

A night sky with the Milky Way galaxy visible. On the left, a large, dark rock formation (Pinnacles Rock) is silhouetted against the stars. On the right, a person is silhouetted on a hill with their arms raised. The text is overlaid in the center.

What does the Dark Sky Overlay Zone mean for you?

Public Information Session ★ Thursday, October 24, 2019
Ventura County Planning Division ★ Ruchita Kadakia, Project Planner



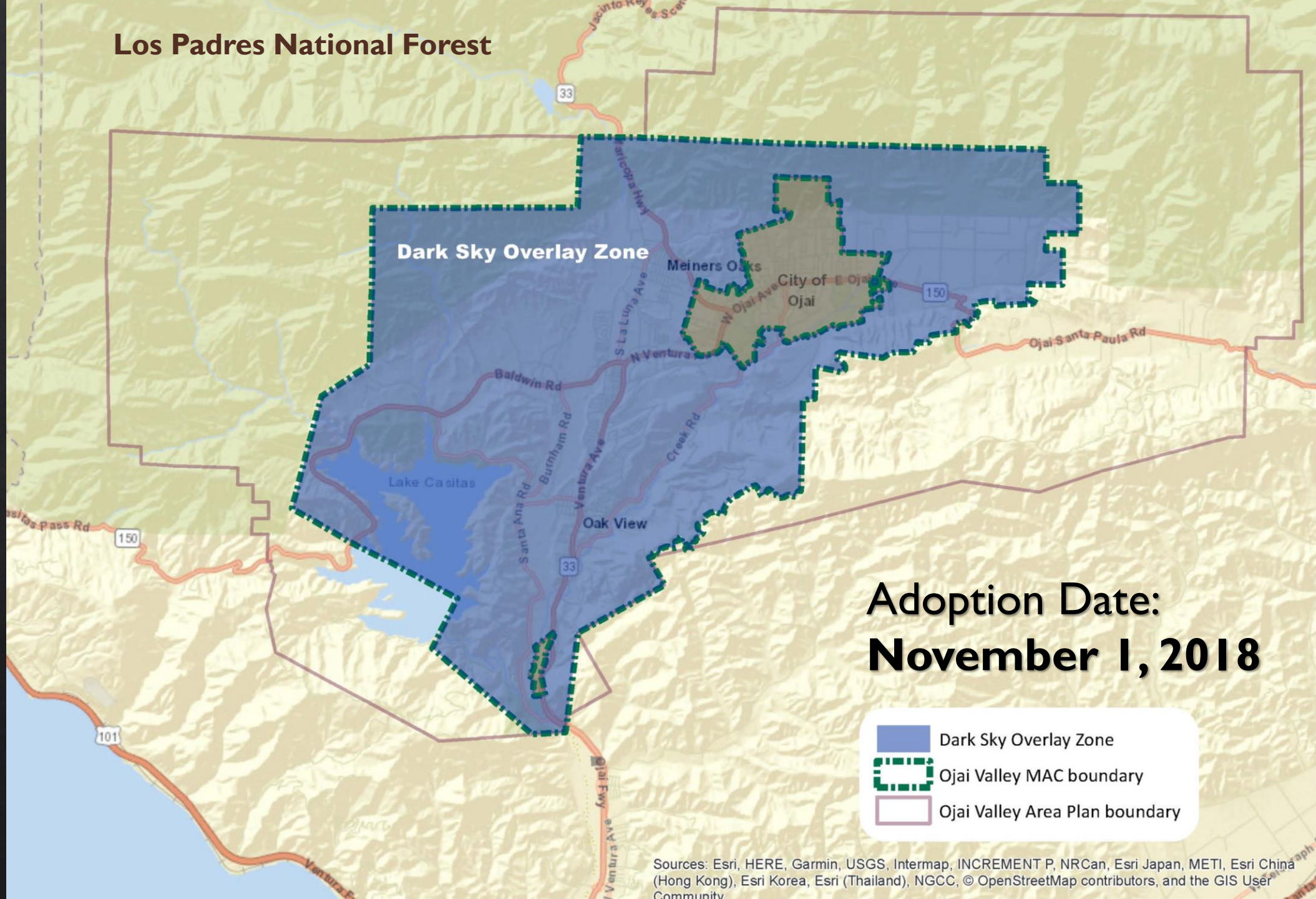
Why did we Prepare this Ordinance?

