



## **Memorandum**

**To:** Planning Commission  
**From:** Thomas Dansie  
**Date:** April 2, 2021  
**Re:** Outdoor Lighting Ordinance Revisions

---

### ***Executive Summary***

The Town has a goal of obtaining designation as a Dark Sky Community from the International Dark Sky Association (IDA). One of the requirements for this designation is for the Town to have an outdoor lighting ordinance that meets the IDA's standards. Several revisions to the Town's ordinance are necessary to comply with IDA standards. Staff has drafted language for these revisions. The Commission should review these proposed revisions during the meeting and give staff feedback.

### ***Background***

The Town adopted an outdoor lighting ordinance in 2009. At that time the Town collaborated with night sky experts from a number of different organizations, including the IDA, in creating an effective ordinance. The ordinance has been amended several times in the years since its adoption. The ordinance is effective in limiting light pollution, controlling glare, and ensuring outdoor lighting enhances the character of the community.

The Town is active in enforcing the outdoor lighting ordinance. Although some persistent violations remain, and new violations occasionally occur, the vast majority of outdoor lighting in the Town complies with the ordinance. The ordinance and the Town's enforcement thereof have helped preserve dark night skies in Springdale.

Although the ordinance is effective, it does not meet several technical standards established by the IDA for outdoor lighting ordinances. The Town requested the IDA conduct a courtesy of the ordinance earlier this year. The ensuing review revealed eight specific areas of the code that need to be revised for compliance with IDA standards. The review also identified two general issues that need to be addressed. A copy of the IDA courtesy review is attached to this report.

### ***Analysis***

Staff has addressed the eight<sup>1</sup> areas of specific revision and the two areas of general revision in the attached draft ordinance language. The Commission should review this ordinance language to determine: 1) if it resolves the comments in the IDA report, and 2) if it accomplishes the Town's outdoor lighting goals.

---

<sup>1</sup> The proposed revisions technically only address seven of the IDA's comments. The eighth comment concerns the size of illuminated signs. The IDA limits sign illumination to 200 square feet in area. Since the Town does not allow signs larger than 40 square feet under any circumstances, it goes without saying that our ordinance meets the requirement that no illuminated sign will be larger than 200 square feet.

Staff notes that the current lumen per acre allowance in the ordinance will need to be revised. The Town currently limits illumination on a property to 30,000 lumens per acre. Currently the lumen per acre allowance excludes sign illumination and discounts the illumination from lights under a covered roof overhang by 75%. The IDA standards require sign illumination to be included in the lumen allowance. The IDA standards do not allow discounting the illumination from lights under roof overhangs.

The Town's 30,000 lumen per acre allowance was carefully calculated based on signs being excluded and lights under overhangs being discounted by 75%. The Town will need to revise the amount of lumens per acre allowed based on these required revisions.

***Requested Direction***

Staff requests the Commission review the attached draft language and give feedback.



INTERNATIONAL DARK SKY ASSOCIATION

# Lighting Ordinance Pre-Screen

## International Dark Sky Places Program 2018 IDSC Guidelines

**Jurisdiction:** Springdale, UT

**Submitted by:** Shelly Heaton

**Reviewer:** Adam M. Dalton

**Affiliation:** City of Springdale, UT

**Date:** 1/19/2021

1. A fully-shielded or full-cutoff standard for all lighting fixtures over 1000 lumens initial lamp output (or equivalent wattages)

A. Required: Unless specifically exempted by this chapter, all outdoor lighting shall use full cutoff fixtures and shall be installed so light is directed downward with no light emitted above the horizontal. Lighting must not be placed at a location, angle, or height that directs illumination outside the property boundaries where the light fixtures are located.

**(10-15C-3A)**

C. Fixtures having a total light output less than one thousand (1,000) lumens are exempted from the full cutoff requirement provided

**(10-15C-3C-1)**

*See 10-15C-3C-1a-d for more information*

### **MEETS 2018 IDSC STANDARDS**

2. Restrictions on total amount of unshielded lighting, such as a limit on lumens per acre or total site lumens in unshielded fixtures (or equivalent wattages)

### **NO PROVISION SEEN TO THIS EFFECT**

3. A policy to address over-lighting, such as energy density caps, lumens/acre caps, or maximum illuminance specifications

In the VC and CC zones, each property (or group of adjacent properties developed together as a commercial center) is allowed no more than 30,000 lumens of total lighting per acre.

