISITION PROGRAMS THAT PRIORITIZE THE RETIREMENT OF DEVELOPMENT AND THE RESTORATION OF SENSITIVE LAND.**

**GOAL LU-4  
REGIONAL PLAN GOALS, POLICIES, AND ORDINANCES SHALL BE IMPLEMENTED USING AN INTEGRATED SYSTEM OF REGIONAL AND LOCAL GOVERNMENT PLANNING.**

**POLICIES:**

**LU-4.1 THE REGIONAL PLAN LAND USE MAP IDENTIFIES GROUPINGS OF GENERALIZED LAND USES AND PRIORITY REDEVELOPMENT AREAS IN THE REGION. AREAS OF SIMILAR USE AND CHARACTER ARE MAPPED AND CATEGORIZED WITHIN ONE OR MORE OF THE FOLLOWING EIGHT LAND USE CLASSIFICATIONS: WILDERNESS, BACKCOUNTRY, CONSERVATION, RECREATION, RESORT**

RECREATION, RESIDENTIAL, MIXED-USE, AND TOURIST. THESE LAND USE CLASSIFICATIONS SHALL DICTATE ALLOWABLE LAND USES. EXISTING URBANIZED AREAS ARE IDENTIFIED AS CENTERS AND INCLUDE TOWN CENTERS, THE REGIONAL CENTER AND THE HIGH DENSITY TOURIST DISTRICT. CENTERS ARE THE AREAS WHERE SUSTAINABLE REDEVELOPMENT IS ENCOURAGED.

Since the development permitted under this plan is generally limited to the existing urban boundaries in which uses have already been established, the concept of this land use plan is directed toward encouraging infill and redirection. The intent of this system is to provide flexibility when dealing with existing uses, continuation of acceptable land use patterns, and redirection of unacceptable land use patterns. Implementation ordinances set forth the detailed management criteria and allowed uses for each land use classification.

### **Wilderness**

Wilderness Districts are designated and defined by the U.S. Congress as part of the National Wilderness Preservation System. These lands offer outstanding opportunities for solitude and primitive, unconfined recreation experiences, and they contain ecological, geological, and other features of scientific, educational, scenic and historic value. The wilderness designation is intended to protect and preserve such areas for present and future generations. These lands are managed to prevent the degradation of wilderness character. Natural ecological processes and functions are preserved, and restored where necessary. Permanent improvements and mechanized uses are prohibited. Wilderness District lands within the Tahoe Region include portions of the Desolation, Granite Chief and Mount Rose Wilderness Areas.

### **Backcountry**

Backcountry Districts are designated and defined by the U.S. Forest Service as part of their Resource Management Plans. These lands are roadless areas including Dardanelles/Meiss, Freel Peak and Lincoln Creek. On these lands, natural ecological processes are primarily free from human influences. Backcountry areas offer a recreation experience similar to wilderness, with places for people seeking natural scenery and solitude. Primitive and semi-primitive recreation opportunities include hiking, camping, wildlife viewing, and cross-country skiing, in addition to more developed or mechanized activities not allowed in wilderness areas (e.g., mountain biking, snowmobiling). Management activities that support administrative and dispersed recreation activities are minimal, but may have a limited influence. Limited roads may be present in some backcountry areas; road reconstruction may be permitted on backcountry lands where additional restrictions do not apply. Backcountry areas contribute to ecosystem and species diversity and sustainability, serve as habitat for fauna and flora, and offer wildlife corridors. These areas provide a diversity of terrestrial and aquatic habitats, and support species dependent on large, undisturbed areas of land. Backcountry areas are managed to preserve and restore healthy watersheds with clean water and air, and healthy soils. Watershed processes operate in harmony with their setting, providing high quality aquatic habitats.

### **Conservation**

Conservation areas are non-urban areas with value as primitive or natural areas, with strong environmental limitations on use, and with a potential for dispersed recreation or low intensity resource management. Conservation areas include (1) public lands already set aside for this purpose, (2) high-hazard lands, stream environment zones, and other fragile areas, without substantial existing improvements, (3) isolated areas which do not contain the necessary infrastructure for development, (4) areas capable of sustaining only passive

recreation or non-intensive agriculture, and (5) areas suitable for low-to-moderate resource management.

### **Recreation**

Recreation areas are non-urban areas with good potential for developed outdoor recreation, park use, or concentrated recreation. Lands which this plan identified as recreation areas include (1) areas of existing private and public recreation use, (2) designated local, state, and federal recreation areas, (3) areas without overriding environmental constraints on resource management or recreational purposes, and (4) areas with unique recreational resources which may service public needs, such as beaches and ski areas.

### **Resort Recreation**

Resort Recreation areas are the specific Edgewood and Heavenly parcels depicted on Map 1 of the Regional Plan.

### **Residential**

Residential areas are urban areas having potential to provide housing for the residents of the Region. In addition, the purpose of this classification is to identify density patterns related to both the physical and manmade characteristics of the land and to allow accessory and non-residential uses that complement the residential neighborhood. These lands include: (1) areas now developed for residential purposes; (2) areas of moderate-to-good land capability; (3) areas within urban boundaries and serviced by utilities; and (4) areas of centralized location in close proximity to commercial services and public facilities.

### **Mixed-Use**

Mixed-use areas are urban areas that have been designated to provide a mix of commercial, public services, light industrial, office, and residential uses to the Region or have the potential to provide future commercial, public service, light industrial, office, and residential uses. The purpose of this classification is to concentrate higher intensity land uses for public convenience, and enhanced sustainability.

### **Tourist**

Tourist areas are urban areas that have the potential to provide intensive tourist accommodations and services or intensive recreation. This land use classification also includes areas recognized by the Bi-State Compact as suitable for gaming. These lands include areas that are:

- 1) already developed with high concentrations of visitor services, visitor accommodations, and related uses;
- 2) of good to moderate land capability (land capability districts 4-7);
- 3) with existing excess land coverage; and
- 4) located near commercial services, employment centers, public services and facilities, transit facilities, pedestrian paths, and bicycle connections

### **Town Center District**

Town centers contain most of the Region's non-residential services and have been identified as a significant source of sediments and other contaminants that continue to enter Lake Tahoe. Town centers are targeted for redevelopment in a manner that improves environmental conditions, creates a more sustainable and less auto-dependent development pattern and provides economic opportunities in the Region.

### **Regional Center District**

The Regional Center includes a variety of land uses in the core of South Lake Tahoe, including the Gondola and base lodge facilities for Heavenly Ski Area. Development patterns in the Regional Center have been and should continue to be more intensive than town centers and less intensive than the High Density Tourist District. Older development within the Regional Center is a significant source of sediment and other water contaminants. The Regional Center is targeted for redevelopment in a manner that improves environmental conditions, creates a more sustainable and less auto-dependent development pattern and provides economic opportunities in the Region.

### **High Density Tourist District**

The High Density Tourist District contains a concentration of hotel/casino towers and is targeted for redevelopment in a manner that improves environmental conditions, creates a more sustainable and less auto-dependent development pattern and provides economic opportunities for local residents. The High Density Tourist District is the appropriate location for the Region's highest intensity development.

### **Stream Restoration Plan Area**

Stream Restoration Plan Areas are Stream Environment Zones along major waterways that have been substantially degraded by prior or existing development. Individual Restoration Plans should be developed for each Stream Restoration Plan Area in coordination with the applicable local government and property owners in the plan area. Restoration Plans may be developed as a component of an Area Plan or as a separate document and should identify feasible opportunities for environmental restoration.

- LU-4.2** DETAILED PLAN AREA STATEMENTS HAVE BEEN APPROVED FOR ALL PROPERTIES IN THE REGION. THESE PLAN AREA STATEMENTS WERE ADOPTED IN ACCORDANCE WITH THE 1987 REGIONAL PLAN AND SHALL REMAIN IN EFFECT UNTIL SUPERSEDED BY AREA PLANS THAT ARE DEVELOPED IN ACCORDANCE WITH AND FOUND IN CONFORMANCE WITH THIS REGIONAL PLAN. IF ANY PLAN AREA STATEMENT CONTAINS PROVISIONS THAT CONTRADICT NEWER PROVISIONS OF THE REGIONAL PLAN OR DEVELOPMENT CODE, THE NEWER PROVISIONS OF THE REGIONAL PLAN OR DEVELOPMENT CODE SHALL PREVAIL, BUT ONLY TO THE EXTENT THAT SPECIFIC PROVISIONS CONFLICT.
- LU-4.3** COMMUNITY PLANS HAVE BEEN APPROVED FOR SOME PROPERTIES IN THE REGION TO REFINE AND SUPERSEDE THE PLAN AREA STATEMENTS. THESE COMMUNITY PLANS WERE ADOPTED IN ACCORDANCE WITH THE 1987 REGIONAL PLAN AND SHALL REMAIN IN EFFECT UNTIL SUPERSEDED BY AREA PLANS THAT ARE DEVELOPED IN ACCORDANCE WITH AND FOUND IN CONFORMANCE WITH THIS REGIONAL PLAN. IF ANY COMMUNITY PLAN CONTAINS PROVISIONS THAT CONTRADICT NEWER PROVISIONS OF THE REGIONAL PLAN OR DEVELOPMENT CODE, THE NEWER PROVISIONS OF THE REGIONAL PLAN OR DEVELOPMENT CODE SHALL PREVAIL, BUT ONLY TO THE EXTENT THAT SPECIFIC PROVISIONS CONFLICT.
- LU-4.4** OTHER DETAILED PLANS, SUCH AS THE AIRPORT MASTER PLAN, SKI AREA MASTER PLANS, AND REDEVELOPMENT PLANS HAVE ALSO BEEN APPROVED FOR SOME PROPERTIES IN THE REGION TO FURTHER REFINE AND SUPERSEDE THE PLAN AREA STATEMENTS. THESE PLANS WERE ADOPTED IN ACCORDANCE WITH THE 1987 REGIONAL PLAN AND SHALL REMAIN IN EFFECT UNTIL

**SUPERSEDED BY AREA PLANS THAT ARE DEVELOPED IN ACCORDANCE WITH AND FOUND IN CONFORMANCE WITH THIS REGIONAL PLAN. IF ANY OF THESE PLANS CONTAIN PROVISIONS THAT CONTRADICT NEWER PROVISIONS OF THE REGIONAL PLAN OR DEVELOPMENT CODE, THE NEWER PROVISIONS OF THE REGIONAL PLAN OR DEVELOPMENT CODE SHALL PREVAIL, BUT ONLY TO THE EXTENT THAT SPECIFIC PROVISIONS CONFLICT.**

**LU-4.5 TRPA SHALL REQUEST THAT ALL LOCAL, STATE, FEDERAL AND TRIBAL GOVERNMENTS IN THE REGION PROVIDE WRITTEN STATEMENTS INDICATING THEIR INTENT TO PREPARE AREA PLANS AND THEIR ANTICIPATED SCHEDULE FOR COMPLETION OF AREA PLANS FOR AREAS WITHIN THEIR JURISDICTION. STATEMENTS OF INTENT SHOULD BE PROVIDED TO TRPA NO LATER THAN DECEMBER 31, 2013. THE TRPA GOVERNING BOARD SHALL EVALUATE THE LOCAL GOVERNMENT STATEMENTS OF INTENT AND DEVELOP AN ACTION PLAN BY APRIL 30, 2014. THE ACTION PLAN MAY INCLUDE UPDATES AND CONSOLIDATIONS OF PLAN AREA STATEMENTS, COMMUNITY PLANS AND OTHER PLANS FOR AREAS THAT ARE NOT INCLUDED IN AREA PLANS. ANY PLANS THAT ARE UPDATED BY TRPA MAY UTILIZE THE PROVISIONS THAT APPLY TO AREA PLANS.**

**LU-4.6 IN ORDER TO BE RESPONSIVE TO THE UNIQUE NEEDS AND OPPORTUNITIES OF COMMUNITIES OF THE REGION, LOCAL, STATE, FEDERAL AND TRIBAL GOVERNMENTS ARE ENCOURAGED TO PREPARE CONFORMING AREA PLANS THAT SUPERSEDE EXISTING PLAN AREA STATEMENTS AND COMMUNITY PLANS OR OTHER TRPA REGULATIONS FOR AREAS WITHIN THEIR JURISDICTION. AREA PLANS SHALL BE PREPARED IN COORDINATION WITH LOCAL RESIDENTS, OTHER STAKEHOLDERS AND TRPA STAFF, AND SHALL BE CONSISTENT WITH THE REGIONAL GOAL AND POLICY PLAN AND APPLICABLE ORDINANCES. AFTER BEING FOUND IN CONFORMANCE WITH THE REGIONAL PLAN, AREA PLANS SHALL BECOME A COMPONENT OF THE REGIONAL PLAN.**

**LU-4.7 AFTER APPROVAL BY LOCAL, STATE, FEDERAL OR TRIBAL GOVERNMENTS, AREA PLANS SHALL BE REVIEWED BY THE TRPA GOVERNING BOARD AT A PUBLIC HEARING. IN ORDER TO TAKE EFFECT, THE TRPA GOVERNING BOARD SHALL MAKE A FINDING THAT THE AREA PLAN, AND ZONING AND DEVELOPMENT CODES WITHIN THE PLAN, ARE CONSISTENT WITH AND FURTHER THE GOALS AND POLICIES OF THE REGIONAL PLAN. THIS FINDING SHALL BE REFERRED TO AS A FINDING OF CONFORMANCE AND SHALL BE SUBJECT TO THE SAME VOTING REQUIREMENTS AS APPROVAL OF A REGIONAL PLAN AMENDMENT.**

**LU-4.8 IN ORDER TO BE FOUND IN CONFORMANCE WITH THE REGIONAL PLAN, ALL AREA PLANS SHALL INCLUDE POLICIES, ORDINANCES AND OTHER IMPLEMENTATION MEASURES TO:**

- 1) Identify zoning designations, allowed land uses and development standards throughout the plan area.**
- 2) Be consistent with all applicable Regional Plan policies, including but not limited to the regional growth management system, development allocations and coverage requirements.**
- 3) Either be consistent with the Regional Land Use Map or recommend and adopt amendments to the Regional Land Use Map as part of an integrated plan to comply with Regional Plan policies and provide threshold gain.**
- 4) Recognize and support planned, new, or enhanced Environmental Improvement Projects. Area Plans may also recommend enhancements to**

planned, new, or enhanced Environmental Improvement Projects as part of an integrated plan to comply with Regional Plan Policies and provide threshold gain.

- 5) Promote environmentally beneficial redevelopment and revitalization within Centers.
- 6) Preserve the character of established residential areas outside of Centers, while seeking opportunities for environmental improvements within residential areas.
- 7) Protect and direct development away from Stream Environment Zones and other sensitive areas, while seeking opportunities for environmental improvements within sensitive areas. Development may be allowed in disturbed Stream Environment Zones within Centers only if allowed development reduces coverage and enhances natural systems within the Stream Environment Zone.
- 8) Identify facilities and implementation measures to enhance pedestrian, bicycling and transit opportunities along with other opportunities to reduce automobile dependency.

**LU-4.9 IN ORDER TO BE FOUND IN CONFORMANCE WITH THE REGIONAL PLAN, ALL AREA PLANS THAT INCLUDE TOWN CENTERS OR THE REGIONAL CENTER SHALL INCLUDE POLICIES, ORDINANCES AND OTHER IMPLEMENTATION MEASURES TO:**

- 1) Address all requirements of *Policy LU-4.8*.
- 2) Include building and site design standards that reflect the unique character of each area, respond to local design issues and consider ridgeline and viewshed protection.
- 3) Promote walking, bicycling, transit use and shared parking in town centers and the Regional Center, which at a minimum shall include continuous sidewalks or other pedestrian paths and bicycle facilities along both sides of all highways within town centers and the Regional Center, and to other major activity centers.
- 4) Use standards within town centers and the Regional Center addressing the form of development and requiring that projects promote pedestrian activity and transit use.
- 5) Ensure adequate capacity for redevelopment and transfers of development rights into town centers and the Regional Center.
- 6) Identify an integrated community strategy for coverage reduction and enhanced stormwater management.
- 7) Demonstrate that all development activity within town centers and the Regional Center will provide threshold gain, including but not limited to measurable improvements in water quality.

**LU-4.10 IN ORDER TO BE FOUND IN CONFORMANCE WITH THE REGIONAL PLAN, AREA PLANS THAT INCLUDE THE HIGH DENSITY TOURIST DISTRICT SHALL INCLUDE POLICIES, ORDINANCES AND OTHER IMPLEMENTATION MEASURES TO:**

- 1) Address all requirements of Policies LU-4.8 and LU-4.9.
- 2) Include building and site design standards that substantially enhance the appearance of existing buildings in the High Density Tourist District.

- 3) Provide pedestrian, bicycle and transit facilities connecting the High Density Tourist District with other regional attractions.
- 4) Demonstrate that all development activity within the High Density Tourist District will provide threshold gain, including but not limited to measurable improvements in water quality. If necessary to achieve threshold gain, off-site improvements may be additionally required.

**LU-4.11 LOCAL, STATE, FEDERAL AND TRIBAL GOVERNMENTS MAY ADOPT DEVELOPMENT ORDINANCES THAT SUPERSEDE TRPA ORDINANCES IF THE AREA PLAN AND ASSOCIATED ORDINANCES ARE FOUND IN CONFORMANCE WITH THE REGIONAL PLAN, AND MEET THE INTENT OF TRPA ORDINANCES.**

**LU-4.12 ONCE AN AREA PLAN, AND ZONING AND DEVELOPMENT CODES WITHIN THE PLAN, HAVE BEEN FOUND IN CONFORMANCE WITH THE REGIONAL PLAN, LOCAL, STATE, FEDERAL AND TRIBAL GOVERNMENTS MAY ASSUME DEVELOPMENT REVIEW AUTHORITY BY MEMORANDUM OF UNDERSTANDING WITH TRPA, SUBJECT TO THE FOLLOWING LIMITATIONS:**

- 1) The TRPA Governing Board shall annually review a sample of permits issued within each Area Plan, and shall certify that the Area Plans are being implemented in conformance with the Regional Plan. If the TRPA Governing Board finds that development that has been permitted within an Area Plan does not comply with the Conforming Area Plan, TRPA may retract delegation of certain permitting authority and implement the Conforming Area Plan.
- 2) Where applicable, Area Plans shall be prepared and maintained in coordination with TMDL regulatory agencies and applicable load reduction plans, as specified in the Code of Ordinances.
- 3) Approval of projects within Area Plans shall require TRPA review and approval if the project includes any of the following criteria, except for minor improvements as further specified in the Code of Ordinances:
  - i. All development within the High Density Tourist District;
  - ii. All development within the Shorezone of Lake Tahoe;
  - iii. All development within the Conservation District;
  - iv. All development within the Resort Recreation District;
  - v. All development meeting criteria on the following table:

	Regional Center	Town Center	Not in Center
Residential	100,000 sq. ft.	50,000 sq. ft.	25,000 sq. ft.
Non-Residential	80,000 sq. ft.	40,000 sq. ft.	12,500 sq. ft.

- 4) All delegated permitting decisions shall be appealable to TRPA. Appeal procedures are set forth in the Code of Ordinances and are intended to address the following goals:
  - i. Eliminate frivolous appeals and appellants “laying in wait” by encouraging early and consistent engagement.
  - ii. Increase procedural certainty and timeliness irrespective of outcomes.
  - iii. Establish that project-by-project negotiation should not be the Governing Board’s default position.
- 5) All ongoing TRPA development monitoring and reporting requirements are met.
- 6) The limitations on delegation specified in the Table above may be increased or decreased by the TRPA Governing Board. The levels of delegation may be decreased, or increased if the Governing Board finds that lead agencies, based on ongoing monitoring, reporting and performance review, are acting on projects consistent with the Area Plan and that the terms and conditions of the Area Plan are being met. After four years from the adoption of this provision, the Governing Board shall consider increasing the levels of delegation.

**LU-4.13 TRPA SHALL TAKE AN ACTIVE ROLE IN ASSISTING WITH THE DEVELOPMENT OF CONFORMING AREA PLANS TO HELP ENSURE THAT AREA PLANS ARE IN CONFORMANCE WITH TRPA REQUIREMENTS. LOCAL, STATE, FEDERAL AND TRIBAL GOVERNMENTS SHALL ALSO SEEK REVIEW AND COMMENT FROM ALL PUBLIC AGENCIES WITH JURISDICTIONAL AUTHORITY AT APPROPRIATE POINTS IN THE PLANNING PROCESS TO ENSURE THAT REQUIREMENTS OF OTHER PUBLIC AGENCIES ARE ADDRESSED. THIS POLICY IS INTENDED TO ENSURE THAT EACH AREA PLAN, AND ZONING AND DEVELOPMENT CODES WITHIN THE PLAN, WHEN PRESENTED TO TRPA FOR CONFORMANCE REVIEW AND APPROVAL, WILL HAVE ADDRESSED THE NEEDS AND CONCERNS OF THE COMMUNITY AND WILL BE CONSISTENT WITH ALL APPLICABLE LOCAL, STATE, AND REGIONAL PLAN REQUIREMENTS.**

**GOAL LU-5  
COORDINATE THE REGULATION OF LAND USES WITHIN THE REGION WITH THE LAND USES SURROUNDING THE REGION.**

To minimize the impacts on one another, the Tahoe Region and its surrounding communities should attempt to coordinate land use planning decisions. This goal is especially pertinent with respect to major land use decisions immediately adjacent to the Region which may have significant impacts on the Region and affect the ability of TRPA to attain environmental thresholds.

