

**STAFF REPORT TO: AMADOR COUNTY PLANNING COMMISSION  
FOR MEETING OF: November 12, 2019**

**ITEM 5:** Discussion and possible recommendation to the Board of Supervisors regarding a proposed amendment to Chapter 19.50 Design Standards and Findings, by adding Section 19.50.060, “Dark Sky Ordinance” to Amador County Code pertaining to all parcels within the unincorporated County. The amendment proposes regulations for nighttime lighting in commercial and residential districts.

**Applicant:** County of Amador (Zoning Ordinance Amendment ZOA-19;9-1)

**Supervisory Districts:** All

**Location:** The ordinance would apply to all applicable portions of the unincorporated area of Amador County which utilize artificial lighting sources as described herein.

**A. BACKGROUND:** On March 23, 2018, the Board of Supervisors approved a Settlement Agreement (attached) to resolve litigation regarding the County’s 2016 adoption of the Amador County General Plan and certification of the General Plan Environmental Impact Report. The Agreement includes the requirement for the County to draft a proposed Dark Skies Protection Ordinance (Settlement Agreement Term D), to be considered by the Board of Supervisors by March 27, 2020.

This draft ordinance was first presented to the Planning Commission on October 8, 2019 and the item was continued to the next scheduled Planning Commission for public review, November 12, 2019.

The proposed draft ordinance intends to satisfy Settlement Agreement Term D by providing regulations for lighting within the unincorporated County. Regulations include addressing installation criteria for permanent and temporary outdoor lighting, addressing nonconforming lighting, and providing guidelines for new construction. Upon approval, the text amendment will be codified as Chapter 19.50.060, Dark Sky Ordinance.

Settlement Term D reads:

**D. Dark Skies Ordinance**

Recognizing that enjoyment of dark night skies is an integral part of Amador County’s rural quality of life and scenic beauty, the County shall draft a proposed Dark Skies Protection Ordinance and hold at least one public hearing to consider its adoption. As part of the process, the County shall review and consider the following minimum standards for inclusion in the draft:

1. Exterior lighting shall use the lowest possible wattage and energy-efficient luminaire for each application and minimize light use during non-active hours (11PM-dawn), except as needed for safety.
2. Exterior lighting shall illuminate only the area needed for safety.
3. Outdoor light fixtures for streets, commercial and residential buildings, pedestrian areas, and roadways shall be shielded, and/or directed down to preserve the night sky and away from residential areas to minimize light and glare effects on adjacent residences.
4. Exterior lighting fixtures shall be installed and shielded in such a manner that no light rays are emitted from the fixture at angles above the horizontal plane.
5. Timers or motion sensors shall be implemented on exterior lighting fixtures at night near buildings, where applicable, to avoid continual lighting of surfaces.
6. Yellow spectrum light sources, such as low-pressure sodium lamps and narrow-spectrum amber LEDs, shall be used for the majority of outdoor lighting. Other spectrum lighting may be used where

necessary for a particular purpose, such as safety.

7. In commercial areas, special standards shall be established for illuminated signs and flashing or blinking lights.

The Planning Department received an item of correspondence from Jack Sales, representing the International Dark Sky Association, who presented several elements for possible address in the draft ordinance including LEDs, Correlative Color Temperature, dimming and motion sensors, and municipal street lighting s well as outreach materials (informational handouts) and some other jurisdictions' lighting ordinances for reference.

**B. PROPOSED PLANNING COMMISSION ACTION:** The Planning Commission, after taking public comment on the proposed ordinance, may make any recommendations felt necessary regarding proposed Chapter 19.50.060, "Dark Sky Ordinance." Recommendations will be forwarded to the Board of Supervisors for their consideration at a future public hearing.

**C. RECOMMENDED FINDING(S):**

1. *The adoption of Chapter 19.50.060, "Dark Sky Ordinance," is Categorically Exempt from the California Environmental Quality Act according to Sections 15307 (Class 7) and 15308 (Class 8) of the State CEQA Guidelines.*
  - a. *Class 7 consists of actions taken by regulatory agencies as authorized by state law or local ordinance to assure the maintenance, restoration, or enhancement of a natural resource where the regulatory process involves procedures for protection of the environment.*
  - b. *Class 8 exemptions consist of actions taken by regulatory agencies, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment.*
2. *Following Board adoption of the proposed ordinance, a Notice of Exemption will filed with the County Recorder.*

Chapter 19.50.060  
Dark Sky Ordinance

Sections:

- 19.50.061 Title.**
- 19.50.062 Applicability.**
- 19.50.063 Purpose and intent.**
- 19.50.064 Definitions.**
- 19.50.065 Exemptions.**
- 19.50.066 Exceptions**
- 19.50.067 Prohibited.**
- 19.50.068 Lighting Regulations.**
- 19.50.069 Effective Date and Grandfathering of Nonconforming Luminaires.**
- 19.50.070 New Construction.**
- 19.50.071 Enforcement.**

**19.50.061 Title.**

This chapter shall be referred to as the Dark Sky Ordinance.

**19.50.062 Applicability.**

The provisions of this chapter apply only within the unincorporated area of Amador County. All requirements, regulations, and standards imposed by this section are intended to apply in addition to any other applicable requirements, regulations, and standards imposed elsewhere in this Code.

**19.50.063 Purpose and intent.**

Efficient outdoor nighttime lighting provides numerous benefits including safety, night-time character, and security. Regulation of lighting may prevent or reduce problems related to excessive glare, light trespass, increased energy use, and light pollution. This lighting ordinance provides regulations for installation and establishes safety and installation guidelines for safe and compliant lighting.

**19.50.064. Definitions:** For the purpose of this ordinance, terms shall be defined as follows:

- A. **“Direct Light.”** Light emitted directly from a lamp or luminaire.
- B. **“Full Cutoff Light Fixtures.”** Light fixtures shielded or constructed so that no light rays are emitted above the horizontal plane and which limit glare in the region between 80 and 90 degrees from the horizontal plane. The term is often used interchangeably with **“Fully-shielded lights”** which may or may not limit glare in the region between 80 and 90 degrees from the horizontal plane.
- C. **“Glare.”** Light emitted from a luminaire that reduces a viewer’s ability to see, and in extreme cases causes momentary blindness.
- D. **“Opacity/Opaque.”** Lighting that is shielded by a non-transparent or translucent medium so as to limit, lessen, or redirect light output.
- E. **“Horizontal Plane.”** Surface parallel to the tangent plane created from a perpendicular intersection with the ground plane.
- F. **“Indirect light.”** Direct light that has been reflected or redirected off of other surfaces.