- ◆ Community-generated project
- ◆ Benefits to the community
 - ◆ Views of night skies,
 - ◆ Maintain the existing rural ambience in Ojai
- ◆ Proximity to Los Padres National Forest



Benefits of Dark Skies

Los Padres National Forest



**Adoption Date:
November 1, 2018**

-  Dark Sky Overlay Zone
-  Ojai Valley MAC boundary
-  Ojai Valley Area Plan boundary

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

Amendments to the Zoning Ordinance

◆ Added **Definitions**

- ◆ Technical terminology (lumens, Kelvin, foot-candles)
- ◆ Lighting components (Luminaire, Fully- and Partially-shielded lighting)

◆ **Standards for the Dark Sky Overlay Zone**

- ◆ The ordinance addresses the following two areas:

A. Dark Hours

B. Lighting Intensity, Color, Shielding and Direction

Existing Lighting (Sec. 8109-4.7.2)

- ◆ Effective one year after ordinance adoption (November 1, 2019)
 - ◆ Direct lights downward, if possible; and
 - ◆ Turn non-essential lights off during dark hours
- ◆ Special requirements apply to existing lighting in Commercial and Industrial zones for commercial and industrial uses 3 years after ordinance adoption (from November 1, 2021)

What is Essential Lighting?

- ◆ Lighting that is used for safety purposes and for circulation:
 - ◆ Security lighting
 - ◆ Illuminates walkways and driveways
 - ◆ Illuminates a building entrance

- ◆ Allowed to remain on at all times, for both new and existing lighting



Exemptions (Sec. 8109-4.7.5)

◆ **Lighting for Temporary Purposes:**

- ◆ Temporary construction lighting
- ◆ Temporary emergency lighting
- ◆ Temporary/intermittent outdoor nighttime lighting for agricultural uses, which are usual or customary
- ◆ Temporary lighting by permit (film permits, etc.) or by use (outdoor events)

◆ **Lighting for Signage**

◆ **Seasonal or Festive lighting**

◆ **Lighting outside of Planning Division authority:**

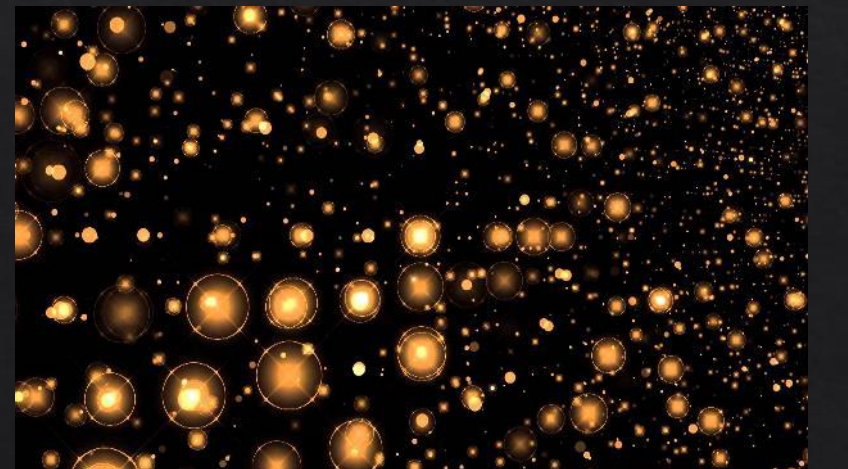
- ◆ Lighting for Wireless Communication Facilities (as required by Federal Aviation Administration)
- ◆ Lighting required to comply with preemptive state or federal law

◆ **Lights which are 60 lumens or less (including solar lights)**

◆ **Lighting on public / private streets**

Prohibited Lighting (Sec. 8109-4.7.3)

- ◆ Perimeter lot lighting, except those used for safety/security
- ◆ Blinking, flashing, rotating, strobe lights



Components of the Overlay Zone (Sec. 8109-4.7.4)

1. Dark Hours
2. Shielded fixtures, directed downward
3. Lighting Color
4. Lumens (Lighting Intensity)
5. Security Lighting
6. Light Trespass Limits
7. Outdoor Recreational Facilities Lighting
8. Service Station Lighting
9. Maximum Allowable Height
10. Night lighting for enclosed Agricultural Operations

DARK HOURS:

From 10:00 p.m., or when people are no longer present, or close of business, whichever is latest, until sunrise