**POLICIES:**

**LU-5.1 THE REGIONAL PLAN SHALL ATTEMPT TO MITIGATE ADVERSE IMPACTS GENERATED BY THE PLAN WITHIN THE REGION, AND NOT EXPORT THE IMPACTS TO SURROUNDING AREAS.**

Where project approvals or other proposed actions by TRPA would adversely impact surrounding areas, TRPA shall consult with the affected jurisdictions. While the Agency will attempt to ensure that adverse impacts are mitigated

within the Region, there may be situations where the adverse impacts on surrounding areas are outweighed by the environmental harm that would result from absorbing all impacts within the Region. In that regard, state laws in California and Nevada require the export of virtually all waste-waters and solid wastes from the Region.

**LU-5.2 WHERE NECESSARY FOR THE REALIZATION OF THE REGIONAL PLAN, THE AGENCY MAY ENGAGE IN COLLABORATIVE PLANNING WITH LOCAL GOVERNMENTAL JURISDICTIONS LOCATED OUTSIDE THE REGION, BUT CONTIGUOUS TO ITS BOUNDARIES. THE TRPA GOVERNING BOARD SHALL INITIATE ALL COLLABORATIVE PLANNING EFFORTS THAT ARE AUTHORIZED BY THIS POLICY.**

# HOUSING

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The purpose of this Subelement is to assess the housing needs of the Region and to make provisions for adequate housing. The Bi-State Compact does not specifically mandate this Subelement nor do the environmental thresholds address this topic. However, the states of Nevada and California both require housing to be addressed as part of a General Plan. It is the intent of this Subelement to address housing issues on a regional basis with Area Plans handling the specifics of implementation.

## GOAL HS-1

**PROMOTE HOUSING OPPORTUNITIES FOR FULL-TIME AND SEASONAL RESIDENTS AS WELL AS WORKERS EMPLOYED WITHIN THE REGION.**

### POLICIES:

- HS-1.1 SPECIAL INCENTIVES, SUCH AS BONUS DEVELOPMENT UNITS, WILL BE GIVEN TO PROMOTE AFFORDABLE OR GOVERNMENT-ASSISTED HOUSING FOR LOWER INCOME HOUSEHOLDS (80 PERCENT OF RESPECTIVE COUNTY'S MEDIAN INCOME) AND FOR VERY LOW INCOME HOUSEHOLDS (50 PERCENT OF RESPECTIVE COUNTY'S MEDIAN INCOME). EACH COUNTY'S MEDIAN INCOME WILL BE DETERMINED ACCORDING TO THE INCOME LIMITS PUBLISHED ANNUALLY BY THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.
- HS-1.2 LOCAL GOVERNMENTS WILL BE ENCOURAGED TO ASSUME THEIR "FAIR SHARE" OF THE RESPONSIBILITY TO PROVIDE LOWER AND VERY LOW INCOME HOUSING.
- HS-1.3 FACILITIES SHALL BE DESIGNED AND OCCUPIED IN ACCORDANCE WITH LOCAL, REGIONAL, STATE, AND FEDERAL STANDARDS FOR THE ASSISTANCE OF HOUSEHOLDS WITH LOW AND VERY LOW INCOMES. SUCH HOUSING UNITS SHALL BE MADE AVAILABLE FOR RENTAL OR SALE AT A COST TO SUCH PERSONS THAT WOULD NOT EXCEED THE RECOMMENDED STATE AND FEDERAL STANDARDS.
- HS-1.4 AFFORDABLE OR GOVERNMENT ASSISTED HOUSING FOR LOWER INCOME HOUSEHOLDS SHOULD BE LOCATED IN CLOSE PROXIMITY TO EMPLOYMENT CENTERS, GOVERNMENT SERVICES, AND TRANSIT FACILITIES. SUCH HOUSING MUST BE COMPATIBLE WITH THE SCALE AND DENSITY OF THE SURROUNDING NEIGHBORHOOD.

## GOAL HS-2

**TO THE EXTENT FEASIBLE, WITHOUT COMPROMISING THE GROWTH MANAGEMENT PROVISIONS OF THE REGIONAL PLAN, THE ATTAINMENT OF THRESHOLD GOALS, AND AFFORDABLE HOUSING INCENTIVE PROGRAMS, MODERATE INCOME HOUSING WILL BE ENCOURAGED IN SUITABLE LOCATIONS FOR THE RESIDENTS OF THE REGION.**

**POLICIES:**

- HS-2.1** SPECIAL INCENTIVES, SUCH AS BONUS DEVELOPMENT UNITS, WILL BE MADE AVAILABLE TO PROMOTE HOUSING FOR MODERATE INCOME HOUSEHOLDS (120 PERCENT OF RESPECTIVE COUNTY'S MEDIAN INCOME). SUCH INCENTIVES SHALL BE MADE AVAILABLE WITHIN JURISDICTIONS THAT DEVELOP HOUSING PROGRAMS THAT ARE SUBSTANTIALLY CONSISTENT WITH AND COMPLEMENTARY TO THE REGIONAL PLAN.
- HS-2.2** RESIDENTIAL UNITS DEVELOPED USING MODERATE INCOME HOUSING INCENTIVES SHALL BE USED TO PROVIDE HOUSING FOR FULL-TIME RESIDENTS OF THE TAHOE REGION. SUCH UNITS SHALL NOT BE USED FOR VACATION RENTAL PURPOSES.
- HS-2.3** RESIDENTIAL UNITS DEVELOPED USING MODERATE INCOME HOUSING INCENTIVES SHALL REMAIN PERMANENTLY WITHIN THE PROGRAM.

**GOAL HS-3**

**REGULARLY EVALUATE HOUSING NEEDS IN THE REGION AND UPDATE POLICIES AND ORDINANCES IF NECESSARY TO ACHIEVE STATE, LOCAL AND REGIONAL HOUSING GOALS.**

**POLICIES:**

- HS-3.1** TRPA SHALL REGULARLY REVIEW ITS POLICIES AND REGULATIONS TO REMOVE IDENTIFIED BARRIERS PREVENTING THE CONSTRUCTION OF NECESSARY AFFORDABLE HOUSING IN THE REGION. TRPA STAFF WILL WORK WITH LOCAL JURISDICTIONS TO ADDRESS ISSUES INCLUDING, BUT NOT LIMITED TO, WORKFORCE AND MODERATE INCOME HOUSING, SECONDARY RESIDENTIAL UNITS AND LONG TERM RESIDENCY IN MOTEL UNITS IN ACCORDANCE WITH THE TIMELINE OUTLINED IN THE IMPLEMENTATION ELEMENT.

# COMMUNITY DESIGN

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**T**he purpose of this Subelement is to implement the TRPA regional design criteria as they apply to the built environment. The Governing Board policy applicable to community design is derived from environmental threshold carrying capacities for scenic resources:

## **POLICY STATEMENT**

**It shall be the policy of the TRPA Governing Board in development of the Regional Plan, in cooperation with local jurisdictions, to ensure the height, bulk, texture, form, materials, colors, lighting, signing and other design elements of new, remodeled and redeveloped buildings be compatible with the natural, scenic, and recreational values of the Region.**

This Subelement sets forth policies for new developments or existing developments in need of remodeling or redevelopment. Some aspects of development can be brought to total conformance within a certain period of time, such as a five-year program to bring all signs into conformance with adopted standards. Others may require more time or extensive redevelopment or rehabilitation to correct past deficiencies.

## **GOAL CD-1**

**ENSURE PRESERVATION AND ENHANCEMENT OF THE NATURAL FEATURES AND QUALITIES OF THE REGION, PROVIDE PUBLIC ACCESS TO SCENIC VIEWS, AND ENHANCE THE QUALITY OF THE BUILT ENVIRONMENT.**

### **POLICIES:**

**CD-1.1 THE SCENIC QUALITY RATINGS ESTABLISHED BY THE ENVIRONMENTAL THRESHOLDS SHALL BE MAINTAINED OR IMPROVED.**

Implementation of regional design review requirements will be required to ensure compliance with this policy.

**CD-1.2 RESTORATION PROGRAMS BASED ON INCENTIVES WILL BE IMPLEMENTED IN THOSE AREAS DESIGNATED IN NEED OF SCENIC RESTORATION TO ACHIEVE THE RECOMMENDED RATING.**

## **GOAL CD-2**

**REGIONAL BUILDING AND COMMUNITY DESIGN CRITERIA SHALL BE ESTABLISHED TO ENSURE ATTAINMENT OF THE SCENIC THRESHOLDS, MAINTENANCE OF DESIRED COMMUNITY CHARACTER, COMPATIBILITY OF LAND USES, AND COORDINATED PROJECT REVIEW.**

The intent of the criteria is that they be regional in nature yet specific enough to ensure that the Agency meets the mandate of specific thresholds and other policy requirements of this plan as they relate to site planning. The concept is that a design review document is the focal point for implementing many other plan policies relating to transportation, noise, water quality, air quality, scenic and aesthetic considerations, etc.

**POLICIES:**

**CD-2.1 TO BE FOUND IN CONFORMANCE WITH THE REGIONAL PLAN, AREA PLANS SHALL REQUIRE THAT ALL PROJECTS COMPLY WITH THE FOLLOWING DESIGN REQUIREMENTS. AREA PLANS MAY ALSO INCLUDE ADDITIONAL OR SUBSTITUTE REQUIREMENTS NOT LISTED BELOW THAT PROMOTE THRESHOLD ATTAINMENT.**

- A. Community Design: Area Plans that include the Regional Center or town centers shall address the following design standards:
- i. Existing or planned pedestrian and bicycle facilities shall connect properties within Centers to transit stops and the Regional Bicycle and Pedestrian network.
  - ii. Area Plans shall encourage the protection of views of Lake Tahoe.
  - iii. Within town centers and the Regional Center, building height and density should be varied with some buildings smaller and less dense than others.
  - iv. Site and building designs within Centers shall promote pedestrian activity and provide enhanced design features along public roadways. Enhanced design features to be considered include increased setbacks, stepped heights, increased building articulation, and/or higher quality building materials along public roadways.
  - v. Area Plans shall include strategies for protecting undisturbed sensitive lands and, where feasible, establish park or open space corridors connecting undisturbed sensitive areas within Centers to undisturbed areas outside of Centers.
- B. Site Design: All new development shall consider site design which includes, at a minimum:
- i. Existing natural features to be retained and incorporated into the site design.
  - ii. Building placement and design to be compatible with adjacent properties and consideration of solar exposure, climate, noise, safety, fire protection, and privacy.
  - iii. Site planning to include a drainage, infiltration, and grading plan meeting water quality standards.
  - iv. Access, parking, and circulation to be logical, safe, and meet the requirements of the transportation element.

- C. **Building Design:** Standards shall be adopted to ensure attractive and compatible development. The following shall be considered:
- i. Outside town centers, building height shall be limited to two stories (24 - 42 feet). Within town centers, building height may be allowed up to four stories (56 feet) as part of an Area Plan that has been found in conformance with the Regional Plan. Within regional centers, building height may be allowed up to six stories (95 feet) as part of a Conforming Area Plan. Within the High Density Tourist District, the height of casino hotel buildings existing as of 2012 that are at least eight stories or 85 feet high may be increased up to 197 feet as part of a Conforming Area Plan. Subject to TRPA approval pursuant to TRPA Code of Ordinances or a Conforming Area Plan, provisions for additional height requirements may be provided for unique situations such as lighting towers, ski towers, buildings within Ski Area Master Plans, steep sites, and essential public safety facilities.
  - ii. Building height limits shall be established to ensure that buildings do not project above the forest canopy, ridge lines, or otherwise detract from the viewshed.
  - iii. Buffer requirements should be established for noise, snow removal, aesthetic, and environmental purposes.
  - iv. The scale of structures should be compatible with existing and planned Land Uses in the area.
  - v. Viewshed should be considered in all new construction. Emphasis should be placed on lake views from major transportation corridors.
  - vi. Area Plans that allow buildings over two stories in height shall where feasible include provisions for transitional height limits or other buffer areas adjacent to areas not allowing buildings over two stories in height.
  - vii. Area Plans shall include design standards for building design and form. Within Centers, building design and form standards shall promote pedestrian activity.
- D. **Landscaping:** The following should be considered with respect to this design component of a project:
- i. Native vegetation should be utilized whenever possible, consistent with fire defensible space requirements.
  - ii. Vegetation should be used to screen parking, alleviate long strips of parking space and accommodate stormwater runoff where feasible.
  - iii. Vegetation should be used to give privacy, reduce glare and heat, deflect wind, muffle noise, prevent erosion, and soften the line of architecture where feasible.
- E. **Lighting:** Lighting increases the operational efficiency of a site. In determining the lighting for a project, the following should be required:
- i. Exterior lighting should be minimized to protect dark sky views, yet adequate to provide for public safety and should be consistent with the architectural design.

- ii. Exterior lighting should utilize cutoff shields that extend below the lighting element to minimize light pollution and stray light.
  - iii. Overall levels should be compatible with the neighborhood light level. Emphasis should be placed on a few, well placed, low intensity lights.
  - iv. Lights should not blink, flash, or change intensity except for temporary public safety signs.
- F. **Signing:** Area Plans may include alternative sign standards. For Area Plans to be found in conformance with the Regional Plan, the Area Plan must demonstrate that the sign standards will minimize and mitigate significant scenic impacts and move toward attainment or achieve the adopted scenic thresholds for the Lake Tahoe Region.

In the absence of a Conforming Area Plan that addresses sign standards, the following policies apply, along with implementing ordinances:

- i. Off premise signs should generally be prohibited; way-finding and directional signage may be considered where scenic impacts are minimized and mitigated.
  - ii. Signs should be incorporated into building design
  - iii. When possible, signs should be consolidated into clusters to avoid clutter
  - iv. Signage should be attached to buildings when possible
  - v. Standards for number, size, height, lighting, square footage, and similar characteristics for on premise signs shall be formulated and shall be consistent with the land uses permitted in each district.
- G. **Center Boundaries:** Area Plans may propose modifications to the boundaries of a Center, if the modification complies with the following:
- i. Boundaries of Centers shall be drawn to include only properties that are developed, unless undeveloped parcels proposed for inclusion have either at least three sides of their boundary adjacent to developed parcels (for four-sided parcels), or 75 percent of their boundary adjacent to developed parcels (for non-four-sided parcels). For purposes of this requirement, a parcel is considered developed if it includes 30 percent or more of allowed coverage already existing on site or an approved but un-built project meeting this coverage requirement.
  - ii. Properties included in a Center shall be less than 1/4 mile from existing Commercial and Public Service uses.
  - iii. Properties included in a Center shall encourage and facilitate the use of existing or planned transit stops and transit systems.

## 3.9 SCENIC RESOURCES

### 3.9.1 INTRODUCTION

This section describes the physical characteristics of the landscape and scenic features and resources that exist in the Lake Tahoe Region, and the regulations that relate to the management of those resources. The potential scenic impacts that would result from implementation of the Regional Plan Update alternatives are identified and assessed, and mitigation measures are recommended for any significant or potentially significant impacts to scenic resources.

The scenic quality of the Lake Tahoe Basin is appreciated by visitors and residents alike as it is viewed from roads, trails, scenic resources such as parks and public beaches, and the surface of Lake Tahoe, while engaged in outdoor activities. Lake Tahoe, the focal point of the Basin landscape, is approximately 22 miles long and 12 miles wide with a surface area of 122,239 acres. The surface of the Lake affords panoramic views of the entire Lake Tahoe Basin.

### 3.9.2 REGULATORY BACKGROUND

Impacts to scenic resources are regulated by TRPA and at the federal, state, and local levels. Applicable planning documents, codes, ordinances and guidelines relating to scenic resources are described below.

#### TAHOE REGIONAL PLANNING AGENCY

The two major scenic resource goals of TRPA are to maintain and restore the scenic qualities of the naturally appearing landscape and to improve the accessibility of Lake Tahoe for public viewing (TRPA 2011). These goals are implemented through the Environmental Threshold Carrying Capacities and the Regional Plan.

#### ENVIRONMENTAL THRESHOLD CARRYING CAPACITIES

The Tahoe Regional Planning Compact (Compact) provides for the development and implementation of Environmental Threshold Carrying Capacities (thresholds). In 1982, the threshold study team completed the Scenic Resource Inventory and evaluation necessary to define and establish threshold standards for preservation of scenic quality. At that time, numerical standards were established for roadway and shoreline travel routes, and roadway and shoreline scenic quality, which are based on a rating scale or numeric standard. Additionally, TRPA adopted a management standard policy statement for overall community design elements. In 1993, TRPA adopted numeric standards for designated public recreation areas and bike trails (TRPA 2007, p. 8-1).

The goals of the Scenic Resources Thresholds are to:

- ▲ Maintain or improve 1982 roadway and shoreline scenic travel route ratings,
- ▲ Maintain or improve views of individual scenic resources, and
- ▲ Maintain or improve quality of views from public outdoor recreation areas.

The four thresholds for scenic resources are outlined below. The TRPA 2006 Threshold Evaluation Report found that positive trends have occurred for all four thresholds between 2001 and 2006 (TRPA 2007, Executive Summary p.12), and that three of the four thresholds, namely Scenic Quality, Public Recreation Areas and Bike Trails, and Community Design, are “at or somewhat better than target,” as reported in the 2011 Threshold Evaluation (TRPA 2012).

## CARSON CITY

Guiding Principle #3 of the Carson City Master Plan (adopted July 6, 2006) provides for “Stewardship of the Natural Environment.” This principle includes a goal to protect visual resources in the City. Policies associated with this goal include limitations on hillside development, limiting light pollution on night skies, protecting the City’s visual quality, and maintaining sign controls (Carson City 2006: p. 3-9).

### 3.9.3 AFFECTED ENVIRONMENT

The appearance of the landscape may be changed by forces of nature and human action. In the Lake Tahoe Region, human activity has had a notable influence on the landscape. Beginning with the Comstock era around 1859, demand for timber resulted in extensive logging within the Lake Tahoe Region with large portions appearing virtually deforested by 1890 (Elliot-Fisk et al. 1997). Urban development began in the early 1900s with small vacation resorts and a few communities. After World War II, demand for recreation, tourism, and permanent housing fueled large increases in development. Gaming casinos were built and commercial development increased to become the second largest developed land use next to residential by 2002. Even so, concentrated development in the Region is largely confined to private lands, which make up 10 percent of the land Region-wide compared to 90 percent in public ownership (as indicated by TRPA GIS and Assessor’s data). Today, 90 percent of the privately owned buildable parcels in the Region have already been developed. Thus, while some new development will occur, most new projects involve redevelopment of previously developed sites and transfers of development from one location to another.

### VISUAL ENVIRONMENTS

The Lake Tahoe Region contains a mix of environments, including urban centers, residential neighborhoods, small commercial nodes that serve the residential neighborhoods, large-scale recreation areas, and undeveloped stretches of wild and rural landscapes. These elements are described by three general visual environments: urban, rural, and a rural transition environment between the urban and rural areas (TRPA 1989, p. vii).

- ▲ **Urban Areas:** Urban areas are dominated by commercial uses, public service activities, and residential uses (human-made development). Examples include Tahoe City, South Lake Tahoe, Stateline, Kings Beach, and Incline Village.
- ▲ **Rural Transition Areas:** Rural transition areas are a combination of human-made development and natural landscape features. Examples include Round Hill, Zephyr Cove, Christmas Valley, Tahoma, Sunnyside, and Homewood.
- ▲ **Rural Areas:** Rural areas are dominated by natural elements and processes. Examples include Emerald Bay, Luther Pass, and the east shore forests (TRPA 1989: p. vii).

### NATURAL FEATURES

The dominant natural features of the Lake Tahoe Region are the expansive alpine lake (Lake Tahoe) ringed by rugged mountain peaks with thickly forested slopes.

### LAKE TAHOE

Lake Tahoe is a water feature of remarkable color, clarity, size and depth. Water clarity is noted to approximately 70 feet deep, though the clarity has declined from greater than 100 feet since readings began in the late 1960s (USGS 2008). Lake Tahoe is the second deepest lake in the United States and the tenth deepest in the world, with a maximum depth measured at 1,645 feet. The color of Lake Tahoe’s water is highly variable,

influenced by depth. Water color ranges from clear, light green at the shallow lake edges (especially noteworthy in areas such as Emerald Bay), to dark blue in the deeper areas. The Lake is approximately 22 miles long and 12 miles wide, with 72 miles of shoreline and a surface area of 191 square miles (USGS 2008). The expansiveness of the Lake allows for long-distance views throughout the area.

## **MOUNTAINS**

Distinctive mountain ridges and peaks surround the flat plane of Lake Tahoe and create an enclosed landscape. The Lake Tahoe Basin is ringed by several high mountains rising to elevations up to 10,891 feet at Freel Peak in the Carson Range. The mountains are thickly forested, predominately by evergreen species, and many have rocky summits that maintain patches of snow year-round.

## **NATURAL VIEWS**

Views of the natural scenery are dominant. The clear blue water of the Lake is ringed by rocky shorelines and sandy beaches. Human-made features including marinas, piers, and other structures are also located along the water's edge. Slopes rise from the Lake with a variety of vegetation and rocky outcrops intermingled with streams and waterfalls. Above these slopes, forested mountains climb to high peaks. These views contain a high degree of natural contrast and variety and are generally of high visual quality.