- G. **“Light Bulb, bulb.”** The component of a luminaire consisting of a single or collection of light-emitting technologies which are responsible for the emission of light. Applicable technologies include, but are not limited to the following:
- a. **“High Intensity Discharge (HID) Lamp.”** A term for a lamp or light source characterized by an arc tube which encloses various gases and metal salts operating at relative high pressures and temperatures. Common HID lamps are mercury vapor, metal halide, xenon, and high-pressure sodium;
  - b. **“Incandescent, Light Bulb.”** A light source of electric light produced by incandescence and heating of a filament;
  - c. **“Light Emitting Diode (L.E.D.)”** A light source where light is produced by passing an electric current through a two-lead semiconductor diode. LED’s also are characterized by smaller size, lower energy consumption, and longer life than their non LED counterparts;
- H. **“Light Pollution.”** Brightening of the night sky caused by street lights and other man-made sources, disrupting natural cycles and inhibiting observation of astronomical bodies.
- I. **“Light trespass.”** Shining of light produced by a luminaire beyond property boundaries where it is located.
- J. **“Lumen.”** A unit of luminous flux, standard measure of luminescence (*i.e.*, lighting). For the purposes of the ordinance, the lumen-output values shall be the INITIAL lumen output ratings of the lamp or bulb.
- K. **“Luminaire.”** A complete lighting system, including a lamp or lamps and a fixture. Specific examples can include the following:
- a. **“Flood or Spot Light.”** Any light fixture incorporating a reflector or refractor to concentrate and or direct light output in a particular direction;
  - b. **“Hazard warning luminaire.”** A type of luminaire intended to indicate potential or existing hazards;
  - c. **“Laser Projector.”** A type of luminaire which highly concentrated beams of light in various directions, often motorized; See “Temporary Outdoor Lighting;”
  - d. **“Residential entrance light.”** An exterior lighting fixture mounted on a building required by the CA electrical code or CA building code to illuminate an outdoor entrance or exit with grade level access;
  - e. **“Searchlight.”** A powerful outdoor electric luminaire with a concentrated beam directed in a specific direction, or motorized to change direction.
- L. **“Temporary outdoor lighting.”** Specific illumination of an outside area of object by any man-made device located outdoors that produces light by any means for a period of less than sixty (60) consecutive days, with at least one-hundred and eighty (180) consecutive days passing before being used again.

#### **19.50.065 Exemptions.**

- A. State and Government Facilities with outdoor lighting required by State or Federal law are exempt from the contents of this chapter. A person seeking an exemption under this subsection shall request an exemption at that time the person submits the application for the permit required by County code. The applicant shall submit proof along with the application for the permit that demonstrates that the applicant is entitled to an exemption under this section.
- B. Public Roadway Illumination luminaires may be installed at a maximum height of twenty (20) feet and positioned at that height up to the edge of any bordering property or as determined by the public agency responsible for their installation.
- C. Official Traffic Control Devices or Fixtures installed and or maintained by any local, state, or federal agency;
- D. Temporary Emergency Lighting needed by emergency services of any type.
- E. Vehicular Luminaires shall be exempt from the requirements of this article and subject to all applicable State and Federal regulations.
- F. Searchlights when utilized by government personnel for official purposes shall be exempt from the regulations of this Code.
- G. Illumination of the United States Flag, provided that such lighting does not interfere with the vision of drivers or pedestrians, or otherwise create an unsafe condition for the public or substantial nuisance;
- H. Historic Light Fixtures which are a part of a historic property and add to the historic character of the property, as determined by the Planning Department or an approved Use Permit.
- I. Public Gathering Lighting Fixtures for public events or gatherings, temporary in nature and licensed or permitted under other provisions of the municipal or county code, or Use Permit.
- J. Nonconforming Temporary Outdoor Lighting or temporary outdoor lighting installed for periods exceeding sixty (60) consecutive days may be approved under a Use Permit as provided for in Chapter 19.56 of this code if the following conditions are met:
  - 1. The applicant shall submit a detailed description of the proposed nonconforming lighting with any applicable plans or materials as specified in Chapter 19.50.070 New Construction, to the Planning Department along with a Use Permit Application.
  - 2. The applicant must obtain all applicable permits from the environmental health department, building department, and department of transportation and public works.
  - 3. Public notice of such application shall be given in the manner described in Chapter 19.56 of this code, Use Permits.
  - 4. Maintenance and Repairs of Nonconforming Fixtures may be maintained and repaired however any structural change in a nonconforming fixture or any additions to that fixture shall be consistent with the provisions of this chapter or otherwise compliant with the terms specified in the Use Permit.

**19.50.066 Exceptions.**

Any fixtures which, by their nature, use, or design, present a compelling argument for the promotion of public health, safety, and welfare as determined by the Planning Commission or Board of Supervisors.

#### **19.50.067 Prohibited.**

- A. Any new installation of illumination directed above the horizontal plane between the hours of 11:00 p.m. and sunrise is prohibited unless otherwise addressed in this code or permitted under an approved Use Permit.
- B. Bottom-mounted outdoor advertising-sign lighting fixtures are prohibited.
- C. No High Intensity Discharge (HID) lights or lamps are permitted for any outdoor use without an approved Use Permit pursuant to Section 19.56.
- D. Non-temporary lights that blink, flash, rotate, move, or change in intensity or color, and “wall washer” lights are prohibited.
- E. No spotlights or other temporary lights or high intensity focused luminaires shall be permitted without a staff-issued Use Permit specifying range, direction, and intensity of said spotlight.
- F. Light projectors directed above the horizontal plane in any airport zone.

#### **19.50.068 Lighting Regulations.**

All new public and private outdoor lighting installed in the unincorporated County shall be in conformance with the requirements established by this Ordinance. All previous language in Amador County bylaws and ordinances regarding outdoor lighting will be subordinate to this ordinance for all new public and private outdoor lighting unless otherwise specified by the Planning Commission and the Board of Supervisors.

- A. Generally--
  - a. All outdoor lighting shall comply with California State Building Requirements and County Code.
  - b. All luminaires and lamps shall be installed per manufacturer’s specifications to be considered compliant.
  - c. On-site and Off-sight lighting shall be designed, controlled, and maintained so minimal light source is visible from outside the property, and so all lighting does not unreasonably disturb occupants of adjacent properties or interfere with traffic on any public road or right-of-way.
  - d. Any luminaire and all flood or spot luminaires shall not emit any direct light above a horizontal plane between the hours of 11:00 p.m. and sunrise.
- B. Lamps Up To 800 Lumens. Any full cutoff luminaire, including flood or spot luminaires, with a lamp or lamps rated at a total of 800 lumens or less may be used without restriction to a light distributing or mounting height under 10 ft., except that the luminaire may not be aimed, directed, or focused so as to cause direct light from the luminaire on adjacent or nearby residential buildings, or to create glare perceptible to persons operating motor vehicles on public roadways. The luminaire shall be redirected or its light output controlled as necessary to eliminate such conditions.
- C. Exterior Lighting. All exterior lighting, including motion-sensitive or timed lighting, shall be provided by full cutoff fixtures installed per the manufacturer's specifications in order to limit glare.