Components of the Overlay Zone

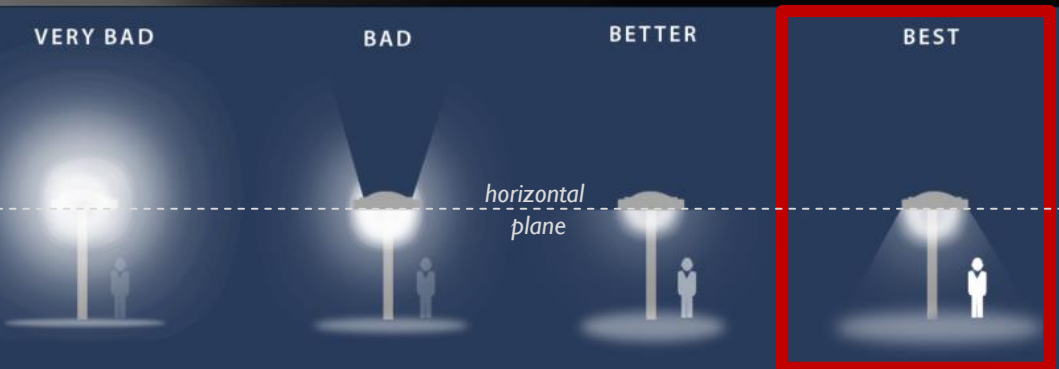
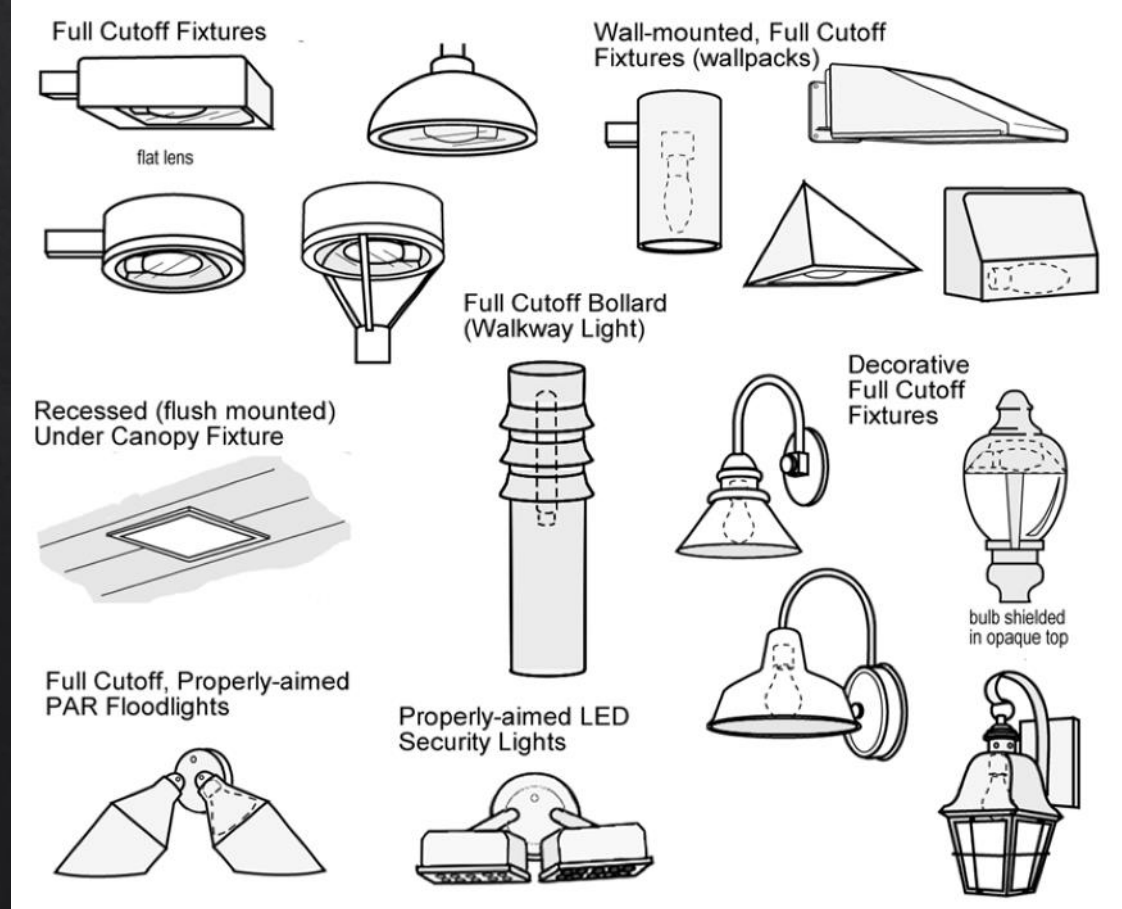
2. Shielded luminaires, directed downward

- ◇ All new outdoor lights shall be **fully-shielded** and directed downward
- ◇ Porch lights and under-eave lights may be **partially-shielded**



Fully-Shielded Luminaires

A luminaire constructed and installed in such a manner that **ALL** light emitted by the fixture is projected below the horizontal plane through the fixture's lowest light-emitting part.