## **DARK SKIES**

Rural and rural transition areas in the Lake Tahoe Basin have dark skies with little light pollution from urban areas, making them ideal locations for astronomical viewing. Views from lakeside beaches and from watercraft on the Lake are especially expansive and free of nighttime light interference. Lighting associated with urban development and human presence can result in light pollution and spillover, which can adversely affect the dark night skies that contribute to the natural scenic character of the Basin.

## **SCENIC ROADWAYS**

In the Lake Tahoe Basin, Eastshore Drive (in Nevada) is designated as a National Scenic Byway. Eastshore Drive is the name given to the combined lengths of US 50 and SR 28 along the eastern shore of Lake Tahoe from the California-Nevada border in the south to the Nevada-California border in the north. Both US 50 and SR 28 are designated as Nevada State Scenic Byways (FHWA 2011b, NDOT 2011). Mt. Rose Highway (SR 431), located in the northern portion of the Lake Tahoe Basin is also designated as a Nevada State Scenic Byway (NDOT 2011).

There are two Officially Designated California State Scenic Highways in El Dorado County and two Eligible State Scenic Highways (not officially designated) in Placer County. In El Dorado County, SR 89 is Officially Designated from the Placer County line to the Alpine County line, while US 50 is Officially Designated from Placerville to the South Lake Tahoe city limit (Caltrans 2010). In Placer County, SR 28 (Caltrans 2009a) and portions of SR 89 (Caltrans 2009b) are Eligible State Scenic Highways.

## **EXISTING SCENIC QUALITY AND THE BUILT ENVIRONMENT**

Systematic monitoring of scenic conditions in the Lake Tahoe Region has been regularly conducted by TRPA since 1982. USFS also monitors scenic conditions throughout the lands it manages. TRPA scenic monitoring data show that, in most cases, scenic quality is highest in areas that have little or no development and that, where development exists, the level of scenic quality depends on the visual character and quality of the built environment and its visual compatibility with the natural landscape. Improvements in scenic quality have resulted primarily where development has been removed or redeveloped.

rate than with Alternatives 1, 2, 4, and 5 as a result of built-in transfers and environmental redevelopment incentives. For these reasons, the impact of Alternative 3 on visual character would be **less than significant**.

#### **ALTERNATIVE 4: REDUCED DEVELOPMENT, INCENTIVIZED REDEVELOPMENT**

Alternative 4 seeks to consolidate development in the Lake Tahoe Region within 12 PTOD districts. It would also establish a transect zoning system that would allow for a mix of land uses and housing types, and would regulate development based on the physical form of the built environment. These actions would affect the visual character of the areas involved. The greatest change would likely occur within the 12 PTOD districts. Design standards for new development and redevelopment would be implemented for the PTOD districts that reflect community input. These would serve to guide the character of development in a desirable manner as physical changes to the built environment occur over time. For these reasons, the impact of Alternative 4 on visual character would be **less than significant**.

#### **ALTERNATIVE 5: SIMILAR RATE OF DEVELOPMENT AND REGULATORY STRUCTURE TO THE 1987 REGIONAL PLAN**

Alternative 5 would retain existing requirements and types of incentives for development and redevelopment. It would allow more allocations as incentives for new development than the other alternatives, although they would be allocated based on the ratios and rules of the existing Regional Plan. Current design standards and guidelines and limits on building height would be maintained. Any new development or redevelopment project would be subject to TRPA approval including public input and environmental review. As a result, the existing visual character of the region would remain largely unchanged and levels of scenic quality would be maintained or continue to improve slowly as indicated by TRPA scenic threshold monitoring data. For these reasons, the impact of Alternative 5 on visual character would be **less than significant**.

#### **MITIGATION MEASURES**

*No mitigation is required for any of the alternatives.*

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<b>Impact 3.9-3</b>	<b>Adversely Affect Nighttime Views In the Region.</b> Outdoor lighting in developed areas is necessary for public safety and security. If not properly controlled, it has the potential to illuminate the night sky and adversely affect nighttime views. The impact of outdoor lighting on nighttime views is considered to be <b>less than significant</b> under Alternatives 1 and 5 and <b>beneficial</b> for Alternatives 2, 3, and 4 because specific measures to control stray light and minimize off-site spillage of light would be required under those alternatives.
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The intent of all alternatives is to set specific requirements for exterior lighting location, height, and shielding to satisfy public safety requirements but minimize off-site spillage and, to the extent feasible, reduce light pollution coming from within the Region. Existing lighting standards currently require only that lights be directed downward and do not specifically require the use of cutoff shields. Changes to Chapter 36.8 of the Code of Ordinances to require the use of cutoff shields would apply to Alternatives 2, 3, and 4. As new development and redevelopment occur, these lighting standards would be implemented. Some light pollution and stray light is now coming from outside the Region, notably from night skiing lights at Squaw Valley Resort; however, control of these sources is outside the authority of TRPA and the scope of this EIS.

# **Pattern Outdoor Lighting Code (USA)**

Standard ver. 2.0  
July 2010

This document is based on the USA Pattern Code contained within the *IDA Outdoor Lighting Code Handbook*, published by the International Dark-Sky Association in 2000. It has been revised and updated by the author.

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Note: ***Bold italics*** indicate terms defined in Section 15.

## **Section 1. Purpose and Intent.**

It is the intent of this Code to define practical and effective measures by which the obtrusive aspects of outdoor light usage can be reduced, while preserving safety, security, and the nighttime use and enjoyment of property. These measures are intended to curtail the degradation of the nighttime visual environment, reduce ***light trespass, glare***, energy and resource waste by encouraging lighting practices that direct appropriate amounts of light where and when it is needed, increasing the use of energy-efficient sources, and decreasing the use of poorly shielded or inappropriately directed ***lighting fixtures***.

## **Section 2. Conformance with Applicable Codes.**

All outdoor lighting shall be ***installed*** in conformance with the provisions of this Code, the Building Code, the Electrical Code, the Energy Code, and the Sign Code of the jurisdiction as applicable and under appropriate permit and inspection.

## **Section 3. Applicability.**

- 3.1 New Uses, Buildings and Major Additions or Modifications. For all proposed new land uses, developments, buildings, and structures that require a permit, all outdoor lighting shall meet the requirements of this Code. All building additions or modifications of twenty-five (25) percent or more in terms of additional dwelling units, gross floor area, or parking spaces, either with a single addition or with cumulative additions subsequent to the effective date of this provision, shall invoke the requirements of this Code for the entire property, including previously installed and any new outdoor lighting. Cumulative modification or replacement of outdoor lighting constituting twenty-five (25) percent or more of the permitted ***lumens*** for the parcel, no matter the actual amount of lighting already on a non-conforming site, shall constitute a major addition for purposes of this section.
- 3.2 Minor Additions. Additions or modifications of less than twenty-five (25) percent to existing uses, as defined in Section 3.1 above, and that require a permit, shall require the submission of a complete inventory and site plan detailing all existing and any proposed new ***outdoor lighting fixtures***. Any new ***outdoor lighting fixtures*** on the site shall meet the requirements of this Code with regard to shielding and lamp type; the ***total outdoor light output*** after the modifications are complete shall not exceed that on the site before the modification, or that permitted by this Code, whichever is larger.

3.3 Resumption of Use after **Abandonment**. If a property or use with non-conforming lighting is **abandoned**, then all outdoor lighting shall be reviewed and brought into compliance with this Code before the use is resumed.

3.4 Public Roadways. Lighting for public roadways must comply with the provisions of this Code, except the **total outdoor light output** limits of Section 4.2.

## Section 4. General Outdoor Lighting Standards.

4.1 Shielding Standards. All nonexempt **outdoor lighting fixtures** shall have shielding as shown in Table 4.1; outdoor **luminous tube** lighting does not require shielding but total output from **partially shielded** lighting is subject to the limits set forth in Section 4.2.

Use Codes:

A = unshielded, **partially** and **fully shielded fixtures** allowed

P = **partially** and **fully shielded fixtures** allowed

F = only **fully shielded fixtures** allowed

X = not allowed

Table 4.1. LIGHT FIXTURE SHIELDING STANDARDS

Land Use and Lighting Class	Lighting Zone		Notes
	LZ 1	LZ 2	
<b>Commercial, Industrial, Mixed-use and Multi-family Residential uses</b>			
<b>Class 1 lighting</b> (Color Rendition):			
Initial output $\geq$ 2000 <i>lumens</i>	F	F	
Initial output < 2000 <i>lumens</i>	F	P	3
<b>Class 2 lighting</b> (General Illumination):			
Initial output $\geq$ 2000 <i>lumens</i>	F	F	
Initial output < 2000 <i>lumens</i>	F	P	3
<b>Class 3 lighting</b> (Decorative):			1
Initial output $\geq$ 2000 <i>lumens</i>	X	X	
Initial output < 2000 <i>lumens</i>	P	P	3
Initial output < 20 <i>lumens</i>	X	A	
<b>Residential uses:</b>			2
<b>All Classes</b>			
Initial output $\geq$ 2000 <i>lumens</i>	F	F	
Initial output < 2000 <i>lumens</i>	P	P	1,3

Notes to Table 4.1

1. Exception: seasonal decorations using typical low-wattage incandescent lamps shall be permitted in all lighting zones from Thanksgiving through 15 January.
2. For purposes of this section, residential refers to all residential land-use zoning, including all densities and types of housing such as single-family detached and duplexes, but does not include multi-family residential uses.
3. Examples of lamp types of 2,000 and 1,000 *lumens* and below (The acceptability of a particular light is determined by *lumen* output, not wattage; values listed are approximate; check manufacturer’s specifications).

Lamp Type and Wattage with Outputs below 2000 **lumens** and 1000 **lumens**

Lamp Type	2000 <b>lumens</b>	1000 <b>lumens</b>
Standard incandescent and less	100 watt	60 watt
Tungsten-halogen (quartz) and less	100 watt	60 watt
Fluorescent and less	25 watt	15 watt
Compact Fluorescent and less	26 watt	13 watt
No available High-Pressure Sodium or Metal Halide		

4.2. **Total Outdoor Light Output** Standards. **Total outdoor light output** (see definition 16.30) shall not exceed the limits in Table 4.2.

Table 4.2. MAXIMUM **TOTAL OUTDOOR LIGHT OUTPUT** STANDARDS

Land Use	LIGHTING ZONE		Notes
	LZ 1	LZ 2	
<b>Commercial Industrial, Mixed-use and Multi-family Residential uses (lumens per net acre)</b>			
total ( <b>fully shielded + partially shielded + unshielded</b> )	50,000	100,000	
<b>partially shielded + unshielded only</b>	5,000	10,000	
<b>Residential uses (lumens per residence)</b>			1
total ( <b>fully shielded + partially shielded</b> )	10,000	10,000	
<b>partially shielded</b>	3,000	3,000	

Note to Table 4.2

1. For purposes of this section, residential refers to all residential land-use zoning, including all densities and types of housing such as single-family detached and duplexes, but does not include multi-family residential uses.

4.3. Lamp Type Standards. All lamps must conform to the types listed in Table 4.3.

Lamp Types:

wLED = "warm white" light emitting diode with **CCT** ≤ 3500 K

HPS = high-pressure sodium

LPS = low-pressure sodium

Table 4.3. ALLOWED LAMP TYPES

LIGHTING CLASS	Allowed Lamp Types	Notes
<b>Commercial, Industrial, Mixed-use and Multi-family Residential uses</b>		
<b>Class 1 lighting (Color Rendition):</b>		
All initial outputs	all types	
<b>Class 2 lighting (General Illumination):</b>		
Initial output $\geq 2,000$ lumens	wLED, HPS, LPS	
Initial output $< 2,000$ lumens	all types	
<b>Class 3 lighting (Decorative):</b>		
All initial outputs	all types	
<b>Residential uses (all Classes):</b>		1
All initial outputs	all types	

Note to Table 4.3

- For purposes of this section, residential refers to all residential land-use zoning, including all densities and types of housing such as single-family detached and duplexes, but does not include multi-family residential uses.

4.4. **Spot Light** Aiming Standard. **Light Fixtures** containing **Spot** or **Flood lamps** must be aimed no higher than 45 degrees above straight down (half-way between straight down and straight to the side) (Figure 4.4). When aimed above straight down but at less than 45 degrees, such **light fixtures** shall be considered **partially shielded**; when aimed straight down they shall be considered **fully shielded**.

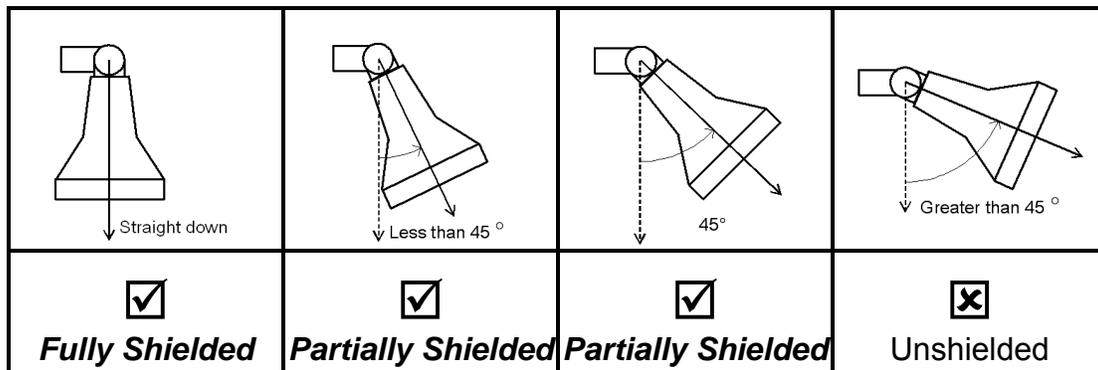


Figure 4.4. **Spot light** aiming

- 4.5. “House Side” Shielding Standard. Beyond the shielding requirements of Section 4.1, any privately or publicly owned **outdoor light fixture** with a lamp of initial output over 10,000 **lumens** located within 50 feet of any residential (including multi-family residential) property or public right-of-way shall utilize an internal or external “house-side” shield, with the **light fixture** and shield oriented to minimize **light trespass** over the adjacent property or right-of-way line (Figure 4.5). If an external shield is used, the surface of the shield facing the lamp must be a dark or flat black color.

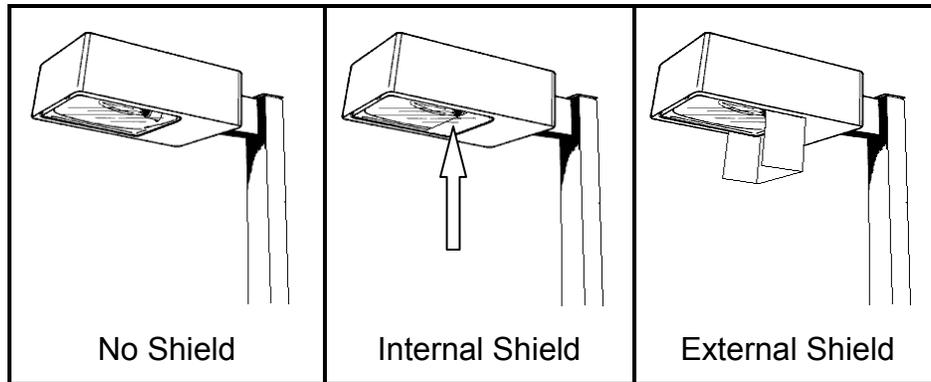


Figure 4.5. House-side shield configurations

- 4.6. Effective Shielding Standard. All **light fixtures** that are required to be **fully shielded** shall be installed and maintained in such a manner that the shielding is effective as described in the definition in Section 15 for **fully shielded fixtures**.
- 4.7. **Multi-Class Lighting** Standard. **Multi-Class lighting** must conform to the shielding and timing restrictions, if any, that apply to the most restrictive included **Lighting Class**.
- 4.8. **Luminous Tube** Lighting. Lighting using **luminous tubes** is included in the total outdoor light output calculations for the site. Lumens for neon lighting are calculated on a per foot basis, rather than per "fixture." Any unshielded neon lighting is limited by the **partially shielded** + unshielded lighting limits of Section 4.2.
- 4.9. Internally Illuminated Architecture. Any architectural element including walls, portions of buildings or canopy edges that is internally illuminated and that is not a sign or fenestration (windows or doors) shall have 100 percent of the initial lamp output of all lamps used to provide such illumination considered **partially shielded** lighting for the purposes of calculating **total outdoor light output** for the site.
- 4.10. Indoor Lighting. Any indoor lighting fixture within a non-residential structure containing a lamp with initial output over 2,500 lumens and mounted such that

any part of the fixture is lower than the upper edge of a window or door must be fully shielded (See Figure 4.10).

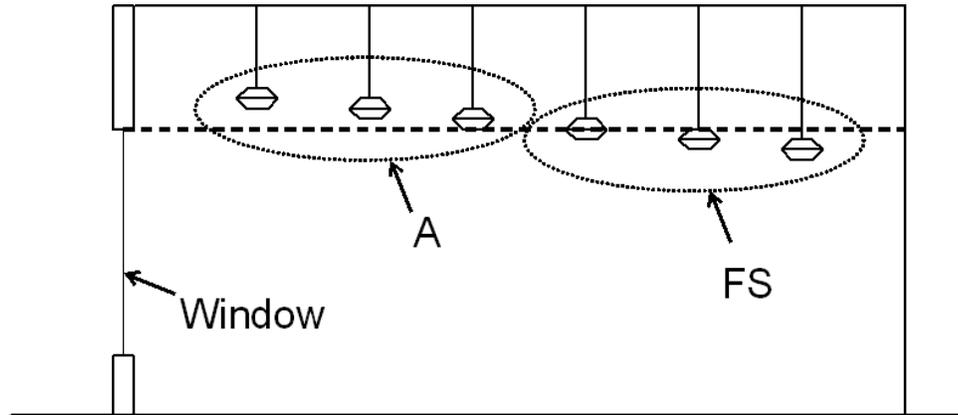


Figure 4.10. Elevation cross-section view showing required shielding for indoor non-residential lighting (FS = **fully shielded**; A = allowed, **fully shielded, partially shielded** or unshielded)

#### 4.11. Time Limits.

- A. **Class 3 lighting** shall be extinguished between 10:00pm (or when the business closes, whichever is later) and the time the business re-opens.
- B. **Class 2 lighting** located 75 feet or more from the nearest building, **display area** or storage area shall be extinguished between 10:00pm (or within 30 minutes of the business closing, whichever is later) and the time the business re-opens.

## Section 5. Outdoor Advertising Sign Lighting Standards.

5.1 **Externally Illuminated Sign** Lighting Standards. External illumination for signs, including **billboards**, shall conform to the provisions of this Code. Such lighting shall be treated as **Class 1 lighting** and shall conform to the lamp source, shielding restrictions and **total outdoor light output** limits of Section 4 (except as provided in Section A below). All upward-directed sign lighting is prohibited.

- A. Lighting for externally illuminated **billboards** may use up to 200 initial lamp **lumens** per square foot of sign face. Lighting for billboards is not included toward the **total outdoor light output** limits of Section 4.2.

5.2 **Internally Illuminated Sign, Neon Sign, Multicolor Fixed-Copy LED Sign and Single-Color LED Sign** Lighting Standards.

- A. Outdoor **internally illuminated signs** must either be constructed with an **opaque** background and translucent text and symbols, or with a colored background and generally LIGHTER text and symbols (Figure 5.2.A). Lamps used for internal illumination of **internally illuminated signs** shall not be counted toward the **total outdoor light output** limits in Section 4.2.

Light Background ✗	Colored Background ✓	Opaque Background ✓
		
		

Figure 5.2.A. **Internally illuminated sign** styles

- B. **Neon signs, multicolor fixed-copy LED Signs** and **single-color LED signs** (Figure 5.2.B) shall be treated as **internally illuminated signs** for the purposes of this Code, and shall not have their outputs counted toward the **total outdoor light output** limits in Section 4.2. Any lighting extending beyond the area considered to be the sign area (as defined in the Sign Code of this jurisdiction) shall conform to all provisions of this Code. In particular, such lighting shall be treated as **Class 3 lighting** (decorative) and shall conform to the **total outdoor light output** limits of Section 4.

Neon	Multicolor Fixed-Copy LED	Single-Color LED
		

Figure 5.2.B. **Neon, multicolor fixed-copy LED** and **single-color LED signs**

- C. Other internally-illuminated panels or decorations not considered to be signage according to the sign code of this jurisdiction (such as illuminated

canopy margins or building faces), shall be considered **Class 3 lighting** (decorative), and shall be subject to the standards applicable for such lighting, including but not limited to the lamp source, shielding standards and **total outdoor light output** limits of Section 4.2.

5.3 **Multicolor Changeable-Copy LED Sign** Lighting Standards. Lighting for **multicolor changeable-copy LED signs** (Figure 5.3.A) must meet the following:

A. [ALTERNATIVE A] **Multicolor changeable-copy LED signs** are not permitted.

[ALTERNATIVE B] **Multicolor changeable-copy LED signs** must be adjusted to prevent overly bright **luminance** at night: automatic controls must limit night **luminance** to a maximum of 100 **nits** when the display is set to show maximum brightness white (100% full white mode). The applicant shall provide a written certification from the sign manufacturer that the nighttime light intensity has been factory pre-set not to exceed this level, and that this setting is protected from end-user modification by password-protected software or other method as deemed appropriate by the Planning Director.