Fixtures that are shielded by a structural element so as to meet the intent of a full cutoff fixture shall be considered in compliance.

- D. Permanent Residential Lighting. The following residential lighting regulations apply to all property within the R1, R2, R3, R1A, R2A, or RE zones or any luminaires utilized for residential purposes:
- a. Exterior lighting fixtures shall be mounted no higher than 10 feet above the flooring, deck, walkway, driveway or other occupied area, or at the highest grade point of the ground surface immediately adjacent to the lighting fixture.
  - b. Pathway lighting including permanent string lights, paving lights, walkway lights, etc. must be full cutoff or shielded fixtures or else not emit perceivable illumination visible at the property boundaries.
  - c. Lighting fixtures shall provide for pedestrian safety, shall be adequately spaced and scaled without interference from landscaping, and shall be directed away from adjacent areas to minimize light pollution or glare into neighboring properties.
- E. Commercial Lighting Regulations. The following commercial lighting regulations apply to all property within the C1, C2, LM, MM, M, MRZ, or H zones or any luminaires utilized for commercial purposes:
- a. The maximum height of any luminaire may not exceed the maximum building height as specified by the property's zoning district, unless otherwise allowed with a Use Permit.
  - b. The illumination of signs shall comply with County Code Section 19.32. Any inconsistencies between this section and County Code Section 19.32 shall be limited by the more restrictive provision.
  - c. All allowed lighting fixtures used to illuminate an outdoor advertising sign shall be mounted on the top of the sign structure and be full cutoff fixtures.
  - d. Outdoor advertising signs constructed of translucent materials and wholly illuminated from within do not require shielding.
- F. Recreational Facilities. Any light source permitted by this Code may be used for lighting of outdoor recreational facilities (public or private) including, but not limited to: football fields, soccer fields, baseball fields, softball fields, tennis courts, or show areas, provided all the following conditions are met and that a Use Permit has been secured in each case:
- a. All fixtures used for event lighting shall be designed with full cutoff capability, so as to minimize light pollution, trespass, and glare.
  - b. No illumination of the playing field, court, or track shall be permitted after 11:00 p.m. except to conclude a scheduled event that was in progress before 11:00 p.m. and circumstances prevented concluding before 11:00 p.m.
- G. Street Parking and Security Lighting. The requirements for street, parking, and security lighting set forth in this section, except where specifically exempted, apply to all zoning districts within the County.
- a. All street, parking, and security lighting shall utilize full cutoff fixtures that by design have a cutoff angle of no more than 90 degrees, and be properly installed so as to maintain the

full cutoff angle of 90 degrees. Fixtures that are shielded by a structural element so as to meet the intent of a full cutoff fixture shall be considered to be in compliance.

- b. Lighting fixtures shall be mounted no higher than 30 feet above a parking or street surface unless otherwise permitted by a Use Permit or government agency.
- H. Temporary Outdoor Lighting. Temporary outdoor lighting is allowed in all zoning districts so long as it satisfies all of the following requirements and is not deemed a nuisance or safety hazard:
- a. It is temporary in nature and removed within sixty (60) days, with 180 or more consecutive days passing before reinstallation;
  - b. It is installed per manufacturer specifications and California Building Code;
  - c. It is kept clear of all flammable materials, vegetative or otherwise;
  - d. It is operated in the presence of a responsible party who has the capability and authority necessary to disconnect the lights if deemed necessary by the County;
  - e. Any light projectors (patterns, lasers, etc.) are directed only at solid surfaces and do not shine across property lines or into abutting properties. Within airport zones, use of light projectors directed above the horizontal plane is prohibited.
- I. Hazard Warning Luminaires and Temporary Construction Lighting. Any hazard warning luminaires and temporary construction lighting required as part of an approved project must consist of red construction lighting and, to the greatest extent feasible, meet and not exceed the federally required minimum lumen output requirement for the specific project. Hazard warning luminaires must be installed on or within five (5) days of preparation of the project site and be removed within five (5) days upon completion of the project. All hazard warning luminaires shall be placed so as to minimize or eliminate glare to any operators of motor vehicles within sightlines of the project site.

#### **19.50.069 Effective Date and Grandfathering of Nonconforming Luminaires:**

- A. This ordinance shall take effect immediately upon approval by the Board of Supervisors. Luminaires not conforming to this code that were lawfully in place before this code became effective, [INSERT DATE HERE] shall be considered “grandfathered”.
- B. Nonconforming fixtures destroyed or damaged to an extent in excess of 50% of replacement value shall be replaced or repaired by a conforming fixture.

#### **19.50.070 New Construction**

- A. Submission Contents. Any new projects submitted for review to the Building or Planning Department of Amador County may, in the Planning Department’s discretion, be subject to the following Design Guidelines at the time of submission.
  - 1. Lighting Plan. Applicant shall submit plans indicating the location on the premises, and type of illuminating devices, fixtures, lamps, supports, reflectors, and other devices. The Planning Department may also require information regarding lumens radiating from each fixture, area of effect, and direction of emission.
  - 2. Device Specifications. Applicant shall submit photometric data and manufacturer specifications as deemed necessary by the Planning Department. When applicable, the



applicant shall be encouraged to utilize lighting on timers or motion sensors, as feasible. Applicant may also be required to describe any relevant materials which shall to any effect, change intensity, color (wavelength), or redirect illumination of any kind over the course of the project.

3. Lamp or Fixture Substitution. Should any outdoor light fixture, or the type of light source therein, be changed after the permit has been issued, the new luminaire and fixture must comply with the provisions of this code or an equivalent fixture to that which was described as part of the permit.

**19.50.071 Enforcement.**

Enforcement of the provisions of this chapter shall follow the procedures of County Code Section 2.06. Nothing in this ordinance restricts the right of the County to abate a public nuisance.