**(10-15C-7)**

### **MEETS 2018 IDSC STANDARDS**

4. A provision that clearly:
  - a. indicates where, when, and under what circumstances new public outdoor lighting (street lighting and lighting on other public property and rights-of-way) is warranted and will be permitted

B. Roadway/Streetlights: Streetlights are prohibited unless recommended by the town engineer or required by UDOT to ensure the safety of the public. All streetlights shall utilize lamp types that are energy efficient and minimize sky glow and other unintended impacts of artificial lighting. For lights along SR-9, the lowest illumination design that meets the minimum illumination requirements set by UDOT shall be used. Lights along SR-9 shall use decorative light fixtures similar in appearance to the shuttle stop lighting.

**(10-15C-5B)**

*Would need to specify regarding the installation of other public lighting in addition to streetlights to meet the above requirement.*

### **NEEDS ADDITIONAL TEXT TO MEET IDSC STANDARDS**

- b. requires that adaptive controls and curfews be employed in all future installations of public outdoor lighting.

### **NO PROVISION SEEN TO THIS EFFECT**

5. A provision that clearly establishes a threshold of 3000 Kelvins for the allowable correlated color temperature of all lighting fixtures **OR**

Allowed lighting must not emit more than 25% of its total spectral power at wavelengths < 550 nanometers; **OR**

The scotopic-to-photopic (S/P) ratio of allowed lighting must not exceed 1.3

C. Light Color Temperature: All lighting must be of a warm color temperature. All light sources in all outdoor lighting must have color temperature equal to or less than three thousand degrees Kelvin (3,000°K). (Ord. 2009-04, 8-12-2009; Ord. 2017-05, 6-7-2017; Ord. 2019-09, 10-9-2019)

**(10-15C-4C)**

### **MEETS 2018 IDSC STANDARDS**

6. Affects an amortization period, applicable to ALL publicly AND privately-owned lighting, to end not more than ten (10) years from the effective date of the outdoor lighting policy, after which all non-conforming lighting extant at the time of enactment must be brought into compliance with the policy.

3. All outdoor lighting not previously scheduled for amortization or otherwise exempted shall be brought into conformance with this chapter within seven (7) years from August 12, 2009.

**(10-15C-12-3)**

### **MEETS 2018 IDSC STANDARDS**

7. Outdoor recreational and/or athletic field lighting may be exempted from the strict shielding and short-wavelength emission requirements above provided that all of the following conditions are met:

- a. Illuminating Engineering Society (IES) lighting guidelines(RP-6) are followed according to the appropriate class of play.

b. The recreational lighting does not exceed illumination levels for class IV sports lighting set by the Illuminating Engineering Society of North America.  
**(10-15C-5D-1b)**

**MEETS 2018 IDSC STANDARDS**

- b. Field lighting is provided exclusively for illumination of the surface of play and viewing stands, and not for any other applications

c. The recreational lighting will only illuminate the field or court area with no direct illumination falling outside of those areas.  
**(10-15C-5D-1c)**

**MEETS 2018 IDSC STANDARDS**

- c. Illuminance levels must be adjustable based on the task (e.g., active play vs. field maintenance)

**NO PROVISION SEEN TO THIS EFFECT**

- d. Off-site impacts of the lighting will be limited to the greatest practical extent possible

d. The light source for the recreational light will not be visible from adjacent properties.  
**(10-15C-5D-1d)**

**MEETS 2018 IDSC STANDARDS**

- e. A strict curfew requirement (e.g., lights must be extinguished by 10pm/2200h or one hour after the end of play, whichever is later) is observed

**NO PROVISION SEEN TO THIS EFFECT**

- f. Timers must be installed to prevent lights being left on accidentally overnight by automatically extinguishing them

**NO PROVISION SEEN TO THIS EFFECT**

- 8. Restrictions on the installation and operation of illuminated signs:
  - a. Luminance levels for operation between sunset and sunrise shall not exceed 100 nits (100 candelas per square meter) as measured under conditions of a full white display; AND

**NO PROVISION SEEN TO THIS EFFECT**

- b. Sign illumination shall be extinguished completely one (1) hour after sunset, and remain off until one (1) hour before sunrise; AND

**NO PROVISION SEEN TO THIS EFFECT**

- c. The luminous/illuminated surface area of an individual sign shall not exceed 200 square feet (18.6 square meters)

**NO PROVISION SEEN TO THIS EFFECT**

**Any extra provisions worth noting:**

1. With the exception of sign illumination, all outdoor lighting (building mounted, pathway lights, parking lot lights, etc.) are included in the lumen allowance.