Figure 5.3.A. **Multicolor changeable-copy LED sign**

5.4 Time Limits. Illumination for all **on-site advertising signs** except **billboards**, shall be turned off by the times listed in Table 5.4 or when the business closes, whichever is later. Signs subject to time limits are required to have functioning and properly adjusted automatic shut-off timers. Light background (white, off-white, light gray, cream or yellow) **internally illuminated signs, installed** legally before enactment of this code [enter date], may continue to be used and illuminated but must conform to the time limits as indicated.

Table 5.4. ILLUMINATED SIGN TIME LIMITS

Sign Type	Lighting Zone	
	LZ 1	LZ 2
<i>Internally illuminated</i> , light background	6pm	8pm
<i>Multicolor Changeable-Copy LED</i>	6pm	8pm
All other types	9pm	10pm

**Section 6: Special Use Lighting Standards.**

6.1 Recreational Facilities.

A. Class of Play: Fields designed primarily for use by municipal or amateur leagues, training, recreational or social levels, shall be considered **Sports Class IV** as defined by the Illuminating Engineering Society of North America (IESNA). Fields designed primarily for college, semiprofessional, professional or national levels shall be considered **Sports Class I**, **Sports Class II** or **Sports Class III** as defined by IESNA.

B. Lighting Class and Amount: Lighting for outdoor athletic fields, courts or tracks shall be considered **Class 1 lighting** (Color Rendition), and shall be exempt from the **lumens** per acre limits of Section 4.2. **Illuminance** shall be designed to achieve no greater than the minimal levels for the activity as recommended by the Illuminating Engineering Society of North America (IESNA) for the **Sports Class** as described in Section 6.1.A.

C. Shielding:

1. Facilities designed for **Sports Class III** and **Sports Class IV**: lighting for the field shall use **fully shielded lighting fixtures**. Where **fully shielded fixtures** are not available, **lighting fixtures** using external louvers or shields that, in the final installed configuration, extend to within 3 inches on the lowest portion of the light fixture opening are required (Figure 6.1.C.1). The fixtures shall be **installed** and maintained with aiming angles that permit no greater than 1% of the light emitted by each fixture to project above the horizontal.

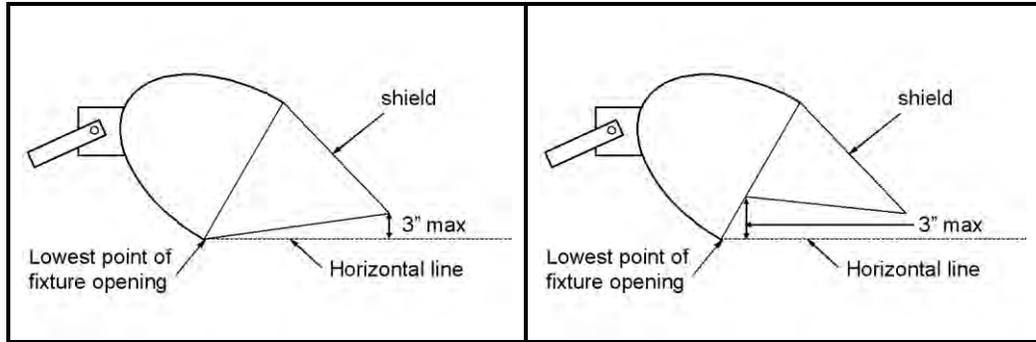


Figure 6.1.C.1. **Sports Class III** and **IV** lighting shield configurations.

2. Facilities designed for **Sports Class I** and **Sports Class II**: lighting for the field shall use **lighting fixtures** with internal and/or external control louvers or shields to minimize off-site **glare** and **light trespass**. The fixtures shall be **installed** and maintained with aiming angles that permit no greater than 5% of the light emitted by each fixture to project above the horizontal.
- D. Certification: Every such lighting system design and installation shall be certified by a registered engineer, architect or landscape architect as conforming to all applicable restrictions of this Code.
- E. Time Limit: All field lighting shall be extinguished within 30 minutes of cessation of play, and events shall be scheduled so as to complete activity before 11pm. Illumination of the playing field, court or track shall be permitted after the time limit only to conclude a scheduled event that did not conclude before the time limit due to unusual circumstances.

## 6.2. **Frontage Row of Vehicle Display Areas**

- A. Lighting Class: Lighting for **frontage row of vehicle display areas** shall be considered **Class 1 lighting** (Color Rendition).
- B. Shielding: All **frontage row vehicle display area** lighting shall utilize **fully shielded light fixtures** that are **installed** in a fashion that maintains the **fully shielded** characteristics.
- C. **Lumen** Limit: **Total outdoor light output** for the **frontage row of vehicle display areas** is exempt from the **total outdoor light output** limits in Section 4.2, but shall not exceed 60 **lumens** per square foot.
- D. Time Limit: The **frontage row of vehicle display area** lighting exceeding the **lumens** per acre cap of Section 4.2 shall be turned off at 10 p.m. or within thirty minutes after closing of the business, whichever is later. Lighting in the **frontage row of vehicle display areas** after the time limit

shall be considered **Class 2 lighting**, and shall conform to all restrictions of this Code applicable for **Class 2 lighting**, including the **total outdoor light output** limits in Section 4.2.

### 6.3 Service Station Canopies.

- A. Lighting for service station canopies shall be considered **Class 1 lighting** (Color Rendition).
- B. Shielding: All **light fixtures** mounted on or recessed into the lower surface of service station canopies shall be **fully shielded** and utilize flat lenses.
- C. Total Under-Canopy Output: The total light output used for illuminating service station canopies, defined as the sum of all under-canopy initial bare-lamp outputs in **lumens**, shall not exceed 60 **lumens** per square foot of canopy. All lighting mounted under the canopy, including but not limited to **light fixtures** mounted on the lower surface or recessed into the lower surface of the canopy and any lighting within signage or illuminated panels over the pumps, is to be included toward the total at full initial **lumen** output.
- D. The **lumen** output of lamps mounted on or within the lower surface of a canopy is included toward the **total outdoor light output** limits in Section 4.2 according to the method defined for **total outdoor light output**. Other lighting located under a canopy but not mounted on or within the lower surface is included toward the **total outdoor light output** limits in Section 4.2 at full initial output.

6.4 Other Lighting on Parcels with Special Uses. All lighting not directly associated with the special use areas above shall conform to the lighting standards described in this Code at all times, including but not limited to the shielding requirements of Section 4.1, the **total outdoor light output** limits of Section 4.2 and the lamp type standards of Section 4.3. The **net acreage** for the determination of compliance with Section 4.2 shall not include the area of the athletic field or **frontage row of vehicle display area**; the area of any service station canopy shall be included in the **net acreage**.

## Section 7. Submission of Plans and Evidence of Compliance with Code, Subdivision Plats.

7.1 Submission Contents. The applicant for any permit required by any provision of the laws of this jurisdiction in connection with proposed work involving **outdoor lighting fixtures** shall submit (as part of the application for permit) evidence that the proposed work will comply with this Code. Even should no other such permit be required, the installation or modification of any exterior lighting (except for routine servicing and same-type lamp replacement) shall

require submission of the information described below. The submission shall contain but shall not necessarily be limited to the following, all or part of which may be part of or in addition to the information required elsewhere in the laws of this jurisdiction upon application for the required permit:

- A. plans indicating the total number and location on the premises of all **outdoor lighting fixtures**, both proposed and any already existing on the site;
- B. description of all **outdoor lighting fixtures**, both proposed and existing. The description may include, but is not limited to, catalog cuts and illustrations by manufacturers (including sections where required); lamp types, wattages and initial **lumen** outputs;

7.2 Additional Submission. The above required plans, descriptions and data shall be sufficiently complete to enable the designated official to readily determine whether compliance with the requirements of this Code will be secured. If such plans, descriptions and data are not sufficient, the applicant shall submit such additional evidence as reasonably requested by the jurisdiction, including certified reports of tests performed and certified by a recognized testing laboratory.

7.3 Subdivision Plats. If any subdivision proposes to have **installed** street or other common or public area outdoor lighting, submission of the information as described in Section 7.1 shall be required for all such lighting.

7.4 Lamp or Fixture Substitution. Should any **outdoor light fixture** or the type of light source therein be changed after the permit has been issued, a change request must be submitted to the designated official for approval, together with adequate information to assure compliance with this Code. Approval must be received prior to substitution.

7.5 Plan Approval. If the designated official determines that the proposed lighting does not comply with this Code, the permit shall not be issued or the plan approved.

7.6 Certification of Installation. For projects using 200,000 lumens or more a registered engineer shall certify in writing to the City that all lighting was installed in accordance with the approved plans.

## **Section 8. Prohibitions.**

8.1 Sale of Non-Conforming Fixtures and Lamps. The installation, sale, offering for sale, lease or purchase of any outdoor lighting fixture or lamp the use of which is not allowed by this Code is prohibited.

8.2 Laser Source Light. The use of laser source light or any similar high intensity light for outdoor advertising or entertainment, when projected above the horizontal, is prohibited.

8.3 Searchlights. The operation of searchlights for advertising purposes is prohibited.

## **Section 9. Temporary Exemption.**

9.1 Request; Renewal; Information Required. Any person may submit, on a form prepared by the jurisdiction, to the designated official, a temporary exemption request. The request shall contain the following information:

- A. specific Code exemption(s) requested;
- C. duration of requested exemption(s);
- E. proposed location on premises of the proposed light fixture(s);
- B. purpose of proposed lighting;
- D. information for each light fixture and lamp combination as required in section 7.1;
- F. previous temporary exemptions, if any, and addresses of premises thereunder;
- G. such other data and information as may be required by the designated official.

9.2 Approval; Duration. The designated official shall have five (5) business days from the date of submission of the request for temporary exemption to act, in writing, on the request. If approved, the exemption shall be valid for not more than thirty (30) days from the date of issuance of the approval. The approval shall be renewable upon further written request, at the discretion of the designated official, for a maximum of one (1) additional thirty (30) day period. The designated official is not authorized to grant more than one (1) temporary permit and one (1) renewal for a thirty (30) day period for the same property within one (1) calendar year.

9.3 Disapproval; Appeal. If the request for temporary exemption or its extension is disapproved, the person making the request will have the appeal rights provided in Section 11.

## **Section 10. Other Exemptions.**

10.1 Nonconformance

- A. Bottom-mounted or unshielded outdoor advertising sign lighting shall not be used beginning five years after enactment of this Code.

B. All other outdoor light fixtures lawfully installed prior to and operable on the effective date of this Code are exempt from all requirements of this Code. There shall be no change in use or lamp type, or any replacement (except for same-type and same-output lamp replacement) or structural alteration made, without conforming to all applicable requirements of this Code. Further, if the property is abandoned, or if there is a change in use of the property, the provisions of this Code will apply when the abandonment ceases or the new use commences.

10.2 State and Federal Facilities. Compliance with the intent of this Code at all State and Federal facilities is encouraged.

10.3 Emergency Lighting. Emergency lighting, used by police, firefighting, or medical personnel, or at their direction, is exempt from all requirements of this code for as long as the emergency exists.

10.4 Swimming Pool and Fountain Lighting. Underwater lighting used for the illumination of swimming pools and fountains is exempt from the lamp type and shielding standards of Section 4.1, though it must conform to all other provisions of this code.

## **Section 11. Appeals.**

Any person substantially aggrieved by any decision of the designated official made in administration of the Code has the right and responsibilities of appeal to the Advisory/Appeals Board of this jurisdiction.

## **Section 12. Law Governing Conflicts.**

Where any provision of federal, state, county, township or city statutes, codes, or laws conflicts with any provision of this Code, the most restrictive shall govern unless otherwise regulated by law.

## **Section 13. Violation and Penalty.**

It shall be a civil infraction for any person to violate any of the provisions of this Code. Each and every day or night during which the violation continues shall constitute a separate offense. A fine shall be imposed of not less than fifty dollars nor more than seven hundred dollars for any individual or not less than 100 nor more than ten thousand dollars for any corporation, association, or other legal entity for each offense. The imposition of a fine under this Code shall not be suspended.

## Section 14. Severability.

If any of the provisions of this Code or the application thereof is held invalid, such invalidity shall not affect other provisions or applications of this Code which can be given effect, and to this end, the provisions of this Code are declared to be severable.

## Section 15. Definitions.

As used in this Code, unless the context clearly indicates otherwise, certain words and phrases shall mean the following:

- 15.1 **Abandoned.** Abandonment shall be determined as provided in Section \_\_\_\_\_ of the City/Town's Zoning Ordinance. [Consider "cessation of use" here instead, depending on advice of local counsel]
- 15.2 **Billboard.** Any sign designed for use with changeable advertising copy and which is normally used for the advertisement of goods produced or services rendered at locations other than the premises on which the sign is located.
- 15.3 **CCT.** Correlated color temperature. A numerical figure used to describe the apparent color of white or nearly white light sources such as LEDs or metal halide.
- 15.4 **Class 1 Lighting.** All outdoor lighting used for, but not limited to, outdoor sales or eating areas, assembly or repair areas, advertising and other signs, recreational facilities and other similar applications where COLOR RENDITION IS IMPORTANT to preserve the effectiveness of the activity. Designation of lighting as **Class 1 lighting** requires a finding by the Planning Director of the essential nature of color rendition for the application. Recognized **Class 1 lighting** uses are: outdoor eating and retail food or beverage service areas; outdoor maintenance areas where regularly scheduled maintenance activity occurs after dark; **display areas**; assembly areas such as concert or theater amphitheaters.
- 15.5 **Class 2 Lighting.** All outdoor lighting used for, but not limited to, illumination for walkways, roadways, equipment yards, parking lots and outdoor security where GENERAL ILLUMINATION for visibility, safety or security of the grounds is the primary concern.
- 15.6 **Class 3 Lighting.** Any outdoor lighting used for DECORATIVE effects including, but not limited to, architectural illumination, flag and monument lighting, and illumination of trees, bushes, etc.

15.7 **Development Project.** Any residential, commercial, industrial or mixed-use subdivision plan or development plan which is submitted to the City for approval.

15.8 **Display Area.** Outdoor areas where active nighttime sales activity occurs AND where accurate color perception of merchandise by customers is required. Recognized **display area** uses include automobile and recreational vehicle sales, boat sales, tractor sales, building supply sales, gardening or nursery sales, swap meets. Uses not on this list must be approved as **display area** uses by the Planning Director.

15.9 **Frontage Row of Vehicle Display Area.** That portion of a **display area** used for vehicles located adjacent to the parcel frontage. Includes only the front row of vehicles adjacent to the parcel frontage; does not include the driving area located behind the parked vehicles or the remainder of the **display area** not adjacent to the frontage. (Figure 15.9)

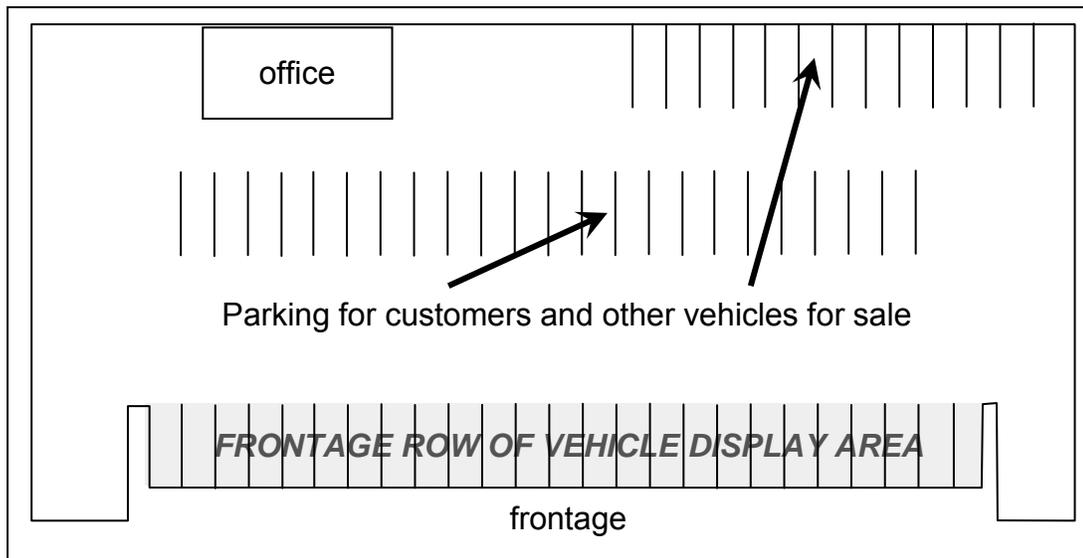


Figure 15.9. **Frontage Row of Vehicle Display Area**

15.10 **Flood Lamp.** See **Spot Lamp.**

15.11 **Footcandle.** The standard imperial unit used to measure **illuminance**, or the amount of light falling onto a surface, such as a roadway or athletic field. One **footcandle** equals one **lumen** per square foot. One **footcandle** equals approximately 10 **lux**.

15.12 **Fully Shielded (Light Fixture).** A **light fixture** constructed in such a manner that all light emitted by the fixture, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the **fixture**, is projected below the horizontal. Any structural part of the **light**

**fixture** providing this shielding must be permanently affixed, and part of the fixture, not part of any surrounding building or architectural elements.

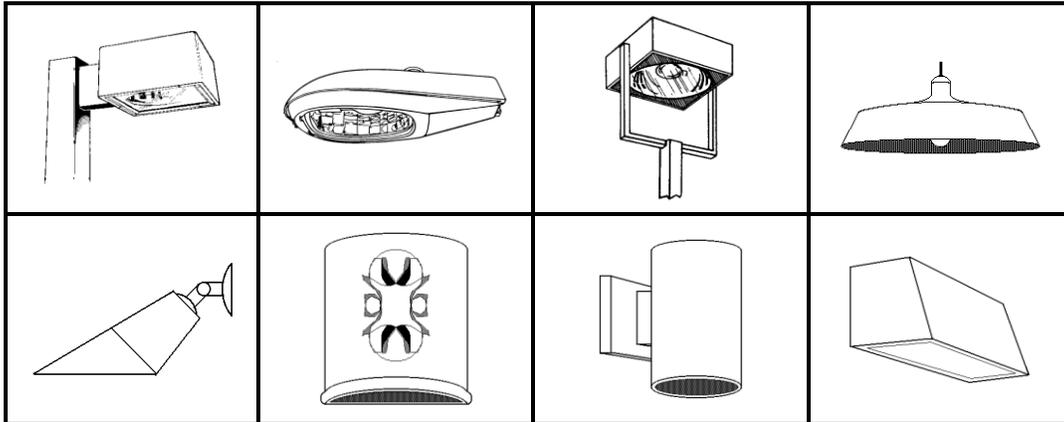


Figure 15.12a. Examples of **fully shielded fixtures**.

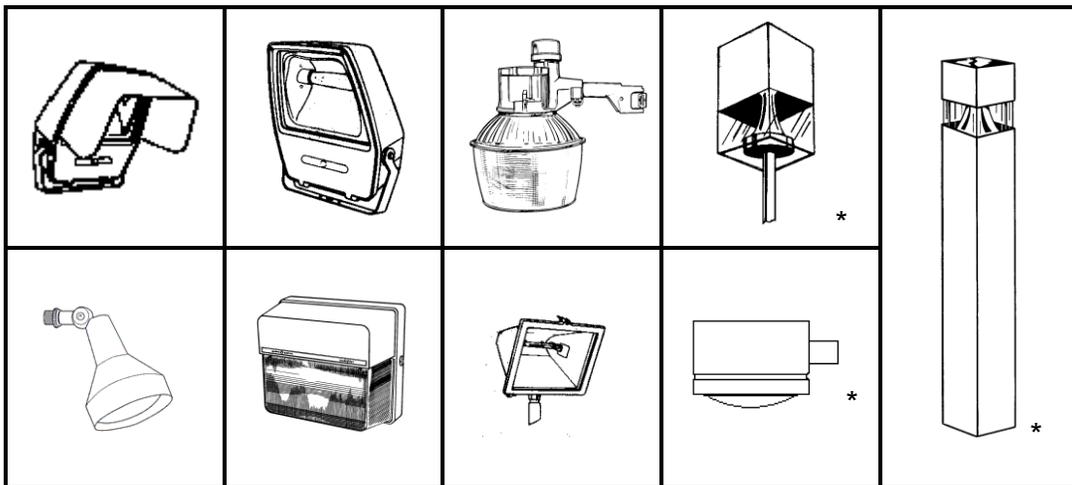


Figure 15.12b. Examples of fixtures that are NOT **fully shielded** (\*even though the lamp in these fixtures is shielded from direct view when viewed from the side or above, reflective surfaces and/or lens covers are visible from the side).

15.13 **Glare**. The sensation produced by a bright source within the visual field that is sufficiently brighter than the level to which the eyes are adapted to cause annoyance, discomfort, or loss in visual performance and visibility; blinding light.

15.14 **Illuminance**. The amount of light falling onto a unit area of surface (luminous flux per unit area) - measured in **footcandles** or **lux**.

15.15 **Installed**. The attachment, or assembly fixed in place, whether or not connected to a power source, of any **outdoor light fixture**.