Components of the Overlay Zone

3. Lighting Color

- ◇ Max. 3,000 K

K = Kelvin, a unit of measure to describe the hue of a light source (warmness or coolness)

- ◇ *Exception – Security Lighting for security cameras may have a cooler color temperature*

(i.e. higher than 3,000 K, to the minimum necessary)



KELVIN

(CORRELATED COLOR TEMPERATURE)

2700K

Warm White

- 2700-3000K
- Most similar to incandescents
- Inviting, relaxing

3000K

Bright White

- 3500-4100K
- Energetic, lively
- Good for kitchens workspaces

6500K

Lighting Science Group
lighting facts^{CM}
A Program of the U.S. DOE

Light Output (Lumens)	850
Watts	18
Lumens per Watt (Efficacy)	47

Color Accuracy Color Rendering Index (CRI)	85
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All results are according to IESNA LM-79-2009: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

Visit www.lightingfacts.com for the *Label Reference Guide*.

Registration Number: R31N-YZTSD6
Model Number: DFN 38 WW FL 120
Type: Replacement lamps

CORRELATED COLOR TEMPERATURE (CCT) LUX

Components of the Overlay Zone

4. Lighting Intensity (Lumens)

- ◇ Max. 850 lumens, except:
 - Security lighting (2,600 lumens max.); and
 - Outdoor recreational lighting
- ◇ Lighting under 60 lumens (including solar lights) is exempt



Traditional Bulb (10lm/watt)	LED Bulb (100lm/watt)
40w 0-450 lumens	2-5w 0-450 lumens
60w 500-850 lumens	6-9w 500-850 lumens
75w 900-1150 lumens	11-14w 900-1150 lumens
100w 1200-1650 lumens	15-17w 1200-1650 lumens

LEDs use significantly less watts (energy) to emit the same brightness (lumens) as your traditional incandescent bulb.

BRIGHTNESS		450 lumens	800 lumens	1100 lumens	1600 lumens	2600 lumens	5800 lumens
BULB							
	LED	6W	9-10W	13W	16-18W	24W special high voltage lamps	45W
	CFL	8-9W	13-14W	18-19W	23W	40W	85W
	Regular Incandescent	40W	60W	75W	100W	150W	300W
	Halogen	29W	43W	53W	72W	150W	300W

Components of the Overlay Zone

5. Security Lighting

- ◇ Max. 2,600 lumens
- ◇ Use motion sensors between 850 and 2,600 lumens
- ◇ May exceed 3,000 Kelvin, as required by security camera system

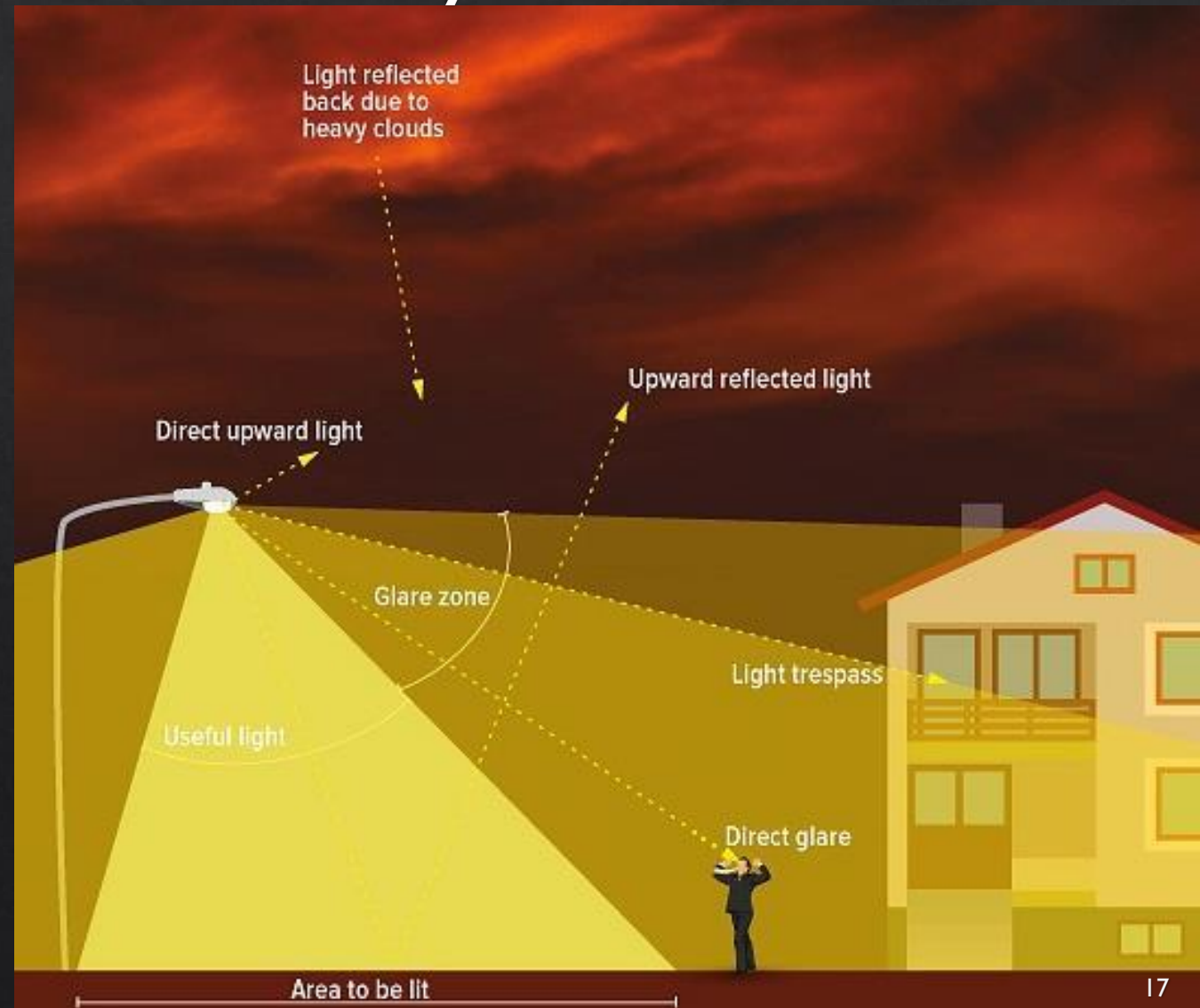
Existing Security Lighting with any Kelvin or lumen levels may remain on during dark hours, even if no motion sensor is installed