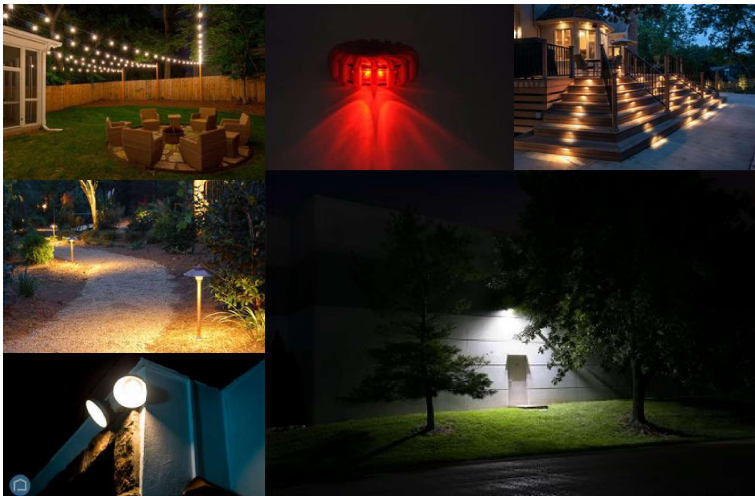


# Dark Skies

Public Review Draft Ordinance

## Intent : Draft an Ordinance that...

Recognizes benefits of outdoor lighting while preserving property owner rights and night-time character. Regulate lighting to prevent or reduce problems of glare, light trespass, energy waste, and light pollution while establishing safety and installation guidelines.



- **Outdoor lighting benefits include:**

- Safety
- Security
- Character
- Visibility

# Key Ordinance Requirements for Consideration:

- **Shielding**

Exterior lighting fixtures shall be installed and shielded in such a manner that no light rays are emitted from the fixture at angles above the horizontal plane.

- **Glare and Light Trespass**

Outdoor light fixtures for streets, commercial and residential buildings, pedestrian areas, and roadways shall be shielded, and/or directed down to preserve the night sky and away from residential areas to minimize light and glare effects on adjacent residences.

- **Intensity and Activity**

Exterior lighting shall use the lowest possible wattage and energy-efficient luminaire for each application and minimize light use during non-active hours (11PM-dawn), except as needed for safety.

- **Safety**

Exterior lighting shall illuminate only the area needed for safety.

- **Timers, Motion, Shielding**

Timers or motion sensors shall be implemented on exterior lighting fixtures at night near buildings, where applicable, to avoid continual lighting of surfaces.

- **Commercial Lighting**

In commercial areas, special standards shall be established for illuminated signs and flashing or blinking lights.

## Definitions

### Glare

Light emitted which reduces a viewer's ability to see, and in extreme cases causes momentary blindness.

### Cutoff Light Fixtures

Limit glare, and restrict light to below the *horizontal plane*.

### Horizontal Plane

Area parallel to the ground and extending outwards

### Light Trespass

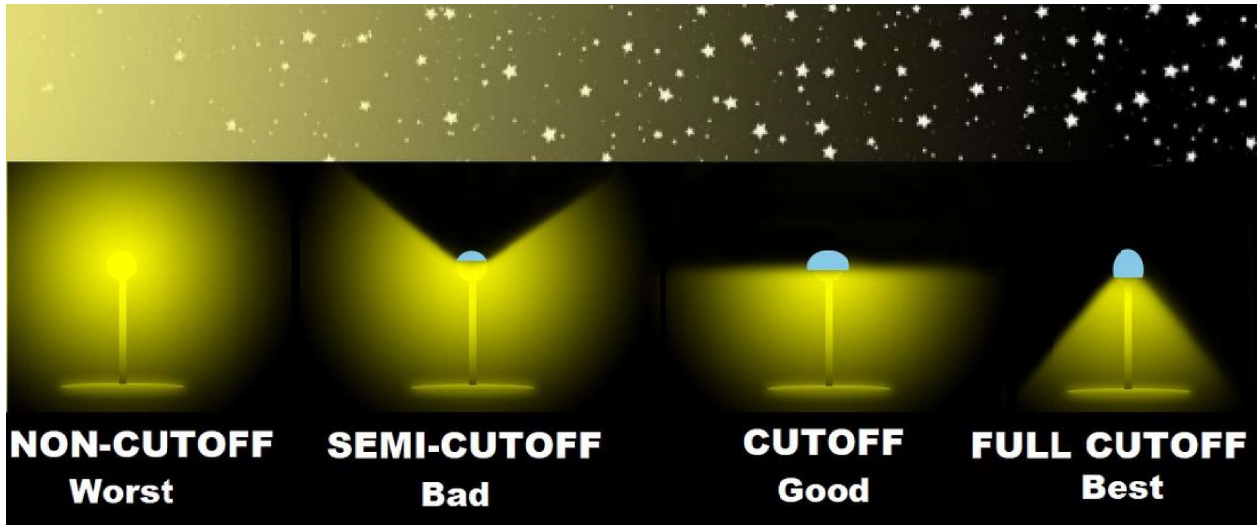
Light which shines beyond property boundaries

### Lumen

Unit of measurement for light. Standard 60W incandescent bulbs are customarily 400-800 lumens

### Luminaire

Any device which emits light



**Examples of Acceptable / Unacceptable Lighting Fixtures**

**Unacceptable / Discouraged**  
Fixtures that produce glare and light trespass

- Unshielded Floodlights or Poorly-shielded Floodlights
- Unshielded Wallpacks & Unshielded or Poorly-shielded Wall Mount Fixtures
- Drop-Lens & Sag-Lens Fixtures w/ exposed bulb / refractor lens
- Unshielded Streetlight
- Unshielded Bollards
- Unshielded Barn Light
- Louvered Marine style Fixtures
- Unshielded "Period" Style Fixtures
- Drop-Lens Canopy Fixtures
- Unshielded PAR Floodlights

**Acceptable**  
Fixtures that shield the light source to minimize glare and light trespass and to facilitate better vision at night

- Full Cutoff Fixtures
- Fully Shielded Wallpack & Wall Mount Fixtures
- Fully Shielded Fixtures
- Full Cutoff Streetlight
- Fully Shielded Barn Light
- Fully Shielded Walkway Bollards
- Fully Shielded Decorative Fixtures with arm and reflector top
- Fully Shielded "Period" Style Fixtures with arm and reflector top
- Flush Mounted or Side Shielded Under Canopy Fixtures
- Shielded / Properly-aimed PAR Floodlights

Illustrations by Bob Cahill © 2005. Rendered for the team of Southampton, NY. Used with permission.



# Current Draft Sections

- **Definitions**

- **Exemptions**

- Government Facilities and Luminaires
- Roadways and Traffic
- Emergency Lighting
- Nonconforming Fixtures
- Illumination of the US Flag
- Historic Light Fixtures.