15.16 **LED**. Light emitting diode.

15.17 **Light Fixture, Outdoor**. A complete lighting assembly (including the lamp, housing, reflectors, lenses and shields), less the support assembly (pole or mounting bracket). Includes **luminous tubes**, lamps or similar devices, permanently **installed** or portable, used for illumination, decoration, or advertisement. Such devices shall include, but are not limited to lights used for:

- A. parking lot or **parking garage** lighting;
- B. roadway and driveway lighting;
- C. pedestrian or walkway lighting;
- D. entryway lighting;
- E. recreational areas;
- F. landscape lighting;
- G. **billboards** and other signs (advertising or other);
- H. **display area** lighting;
- I. building or structure decoration;
- J. building overhangs and open canopies.

For purposes of determining **total light output from a light fixture**, lighting assemblies which include multiple lamps within a single **light fixture** or on a single pole or standard shall be considered as a single unit (Figure 15.18).

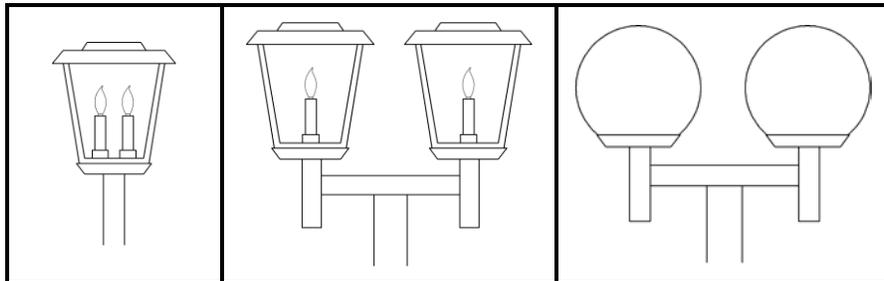


Figure 15.17. **Light fixtures** with multiple lamps in a single fixture (left) and on a single pole or bracket (center, right)

15.18 **Light Trespass**. Light falling across property boundaries, onto property not containing the originating light source.

15.19 **Lighting Zones**. The **lighting zones** are defined on the Lighting Zone Map, by this reference made a part of this Code. Guidelines used to guide the delineation of the **lighting zones** are:

- A **Lighting Zone LZ 1**. This Zone includes predominantly residential areas, including small neighborhood commercial or industrial areas mostly surrounded by residential areas

**B Lighting Zone LZ 2.** This Zone includes urban areas with primary land uses for commercial, business and industrial activity, including urban multi-family residential areas mostly surrounded by commercial areas.

15.20 **Lumen.** Unit of luminous flux; used to measure the amount of light emitted by lamps.

15.21 **Luminaire.** See **Light Fixture, (Outdoor).**

15.22 **Luminance.** The intensity of light reflected or emitted from a unit area of surface, such as a sign face - measured in **nits**.

15.23 **Luminous Tube.** A glass tube filled with a gas or gas mixture (including neon, argon, mercury or other gasses), usually of small diameter (10-15 millimeter), caused to emit light by the passage of an electric current, and commonly bent into various forms for use as decoration or signs. A "neon" tube. Does not include common fluorescent tubes or compact fluorescent lamps.

15.24 **Lux.** The standard metric unit used to measure **illuminance**, or the amount of light falling onto a surface, such as a roadway or athletic field. One **lux** equals one **lumen** per square meter. One **lux** equals approximately 0.1 **footcandles**.

15.25 **Multi-Class Lighting.** Any outdoor lighting used for more than one purpose, such as security and decoration, such that its use falls under the definition of two or more Classes as defined for **Class 1, 2 and 3 Lighting**.

15.26 **Neon Tube.** See **Luminous Tube**.

15.27 **Net Acreage.** The remaining area after deleting all portions for proposed and existing streets within a parcel, subdivision or multiple contiguous parcels proposed for development. For parcels including special uses listed in Section 6 that are exempted from the **total outdoor light output** limits of Section 4.2, the area devoted to the special use only shall also be excluded from the **net acreage**.

15.28 **Nit.** The standard unit used to measure the brightness of a surface, such as a sign.

15.29 **Outdoor Light Fixture.** See **Light Fixture, Outdoor**.

15.30 **Opaque.** **Opaque** means that a material does not transmit light from an internal illumination source. Applied to sign backgrounds, means that the area surrounding any letters or symbols on the sign allows no light from an internal source to shine through it.

15.31 **Outdoor Light Output, Total.** The initial total amount of light, measured in **lumens**, from all lamps used in **outdoor light fixtures**. Includes all lights and **luminous tubes** used for **Class 1, Class 2, Class 3** and **multi-Class lighting**, and lights used for external illumination of signs, but does not include lights used to illuminate **internally illuminated signs**, **luminous tubes** used in **neon signs**, or seasonal lighting from typical low-output lamps permitted between Thanksgiving and January 15th. For lamp types that vary in their output as they age (such as high pressure sodium, fluorescent and metal halide), the initial lamp output, as defined by the manufacturer, is the value to be considered. For **LED** fixtures, the light output of the fixture, as defined by the manufacturer, is the value to be considered. For determining compliance with Section 4.2 [**Total Outdoor Light Output**] of this Code, the light emitted from lamps and **luminous tubes** is to be included in the total output as follows (see Figures 15.31a/b):

- A. **outdoor light fixtures installed** on poles (such as parking lot **light fixtures**) and **light fixtures** or **luminous tubes installed** on the sides of buildings or other structures, when not shielded from above by the structure itself as defined in parts B, C and D below, are to be included in the **total outdoor light output** by simply adding the initial **lumen** outputs of the lamps and tubes;
- B. **outdoor light fixtures** and **luminous tubes installed** under canopies, buildings (including **parking garage** decks), overhangs or roof eaves where all parts of the lamp, tube or **light fixture** are located at least five (5) feet but less than ten (10) feet from the nearest edge of the canopy or overhang are to be included in the **total outdoor light output** as though they produced only one-quarter (0.25) of the lamp's rated initial **lumen** output;
- C. **outdoor light fixtures** and **luminous tubes installed** under canopies, buildings (including **parking garage** decks), overhangs or roof eaves where all parts of the lamp, tube or **light fixture** are located at least ten (10) feet but less than thirty (30) feet from the nearest edge of the canopy or overhang are to be included in the total outdoor light output as though they produced only one-tenth (0.10) of the lamp's or tube's rated initial **lumen** output.
- D. **outdoor light fixtures** and **luminous tubes installed** under canopies, buildings (including **parking garage** decks), overhangs or roof eaves where all parts of the lamp or light fixture are located thirty (30) or more feet from the nearest edge of the canopy or overhang are not to be included in the **total outdoor light output**. Such lamps and tubes must however conform to the lamp source and shielding requirements of Section 4.

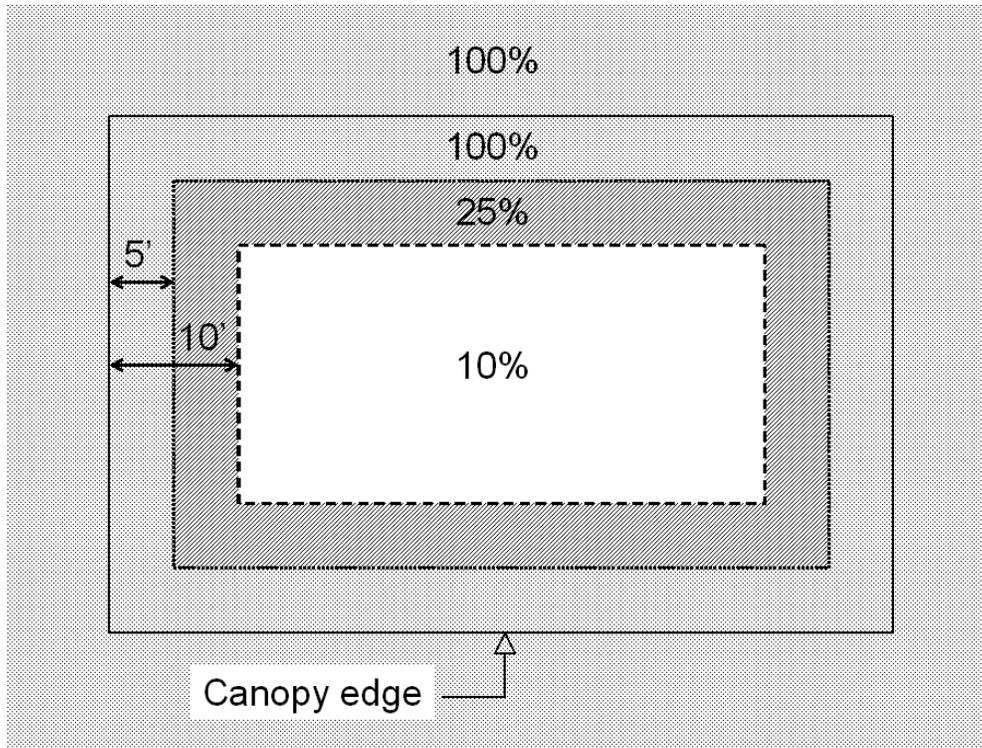


Figure 15.31a. Plan view of a canopy, showing fixture location and initial lamp output percentage counted toward **Total Outdoor Light Output**.

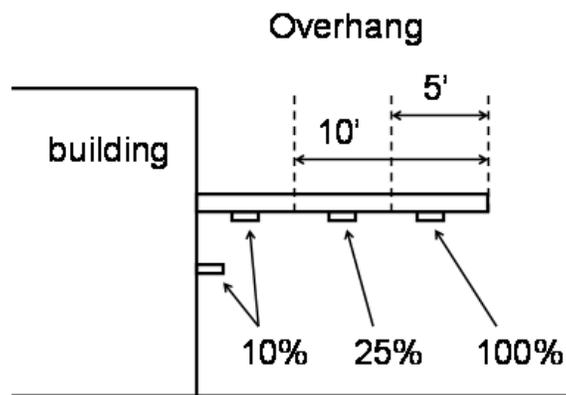


Figure 15.31b. Elevation view of a canopy or overhang attached to a building, showing location of **fully shielded fixtures** and initial lamp output percentage counted toward **Total Outdoor Light Output**.

15.32 **Parking Garage**. A multi-level or covered structure for parking that is open to the outside air. Includes parking facilities under buildings when the area is open to the outside at more locations than just the automobile entries and exits.

15.33 **Partially Shielded** (Light Fixture). A **light fixture** constructed and mounted such that most light emitted by the fixture, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the fixture, is projected below the horizontal. Light emitted at or above the horizontal direction (sideways or upwards) arises only from decorative elements or strongly colored or diffusing materials such as "honey" or colored glass or plastic. Fixtures using spot or flood lamps are considered **partially shielded** if the lamps are aimed no higher than 45 degrees above straight down (half-way between straight down and straight to the side).

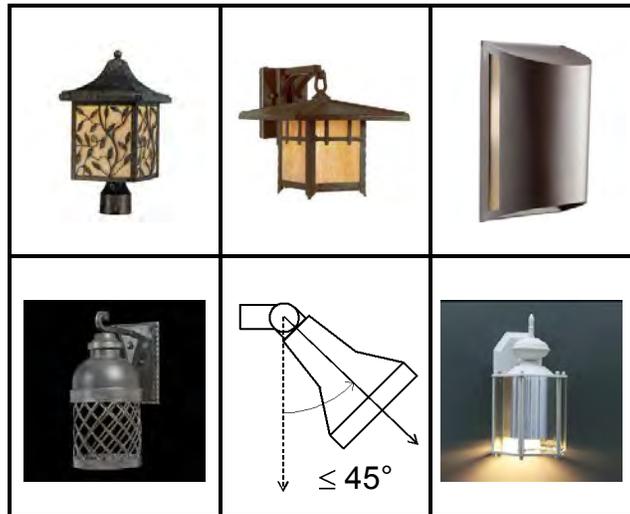


Figure 15.33. Examples of **partially shielded fixtures**:

15.34 **Person**. any individual, tenant, lessee, owner, or any commercial entity including but not limited to firm, business, partnership, joint venture, or corporation.

15.35 **Searchlight**. A lighting assembly designed to direct the output of a contained lamp in a specific tightly focused direction (a beam) with a reflector located external to the lamp, and with a swiveled or gimbaled mount to allow the assembly to be easily redirected. Such lights are used commonly to sweep the sky for advertisement purposes.

15.36 **Sign, Externally Illuminated**. A sign illuminated by light sources from the outside.

15.37 **Sign, Internally Illuminated**. A sign illuminated by light sources enclosed entirely within the sign cabinet and not directly visible from outside the sign.

15.38 **Sign, Multicolor Changeable-Copy LED**. A sign composed of **LEDs** of more than one color and programmable to allow changing displays.

- 15.39 **Sign, Multicolor Fixed-Copy LED.** A sign composed of **LEDs** of more than one color with a fixed (not changeable or programmable) copy display.
- 15.40 **Sign, Neon.** A sign including **luminous tubes** formed into text, symbols or decorative elements and directly visible from outside the sign cabinet.
- 15.41 **Sign, On-Site Advertising.** A sign used primarily to advertise goods or services offered on the same parcel on which the sign is located. Such a sign may include incidental non-advertising information (for example time and temperature; does not include publicly owned signs providing general interest information exclusively (such as road names or highway conditions)
- 15.42 **Sports Class I/II/III/IV.** Level of sports play as defined by the Illuminating Engineering Society of North America. This level is primarily determined by the number and distance of spectators; the higher recommended illumination levels facilitate the spectator's ability to view the action. **Sports Class IV** is the most common level, and is typical of municipal and amateur league and social level sports, with minimal accommodations for spectators, typically including bleachers located close to the field. **Sports Class III** includes increased accommodation for spectators. **Sports Class II** and **Sports Class I** apply to large sports facilities where thousands of spectators may be located hundreds of feet from the field, and television broadcasting may be a consideration.
- 15.43 **Spot Lamp.** A specific form of lamp designed to direct its output in a specific direction (a beam) with a reflector formed from the glass envelope of the lamp itself, and with a clear or nearly clear glass envelope: Such lamps are so designated by the manufacturers, and typically used in residential outdoor area lighting (Figure 15.43).

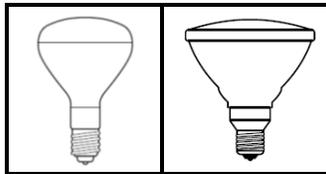


Figure 15.43. **Spot lamps**

- 15.44 **Spot Light.** A **light fixture** containing a **Spot Lamp**.
- 15.45 **Temporary Lighting.** Lighting which does not conform to the provisions of this Code and which will not be used for more than one thirty (30) day period within a calendar year, with one thirty (30) day extension. Temporary lighting is intended for uses which by their nature are of limited duration; for example holiday decorations, civic events, or construction projects in.



# Placer

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**NO. 397 TOWN OF DUTCH FLAT** - Founded in the spring of 1851 by Joseph and Charles Dornback, from 1854 to 1882 Dutch Flat was noted for its rich hydraulic mines. In 1860 it had the largest voting population in Placer County, Chinese inhabitants numbered about 2,000. Here Theodore Judah and D. W. Strong made the original subscription to build the first transcontinental railroad.

**Location:** NE corner of Main and Stockton Sts, Dutch Flat

**NO. 398 YANKEE JIM'S** - Gold was discovered here in 1850 by 'Yankee Jim,' a reputed lawless character, and by 1857 the town was one of the most important in Placer County. The first mining ditch in the county was constructed here by H. Starr and Eugene Phelps. Colonel William McClure introduced hydraulic mining to this area in June of 1853.

**Location:** SE corner of Colfax Foresthill and Springs Garden Rds, 3.0 mi NE of Forest Hill

**NO. 399 TOWN OF FOREST HILL** - Gold was discovered here in 1850, the same year the first 'forest house' was built. In 1852 the Jenny Lind Mine, which produced over a million dollars in gold, was discovered. Mines in this immediate vicinity produced over ten million dollars up to 1868. The town was an important trading post and was famed for its beautiful forest.

**Location:** 24540 Main St, Forest Hill

**NO. 400 VIRGINIATOWN** - Founded June 1851, the town was commonly called 'Virginia.' Over 2,000 miners worked rich deposits here. In 1852 Captain John Brislow built California's first railroad to carry pay dirt one mile, to Auburn Ravine. It was the site of Philip Armour's and George Aldrich's butcher shop, said to have led to founding of the famous Chicago Armour meatpacking company.

**Location:** 4725 Virginiatown Rd, 0.2 mi SE of Fowler and Virginiatown Rds, 7 mi NW of Newcastle

**NO. 401 IOWA HILL** - Gold was discovered here in 1853, and by 1856 weekly production was estimated at one hundred thousand dollars. The total value of gold produced up to 1880 is placed at twenty million dollars. The town was destroyed by fire in 1857 and again in 1862, each time it was rebuilt with more substantial buildings, but the last big fire, in 1922, destroyed most of the town.

**Location:** 0.1 mi SW of post office on Iowa Hill Rd, Iowa Hill

**NO. 402 TOWN OF MICHIGAN BLUFF** - Founded in 1850 and first known as Michigan City, the town was located on the slope one-half mile from here. Leland Stanford, who gained wealth and fame in California, operated a store in Michigan City from 1853 to 1855. In 1858 the town became undermined and unsafe so it was moved to this location and renamed Michigan Bluff.

**Location:** Intersection of Gorman Ranch and Auburn -Foresthill Rds, Michigan Bluff

**NO. 403 EMIGRANT GAP** - The spring of 1845 saw the first covered wagons surmount the Sierra Nevada. They left the valley, ascended to the ridge, and turned westward to old Emigrant Gap, where they were lowered by ropes to the floor of Bear Valley. Hundreds followed before, during, and after the gold rush. This was a hazardous portion of the overland emigrant trail.

**Location:** Emigrant Gap Vista Pt, Interstate 80 (P.M. 55.5 Westbound), Emigrant Gap

**NO. 404 CITY OF AUBURN** - Gold was discovered near here by Claude Chana on May 16, 1848. First known as 'North Fork' or 'Woods Dry Diggings,' the settlement was given the name Auburn in the fall of 1849. It soon became an important mining town, trading post, and stage terminal, and also became the county seat of Sutter County in 1850 and of Placer County in 1851. It was destroyed by fires in 1855, 1859, and 1863.

**Location:** SW corner of Maple St and Lincoln Way, Auburn

**NO. 405 TOWN OF GOLD RUN** - Originally called Mountain Springs, Gold Run was founded in 1854 by O. W. Hollenbeck. It was famed for its hydraulic mines, which from 1865 to 1878 shipped \$6,125,000 in gold. Five water ditches passed through the town to serve the mining companies, but they had to cease operations in 1882 when a court decision made hydraulic mining unprofitable.

**Location:** NW corner of I-80 and Magra Rd, plaque across the street from post office, Gold Run

**NO. 463 OPHIR** - Founded in 1849 as 'The Spanish Corral,' Ophir received its Biblical name in 1850 because of its rich placers. The most populous town in Placer County in 1852, polling 500 votes, Ophir was almost totally destroyed by fire in July 1853 but later became the center of quartz mining in the county.

**Location:** SW corner of Lozanos and Bald Hill Rds, 3 mi W of Auburn

**NO. 585 PIONEER EXPRESS TRAIL** - Between 1849 and 1854, Pioneer Express riders rode this gold rush trail to the many populous mining camps on the American River bars now covered by Folsom Lake-Beals, Condemned, Dotons, Long, Horseshoe, Rattlesnake, and Oregon-on the route to Auburn and beyond.

**Location:** Folsom Lake State Recreation Area, Beals Point unit, 0.3 mi N on levee, plaque on riding trail, Folsom

**NO. 724 PIONEER SKI AREA OF AMERICA, SQUAW VALLEY** - The VIII Olympic Winter Games of 1960 commemorated a century of sport skiing in California. By 1860 the Sierra Nevada-particularly at the mining towns of Whiskey Diggings, Poker Flat, Port Wine, Onion Valley, La Porte, and Johnsville, some 60 miles north of Squaw Valley-saw the first organized ski clubs and competition in the western hemisphere.

**Location:** Adjacent to Lobby Entrance of Cable Car Building at base of mountain, Squaw Valley

**NO. 780-1 FIRST TRANSCONTINENTAL RAILROAD-ROSEVILLE** - Central Pacific graders arrived at Junction on November 23, 1863, and when track reached there on April 25, 1864, trains began making the 18-mile run to and from Sacramento daily. The new line crossed a line reaching northward from Folsom that the California Central had begun in 1858 and abandoned in 1868. Junction, now called Roseville, became a major railroad distribution center.

**Location:** Old Town Roseville, S.E. corner of Church St & Washington Blvd, Roseville

**NO. 780-2 FIRST TRANSCONTINENTAL RAILROAD-ROCKLIN** - Central Pacific reached Rocklin, 22 miles from its Sacramento terminus, in May 1864, when the railroad established a major locomotive terminal here. Trains moving over the Sierra were generally cut in two sections at this point in order to ascend the grade. The first CP freight movement was three carloads of Rocklin granite pulled by the engine Governor Stanford. The terminal was moved to Roseville April 18, 1908.

**Location:** SE corner of Rocklin Rd and First St, Rocklin

**NO. 780-3 FIRST TRANSCONTINENTAL RAILROAD-NEWCASTLE** - Regular freight and passenger trains began operating over the first 31 miles of Central Pacific's line to Newcastle on June 10, 1864, when political opposition and lack of money stopped further construction during that mild winter. Construction was resumed in April 1865. At this point, stagecoaches transferred passengers from the Dutch Flat Wagon Road.