Components of the Overlay Zone

6. Light Trespass Limits

- ◆ Light that falls beyond the property it is located on
(Measured in foot-candles)



Light Trespass Limits

Zone Types	Light Trespass Limits (measured at property line emitting the light source)
Agriculture and Open Space (AE, OS, TP)	0.1 foot-candles
Rural & Single-family/ Two-family Residential (RA, RE, RO, RI, R2)	0.1 foot-candles
Urban/Multi-family Residential (RPD)	0.2 foot-candles
Commercial and Industrial (C-O, C-I, CPD, M-1, M-2, M-3)	0.25 foot-candles, or as per approved permit (PD or CUP)

One foot-candle = light cast on a surface by a candle source one-foot in height, from a distance of one foot

Components of the Overlay Zone

8. Service Station Lighting

- ◇ Canopy lighting shall be fully-shielded and use flat lenses
- ◇ No additional lighting allowed on columns



Components of the Overlay Zone

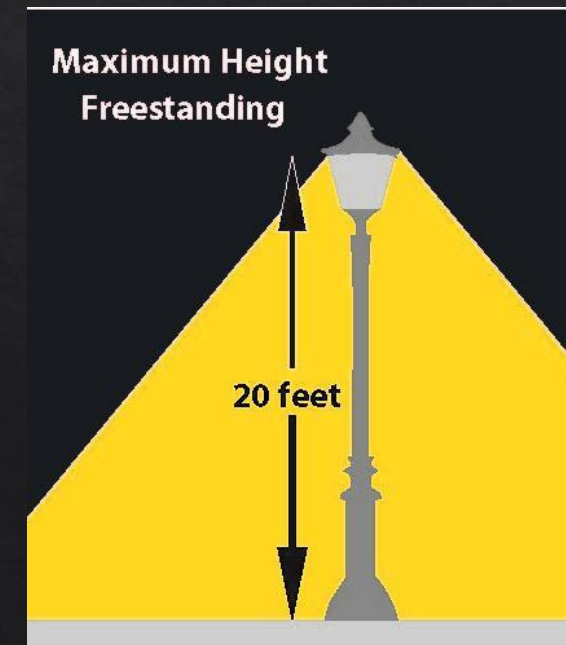
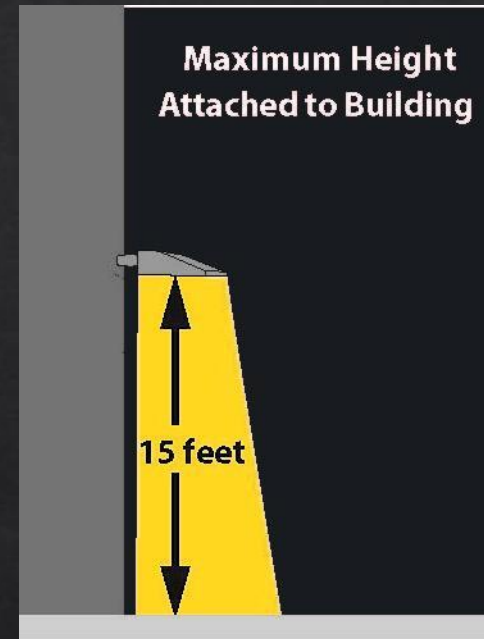
9. Maximum Height Allowance