**(10-15C-7)**

*Sign illumination cannot be unilaterally exempted from all lumen allowances. In the sign code, there are no limits for signage light output.*

2. Full cutoff fixtures located under solid canopies, solid patio covers, or solid roof eave overhangs where all parts of the fixture are at least five (5) feet away from the nearest outer edge of the canopy, cover, or overhang, shall only be counted as twenty five percent (25%) of the fixture's lumen output for determining compliance with the lumen allowance.

**(10-15C-7A-1)**

*The above calculation methodology is not allowed via the 2018 IDSC program guidelines. You cannot "discount" fixtures' lumens, even if they are fully shielded.*

**What's Missing:**

1. Restrictions on total amount of unshielded lighting, such as a limit on lumens per acre or total site lumens in unshielded fixtures (or equivalent wattages)
2. A provision that clearly indicates where, when, and under what circumstances new public outdoor lighting (street lighting and lighting on other public property and rights-of-way) is warranted and will be permitted
3. A provision that requires that adaptive controls and curfews be employed in all future installations of public outdoor lighting.
4. Sports lighting illuminance levels must be adjustable based on the task (e.g., active play vs. field maintenance)
5. Sports lighting timers must be installed to prevent lights being left on accidentally over- night by automatically extinguishing them
6. Illuminated signage luminance levels for operation between sunset and sunrise shall not exceed 100 nits (100 candelas per square meter) as measured under conditions of a full white display; AND

7. Illuminated signage illumination shall be extinguished completely one (1) hour after sunset, and remain off until one (1) hour before sunrise (OR business close, whatever occurs latest)
8. The luminous/illuminated surface area of an individual sign shall not exceed 200 square feet (18.6 square meters)

## ***Outdoor Lighting Ordinance Revisions***

### **IDA Review Comment #1**

10-15C-3, paragraph 3

#### **C. Exemptions To Full Cutoff Fixture Requirements:**

1. Fixtures having a total light output less than one thousand (1,000) lumens are exempted from the full cutoff requirement provided:
  - a. The fixture has a top that is completely opaque such that no light is directed upwards.
  - b. The fixture has sides that completely cover the light source and are made of opaque or semiopaque material. Fixtures with opaque sides may have incidental decorative perforations that emit small amounts of light. Semiopaque material such as dark tinted glass or translucent plastic may be used if the light source is not discernable behind the material. Completely transparent materials, such as clear or colored glass, are not allowed.
  - c. The light source must not be visible from any point outside the property on which the fixture is located.
  - d. All light from the fixture is directed downwards, with no light directed above the horizontal plane.
2. Spotlights controlled by motion sensors having a light output less than one thousand (1,000) lumens per lamp are exempted from the full cutoff requirement provided:
  - a. The fixture is a spotlight or other type of directed light that shall be directed at a forty five degree (45°) angle or less, where the zero angle is pointing straight down.
  - b. The fixture must not be placed in such a manner that results in illumination being directed outside the property boundaries where the light fixtures are located.
  - c. The fixture must be hooded or shielded to the extent necessary to prevent glare on adjacent properties or roadways.
3. Pathway lights less than eighteen inches (18") in height are exempted from the full cutoff fixture requirement, if the total light output from each pathway light is less than three hundred (300) lumens.
4. The total lumen output of lights that do not meet the full cut-off requirement on a property may not exceed 5,000 lumens per acre.

### **IDA Review Comments #2 & #3**

10-15C-5, paragraph B:

B. - Public outdoor lighting (street lighting and lighting on other public property and rights-of-way): ~~Roadway/Streetlights~~:

1. Streetlights are prohibited unless recommended by the town engineer or required by UDOT to ensure the safety of the public. All streetlights shall utilize lamp types that are energy efficient and minimize sky glow and other unintended impacts of artificial lighting. For lights along SR-9, the lowest illumination design that meets the minimum illumination requirements set by UDOT shall be used. Lights along SR-9 shall use decorative light fixtures similar in appearance to the shuttle stop lighting.
2. Public outdoor lighting other than streetlights must meet all the requirements of this chapter. Such lighting is only permitted when it will enhance safety and security for users of the public property being illuminated.
3. Adaptive controls that adjust illumination levels based on time of day must be included in all public outdoor lighting.