- **Exceptions**

As determined by the Board of Supervisors

- **Prohibited**

- New fixtures in violation
- Bottom-mounted lighting
- Intermittent (flashing, blinking, etc.) lights
- Spotlights without Use Permit

- **Lighting Regulations**

- General Regulations
- Low Emission Fixtures
- Exterior lighting
- Permanent Residential Lighting
- Commercial Lighting
- Recreational Facilities
- Street Parking and Security Lighting
- Temporary Outdoor Lighting
- Hazard Warning and Construction Lighting

- **Grandfathering**

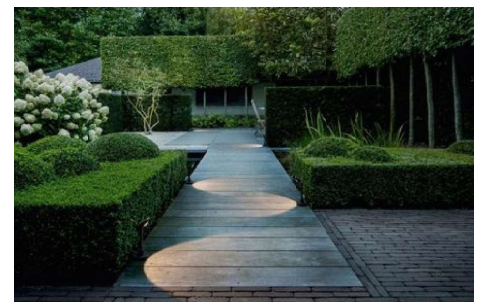
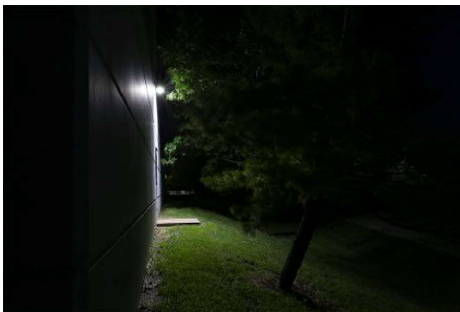
- 50% Replacement Value

- **New Construction**

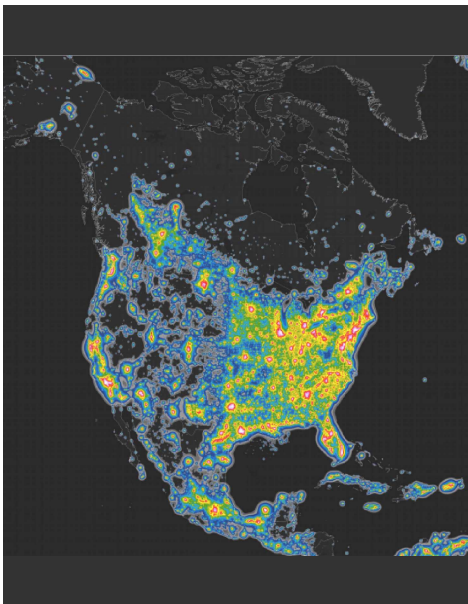
- Project Submission requirements as determined on a case-by-case basis which may include plans and design and/or device specifications.

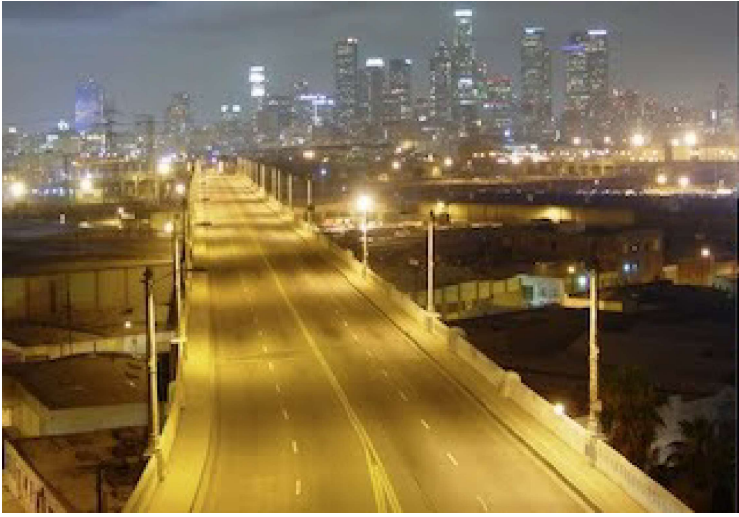
- **Enforcement**

Complaint-driven Planning Department Code Enforcement

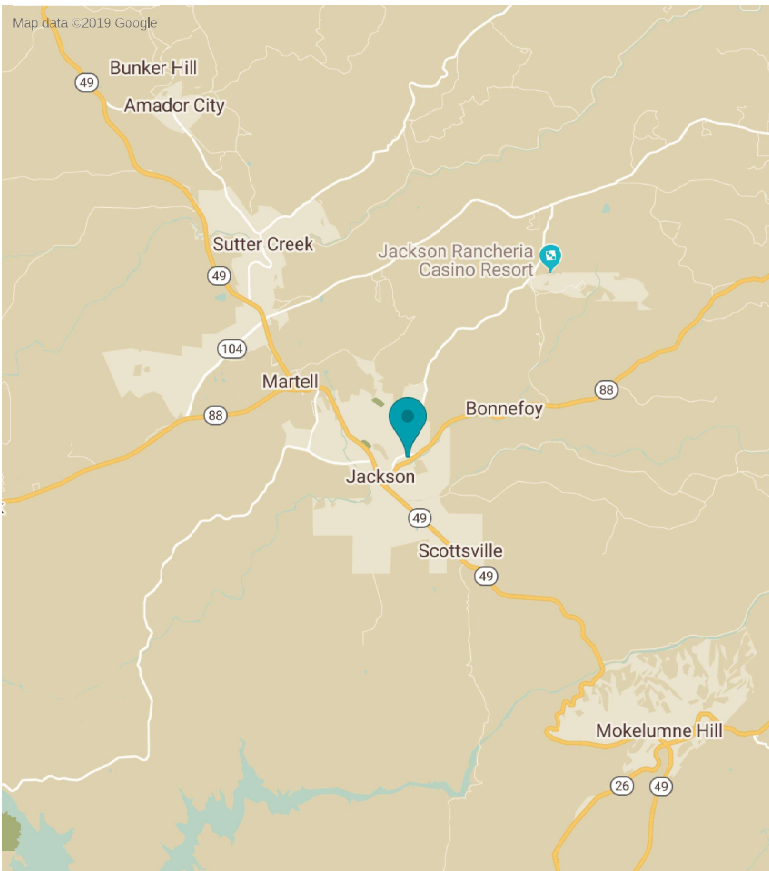












# Contact Us

Amador County Planning Department

 (209) 223-6380

 [planning@amadorgov.org](mailto:planning@amadorgov.org)





Planning Department &lt;planning@amadorgov.org&gt;

**Fwd: Draft Amador County Outdoor Lighting Ordinance**

1 message

**Krista Ruesel** <kruesel@amadorgov.org>  
To: Planning Department <planning@amadorgov.org>

Fri, Oct 25, 2019 at 11:12 AM

Received October 25, 2019

**Krista Ruesel**  
Planner|Amador County Planning Department  
(209)223-6803|kruesel@amadorgov.org

----- Forwarded message -----

From:  
Date: Fri, Oct 25, 2019 at 9:42 AM  
Subject: Draft Amador County Outdoor Lighting Ordinance  
To: Krista Ruesel <kruesel@amadorgov.org>  
Cc: Mara Feeney

Hi Krista

This is a follow up on our conversation about a week ago.