**Location:** SW corner of Main and Page Sts, Newcastle

**NO. 780-4 FIRST TRANSCONTINENTAL RAILROAD-AUBURN** - After an 11-month delay due to political opposition and lack of money, Central Pacific tracks reached Auburn May 13, 1865, and regular service began. Government loans became available when the railroad completed its first 40 miles, four miles east of here. With the new funds, Central Pacific augmented its forces with the first Chinese laborers, and work began again in earnest.

**Location:** 639 Lincoln Way, Auburn

**NO. 780-5 FIRST TRANSCONTINENTAL RAILROAD-COLFAX** - Central Pacific rails reached Illinois-town on September 1, 1865, and train service began four days later. Renamed by Governor Stanford in honor of Schuyler Colfax, Speaker of the House of Representatives and later Ulysses S. Grant's Vice President, the town was for ten months a vital construction supply depot and junction point for stage lines. The real assault on the Sierra began here.

**Location:** Grass Valley Street and Railroad Tracks in Railroad Park, Colfax

**NO. 797 LAKE TAHOE OUTLET GATES** - Conflicting control of these gates, first built in 1870, resulted in the two-decade 'Tahoe Water War' between lakeshore owners and downstream Truckee River water users. The dispute was settled in 1910-11 when techniques for determining water content in snow, developed by Dr. James E. Church, Jr., made possible the accurate prediction and control of the seasonal rise in lake and river levels.

**Location:** 73 N Lake Blvd (Hwy 89), at SW corner of Truckee River Bridge, Tahoe City

**NO. 799-2 OVERLAND EMIGRANT TRAIL** - Over a hundred years ago, this trail resounded to creaking wheels of pioneer wagons and the cries of hardy travelers on their way to the gold fields. It is estimated that over thirty thousand people used this trail in 1849. Rocks near this site still bear the marks of wagon wheels. For those early travelers, the next ordeal was a tortuous descent into Bear Valley.

**Location:** Big Bend Ranger Station, 2008 Hampshire Rocks Rd (old Hwy 40), 8 mi W of Soda Springs

**NO. 885 GRIFFITH QUARRY** - Established in the fall of 1864 by Mr. Griffith Griffith, a native of Wales, the quarry located near this site supplied high-quality granite for a number of the important buildings in San Francisco and Sacramento, including portions of the state capitol. This was also the site of the state's first successful commercial granite polishing mill, erected in 1874.

**Location:** SE corner of Taylor and Rock Springs Rds, Penryn

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### Pioneer Ski Area of America, Squaw Valley (No. 724 California Historical Landmark)

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Photo by [Waymarking.com](#)

The Truckee and Lake Tahoe Region is where organized skiing began. California gold miners were actually the first people to compete on skis. In the 1870s, skiers were racing down the slopes at 100 miles per hour. Squaw Valley is a u-shaped valley in the Sierra Nevada that is located between Truckee and Tahoe City so the landscape naturally lends itself to becoming a popular ski slope.

The Valley's first recorded history since the Native Americans roamed the landscape on their seasonal hunts for food, begins with the Gold Rush in 1849. Prospectors believed they found silver at the mouth of Squaw Valley. Hundreds of men rushed to the area. Unfortunately, the excitement over the silver discovery soon died when the silver ore was discovered to not be silver at all. The boom lasted a year from 1863-64. Residents of the Valley moved out of town to the Comstock Lode of Virginia City, Nevada.

Farming and logging became the primary activities until the Squaw Valley Development Company began acquiring land. These acquisitions led to the modern version of Squaw Valley.

The historical marker at the Pioneer Ski Area was placed in 1960 during VIII Olympic Winter Games to commemorate 100 years of skiing in California and the first televised Olympic Games. One hundred years later in 1960, one thousand competitors from 34 nations arrived in Squaw Valley to participate in the winter games. Squaw Valley first opened as a world class ski resort in 1949 and is one of North America's premier ski destinations. In 2010 Squaw Valley celebrated the fiftieth anniversary of the Winter Olympic Games.

The California Historical Landmark is located at the Squaw Valley Sports Center, at the northeast corner of the Blyth Olympics Arena Building on Squaw Valley Road in Squaw Valley.

#### Placer County

Placer is a Spanish word describing surface mining. Gold that had been "placed" in streams or on the ground through natural erosion was processed by planning, rocking, and similar techniques. Such mining efforts made Placer County residents some of the richest in California.

#### About this Establishment California Historical Landmarks Program

Historical Landmarks are sites, buildings, features, or events that are of statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. Historical Landmarks are eligible for registration if they meet at least one of the following criteria:

- 1) Is the first, last, only, or most significant of its type in the state or within a large geographic region
- 2) Is associated with an individual or group having a profound influence on the history of California
- 3) Is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer, or master builder.

California's Landmark Program began in the late 1800s with the formation of the *Landmarks Club* and the *California Historical Landmarks League*. In 1931, the program became official when legislation changed the Department of Natural Resources—and later the California State Chamber of Commerce—with registering and marking buildings of historical interest or landmarks. The Chamber of Commerce then created a committee of prestigious historians, including DeWitt Hutchings and Lawrence Hill, to evaluate potential landmark sites.

In 1948, Governor Earl Warren created the California Historical Landmarks Advisory Committee to increase the integrity and credibility of the program. Finally, this committee was changed to the California Historical Resources Commission in 1974. Information about registered landmarks numbered 770 onward is kept in the California Register of Historical Resources authoritative guide. Landmarks numbered 669 and below were registered prior to establishing specific standards, and may be added to the California Register when criteria for evaluating the properties are adopted.

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## 7.0 CULTURAL RESOURCES

## 7.0 CULTURAL RESOURCES

This section considers and evaluates the potential impacts of the proposed project on historical, cultural, and paleontological resources. Cultural resources are defined as prehistoric and historic sites, structures, and districts, or any other physical evidence associated with human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or any other reason. Paleontological resources include fossil remains, as well as fossil localities and formations which have produced fossil material.

For analysis purposes, cultural resources may be categorized into four groups: archaeological resources (prehistoric and historical); historic properties, buildings, and districts; areas of importance to Native Americans; and paleontological resources (fossilized remains of plants and animals). Cultural resource impacts include those to existing historic resources (i.e., historic districts, landmarks, etc.) and to archaeological and paleontological resources.

### 7.1 CONCEPTS AND TERMINOLOGY FOR EVALUATION OF CULTURAL RESOURCES

The following definitions are common terms used to discuss the regulatory requirements and treatment of cultural resources:

*Cultural resources* is the term used to describe several different types of properties: prehistoric and historical archaeological sites; architectural properties such as buildings, bridges, and infrastructure; and resources of importance to Native Americans.

*Historic properties* is a term defined by the National Historic Preservation Act (NHPA) as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP), including artifacts, records, and material remains related to such a property.

*Historical resource* is a California Environmental Quality Act (CEQA) term that includes buildings, sites, structures, objects, or districts, each of which may have historical, prehistoric, architectural, archaeological, cultural, or scientific importance, and is eligible for listing or is listed in the California Register of Historical Resources (CRHR) or a local registry of historical resources.

*Paleontological resource* is defined as including fossilized remains of vertebrate and invertebrate organisms, fossil tracks and trackways, and plant fossils. A unique paleontological site would include a known area of fossil-bearing rock strata.

## 7.2 EXISTING SETTING

### 7.2.1 CULTURAL SETTING

#### Prehistory

In the broadest terms, the archaeological signature of the Truckee Basin consists of a trend from hunting-based societies in earlier times to populations that were increasingly reliant on diverse resources by the time of historic contact. The gradual shift in characteristics may be attributed to factors such as paleoclimate, a shifting subsistence base, and demographic changes.

Some of the oldest archaeological remains reported for the Tahoe Region have been found in the Truckee River Canyon near Squaw Valley. These Pre-Archaic remains suggest occupation about 9,000 years ago. Other Pre-Archaic to Early Archaic occupation was documented at Spooner Lake near Spooner Summit overlooking Lake Tahoe, dating from about 7,000 years ago. The most intensive period of occupation in the region may have occurred at varying intervals between 500 and 4,000 years ago. The protohistoric ancestors of the Washoe, also of Late Archaic times, may date roughly from 500 years ago to historic contact in the early 1800s.

Archaeological research relevant to the project site began in the early 1950s when Heizer and Elsasser presented the first cultural chronology for the Sierra Nevada. The chronology was based on survey work conducted to the east of the crest of the Sierra Nevada around Lake Tahoe and parts of the drainages of the Truckee and Carson rivers. In their work, Heizer and Elsasser identified two “complexes.” The earliest cultural group, named the Martis Complex, was followed by the King’s Beach Complex. Both complexes were defined on the basis of surface material. Heizer and Elsasser did not excavate either of the “type sites” for these complexes (Placer County 2004).

Heizer and Elsasser defined the Martis Complex based on nine criteria derived from data obtained from 13 sites. These nine criteria are (1) the use of basalt as the preferred lithic material for tools; (2) the rare use of chert and obsidian for tool production; (3) the use of roughly chipped, large, heavy projectile points in a variety of forms; (4) the use of the mano and metate; (5) the use of bowl mortars with cylindrical pestles; (6) the use of boatstones and atlatls; (7) an economy primarily based on hunting and supplemented by the gathering of seeds; (8) the use of large numbers of basalt flake scrapers; and (9) the frequent use of expanded-base, finger-held drills.

Heizer and Elsasser highlighted the use of basalt as the preferred material for tools as the most distinguishing characteristic of the Martis Complex. They also suggest that the Martis Complex, based on this characteristic, may be related to other basalt-using complexes in the Great Basin, the Mojave Desert, and the Early Horizon in the Central Valley of California. Boatstones from the Martis Complex type site, CA-PLA-5, resemble those from the Central Valley of California, reinforcing the contention of Heizer and Elsasser that the Martis Complex may be related to the Early or Middle Horizon of the Central Valley (Placer County 2004).

Elsasser continued research along both the east and west sides of the Sierra crest and provided additional data to aid in characterizing the Martis Complex and defining its possible relationships to other cultural manifestations. In 1960, he published the results of excavations at three Martis Complex sites: CA-NEV-15, CA-SIE-20, and 26-DO-12. The excavation of these sites expanded the “territory” of the Martis Complex to include the upper elevations of the western slope of the Sierra Nevada. Elsasser suggested that Martis people most likely hunted large, seasonally migratory animals, such as deer and antelope, which they followed between the lower and higher elevations of the Sierra Nevada. Elsasser also emphasized the expanding and apparently widespread distribution of the Martis Complex across the mid-elevations of the Sierra Nevada (Placer County 2004).

Elsasser presented three possibilities for the areal distribution of the Martis Complex:

- It was a high altitude or summer manifestation of a culture that was centered farther out in the Great Basin, to the east; this perhaps had ultimate roots in the Southern California deserts.

- The same as above, except that the center or point of origin was in Central California, during Middle Horizon times.
- It was an essentially autochthonous culture, i.e., one that developed in the Sierra Nevada without strong reference to cultures on either side of the Sierra (Placer County 2004).

Elston et al. augmented the work of Heizer and Elsasser by exploring the relationship between the Martis Complex, the Kings Beach Complex, and the historic Washoe. The Kings Beach Complex is commonly divided into two periods: Early Kings Beach (1,300–700 BP), characterized by Rosegate Series points; and Late Kings Beach (700–150 BP), characterized by Desert Series Points. Early Kings Beach is thought to represent the initial phase of the Washoe ethnographic pattern (Placer County 2004).

### **Ethnography**

Before the arrival of Euro-Americans in the region, California was inhabited by groups of Native Americans speaking more than 100 different languages and occupying a variety of ecological settings. Kroeber and others recognized the uniqueness of California Native Americans and classified them as belonging to the California culture area. Kroeber further subdivided California into four subculture areas: Northwestern, Northeastern, Southern, and Central. The Central area encompasses the current project area, but does not include the Washoe, who are considered to be members of the Great Basin culture area. Kroeber however, states that California and the Great Basin are regions of close cultural kinship that should be joined into a larger culture area (Placer County 2004).

The Washoe historically inhabited the region east of the crest of the Sierra Nevada into the Carson Valley, extending from the Walker River in the south to Honey Lake in the north, with peripheral territory extending to the mid-elevations of the west Sierra slope. The Washoe speak a Hokan language and are the only Great Basin group to speak a non-Numic language. Kroeber and Downs postulate an early relationship, prior to 4,500 years ago, between the Hokan-speaking Washoe and other Hokan-speaking groups in California (Placer County 2004).

The contemporary Washoe have developed a Comprehensive Land Use Plan. It includes goals of reestablishing a presence within the Tahoe Sierra and revitalizing Washoe heritage and cultural knowledge, including the harvest and care of traditional plant resources and the protection of traditional properties within the cultural landscape. The Washoe regard all “prehistoric” remains and sites within the Truckee Basin as being associated with their history.

### **Social Organization**

The basic social and economic group for the Washoe was the family or household unit. Washoe households were somewhat loosely combined to form villages, referred to as *bunches* by Downs. The size and composition of bunches varied considerably, depending on environmental and interpersonal conditions. Downs states that the winter camp or village of several households seemed to be the basis for the bunch, but several villages located in close proximity to one another might also be considered a bunch. Each bunch had a headman or chief, which seems to have been a hereditary position passed on through either parent. During prehistoric and early historic times, however, there was never a single chief for all Washoe (Placer County 2004).

## ***Settlement and Subsistence Patterns***

The Washoe practiced seasonal transhumance, moving from one area or elevation to another to harvest plants, fish, and hunt game across contrasting lifezones that are in relatively close proximity to each other. The Washoe ranged across a rather extensive area that included jointly shared territory (e.g., areas claimed by both Nisenan and Washoe) whose entry was subject to traditional understandings of priority of ownership and current relations between groups (Placer County 2004).

## ***Material Culture and Technology***

The Washoe built two basic structures: the winter house, which consisted of a conical framework of poles covered by overlapping slabs of cedar and/or other conifer bark, with a short covered doorway or vestibule; and the summer brush house, which varied from a simple low enclosure resembling a windbreak to a completely covered, dome-shaped house. They also constructed covered fishing platforms over streams that were often described as floating houses by observers. In addition, the Washoe built sweat lodges and large earth-covered dance houses, but there is disagreement regarding whether or not these structures were regularly constructed before the historic period (Placer County 2004).

The Washoe commonly used flaked and ground stone tools including knives, arrow and spear points, club heads, arrow straighteners, scrapers, rough cobble and shaped pestles, bedrock mortars, and grinding stones (metates). Wood was also used for a variety of implements including both simple and sinew-backed bows, arrow shafts and points, looped stirring sticks, flat-bladed mush paddles, pipes, and hide preparation tools. Cordage was made from plant material and was used to construct fishing nets and braided and twined tumplines. Soaproot brushes were commonly used during grinding activities to collect meal and/or flour. Baskets were also manufactured and used for a variety of purposes from carrying items to storing food resources (Placer County 2004).

## ***Intergroup Relations***

The Washoe frequently interacted with the Nisenan and Northern Sierra Miwok as trading partners, at communal ceremonial gatherings, and in armed conflict (often as a result of perceived territorial encroachment). In fact, the ethnographic literature, particularly in reference to the Nisenan, reports rather regular hostilities between Hill and Valley Nisenan, Nisenan and Washoe, and Nisenan and Sierra Miwok. Most interactions among the three ethnographic groups, however, appear to have been civil and friendly in nature. For example, Beals states that the Nisenan and Washoe along the South Fork of the American River frequently interacted and often met for “Big Times” near Kyburz and Myers Station. The Washoe also traveled to Miwok territory during the summer, and often wintered on the west side of the Sierra Nevada. This scenario is not surprising considering the extreme mobility of the Washoe during their seasonal subsistence patterns. Indeed, Downs states that the Washoe often made long trading trips to the Pacific Coast and San Diego to obtain shellfish and particularly fine obsidian knives (Placer County 2004).

## **History**

### ***Early Settlement***

The history of the Truckee community began with the arrival of Joseph Gray, who built a stage station near the present-day downtown in 1863. Gray was soon joined by a blacksmith named

S. S. Coburn, and the fledgling settlement of Gray's Toll Station was renamed Coburn's Station. This tiny way station grew from two structures into a thriving town that accommodated emigrants, stagecoach travelers, and freight wagons en route westward to California's gold fields and eastward to the Comstock Lode in Nevada. In 1868, Coburn's Station burned and the name was changed to Truckee. The completion of the transcontinental railroad in 1868 gave rise to other developments in transportation, lumber, ice, agriculture, and tourism, which were to become the essential economic bases of Truckee (Placer County 2003).

Throughout most of the nineteenth century, Truckee thrived on the related fields of lumber, railroading, and ice. By the 1920s, this industrial economy and society had largely disappeared, due to the relocation of the train-switching yard to Roseville, the depletion of local timber supplies, and the development of mechanical refrigeration. In its place, the community began to develop a recreation-based economy, boosted by the completion of a good state highway over Donner Summit. The 1960 Winter Olympics at nearby Squaw Valley secured Truckee's position as a center point for year-round recreation. In 1993, Truckee was incorporated as a town (Placer County 2003).

Virtually all of the Town of Truckee is considered moderately to extremely sensitive with regard to the presence of cultural resources. The downtown is home to a high concentration of structures that have historical significance. The area consisting of Donner Pass Road, Jibboom Street, Bridge Street, Church Street, and East and West River Street comprise the commercial and early residential area of Truckee. The downtown area is formed around the Southern Pacific railroad line that runs through the heart of the town. The Truckee station was an integral part of the first transcontinental railroad and became an important hub of train service for the western United States (Placer County 2003).

### ***Transportation***

Some of the first Euro-American visitors to the Truckee area were members of the Stephens-Murphy-Townsend Party, who ascended the Truckee River in mid-November of 1844. Subsequent emigrant travelers followed an alternate route to avoid the rugged Truckee River Canyon, leaving Nevada in the vicinity of Dog Valley and then angling back down to the Truckee River east of the route of present-day State Route 89. This route later became known as the Truckee Route of the Emigrant Trail (Placer County 2003).

The Emigrant Trail was a route that thousands of people followed in order to reach California or Oregon. Between the years 1841 and 1869, it is estimated that 300,000 to 500,000 individuals traveled 2,000 miles across the continent to California or Oregon in search of a new life or gold. A portion of the Emigrant Trail follows a route through the Truckee Basin. The trail passes through Truckee and continues toward Donner Lake. This area is where the ill-fated Donner Party was stranded during a harsh Sierra winter from 1846 to 1847 (Placer County 2003).

In 1864, the Dutch Flat and Donner Lake Wagon Road (DFDLWR) was opened over Donner Pass. The road followed basically the same route through Truckee that the earlier emigrants had followed, entering the northeast end of the town along a present-day dirt road that runs between the Old Truckee Cemetery and the Old Catholic Cemetery. This freight and passenger wagon road was situated near the proposed alignment of the Central Pacific Railroad, as it was designed to aid in transporting supplies to points along the line. It formed the final link in a continuous freight and passenger road from Dutch Flat to the Comstock mines near Virginia City. Used as a wagon haul road until 1909, the DFDLWR was rebuilt as an auto and truck road between 1909 and 1915. This new road was renamed the Lincoln Highway in 1915, forming the Verdi-Truckee

link in the nation's pioneer transcontinental automobile highway. In the 1920s, the Lincoln Highway was redesignated the Victory Highway, which subsequently became US Highway 40 in 1925. Travel along Highway 40 was short-lived, as later that year the route was moved into the Truckee River Canyon. Today, Interstate 80 provides a vital east-west route over the Sierra Nevada range (Placer County 2003).

### ***Logging***

Logging was first initiated in the Martis Valley area after the discovery of the Comstock Lode in 1859. The Martis Valley area soon became one of the major lumbering centers. Intensive cutting in the project area commenced in 1863. Lumber mills were prevalent throughout the area with lumber mills located at Hobart, Truckee, the Martis Valley, and the Squaw Valley area. Sawmills owned by George Schaffer were scattered throughout the Martis Valley. Railroad lines were constructed to connect Truckee with the Hobart lumber mill. A narrow gauge line was also constructed between Truckee and Tahoe City to haul freight, forest products, and tourists. Logging continued to be a major industry in the area until the 1920s (Placer County 2003).

### ***Grazing***

The Martis Valley Community Plan area has historically been used for cattle grazing. The meadows provided feed for cattle herds from the Sacramento Valley during the hot summer months. The historic Joerger Ranch is located between Schaffer Mill Road and State Route 267 north of the Lahontan development (Placer County 2003).

### ***Charcoal Production***

Charcoal production formed an important adjunct to the lumber industry. The organization of Sisson, Crocker & Company was created in 1866 at Truckee exclusively for the purpose of importing Chinese labor for railroad construction. With the completion of the railroad, the Chinese immigrants were channeled to the lumber industry, among other occupations. Such engagement forced immigrant Chinese into direct competition with Euro-Americans. Subsequent anti-Chinese sentiment resulted in the initial expulsion of Chinese from Truckee in 1878 and the ultimate demise of Truckee's Chinese community in 1886. Between those dates, the project area and adjoining lands were apparently under the ownership of Sisson, Crocker & Company, who employed large numbers of Chinese in the production of charcoal to supply the railroad and the smelting works of Nevada and Utah (Placer County 2003).

