

# City of Kanab – Proposed Outdoor Lighting Ordinance

Draft #12.1 of the Kanab Beautification Committee and Dark Sky Working Group 12/4/17

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## Section 1. Purpose and Intent

## Section 2. Lighting Zones

Lighting Zones in this ordinance conform to the Kanab Zoning Map and are utilized here to recognize differing lighting needs around the city. Lighting levels are specified as LZ1, LZ2 and LZ3 in the Tables of this ordinance.

### **LZ1 (Single family and agricultural where low levels of lighting are appropriate):**

- Residential Agricultural
- Rural Residential
- Low Density Residential

### **LZ2 (Multi-family where medium levels of lighting are appropriate):**

- Medium Density Residential
- High Density Residential

### **LZ3 (Commercial and Manufacturing where moderate to high levels of lighting are appropriate):**

- Commercial
- Manufacturing & Distribution

## Section 3. General Requirements (All Areas)

### A. Conformance with All Applicable Codes:

All outdoor lighting shall be installed in conformance with the provisions of this Ordinance, applicable Electrical and Energy Codes, and the Building Code. It will be city policy to comply with this ordinance.

### B. Applicability:

All **existing outdoor lighting and** outdoor lighting for new residential and commercial construction and development shall comply with the requirements of this ordinance, EXCEPT

1. Lighting within the public right-of-way or easement for the principal purpose of illuminating state or federally controlled highways.
2. Lighting for public monuments, statuary and existing residential flagpoles.
3. Lighting solely for signs.
4. Temporary lighting for theatrical, television, performance areas and construction sites.
5. Underwater lighting in swimming pools and other water features.
6. Temporary seasonal lighting, provided that individual lamps are less than 70 lumens (10 watts).
7. Lighting that is only used under emergency conditions.
8. Lighting specified or identified in a specific use permit.
9. Lighting required by federal, state, county or city ordinances and regulations.
10. Temporary lighting for civic events and holiday decorations.

11. Lighting required for the safe take off and landing of aircraft.

C. Lighting Controls: (Commercial and Street Lighting only)

1. Automatic lighting reduction requirements shall utilize motion sensors, timers and/or programmable controllers. Time of outdoor lighting reduction shall be 11:00 pm or one hour after the close of business, whichever is later. After such time, total outdoor brightness (lumens) shall be reduced by at least 50% or turned off. It is recommended that outdoor lighting be turned off when no one is present to use the light.

Lighting reductions are NOT required for any of the following:

- a. Outdoor lighting consisting of only one light fixture.
- b. Lighting required by Code for steps, stairs, walkways and building entrances.
- c. Lighting for outdoor recreational facilities is allowed one hour prior to sunset and until 11 PM, unless needed to complete a specific organized activity or event already in progress.
- d. Lighting governed by special use permit in which times of operation are specifically identified.
- e. Businesses that operate on a 24-hour basis.
- f. Where, as determined by the City, lighting levels must be maintained for safety reasons or special events.

D. Color Temperature of Lamps:

To minimize the amount of harmful blue light in the nighttime environment, lamps (bulbs) shall not exceed a maximum Correlated Color Temperature (CCT) of 3,000 degrees Kelvin. (as listed on the packaging)

**Section 4. Commercial, Multi-Residential and Street Lighting**

Outdoor lighting for all **new** construction of non-residential properties, and multiple residential properties of 7 dwellings or more with common outdoor areas, including RV/Mobile Home Parks and Tiny House Parks shall comply with this section.

A. Site Lumen Limits

The total Site Lumen Limit is determined by using either the Parking Space Method (Table A) or the Hardscape Area Method (Table B). Only one method shall be used per permit application. All existing lighting shall be included in the calculation of total installed lumens. See illustration figures I and J for canopy applications.

B. Off Site Impacts:

All light fixtures shall be rated and installed according to Tables C-1 and C-2. Where lamps exceed 1500 lumens, uplight must not exceed a rating of U0 (zero uplight) under any circumstances.

C. Light Shielding/Height for Parking Lot Illumination:

No light shall be emitted above 90 degrees. The height of pole-mounted fixtures shall be held to a minimum practical height not exceeding twenty feet (20').

D. Fixture Shielding:

All light fixtures are required to be fully shielded and installed so that the shielding complies with the definition of a fully shielded light fixture as shown by the attached illustrations. Figures B thru F.

E. Light Trespass Standard:

All light fixtures, including motion sensing fixtures and security lighting, shall be aimed and shielded so that the direct illumination shall be confined to the property boundaries of the source, including any public or private street or road. Motion sensing light fixtures shall be adjusted according to the manufacturer's instructions to turn off 10 minutes after detected motion ceases.

F. Lighting for Outdoor Signs and Panels:

Outdoor internally illuminated signs (whether freestanding or building mounted) shall be constructed with an opaque background and translucent letters and symbols or with a colored background and lighter letters and symbols. See illustration Figure H.