◆ Attached to -

- ◆ Structures = 15 feet max.
- ◆ Fences = no higher than height of fence

◆ Freestanding –

- ◆ For walkways, driveways, or hardscaping – 2 feet max.
- ◆ All other freestanding – 20 feet max., unless specified by permit





Applicability

Commercial and Industrial Uses in Commercial & Industrial Zones

◆ EFFECTIVE NOVEMBER 1, 2019

◆ **Essential lighting** to be directed downward, if possible

◆ **Existing non-essential** outdoor lighting:

◆ Direct lights downward, if possible; and

◆ Turn lights off during dark hours (when people are no longer present, or the business is closed, or after 10 p.m., whichever is latest)

Commercial and Industrial Uses in Commercial & Industrial Zones

◇ EFFECTIVE NOVEMBER 1, 2021

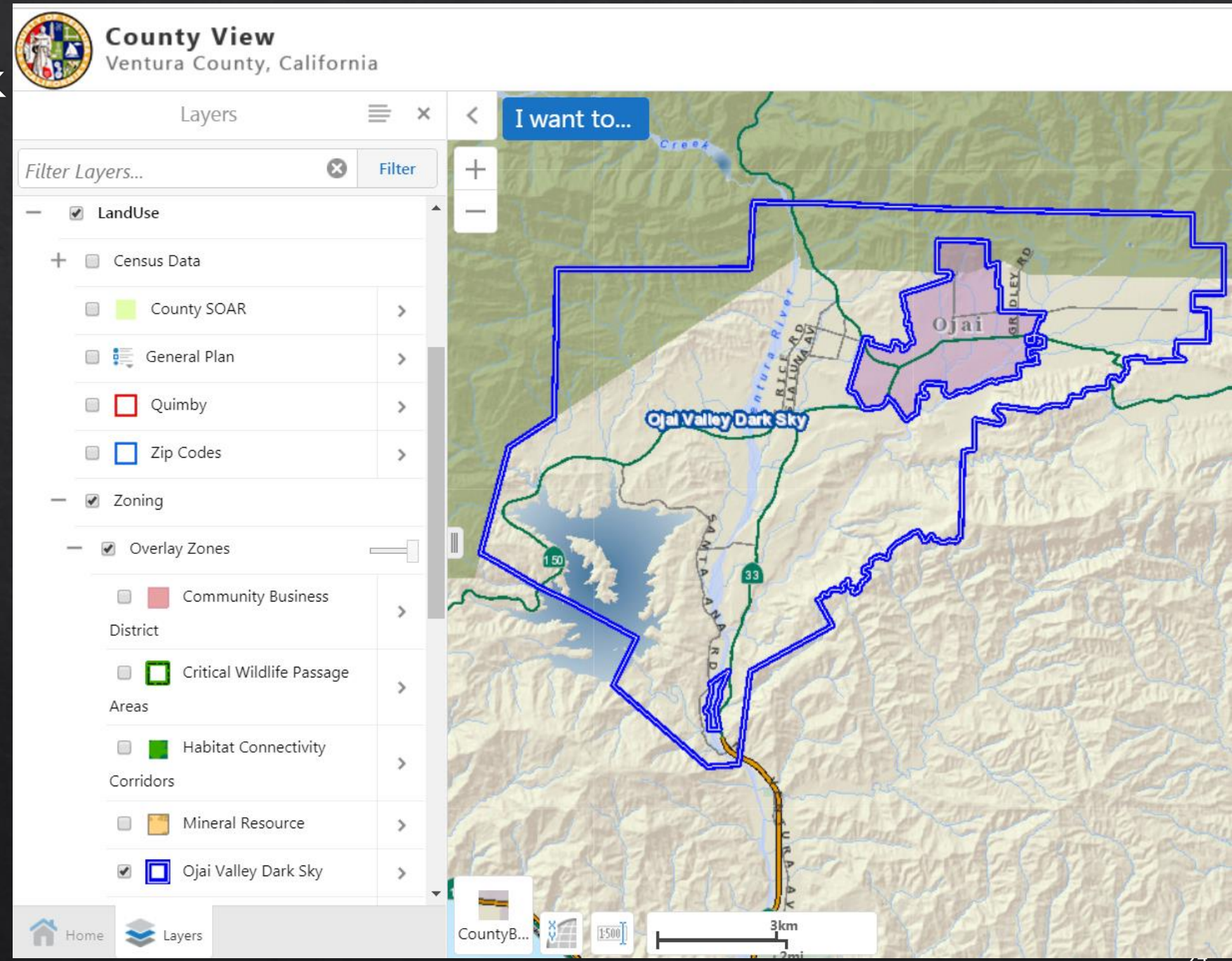
- ◇ **Permitted Facilities** will be conditioned to comply with lighting standards within a reasonable time period after November 1, 2021, on approval of a minor or major modification of the underlying discretionary permit
- ◇ **All outdoor luminaires (including essential lighting)** must conform with adopted standards
- ◇ **Property owners can apply for extension:**
 - ◇ Planning Director approved
 - ◇ Demonstrate good cause (significant financial or other hardship)

Is my parcel in the Dark Sky Overlay Zone?