### ***Ice Production***

Truckee played an important role as an ice production area for the transcontinental railroad from the 1880s until the early 1900s. Truckee was a vital railroad switching yard, and the cold climate of the Martis Valley allowed for perishable goods on board trains to be packed with ice before being shipped east across Nevada or west toward Sacramento. The ice industry came to an abrupt halt with the introduction of mechanized refrigeration (Placer County 2003).

### ***Recreation***

Skis, which were once the only available means of winter transportation, are now a major form of winter recreation. "Snowshoe" racing, on skis 14 feet long, first became a popular sport during the 1860s. The Truckee Basin contains several winter recreational resorts. Squaw Valley, the oldest ski operation in the area, was started in 1947 and was the home of the 1960 Winter

Olympic Games. The Martis Valley Community Plan area contains the Northstar California resort that provides skiing as well as year-round recreational opportunities (Placer County 2003).

### **Known Cultural Resources**

#### ***Prehistoric Resources***

While several prehistoric sites and resources have been identified, there is a high probability that many additional cultural resources remain undiscovered in the project region. A comprehensive cultural resources inventory was completed by the Placer County Department of Museums. Phase III of the Placer County Cultural Resources Inventory focused on unincorporated areas of the county, including the Martis Valley. While this survey did not indicate that prehistoric resources had been located in the Martis Valley Community Plan area, it is a well-known fact that the Martis Valley was home to the Washoe people. Prehistoric campsites, lithic scatters, and bedrock milling stations are known to be present throughout the area. Many sensitive resource sites are adjacent to waterways and meadow areas (Placer County 2003).

A cultural resources record search was requested of the North Central Information Center (NCIC) at California State University, Sacramento. Using the information from the NCIC record search, the following prehistoric cultural resources have been identified in the project area.

The Cultural Resources Baseline Data for Northstar-at-Tahoe (KEA 2001) indicated eight prehistoric sites in the Northstar California project area. Most of the prehistoric remains consist of isolated artifacts such as single projectile points or flakes. The sections where the prehistoric resources were discovered exhibit relatively level ground and close proximity to at least seasonal water sources. Both of these features are consistently present on most prehistoric archaeological sites. Most of the terrain on the Northstar property is steep, rocky slope that is not attractive for a living environment and consequently was most likely infrequently occupied or visited by prehistoric peoples (Placer County 2003). The following resources were found to be prehistoric in nature near the proposed Northstar Mountain Master Plan (NMMP) project- and program-level components:

- (NS-32) Sawmill Flat Site I
- (NS-35) Sawmill Flat Site II
- (NS-36) Sawmill Flat Site III
- (NS-38) Sawmill Flat Prehistoric Isolates
- (NS-29) Sawmill Flat Site IV
- (NS-16) Middle Martis Creek Site I
- (NS-18) Middle Martis Creek Site II
- (NS-20) Middle Martis Creek Site III
- (NS-21) Middle Martis Creek Site IV
- (NS-43) Backside Prehistoric Site

## Northstar Mountain Master Plan EIR

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- (NS-44) Backside Prehistoric Isolate Flake
- (NS-46) Backside Prehistoric Site
- (NS-47) Sawtooth Ridge Isolate Flake
- (NS-48) Mount Pluto Isolate Flake

### **Historic Resources**

Properties of historical importance in California are currently designated as significant resources in three state registration programs: State Historical Landmarks, Points of Historical Interest, and the California Register of Historic Places. Below is a list of three State Historical Landmarks in the region (Placer County 2003).

- No. 134 Donner Monument (or) Pioneer Monument: Located at Donner Memorial State Park, Old Highway 40 at Interstate 80 and Truckee exit, Truckee, the memorial commemorates the ill-fated Donner Party of California-bound emigrants, who wintered here in 1846–1847. Many of the party died of exposure and starvation.
- No. 780-6 First Transcontinental Railroad, Truckee: While construction on Sierra tunnels delayed the Central Pacific Railroad, advance forces at Truckee began building 40 miles of track east and west of Truckee, moving supplies by wagon and sled. The Summit Tunnel was opened in December 1867. The line reached Truckee on April 3, 1868, and the Sierra was conquered. Rails reached Reno on June 19, 1868, and construction advanced eastward toward the meeting with the Union Pacific Railroad at the rate of 1 mile daily. On May 10, 1869, the rails met at Promontory, Utah, to complete the first transcontinental railroad. The site is located at the Southern Pacific Depot, 70 Donner Pass Road, Truckee.
- No. 724 Pioneer Ski Area of America, Squaw Valley: The VIII Olympic Games of 1960 commemorated a century of sport skiing in California and took place at Squaw Valley Sports Center, northeast corner of Blyth Olympic Arena Building, Squaw Valley Road, Squaw Valley. By 1860, the Sierra Nevada, particularly at the mining towns of Whiskey Diggings, Poker Flat, Port Wine, Onion Valley, LaPorte, and Johnsville, some 60 miles north of Squaw Valley, saw the first organized ski clubs and competition in the western hemisphere.

There is one National Historic Landmark in the region: Donner Camp located at Donner Memorial State Park, National Register Number 66000218. This site is a memorial to the Donner Party. In the winter of 1846–1847, a group of 89 California-bound emigrants led by Jacob and George Donner was trapped by the heavy snows of the High Sierra. Bitter cold and dwindling food supplies reduced the wagon train to a group of desperate individuals unable to cooperate, driven to terror and degradation. Four relief expeditions eventually rescued 47 of the party (Placer County 2003).

The Northstar-at-Tahoe North Lookout Ski Pod Project Final Environmental Impact Report indicates that the project area's likelihood to contain historic resources is considered moderately high. Sawmills, logging roads, skidways, and wood camps associated with logging are the principle historical sites. The Cultural Resources Baseline Data for Northstar-at-Tahoe prepared by KEA Environmental (2001) identifies historic resources on the Northstar California property. In general,

these features are located in two main areas near the eastern extent on Northstar property. One group of resources is located near the Middle Martis Creek drainage, which includes several sections of logging roads, a cabin site, and sections of the Richardson Brothers railroad grade, which would have been associated with the Richardson Brothers logging operations. The second cluster of sites is found on Sawmill Flat near the Sawmill Flat Reservoir. Present in this area is a large section of the Richardson Brothers log chute, associated supply depots, and two structures that may have been related to the logging operation or served as hunting cabins in the early years of the twentieth century (Placer County 2003). The following are the identified historic resources near the proposed NMMP project- and program-level components:

- (NS-1) Richardson Brothers Log Chute
- (NS-1 contd.) Richardson Brothers Log Chute & Railroad Grade
- (NS-2) Beaver Pond Aspen Carvings
- (NS-7) Richardson Brothers Railroad Grade
- (NS-4, NS-9) Logging Road Sections
- (NS-11) Terry's Cabin
- (NS-12) Terry's Cabin Stone Wall
- (NS-13) Sawmill Flat Cabins
- (NS-29) Sawmill Flat Historic Scatter, Site IV
- (NS-50) Backside Mine
- (NS-27) Middle Martis Mining Feature
- (NS-8, 9) Middle Martis Logging Roads
- (NS-24) Old Brockway Road
- (NS-42) Schaeffer Log Chute and Cabins
- (NS-45) Backside Carving
- (NS-51) Sawtooth Ridge Tree Blazes

The Historic Brockway Road Grade has partial pavement remaining. It runs parallel to the present-day State Route 267 for approximately one-half mile before disappearing in road fill from the present route (Placer County 2003).

### **Native American Coordination**

A sacred lands search and a list of Native American contacts were requested from the Native American Heritage Commission, and formal requests for Native American consultation (as required under Senate Bill 18) were made on April 29, 2013.

**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**  
**Department of Public Works**

**Second Revision**  
**August 31, 2010**



## 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 and were considered by the Director of Planning and Land Use, in coordination with the Director of Public Works on the August 31, 2010.



---

ERIC GIBSON  
Director of Planning and Land Use



---

JOHN SNYDER  
Director of Public Works

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 have hereby been approved by the Deputy Chief Administrative Officer (DCAO) of the Land Use and Environment Group on the 31<sup>st</sup> 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.

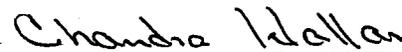
Approved, August 31, 2010

Text

Approved  
March 19, 2007

First Revision  
December 19, 2008

Second Revision  
August 31, 2010



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**COUNTY OF SAN DIEGO**

**GUIDELINES FOR DETERMINING SIGNIFICANCE**

**WILDLAND FIRE AND FIRE PROTECTION**



**LAND USE AND ENVIRONMENT GROUP**

**Department of Planning and Land Use**  
**Department of Public Works**

**Second Revision**  
**August 31, 2010**

## **EXPLANATION**

These Guidelines for Determining Significance for Wildland Fire and Fire Protection 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.

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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, XVII. 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.

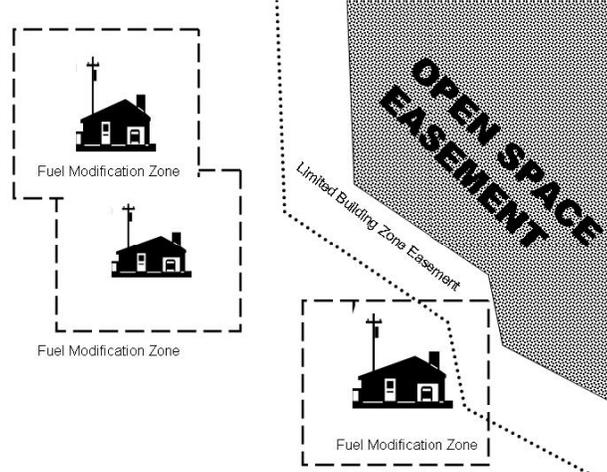
#### **1.1.5 Flame Impingement**

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. 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. Fuel management includes keeping the area clear of flammable man-made materials and managing the vegetation to reduce its flammability. Vegetation management begins with correctly spacing plants to reduce fire risks to the home, and then by watering, pruning and thinning the vegetation regularly. The landscaping around a house in the WUI must be maintained. Defensible space reduces fire speed, intensity, and flame lengths, and limits the spread of a wildfire. This area is known as 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 2. 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), County of San Diego, and 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.

It is important to note that the unincorporated area of the County is served by various independent fire districts, County Service Areas 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/index.asp>) The National Fire Protection Association (NFPA) Standards are a product of the National Fire Protection Association (NFPA), a world-wide organization of fire industry, fire agencies, fire professionals and concerned individuals. These model standards are annually compiled from the standards, recommended practices, manuals, guides, and model laws that are prepared by the individual technical committees of the NFPA. Most are revised on a three-year cycle. The published standards are voted on by the members of the NFPA. The individual standards can be adopted by jurisdictions or modified and adopted as that jurisdiction's ordinance.

## 2.2 State Regulations and Standards

*[[Regulation]]*

**California Environmental Quality Act and Guidelines** [Public Resources Code, §§ 21000-21178; Guidelines for Implementation of CEQA, California Code of Regulations, Title 14, §§15000-15387, Appendix G.] Consideration of impacts relating to wildland fires is required by CEQA. The CEQA Guidelines are concerned with assessing impacts associated with exposing people or structures to wildland fires.

*[[Regulation]]*

**California Building and Fire Codes** [California Code of Regulations, Title 24 parts 2 & 9, <http://osfm.fire.ca.gov/>] Title 24 contains several International Codes that address fire

safety including the International Fire Code, International Building Code. Additional safety regulations adopted by the California Building Standards Commission include the Uniform Mechanical Code, and Uniform Plumbing Code, which are also part of the California Code of Regulations.

*[[Regulation]]*

**California Code of Regulations Title 14 (SRA Fire Safe Regulations)** contains regulations that establish minimum wildfire protection standards in conjunction with building construction and development in the State Responsibility Area (SRA). Over 90 percent of the unincorporated area of the County is located within the SRA. The County has authority to approve subdivisions and issue building permits and, therefore, is the “inspection authority” authorized in Title 14 “SRA Fire Safe Regulations”. However, since the state Board of Forestry and Fire Protection certified the County Fire Code and Consolidated Fire Code under 14 CCR section 1270.03, the County Fire Code and Consolidated Fire Code apply in lieu of the SRA Fire Safe Regulations.

*[[Regulation]]*

**California Code of Regulations Title 19 (State Fire Marshal)** contains regulations that have been developed by the State Fire Marshal for the purpose of establishing additional fire protection for group occupancies, such as places of assembly, schools, high rise buildings, hospitals and organized camps.

## **2.3 Local Regulations and Standards**

*[[Regulation]]*

**County of San Diego Building and Fire 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 Fire Code and 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) [http://www.sdcounty.ca.gov/dplu/docs/2009\\_Consolidated\\_Fire\\_Code.pdf](http://www.sdcounty.ca.gov/dplu/docs/2009_Consolidated_Fire_Code.pdf). The County Consolidated Code is based on the County Fire Code and incorporates local fire district fire codes as ratified by the Board of Supervisors into a single document. The County Consolidated Fire Code includes notations where the local fire district(s) requirements differ from the County Fire Code. The County Consolidated Fire Code is the current fire regulations approved by the Board of Supervisors that apply in the various fire districts. The County Consolidated Fire Code has been certified by the California Board of Forestry and Fire Protection for use in lieu of “SRA Fire Safe Regulations” in CCR title 14.

**Memorandum of Understanding** Agreement between the United States Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), California

Department of Forestry and Fire Protection (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 fire agencies can continue to require abatement of flammable vegetation without violating environmental regulations for the protection of habitats and species.

*[[Regulation]]*

**Combustible Vegetation and Other Flammable Materials Ordinance** [San Diego County Code of Regulatory Ordinances, section 68.401 et seq., Removal of Combustible Vegetation and Other Flammable Materials, <http://www.amlegal.com>] This ordinance addresses the accumulation of weeds, rubbish, and other materials on private property found to create a fire hazard and be injurious to the health, safety, and general welfare of the public. The ordinance finds that the presence of such weeds, rubbish, and other materials is a public nuisance, which must be abated in accordance with the provisions of this ordinance.

**Local Fire Agencies' Ordinances.** Certain codes like the Fire Code can be amended to be more restrictive than state regulations based upon local climatic, geological and topographical features that can have a significant effect on fire protection and emergency services. These amendments are based on fire agencies' findings and local conditions within the County of San Diego. Per state law, local fire district fire code amendments are effective only after they are ratified or modified by the Board of Supervisors. Health and Safety Code, section 13869.7(a) and (c).

### 3.0 TYPICAL ADVERSE EFFECTS

Generally, 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 built without ignition-resistive construction, interior fire sprinklers, and/or sufficient water supply (volume) and pressure;
- Inadequate access and evacuation options;
- 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, or confirmation of 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 wildland fire regulations. Since the applicable regulatory requirements for a project will differ based on use type and extent of the WUI, all discretionary projects may be required to prepare a Fire Protection Plan (FPP) designed to assess a project's compliance with current regulatory codes and ensure that impacts resulting from wildland fire hazards

have been adequately mitigated. The FPP describes ways to minimize and mitigate the fire problems created by the project or development.

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 DPLU maintains a list of persons currently authorized to prepare FPPs for projects within its jurisdiction.

The authority to require FPP can be found in the County Fire Code and the County Consolidated Fire Code.

Examples of regulatory requirements that a project will be required to meet include the California Code of Regulations and County 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.

Because project site constraints vary from property to property, fire codes provide for modifications when the following requirements are met:

- Special individual reasons make the strict letter of the code impracticable;
- The modification is in compliance with the intent and purpose of the code; and,
- Such modification does not lessen health, life and fire safety standards.

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 applies to all projects that are required to model fire behavior in mature vegetation on and near the site (Fire Behavior Modeling) as part of its Fire Protection Plan. 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 fire fighting 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 obtain a Project Facility Availability Form (DPLU Form #399F) that is to be completed and signed by the Fire Authority Having Jurisdiction (FAHJ) prior to formally submitting the project application to the County. 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 fireflow 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, DPLU-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.

#### **4.1 FIRE PROTECTION PLANS**

A Fire Protection Plan 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**

Fire Protection Plan 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 DPLU 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 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 DPLU 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, DPLU will not accept the plan.

The County Fire Code and the County Consolidated Fire Code include 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, DPLU will assume that the FAHJ has no

comments on the proposed Fire Protection Plan. DPLU 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 fire fighting. Travel time may be calculated by using NFPA 1142 Table C.11(b), SANDAG layering, DPLU-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 Planning and Land Use 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 Fire Code and 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 Fire Code and 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

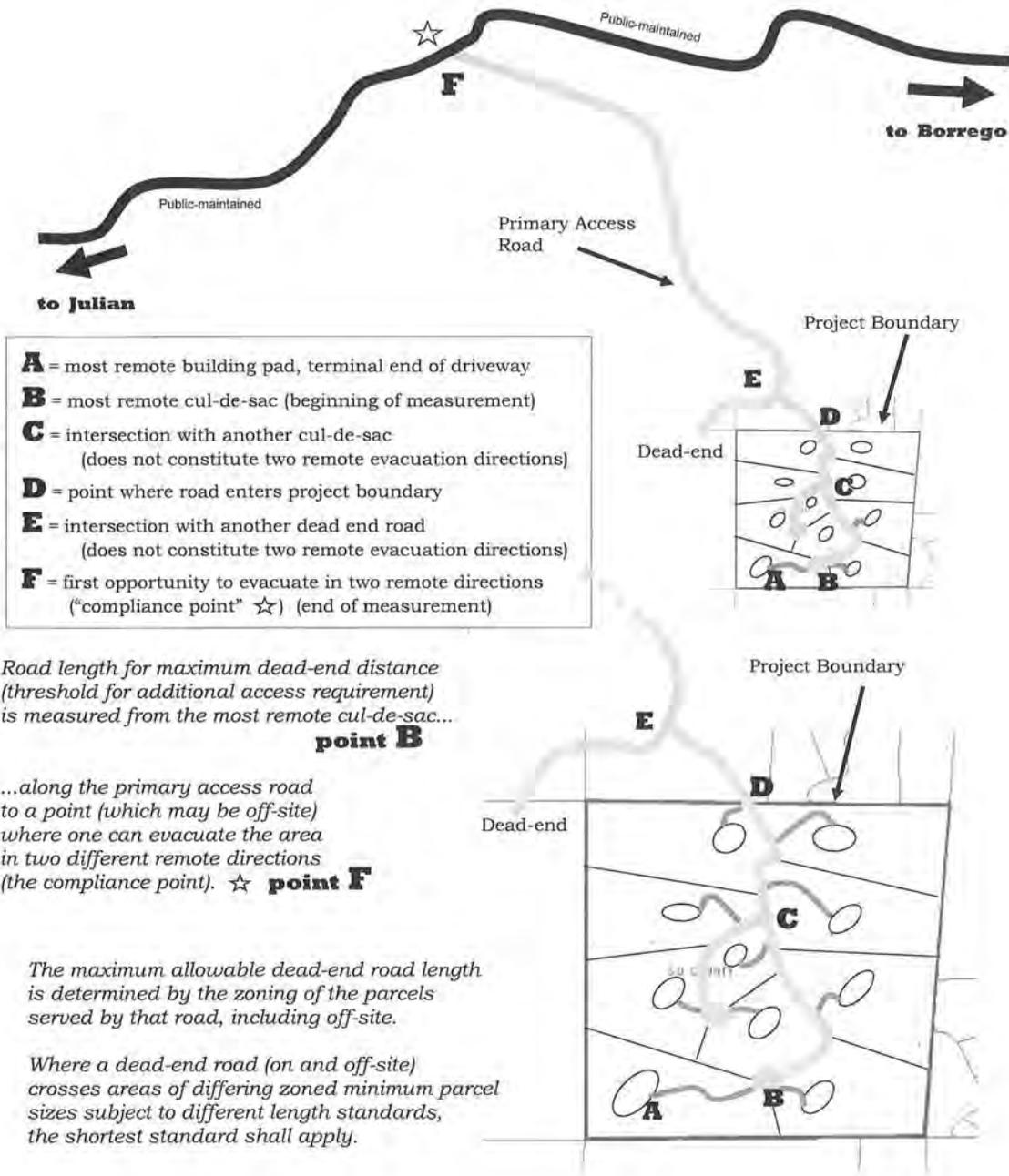
The intent of limiting the allowable length of a dead-end road is to ensure that firefighters have access flexibility to deal with changing dynamics in wildfires and other emergencies, and that civilians have safe, reliable and known evacuation alternatives during emergencies.

In part, the concept of dead-end road regulations relates to limiting the number of persons attempting to evacuate on the road and to limiting 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 Fire Code and County Consolidated Fire Code.

**Figure 3**  
**Guidance for Determining Primary Access Road Length**



## **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, County Fire Code 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. 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 Fire Code and 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. An example of an exception would include a short (e.g. 100 feet) section of slightly more than 20% grade where the road is relatively straight before, during and after the exception, line-of-sight is maintained, and fire engine speed can be maintained. The grade requirement is based largely on the ability of an engine to get proper traction at a standstill and, to a lesser degree, on the potential for fire hose or other equipment to spill out of the engine because of extremes in grade.