I have not had time to fully review and make notes however I want to get this information to you.

As the draft stands now I fully support it's enactment, however it needs to full address LEDs.  
Additional provisions should not slow the process however.

So here are some notes and recommendations for your consideration:

Other Ordinances to consider ---

Please make extensive use of the recently enacted City of Malibu Outdoor Lighting Ordinance.

References below and attached.

Include the Malibu Ordinance in the supporting documents and most important model a web page after the Malibu Dark-Sky-Ordinance page.

Include the Outdoor-Lighting-Basics handout in the supporting documents and publish a similar handout.

More Ordinances to consider -

El Dorado County Outdoor Lighting Ordinance

San Benito County Development Lighting ("DarkSkies") Ordinance.

Butte County Outdoor Lighting Ordinance.

El Dorado County Outdoor Lighting Ordinance

Spectrum and CCT-

Spectrum of Light Sources noted in D. Dark Skies Ordinance, 6. Yellow spectrum light sources....

LED with 3000K or less spectrum in all cases.

Preference or requirement of 2700K for all lighting in residential areas.

Requirement for 3000K or less in all applications

CalGreen regarding CCT ---

In October 2018 the California Energy Commission convened a meeting to regarding CalGreen (24 CCR Part 11) and 3000K lighting standards for outdoor lighting in California.

Here are a few notes which support the requirements for 3000K or less in fact I, James Benya, Michael Siminovitch and others supported the statewide maximum of 3000K under CalGreen (24 CCR Part 11).  
In addition I, James Benya, Michael Siminovitch and others support and advocate 2700K as the max CCT for all outdoor lighting.

Docket 17-BSTD-03 CalGreen Lighting Color Temperature Restrictions  
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=17-BSTD-03>

Comments by

James Benya regarding 3000K/2700K outdoor lighting --

James Benya Comments Letter including planned remarks to be made 10-3-18

<https://efiling.energy.ca.gov/GetDocument.aspx?tn=224851&DocumentContentId=55438>

Comments by

UC Davis California Lighting Technology Center/Michael Siminovitch --

UC Davis Calif. Lighting Technology Center Comments on 15-Day Express Terms 2019 CALGREEN Voluntary Provisions

<https://efiling.energy.ca.gov/GetDocument.aspx?tn=224886&DocumentContentId=55478>

Note that ALL outdoor lighting in California is governed under Title 24 with further restriction enacted by City and County Ordinances.

LED Retrofit ---

LED retrofit of all existing lighting shall comply with the 3000K or less CCT and Shielding requirements of this ordinance.

Examples-

<https://www.venturelighting.com/led-lighting/led-lamps/led-retrofit-lamps/3000k-retrofit/lp16735.html>

<https://www.inductionlightingfixtures.com/product-catalog/led-light-fixtures-bulbs-and-accessories/led-outdoor-light-fixtures-led-bulbs-and-accessories/led-fixtures-led-retrofit-lamp-kits-led-strip-kits-and-led-pcb-kits/led-outdoor-irkm-light-fixture-led-retrofit-kits-for-metal-hali-759.html>

Dimming and Motion Activation ---

A dimming requirement should be included in this ordinance. As a minimum reference to Title 24 dimming requirements should be referenced and included in the staff report.

Requirement for shielding of motion activated lighting should also note include a requirement of NO light trespass.

Municipal Lighting

Public outdoor lighting, including street lighting should be included in this ordinance.

The County should comply with its own ordinance.

Some Additional Web Page Links ---

City of Malibu Dark Sky Ordinance

<https://www.malibucity.org/705/Dark-Sky-Ordinance>

<https://www.malibucity.org/DocumentCenter/View/22947/Outdoor-Lighting-Basics>

<https://www.malibucity.org/DocumentCenter/View/22417/Dark-Sky-Ordinance-Ordinance-No-434>

<https://www.malibucity.org/DocumentCenter/View/25085/Dark-Skies-Gas-Station---Submittal-Packet>

<https://www.malibucity.org/DocumentCenter/View/14301>

<https://www.malibucity.org/DocumentCenter/View/14303>

<https://www.malibucity.org/DocumentCenter/View/14304>

Dark-Skies-Gas-Station-Submittal-Packet\_201910151222275801.pdf

Butte County Outdoor Lighting Ordinance

[https://www.buttecounty.net/Portals/10/CodeEnforcement/Lighting/Outdoor Lighting 12-29-15.pdf](https://www.buttecounty.net/Portals/10/CodeEnforcement/Lighting/Outdoor%20Lighting%2012-29-15.pdf)

El Dorado County Outdoor Lighting Ordinance

[https://www.edcgov.us/government/planning/pcagendas/2006/documents/pcagn102606\\_LightingOrdinanceAttachments.pdf](https://www.edcgov.us/government/planning/pcagendas/2006/documents/pcagn102606_LightingOrdinanceAttachments.pdf)

International Dark Sky Associations (IDA) Links of Note

Home Page, <http://darksky.org/>

Lighting for Policy Makers, <https://www.darksky.org/our-work/lighting/public-policy/policy-makers/>

Lighting Ordinance, <https://www.darksky.org/our-work/lighting/public-policy/lighting-ordinances/>

10/25/2019

County of Amador Mail - Fwd: Draft Amador County Outdoor Lighting Ordinance

IDA Blog on LEDs, <https://www.darksky.org/category/leds/>

Blue Rich LEDs, [https://www.darksky.org/wp-content/uploads/bsk-pdf-manager/8\\_IDA-BLUE-RICH-LIGHT-WHITE-PAPER.PDF](https://www.darksky.org/wp-content/uploads/bsk-pdf-manager/8_IDA-BLUE-RICH-LIGHT-WHITE-PAPER.PDF)

Model Lighting Ordinance , [https://www.darksky.org/wp-content/uploads/bsk-pdf-manager/16\\_MLO\\_FINAL\\_JUNE2011.PDF](https://www.darksky.org/wp-content/uploads/bsk-pdf-manager/16_MLO_FINAL_JUNE2011.PDF)

Fixture Seal of Approval, <https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/>

FSA Products, <https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/fsa-products/>

Regards

Jack Sales



Krista Ruesel <kruesel@amadorgov.org>

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## Comments regarding proposed Amador County Dark Skies Protection Ordinance

3 messages

Mon, Nov 4, 2019 at 10:52 PM

To: Krista Ruesel <kruesel@amadorgov.org>

TO: Krista Ruesel, Planner, & Amador County Planning Commission

Subject: Comments regarding proposed Amador County Dark Skies Protection Ordinance

From:

Jack Sales

### INTRODUCTION --

While a member of the International Dark-Sky Association (IDA) and the Illuminating Engineering Society North America (IESNA) my comments are my own and are based on knowledge gained through over 20 years of association with the lighting industry.