## **Section 5. Residential Lighting**

### **A. General Requirements:**

For residential properties, including multiple residential properties not having common areas, all outdoor light fixtures shall be fully shielded and shall not exceed the allowed lumen output shown in Table D, Row 2. This requirement shall NOT apply to the following:

1. One shielded or unshielded light fixture at the main entry, not exceeding the lumen output in Table D, Row 1.
2. Light fixtures not exceeding the allowed lumen output in Table D, Row 3.
3. Low voltage landscape lighting not exceeding the allowed lumen output in Table D, Row 4.
4. Fully shielded directional flood lighting aimed so that direct glare is not visible from adjacent properties and not exceeding the allowed lumen output in Table D, Row 5.
5. Open flame gas lamps.
6. Lighting controlled by a motion sensor and extinguished within 10 minutes of being activated.
7. Non-regulated lighting as listed in this ordinance.

### **B. Landscape Lighting Requirements:**

1. Shall comply with Table D.
2. Shall not shine onto adjacent properties, and shall be shielded so that the luminous elements of the fixture are not visible from any other property, as shown by illustration Figure B.

C. Total outdoor light output of any residential property shall not exceed a total of 25,000 lumens (1,667 watts) per net acre. A net acre equals all improved areas and shall include buildings, driveways and other areas where outdoor lighting is installed. See full explanation of Net Acre in Definitions.

D. Output of unshielded fixtures shall not exceed 5% of total site lumens.

## **Section 6. Existing Lighting (All Areas)**

Lighting installed prior to the effective date of this ordinance shall comply with the following:

### **A. Amortization:**

Fifteen years from the date of this ordinance, all outdoor residential, non-residential, commercial and street lighting shall comply with this ordinance.

### **ALTERNATE LANGUAGE.....**

#### **A. Non-Conforming Lighting.**

1. All existing outdoor lighting legally installed before adoption of this ordinance that does not conform with the provisions of this ordinance shall be considered non-conforming.
2. When a lighting installation is expanded, or an existing fixture requires repair or upgrade for safe operation, or where use of a non-conforming outdoor light fixture is discontinued for six (6) months, it shall be brought into conformance with this ordinance.
3. Upon replacing a failed lamp, the rated correlated color temperature (CCT) of the replacement lamp (bulb) shall not exceed 3000 degrees Kelvin.

### **B. New Uses or Structures, or Change of Use:**

Whenever there is a new use or change of use on a property (zone change or variance) all outdoor lighting on the property shall be brought into compliance with this ordinance before the new or changed use commences.

C. Additions or Alterations:

1. Major additions. If a major addition occurs on a property, lighting for the **entire** property shall comply with the requirements of this ordinance. For the purpose of this section, the following are considered to be major additions:
  - a. Additions of 25% or more of additional dwelling units, gross floor area, seating capacity, or parking spaces, either with a single addition or with cumulative additions after the effective date of this ordinance.
  - b. Single or cumulative additions, modification or replacement of 25% or more of installed outdoor light fixtures existing at the effective date of this ordinance.
  - c. All additions, modifications, or replacement of more than 25% of existing outdoor lighting fixtures shall require the submission of a complete inventory and site plan detailing all existing and any proposed new outdoor lighting.
2. For all other additions of less than 25%, all **new** outdoor lighting shall meet the requirements of this ordinance.
3. Resumption of Use after Abandonment. If a property with non-conforming lighting is abandoned for a period of six months or more, then all outdoor lighting shall be brought into compliance with this ordinance before any further use of the property occurs.

**Section 7. Special Standards (All Areas)**

A. Flagpoles:

Lighting of flags is permitted as follows:

1. Flagpoles illuminated from below are limited to a height of 25 feet above ground level, illuminated with a single spot type fixture, whose maximum initial output is 60 lumens per foot, measured from the light fixture to the top of the flagpole. The fixture is to be mounted so that the lens is perpendicular to the flagpole.
2. Flagpoles illuminated from above may utilize a light fixture attached to the top of the flagpole or a fixture mounted above the top of the flagpole on a structure within 15 feet of the flagpole and must comply with all shielding and total outdoor light output standards previously specified in this ordinance, except for lights as shown in illustration Figure K. The total output from any light fixture mounted on top of a flagpole is limited to 800 lumens.

B. Amphitheater Lighting:

1. The performance area shall use directed spotlighting such that it is mitigated beyond the property boundaries.
2. The performance area may only be illuminated during performances and rehearsals.
3. The lighting of seating areas, pathways, and other areas of the amphitheater shall be fully shielded and turned off within 1 hour of the end of the performance.

C. Recreational Lighting:

1. The Planning Commission shall approve new recreational lighting fixtures for fields, courts, pools, tracks or ranges only after finding that:
  - a. The lighting has provisions for minimizing glare, spill light, and up-light by the use of louvers, hoods, or shielding.
  - b. The lighting does not exceed recommended illumination levels for Class IV sports lighting set by the Illuminating Engineering Society of North America.
  - c. The lighting will only illuminate the field or court area with no direct illumination falling outside of those areas.
  - d. The light source will not be visible from adjacent properties.
2. Pole mounted lighting shall be limited to the lowest practical height to illuminate the field and shall use directional and/or fully shielded fixtures.
3. Lighting not directly illuminating the field, court, track or range shall conform to all provisions of this ordinance.
4. Existing recreational lighting shall be mitigated to reduce or eliminate light trespass and glare.