## **5.2.4 Fire Access Road Surface Type**

### 5.2.4.1 Applicable Code/Regulations

County Fire Code and 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 Fire Code and County Consolidated Fire Code

##### 5.3.1.2 Applied Standards

Full compliance with the code. (Exceptions are identified in 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 Fire Code and 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, County Fire 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 and Pines Fires that defensible space is a critical factor of structure survival. By ensuring defensible space around structures, fire fighting 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 in an effort to reduce the build-up of combustible vegetation and require adequate fuel modification around structures.

### **5.5.1 Fuel Modification and Setback from Property Line**

#### 5.5.1.1 Applicable Code/Regulations

Chapter 4 of Division 8 of Title 6 of the San Diego County Code, Section 68.40 – Removal of Combustible Vegetation and other Flammable Materials;

County Fire Code and County Consolidated Fire Code

California Public Resource Code section 4291

#### 5.5.1.2 Applied Standards

Projects located in a Hazardous Fire Area need to include Fuel Management Zones (FMZ) surrounding all structures that are designed for human habitation or use or a building designed specifically to house farm animals. An FMZ is a 100-foot area surrounding and extending in all directions from all structures, in which all flammable vegetation or other combustible growth is managed to reduce the threat from wildfires.

The County and FAHJ may require additional FMZ or allow for modifications to the FMZ depending upon unique site characteristics. For example:

- 1) The FMZ 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, the FMZ 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 in FMZs are provided in:

- The County Fire Code (<http://www.amlegal.com>)
- "Fire, Defensible Space *and* You..." ([http://sdcountry.ca.gov/dplu/fire\\_resistant.html](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 Design Strategy – Sheltering

Shelter-in-Place Strategy. **Shelter-in-Place is a possible design concept with early relocation (early evacuation) of residents to a safe location being the preferred action.** All of the following minimum design standards must be implemented in order to qualify for consideration of a Shelter-in-Place concept. Additional standards, or modification to the standards below, may be required by the FAHJ or the Director of Planning and Land Use.

- The primary access roadway should meet or exceed minimum fire code requirements (in terms of width, paving, posting, etc.), and have no potential constraints or bottlenecks on or off-site until it reaches two directions of egress from the area;

- All new structures within the entire proposed project, regardless of distance to property line or WUI area, should be built using Ignition-Resistant Construction (County Building and Fire Codes), including fire sprinklers;
- The project should be designed with adequate and properly managed Fuel Modification Zones and properly maintained ornamental landscaping consistent with the County’s Landscape Ordinance and Landscape Design Manual.
- The developer must provide evidence that resources exist to adequately and consistently enforce fuel management regulations for the life of the project (a funding mechanism should be implemented to ensure fire agency enforcement staffing in perpetuity);
- The developer must provide evidence that resources exist to provide substantial and effective annual public outreach to educate residents on fire safety and emergency response for the life of the project (a funding mechanism must be implemented to ensure fire agency has staffing for public education in perpetuity);
- Any flammable vegetation/habitat areas that are proposed within a shelter-in-place development should be carefully studied and evaluated as part of the FPP.
- Shelter-in-Place is more appropriate for projects that have a strong form of supervision and leadership, frequent and on-going fire safety training and drills, abundant fire safety measures, and full site management that is accountable for maintaining fire safety measures. Examples include organized camps or similar uses that can be regulated via an ongoing discretionary permit.

## **5.7 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. 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.

- 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 fireflow as prescribed in the fire code.
- An adequate fuel management zone 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.

### **5.7.1 Required Findings for Alternatives to Standards**

Certain site-specific situations may make the strict adherence to the County Fire Code or County Consolidated Fire Code either impracticable or infeasible. The fire code official is authorized to approve a modification to the fire code requirements, such as an alternative material or method of construction, where the fire code official finds that the proposed design is satisfactory and complies with the intent of the provisions of the code. If a modification is proposed, the requirements of the County Fire Code and County Consolidated Fire Code specific to modifications apply. Documentation of the modification must appear not only in the FPP, but also in the files of the FAHJ as

prescribed in the Fire Code. The modification must be supported by “findings” including the following:

- That special individual reasons that make the strict letter of the code impracticable;
- That the modification is in compliance with the intent and purpose of the code; and,
- A map showing the proposed location of the mitigation/exception measures.
- That such modification does not lessen health, life and fire safety standards.

### **5.7.2 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.

- 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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## [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 Fire Code, 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.

Second Revision, August 31, 2010

- Updated to incorporate changes to the County Fire Code and 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**

**Department of Planning and Land Use**  
**Department of Public Works**

**Second Revision**  
**August 31, 2010**

## **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:

- Fire Protection Plan (Full Report)  
May be required, pursuant to the County Fire Code and County Consolidated Fire Code, for larger 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)  
May be required in conjunction with a Fire Protection Plan (Full Report) for larger projects and/or projects with high fuel loads and/or steep topography.
- Fire Protection Plan (Letter Report)  
Can be authorized by the County for projects that are located within the State Responsibility Areas and limited to infill projects with virtually no wildlands in the immediate vicinity. The FPP – Letter Report fulfills the requirements of the County Fire Code and 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 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 Fire Code and 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 THE DEPARTMENT OF PLANNING AND LAND USE (DPLU).**

## **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 Fire Protection Plan 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 Fire Protection Plan – Full Report Outline

#### BINDER COVER & COVER PAGE

The Cover Page of the FPP Full Report 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 Fire Protection Plan shall include the following introductory language:

This Fire Protection Plan (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.

#### 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 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
- Fireflow in mains in wildland areas for new development must be a minimum 2500 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 Fire Code or Consolidated Fire Code

#### **4.4 Ignition-Resistant Construction and Fire Protection Systems**

- County Building Code specifies construction standards for all structures located within the Wildland-Urban Interface 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 (if required)
- Completed and signed form “DPLU #399F – Project Facility Availability Form for Fire”

## **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 DPLU's 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.nwccg.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 15<sup>th</sup> through December 31<sup>st</sup> was chosen to represent the general limits of the fire season. Fires have occurred between January 1<sup>st</sup> and April 14<sup>th</sup>, 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 15<sup>th</sup> and ending September 15<sup>th</sup>.

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 15<sup>th</sup>. 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 99<sup>th</sup> percentile wind speed, adding this difference to the 99<sup>th</sup> 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 99<sup>th</sup> 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**

<b>Zone</b>	<b>Period</b>	<b>Temperature</b>	<b>Relative Humidity</b>	<b>Sustained Wind Speed</b>	<b>Burning Index (99%)</b>	<b>Rate of Spread Feet/min</b>	<b>Flame length</b>
<b>Maritime</b>	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
<b>Coastal</b>	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
<b>Transitional</b>	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
<b>Interior</b>	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
<b>Desert</b>	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**

<b>Zone</b>	<b>Period</b>	<b>Temperature</b>	<b>Relative Humidity</b>	<b>Sustained Wind Speed</b>	<b>Burning Index (99%)</b>	<b>Rate of Spread Feet/min</b>	<b>Flame length</b>
<b>Maritime</b>	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
<b>Coastal</b>	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
<b>Transitional</b>	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
<b>Interior</b>	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
<b>Desert Chaparral</b>	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**

<b>Zone</b>	<b>Period</b>	<b>Temperature</b>	<b>Relative Humidity</b>	<b>Sustained Wind Speed</b>	<b>Burning Index (99%)</b>	<b>Rate of Spread Feet/min*</b>	<b>Flame length*</b>
<b>Maritime</b>	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	-	-	-
<b>Coastal</b>	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	-	-	-
<b>Transitional</b>	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	-	-	-
<b>Interior</b>	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
<b>Desert</b>	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 Fire Protection Plan – Letter Report Outline

The Fire Protection Plan (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 Letter Report FPP 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 Full FPP Report 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 the DPLU Fire Service Section at (858) 694-2960.

*(Date)*

County of San Diego  
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 Fire Protection Plan (FPP) – Letter Report is submitted pursuant to the County Fire Code and 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 and 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 Fire Code and 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).

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



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# Massive explosions rock Florida propane plant (PHOTOS, VIDEO)

Published time: July 30, 2013 04:02  
 Edited time: July 31, 2013 09:13

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◀ 342    ◀ 28

A series of gas explosions at a LP tank exchange plant in Lake County, Florida has injured at least 7 people. Witnesses said vibrations from the powerful blasts could be felt several towns over.

Tags  
[Accident, USA](#)

The series of explosions began at about 10:30 p.m. local time. According to the Orlando Sentinel, witnesses compared the sound to fireworks or loud shotgun fire. Apparently the initial blasts completely destroyed the two large LP storage tanks, which the plant used to refill smaller backyard tanks.

*"I heard a loud bomb sound,"* said Lisa Garner, who lives nearby in the Tavares subdivision of Lakeside. *"I thought somebody ran into my house."*

A night shift crew of 24 to 26 people was at the plant when the explosions started, according to Lt. John Herrell, a Lake County Sheriff's Office spokesman. All of them have been accounted for, although there is slight chance that somebody was present at the facility without the management knowing about it he said.

Seven crew members injured in the incident have been transported to hospital while two or three others sought out medical treatment on their own accord. The others escaped the explosions unharmed, Herrell said.

Authorities announced a mile-radius evacuation following reports of the plant fire. The evacuation zone was reduced to a half-mile radius hours later. No injuries were reported outside of the propane plant. Residents of roughly 50 homes were affected by the evacuation.

An Orlando Regional Medical Center spokesperson confirmed three burn victims from Blue Rhino had been admitted in critical condition.

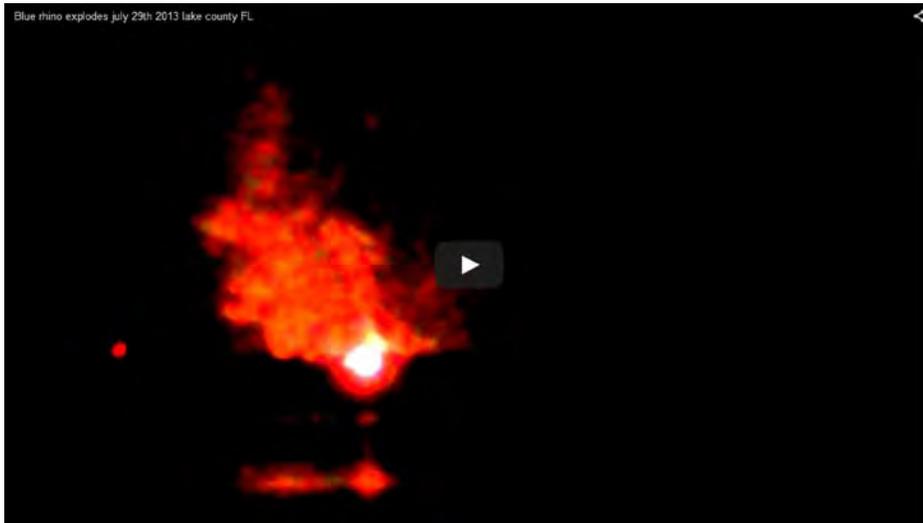
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The massive blaze continued to rage at the facility for at least three hours after the initial explosions. Live footage broadcast by WESH Orlando showed about a dozen trailers storing LP tanks engulfed by the inferno.

Additional explosions were sporadically occurring as individual cylinders blew up due to heat from the fire, sending shrapnel flying. The facility is believed to hold some 53,000 20-gallon tanks in total, according to police.

Firefighters had to keep their distance from the site, limiting their ability to prevent the fire from spreading to the wooded area surrounding Blue Rhino, as it was unsafe for them to approach the plant.



The initial blasts may have been sparked by someone filling their own propane tank when a leak ignited, although police told the Orlando Sentinel that information is unconfirmed.

Blue Rhino, the tank-exchange business, where the explosions took place, moved to Tavares approximately seven years ago. The company is headquartered in North Carolina. County road 448 was closed roughly three miles east.





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 LP Gas Plant In Tavares

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21:44 - 29 июля 2013

10 2



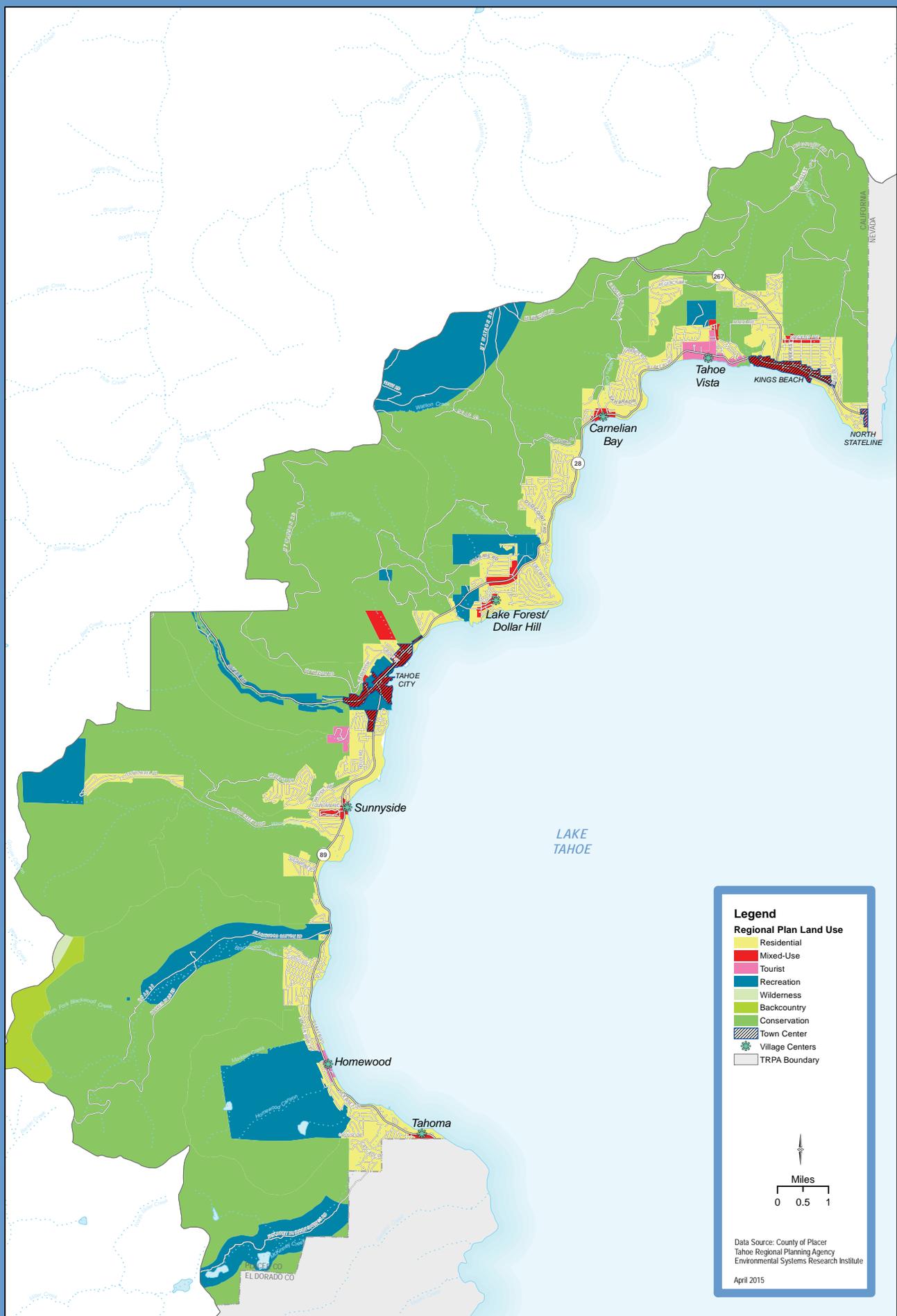
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Reports of mass casualties in Florida where a gas plant is currently engulfed in flames. More details NEXT @9NewsNOW

21:59 - 29 июля 2013





**Legend**

**Regional Plan Land Use**

- Residential
- Mixed-Use
- Tourist
- Recreation
- Wilderness
- Backcountry
- Conservation
- Town Center
- Village Centers
- TRPA Boundary

Miles  
0 0.5 1

Data Source: County of Placer  
Tahoe Regional Planning Agency  
Environmental Systems Research Institute  
April 2015

## 4.6 Town Center Plans

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The Town Center Plans for Tahoe City and Kings Beach share a number of objectives and plan designations, but maintain variations to reflect the unique character and setting of each community. Each Town Center Plan is heavily influenced by the Vision Plans that are summarized in the introduction to this Area Plan. Vision Plan priorities are reflected in the Area Plan Implementing Regulations and the projects described in the Implementation Plan. The Town Center Plans are depicted on Figures 4-6 and 4-7.

The Town Center of North Stateline includes a relatively small area that adjoins and is integrated with larger Town Center properties on the Nevada side of the state line. The Area Plan is focused on Town Center planning efforts within Kings Beach and Tahoe City. A Town Center plan was not prepared for North Stateline. Instead, property owners may continue to operate under existing land use provisions, or may apply for a Special Plan as outlined below to implement the Town Center incentives and address the Regional Plan requirements.



*Recent improvements in the Kings Beach Town Center*

### **Core and Transition Areas**

Each Town Center has Core and Transition areas. Core areas are the center of each community with compact development, continuous sidewalks and improved public spaces. The full suite of Regional Plan incentives apply in these areas.

Transition Areas are located within walking distance of each Core area, but have lower intensity development patterns, incomplete sidewalk networks and fewer public spaces. In accordance with Regional Plan requirements, these areas have transitional building heights (3 stories) and requirements to complete sidewalk (or multi-use trail) connections to core areas prior to or concurrent with projects utilizing the Regional Plan redevelopment incentives.

### **Town Center Zoning**

Town Centers include zoning districts for Mixed Use, Residential and Recreation areas. The zoning ordinances describe the allowed land uses in more detail. Minor Regional Plan land use amendments are also included to be consistent with parcel lines and Town Center boundaries.

## 4.7 Land Use and Community Design Policies

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This section outlines Land Use and Community Design Policies for the Placer County Tahoe Basin Area Plan, which supplement the Regional Plan Goals and Policies.

### LAND USE

- LU-P-1 Continue to implement TRPA policies, ordinances and programs related to land use and development that are in effect.
- LU-P-2 Manage development in accordance with the TRPA growth control system and supplemental programs in this Area Plan, including development rights, IPES, allocations, transfers and conversions.
- LU-P-3 Continue to coordinate with TRPA, the California Tahoe Conservancy, local Public Utility Districts and other agencies to acquire, improve and manage lands for public and environmental purposes.
- LU-P-4 Develop zoning districts consistent with Regional Plan that reflect the unique community characteristics of the Area Plan subareas.
- LU-P-5 Direct development toward Town Centers and preserve the character of surrounding neighborhoods.
- LU-P-6 Direct development away from functioning stream environment zones and other sensitive areas.
- LU-P-7 Require each project seeking an allocation of additional commercial floor area to contribute toward achieving community-wide improvements. Projects shall also be subject to commercial floor area allocation procedures.
- LU-P-8 Coordinate with TRPA on assigning development allocations to the respective Area Plan subarea.
- LU-P-9 Maintain the current allowed densities for areas outside of Town Centers.
- LU-P-10 Encourage public gathering places, outdoor dining, and special event venues.
- LU-P-11 Address parking, transportation, water quality, public access, SEZ restoration, land coverage, and other issues affecting the Plan area through community-wide approaches that encourage redevelopment and maximize attainment of environmental thresholds.
- LU-P-12 Encourage tourist-oriented uses in areas designated as Mixed-Use or Tourist. Prioritize locating tourist retail uses on street and sidewalk frontages.
- LU-P-13 Maintain and enhance open spaces in the Plan area in accordance with Regional Plan goals and policies for Open Space.

- LU-P-14 Projects should include strategies for protecting undisturbed sensitive lands and, where feasible, establishing park or open space corridors connecting undisturbed sensitive areas within Centers to undisturbed areas outside of Centers.
- LU-P-15 Provide areas for passive and active recreation uses and related services to improve public access and enjoyment of Lake Tahoe and the Truckee River.
- LU-P-16 Support efforts to restore disturbed land and improve public access along segments of the Truckee River corridor where access is limited. Where feasible, relocate the multi-use trail to the river frontage.
- LU-P-17 Consider future land use map amendments for non-conforming uses.

### **MIXED USE**

- MU-P-1 Promote the revitalization of Town Centers and Village Centers by encouraging a mixed land use pattern that combines tourist accommodation, residential, commercial, public facilities and public spaces to serve visitors and locals alike.
- MU-P-2 Create distinctive, connected, and walkable districts that have a strong sense of identity.
- MU-P-3 Promote site sensitive design and pedestrian-oriented activities in mixed-use developments.
- MU-P-4 Foster high quality design, diversity, and a mix of amenities in new residential, commercial and tourist accommodation, where appropriate.
- MU-P-5 Establish design standards for mixed-use tourist districts that build on the existing tourist recreation theme with high-quality storefronts designed to attract tourists, and meet the needs of local residents.
- MU-P-6 Support future Regional Plan amendments that promote redevelopment of Village Centers and other mixed use areas that are not included in a Town Center.

### **TOWN CENTER**

- TC-P-1 Reform Town Center development standards to minimize barriers to environmentally beneficial redevelopment in accordance with the Regional Plan.
- TC-P-2 Implement Regional Plan incentives for the transfer of development from sensitive and outlying areas to Town Centers.
- TC-P-3 Establish building height and density standards for Town Centers that support a high-quality, compact, pedestrian-scaled environment.