Preserving and restoring the dark night skies of Amador County is a quality of life issue that is a win win for all.

I fully support enacting the Amador County Dark Skies Protection Ordinance.

It is fitting and long over due that Amador County adopt an Outdoor Lighting Ordinance as the first recognized Amateur Astronomical Observatory was located in Volcano. George Madeiros operated the observatory from 1860 to 1862. It is commemorated by California Historical Landmark No. 715 that plaque was first placed near Volcano in 1968. In 2004 it was revised and relocated in Volcano by the State Department of Parks and Recreation in cooperation with the Stockton Astronomical Society and the Sacramento Astronomical Society.

According to Anyplace America, there are 58 streams and 18 reservoirs in Amador County.

Artificial lighting at night (ALAN) alters aquatic-riparian invertebrate food webs and alters the prey predator relationship of fishes. By enacting this ordinance these important ecological resources will be protected from ALAN.

With over 30 years of advocating for Dark Skies, the International Dark-Sky Association (IDA) established a Fixture Seal of Approval Program. The program certifies outdoor lighting fixtures as being Dark Sky Friendly, meaning that they minimize glare while reducing light trespass, skyglow and requires and in 2014 requiring lighting that has a "correlated color temperature" (CCT) of 3,000K and lower. The program provides a convenient source for selecting fixtures compliant with the Amador County Dark Skies Protection Ordinance.

Concerns about blue light rich LED Lighting are well known, increased glare and compromise human vision, increased skyglow and Light Pollution and more. Previously these blue rich LEDs were considered more efficient, that is no longer the case in fact over all LEDs of 3000K and lower are now preferred. Currently under Title 24 CalGreen Program established Lighting Color Temperature Restrictions of 3000K CCT is the recommended lighting standards for all outdoor lighting in California.

While a CCT of 3000K is required by these programs technology advances have made it appropriate to now consider CCT of 2700K the appropriate standard. By way of reference 2600-2700K is considered the CCT of incandescent lamps we have had for over 100 year. As a minimum 2700K outdoor lighting should be used in residential areas and natural habitat..

## GENERAL COMMENTS --

Additional Illustrations, Attachments and Handouts ---

Illustrations should be added to the Ordinance and can be found in many existing Outdoor Lighting Ordinances.

Better Lights for Better Nights also titled Good Lights for Good Night, by Bob Crelin, can and has been used with full permission. This handout has been used by a number of Municipalities as part of Outdoor Lighting Ordinances and Building Department Handouts.

Examples are -

Village of Lloyd Harbor, NY, <http://www.darksksociety.org/codes/lloydharbor.pdf>

Lakewood Village, Texas, <http://www.lakewoodvillagetx.us/docman-documents/town-ordinances/dark-skies/983-lighting-ordinance>

City of Concord, CA, <https://www.cityofconcord.org/DocumentCenter/View/178/Outdoor-Lighting-PDF>

Butte County [https://www.buttecounty.net/Portals/10/CodeEnforcement/Lighting/Outdoor Lighting 12-29-15.pdf](https://www.buttecounty.net/Portals/10/CodeEnforcement/Lighting/Outdoor%20Lighting%2012-29-15.pdf)

OUTDOOR LIGHTING BASICS by the City of Malibu should be adapted to be included in the Ordinance and as a Building Department Handout.

<https://www.malibucity.org/DocumentCenter/View/22947/Outdoor-Lighting-Basics>

Adaptive Lighting - Title 24 requires Adaptive Lighting however the requirement should extend to all applications as much as possible. Adaptive Lighting goes beyond simple motion sensitive OFF-ON but includes controlled dimming from 90% down to 10% when. Because of LEDs can be controlled, dimming of 50% until motion is detected can save significant energy and reduce light pollution as well.

Adaptive Lighting and Light Trespass - Adaptive Lighting or Motion Sensitive Lighting should not be used as an excuse to enable light trespass. Light Trespass is pronounced in rural areas and it's abatement should apply to motion controlled lighting as well. Shielding of motion sensor activated lighting is essential.

Glare - It is easy to understand the shielding can reduce glare, however glare can be reduced by reducing the color temperature CCT as well, therefor preference should be given to 2200K and 2700K in all cases.

Digital Billboards, Electronic Messaging - Digital Billboards should be prohibited.

In May 2019 the IDA Announces Lighting Guidelines for Electronic Messaging Centers please refer to the following link.

<https://www.darksky.org/ida-announces-lighting-guidelines-for-electronic-messaging-centers/>

Item by Item Response

19.50.064. Definitions: For the purpose of this ordinance, terms shall be defined as follows:

G. "Light Bulb, bulb." The...

COMMENT - Replace with G. "Light Bulb, bulb, and Lamp." The... (add Lamp to the list).

The lighting industry uses the proper term "Lamp" for the colloquial term bulb.

I. "Light trespass." Shining of light produced by a luminaire...

COMMENT - The Bold Font extends to the "S" in Shining. The term often takes the form of "Light Trespass".

Light trespass is often more objectionable in dark surroundings.

Addressing the impacts of Light trespass should be more prominent in this document.

19.50.065 Exemptions.

Recommended Changes and comments.

B. Public Roadway Illumination,

COMMENT - Remove and include all Public Roadway Illumination be included in the ordinance.

C. Official Traffic Control Devices or Fixtures,

COMMENT - Recommend removal as not necessary.

E. Vehicular Luminaires,

COMMENT - Recommend removal as not necessary.

G. Illumination of the United States Flag,

COMMENT - Modify as in The Town of Lakewood Village, Texas

H. Historic Light Fixtures,

COMMENT - This should be a stand alone paragraph and include requirement of low CCT 2200K.