- D. Installations prohibited:
  1. Lighting contrary to this ordinance.
  2. New outdoor neon lighting.
  3. Searchlights
  4. Mercury vapor fixtures or lamps.
  5. Outdoor wall pack style fixtures, unless fully shielded, as shown by illustration Figure L.
  6. Installation of any outdoor barn-light style fixture, unless it includes a full opaque reflector instead of the standard translucent lens, as shown by illustration Figure M.
  7. Flashing, blinking, intermittent or other lights that move or give the impression of movement, not including holiday lighting between November 15 and January 15.
  8. Failure to comply with any terms or conditions set forth in a permit issued under this ordinance.
  
- E. Additional Shielding: In certain cases, such as but not limited to new construction on ridgelines or hillsides, additional shielding may be required to mitigate glare or light trespass and will be considered part of the permitting process.

**Section 8. Lighting by Special Permit Only**

- A. High Intensity and Special Purpose Lighting:
 

The following lighting systems shall be prohibited from being installed or used except by special use permit:

  1. Temporary lighting in which any single light fixture exceeds 20,000 initial lumens (1,300 watts) or the total lighting load exceeds 160,000 lumens. (10,600 watts)
  2. Aerial Lasers.
  3. Other very intense lighting defined as having a light source exceeding 200,000 initial lumens (13,300 watts) or an intensity in any direction of more than 2,000,000 candelas.
- B. Complex and Non-Conforming Uses shall require a conditional use permit. Upon a conditional use permit issued by the City, lighting not complying with the technical requirements of this ordinance but consistent with its intent may be installed for complex sites or special uses. To obtain such a permit, applicants shall demonstrate that the proposed lighting installation:
  1. Makes all reasonable efforts to mitigate the effects of light on the environment and surrounding properties supported by a signed statement describing the mitigation measures.
  2. Uses controls to reduce lighting at a project specific time as defined in the Permit.

**Section 9. Enforcement and Penalties**

- A. Public Nuisance: **MODIFY NUISANCE ORDINANCE TO DEFINE LIGHTING NUISANCE AS FOLLOWS:**
  1. Any violation of this ordinance that results in light trespass or an unreasonable interference with the common and usual use of neighboring property is hereby declared to be a public nuisance, which is prohibited by this ordinance. The provisions of this lighting ordinance shall be regulated and enforced in accordance with Section 10 of the Kanab City Nuisance Ordinance.
  
- B. Administrative Guidance:
 

A volunteer group selected by the city shall provide a user guide to aid in the administration of, and compliance with this ordinance. The user guide shall be educational only and shall not constitute regulations, amendments, or exceptions.
  
- C. Audits:
 

A volunteer group selected by the city shall perform two (2) audits of all outdoor lighting in the city, one at ten (10) years and the other fourteen (14) years after the effective date hereof. These audits will identify all lighting that does not conform to the standards of this ordinance with regard to shielding and trespass. The results of these audits will be made available to the public.

**Section 10. Street Lighting**

This section only applies to streets, but NOT to State or Federally controlled highways.

- A. Light Pollution from Street Lighting shall be controlled on all collectors, local streets, alleys, sidewalks and bikeways as defined by the current version of the American National Standards Institute ANSI/IES RP-8 Standard Practice for Roadway and Street Lighting, in a manner consistent with this ordinance.
- B. Scope:  
This ordinance covers all street lighting not governed by regulations of federal, state or other superseding jurisdiction, except for lighting systems mounted less than 10.5 feet above street level and having less than 1,000 lumens. Street lighting levels shall correlate with the desired conditions of Kanab City Lighting Zones LZ1, LZ2 & LZ3. Other than at the intersection of roadways, street lighting shall utilize half night photocells or timers to reduce the lights halfway between dusk and dawn. All street lighting shall have no light emitted above 90 degrees to the light source.
- C. Warranting:  
The City of Kanab shall establish a warranting process to determine whether new public street lighting is required and shall not assume the need for any lighting or for continuous lighting unless conditions warrant the need. When the City Manager determines that a nighttime public safety hazard exists that can only be mitigated by outdoor lighting, then that lighting shall be deemed warranted. Lighting shall only be installed where warranted and shall employ adaptive controls and lighting reduction curfew as in Section 3.C(1).

**Section 11. Tables**

See Attached

**Lumens to Watts Table**

<http://www.rapidtables.com/calc/light/lumen-to-watt-calculator.htm>

**Section 12. Definitions**

See Attached

**Section 13. Illustrations**

See Attached

Lumens	Incandescent light bulb (watts)	Fluorescent / LED (watts)
375 lm	25 W	6.23 W
600 lm	40 W	10 W
900 lm	60 W	15 W
1125 lm	75 W	18.75 W
1500 lm	100 W	25 W
2250 lm	150 W	37.5 W
3000 lm	200 W	50 W