Check County View (GIS Viewer)

gis.ventura.org/countyview/

- ◆ Look for your parcel (by parcel number or address); for a **“/DKS”** suffix at the end of the zone for your parcel; OR
- ◆ Turn on **“Ojai Valley Dark Sky”** Layer added under Land Use/Zoning/Overlay Zones



Understanding the Ordinance

◆ Informational / Educational Materials on Project website:

www.vcrma.org/ojai-valley-dark-sky-ordinance

Ojai Valley Dark Skies	
Background	Applicability
New Lighting Standards	Radiance Levels
Contact	
1 Dark Hours	Generally, lights shall be turned off after 10PM, or when people are no longer present in exterior areas, or during business hours, whichever is latest, until sunrise. Essential lighting (such as security, parking, walkways, and driveways) may remain on at all times.
2 Shielded Fixtures, etc.	
3 Lighting Color	
4 Lighting Intensity (L)	
5 Security Lighting	
6 Light Trespass Limits	
7 Outdoor Recreational Facility Lighting (public and private)	
8 Service Station Lighting	
9 Maximum Allowable Height	
10 Night Lighting for Greenhouses	

Easy to understand brochures, explaining applicability, standards and lighting terminology

◆ Public Information Brochures

◆ Story Map

◆ Frequently Asked Questions

Online interactive GIS Story Map

EXISTING LIGHTING (Sec. 8109-4.7.2)
FOR ALL ZONES:
From November 1, 2016, unless exempt, existing lights shall be:
• Directed downward of beams and
• Turned off during dark hours (generally after 10:00 p.m. or when people are no longer present, whichever is later, until sunrise).
Note: Nonconforming existing lighting may remain in use until replaced, including during dark hours.

FOR COMMERCIAL AND INDUSTRIAL ZONES:
From November 1, 2021, existing lighting for commercial and industrial uses shall comply with Sec. 8109-4.7.4. Property owners may apply for an extension to this deadline.
After November 1, 2021, existing lighting for commercial and industrial uses shall comply with a discretionary permit. It will be conditioned to comply with Sec. 8109-4.7.4 within a reasonable time period. This condition will be applied when the permit undergoes a minor or major modification.

WHAT'S EXEMPT? (Sec. 8109-4.7.5)
• Temporary emergency lighting
• Temporary construction lighting
• Temporary intermittent night lighting for agricultural uses which is seasonal or customary
• Temporary lighting which has a permit
• Temporary lighting for outdoor events
• Temporary construction lighting as regulated by the Federal Aviation Administration
• Signs
• Seasonal or festive lighting
• Lighting of 60 lumens or less (includes color)
• Lighting on public premises
• Facilities subject to state or federal regulations
• Lighting at public schools

OJAI VALLEY DARK SKY OVERLAY ZONE
Purpose of the Dark Sky Overlay Zone:
• Protect and restore ability to view the night sky
• Preserve tranquility and maintenance of thermal environment

GENERAL STANDARDS (Sec. 8109-4.7.4)
USE FULLY SHIELDED FIXTURES DIRECTED DOWNWARD:
Lights at building entrance (e.g., porch) may be partially shielded.
SHIELDING:
Fully-shielded Partially-shielded
LIGHTING COLOR:
Maximum 3,000 Kelvin, except lighting for security elements which may be a cooler color temperature.
LIGHTING INTENSITY:
Maximum 850 lumens, except security lighting (2,000 lumens max) and outdoor recreational facility lighting.
LIGHT TRESPASS LEVELS:
Limits to ensure minimal spillover beyond the property line as included in Sec. 8109-4.7.4(b).
OUTDOOR RECREATIONAL FACILITY LIGHTING: (for new public and private tennis courts, basketball courts, equestrian arenas, etc.)
• Lighting levels not to exceed IESNA recommendations (see 8109-4.7.4(g)).
• See maximum height allowances for attached and freestanding lighting.
DARK HOURS: Signs when lights must be turned off, unless exempt, from 10:00 p.m. or when people are no longer present, or close of business, whichever is latest, until sunrise.
Exception: Essential lighting can remain on during Dark Hours. Exempt uses to Dark Hours are listed in the right sidebar.
SECURITY LIGHTING:
• Can be max. 2,000 lumens.
• If security lighting is more than 350 lumens, must be on motion sensors & timer with max. 10 mins. activation time during dark hours.
• No motion sensors for fully-shielded security lighting under 350 lumens, or for security lighting for sign and uses in 81, 07 and 06 zones.
• Security lighting is deemed essential lighting and is not subject to dark hours.
• Security lighting used with sensors can be more than 3,000 lumens as required by the system.
NIGHT LIGHTING FOR ENCLOSED TRANSPARENT OR TRANSPARENT GREENHOUSES:
• Security lighting in greenhouses shall use only partially-shielded directional lighting and shielded screens on roof and walls, from 10:00 p.m. until sunrise.
GAS STATIONS:
• Canopies shall have recessed lighting, with no additional lighting on columns.