J4. Maintenance and Repairs of Nonconforming Fixtures,

COMMENT - This should be a stand alone paragraph and include CCT =<3000K.

EXAMPLES, ADDITIONAL COMMENTS - Flags and Historic Fixtures

Illumination of the United States Flag, some important points from the The Town of Lakewood Village, include from page 7

Flagpoles illuminated from below... The maximum output shall be 1,300 lumens and 3,000 kelvins.

The fixture shall be mounted perpendicular to the flag pole and the light outputs shall point straight up at the flag.

Flagpoles illuminated from above shall utilize a single light fixture, not to exceed 800 initial lamp lumens and 3,000 kelvins, attached to the top of the flagpole.

Flags should be illuminated first from the top, and second directly from below.

Historic Light Fixtures or new "Historic" stile, "period" stile fixtures, such as acorns should be restricted to 2200K CCT.

Maintenance and Repairs of Nonconforming Fixtures and LED retrofit of existing fixtures, shall comply with the 3000K or less CCT and Shielding requirements of this ordinance.

19.50.067 Prohibited.

B. Bottom-mounted outdoor advertising-sign lighting fixtures are prohibited.

COMMENT - Excellent statement.

19.50.068 Lighting Regulations.

c. On-site and Off-site lighting shall be designed, controlled, and maintained so minimal light source is visible from outside the property...

COMMENT - This describes Light Trespass.

Light Trespass should be more prominent as in the Malibu OLO on Page 7

G. Allowable light trespass...residential property,...maximum allowable light trespass shall be 0.1 foot-candles

H. From any property onto a non-residential property... (open areas, natural areas) maximum allowable... 0.25 foot-candles

d. Any luminaire and all flood or spot luminaires shall not emit any direct light above a horizontal plane between the hours of 11:00 p.m. and sunrise.

COMMENT - Remove "between the hours of 11:00 p.m. and sunrise". This should be a strict requirement regardless of time of use.

B. Lamps Up To 800 Lumens.

COMMENT - "adjacent or nearby residential buildings," should be "adjacent or nearby residential property".

This is a statement that should also include reference to CCT, recommend the CCT shall not exceed 2700K.

D. Permanent Residential Lighting.

COMMENT - Because a point is made regarding Zoning the Title 24, IDA Model OLO and the City of Malibu OLO should be referenced.

The R1, R2, R3, R1A, R2A, or RE zones should be assigned LZ1 and restricted to a CCT of 2700K.

E. Commercial Lighting Regulations.

COMMENT - Because a point is made regarding Zoning the Title 24, IDA Model OLO and the City of Malibu OLO should be referenced.

The C1, C2, LM, MM, M, MRZ, or H zones should be assigned LZ1 or LZ2 and restricted to a CCT of 3000K or less.

F. Recreational Facilities.

COMMENT - Today LED sports lighting can direct light with pinpoint precision, with no off site light.

Today LED sports lighting can be neighbor friendly with 0.0 foot candle light trespass.

This item should also require a maximum allowable light trespass of 0.1 foot-candles or less.

Recently IDA Announces Criteria for Community-Friendly Outdoor Sports Lighting

<https://www.darksky.org/ida-announces-criteria-for-community-friendly-outdoor-sports-lighting/>

H. Temporary Outdoor Lighting.

COMMENT - Even temporary outdoor lighting shall have a CCT of 3000K or less.

19.50.069 Effective Date and Grandfathering of Nonconforming Luminaires:

COMMENT - The Ordinance should not allow a grandfather clause or be extremely restrictive and require 2700K/3000K compliance.

EXAMPLES AND REFERENTS - Time limitations for compliance

The City of Concord provides a good example in 17.41.100 Application of Ordinance to Legal Non-conforming Lighting, and is noted on the last page of the Malibu Outdoor Lighting Basics Handout.

REF-URL = <https://www.cityofconcord.org/DocumentCenter/View/178/Outdoor-Lighting-PDF> (Page 10)

REF-URL = <https://www.malibucity.org/DocumentCenter/View/22947/Outdoor-Lighting-Basics>

The City of Haley Idaho Outdoor Lighting Ordinance is another example,

"8B.2.2 Existing Lighting. All existing exterior lighting installed before the effective date of this Article shall be brought into conformance with this Article, except Section 8B.4.3, within the following time periods:"... "maximum of thirty (30) days"

REF-URL = [https://www.haileycityhall.org/Codes\\_Plans/documents/Article8BOutdoorLighting-1068\\_002.pdf](https://www.haileycityhall.org/Codes_Plans/documents/Article8BOutdoorLighting-1068_002.pdf) (Page 1)

Non-Conforming Outdoor Lighting should also include Correlated Color Temperature (CCT) requirement of less than 3000K CCT.

The Butte County Outdoor Lighting Ordinance is a further example,

"24-65 - Time limitations for compliance.

A.

Outdoor lighting existing at the time of the effective date of the Zoning Ordinance that does not meet



the requirements of this article shall be brought into compliance or removed as follows:

1. Within three (3) months of the effective date of the Zoning Ordinance, where re-direction of the light fixture is feasible and will bring the light fixture into compliance; or
2. Within six (6) months of the effective date of the Zoning Ordinance, in all other cases."

In closing please consider contents of the following Outdoor Lighting Ordinances.

The IDA/IES Model Lighting Ordinance

<https://www.darksky.org/our-work/lighting/public-policy/mlo/>

City of Malibu Dark Sky Ordinance

<https://www.malibucity.org/705/Dark-Sky-Ordinance>

Butte County Outdoor Lighting Ordinance

[https://www.buttecounty.net/Portals/10/CodeEnforcement/Lighting/Outdoor Lighting 12-29-15.pdf](https://www.buttecounty.net/Portals/10/CodeEnforcement/Lighting/Outdoor%20Lighting%2012-29-15.pdf)

El Dorado County Outdoor Lighting Ordinance

[https://www.edcgov.us/government/planning/pcagendas/2006/documents/pcagn102606\\_LightingOrdinanceAttachments.pdf](https://www.edcgov.us/government/planning/pcagendas/2006/documents/pcagn102606_LightingOrdinanceAttachments.pdf)

Regards

Jack Sales, California Chapter IDA, IESNA, SVAS, SAS, AAS

Att: PDF

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 **AmadorCo-OLO-Response.pdf**  
38K

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**Krista Ruesel** <[kruesel@amadorgov.org](mailto:kruesel@amadorgov.org)>  
To: Planning Department <[planning@amadorgov.org](mailto:planning@amadorgov.org)>

Tue, Nov 5, 2019 at 8:49 AM

**Krista Ruesel**  
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