LIGHT ALLOWED AFTER 10:00 P.M.
• Essential lighting:
• Security lighting
• Lighting for walkways, driveways, and of building entrances
• Lighting for entrance areas where people are still present
• Lights under 60 lumens, in buildings or light fixtures
• Porch lights
• Lighting used by businesses that are still open
• Parking lot lighting, if permitted through a discretionary permit
• Exterior lighting, including holiday lights
• Lightings subject to permissive state or federal standards for illumination
WHAT IS ESSENTIAL LIGHTING?
Lighting that is used for safety purposes and for recreation, including:
• Security lighting, subject to requirements in 8109-4.7.4(e)
• Illuminates walkways and driveways
• Illuminates building entrances (such as porch lights)
This essential lighting is allowed to remain on at all times.
PROHIBITED LIGHTING (Sec. 8109-4.7.5)
• Flashing, blinking, strobe lights
• Permanent lot lighting, unless used for security purposes, or less than 60 lumens
NOTE: Existing lighting that is prohibited shall be turned off after December 1, 2018.

TECHNICAL TERMS USED FOR LIGHTING
What are Shielded Fixtures?
A shielded fixture is one where the complete lighting unit (including the lamp and all its components) is constructed such that the light emitted by the fixture, projects only below the horizontal plane.
Shielded fixtures of TWO types are allowed in the Ordinance:
a. All new lighting is required to be FULLY-SHIELDED (i.e. where ALL light emitted is below the horizontal plane).
b. PARTIALLY-SHIELDED fixtures are only allowed for porch lights, and outdoor recreational facilities (i.e., where MOST light is emitted below the horizontal plane. In the event that there is light emitted above the horizontal plane, it arises only from decorative elements or diffusing materials, e.g., frosted/crystal glass or plastic.)
VERY BAD (Unshielded Lighting causes sky glow) **BAD (Partially-Shielded)** **BETTER (Fully-Shielded)**

What does 3,000 Kelvin look like?
Kelvin (K) is a measure of color temperature, or the warmth or coolness of light. Color temperatures greater than 4,000 Kelvin are bluish-white in tone and are typically considered to be "cooler" colors. Lamps with color temperatures of less than 3,000 Kelvin are yellowish and are considered to be "warmer."
The Ordinance allows for a maximum of 3,000 Kelvin.
* Security lighting may have a cooler color (i.e. higher than 3,000 kelvins) if required for security cameras. Outdoor recreational lighting may also be higher than 3,000 Kelvin. See the ordinance for details.

How do Lumens differ from Watts?
Unlike watts, which measures the amount of energy (or power) consumed, lumens are a unit of measure which quantify the amount of light produced by a lamp. I.e., the brightness.
The Ordinance requires that each lamp emit a maximum of 850 lumens.*
Generally, 850 lumens is equivalent to the amount of light produced by a 60-watt incandescent light bulb (or a 10-watt LED bulb).
* Security lighting may have lamps with a maximum of 2,000 lumens as long as they are on motion sensors. Outdoor recreational lighting may also be higher than 850 lumens. See the ordinance for details.

Wattage	450	800	1100	1600	2600	5800
LED	6W	9-10W	17W	14-19W	34W	41W
CFL	9-10W	13-14W	16-17W	23W	40W	85W
Incandescent	40W	60W	75W	100W	150W	300W
Halogen	30W	47W	57W	72W	102W	100W

Prepared by County of Ventura Planning Division, October 2018
For more information: (805) 654-2488



Image of the Milky Way from the Ventura River bottom
(provided by Lindsay Thomson, an Oak View resident)





Questions?

Contact: Ruchita Kadakia, Project Planner ★ Ruchita.Kadakia@ventura.org

<https://www.vcrma.org/ojai-valley-dark-sky-ordinance>