#### IDA Review Comments #4 & #5

10-15C-5, paragraph D

D. Recreational Lighting:

1. The planning commission shall review all requests for new recreational lighting fixtures for fields or courts. The planning commission shall approve such requests only after finding:
  - a. The recreational lighting has provisions for minimizing glare, spill light, and uplight by the use of louvers, hoods, or shielding.
  - b. The recreational lighting does not exceed illumination levels for class IV sports lighting set by the Illuminating Engineering Society of North America.
  - c. The recreational lighting will only illuminate the field or court area with no direct illumination falling outside of those areas.
  - d. The light source for the recreational light will not be visible from adjacent properties.
2. Pole mounted recreational lighting shall be limited to eighteen feet (18') in height. Pole mounted recreational lighting must be set back a minimum of sixty feet (60') from adjacent properties.
3. The lighting for nonfield and noncourt areas shall conform to all provisions of this chapter.
4. Illumination levels for recreational area lighting must be adjustable based on the task (e.g. active play vs. field or court maintenance).
5. Recreational lighting must be turned off no later than 10:00pm, or one hour after the end of play, whichever is later. Recreational lighting installations must include timers or auto-shut off controls that prevent lights from being left on when the recreational area is not in use.

## **IDA Review Comment #6 & #7**

F. Signs: Signs may be unlighted, lighted externally, lighted internally, or backlit. All sign lighting must be designed, directed, and shielded in such a manner that the light source is not visible beyond the property boundaries where the sign is located. Lighting for signs must be directed such that only the sign face is illuminated. All lighted signs must have stationary and constant lighting.

### 1. Standards For Externally Illuminated Signs:

a. Lighting for externally illuminated signs must be aimed and shielded so that light is directed only onto the sign face and does not trespass onto adjacent streets, roads or properties or into the night sky.

b. Lighting for externally illuminated signs must be mounted at the top of the sign (or within 2 feet of the top of a building mounted sign).

### 2. Standards For Internally Illuminated Signs:

a. Only sign copy areas may be illuminated on an internally illuminated sign.

b. Internally illuminated signs shall use semiopaque materials for sign copy such that the light emanating from the sign is diffused. Transparent, clear, or pure white materials are not allowed for sign copy. Noncopy portions of the sign (e.g., background and graphics) shall be made of completely opaque material that is consistent with subsection 10-24-3A of this title.

### 3. Standards For Backlit Signs:

a. Backlit signs shall be designed such that the light source is not visible.

b. Backlit signs shall be designed such that harsh, direct illumination does not emanate out of the sign. Rather, the backlighting shall only allow indirect illumination to emanate from the sign. For example, signs that create a "halo" effect around sign text are allowed.

c. Backlit signs shall use low wattage light sources.

4. Light Color Temperature Standard: All light sources used to illuminate signage must have color temperature equal to or less than three thousand degrees Kelvin (3,000°K).

5. Luminance level standar: No sign shall have an illuminance level greater than 100 nits (100 candelas per square meter).

6. Sign illumination curfew: Sign illumination shall be turned off one hour after sunset, or the close of the business, whichever is later. Sign illumination shall remain off until one hour prior to sunrise.

## **IDA "Extra Provision Worth Noting"**

In the VC and CC zones, each property (or group of adjacent properties developed together as a commercial center) is allowed no more than 30,000 lumens of total lighting per acre. With the exception of sign illumination, all outdoor lighting (building mounted, pathway lights, parking lot lights, etc.) are included in the lumen allowance. The lighting plan described in section [10-15C-11](#) will be used to demonstrate compliance with the lumen allowance standard. Each light shown on the lighting plan must be included in the calculation of total lumens on the property.

~~A. The lumens associated with each fixture shall be calculated in the lumen allowance as described below:¶~~

- ~~1. Full cutoff fixtures located under solid canopies, solid patio covers, or solid roof eave overhangs where all parts of the fixture are at least five (5) feet away from the nearest outer edge of the canopy, cover, or overhang, shall only be counted as twenty five percent (25%) of the fixture's lumen output for determining compliance with the lumen allowance.¶~~
- ~~2. All outdoor non-signage illumination and light fixtures not described in paragraph A above shall be counted as one hundred percent (100%) of the fixture's lumen output for determining compliance with the lumen allowance. ¶~~
- ~~3. Illumination of signage is not included in determining compliance with the lumen allowance.~~

~~AD.~~ The lumen allowance described in this section applies to all new construction, as well as to all reconstruction, remodels, or additions to existing construction that impact fifty percent (50%) or more of an existing structure, or add fifty percent (50%) or more building size to an existing structure.

~~BE.~~ The lumen allowance described in this section is calculated based only on the developed portion of a property. For example, a five (5) acre property which only has two (2) acres of developed area would have a lumen allowance of sixty thousand (60,000) lumens (thirty thousand (30,000) lumens per acre times two (2) acres of developed area). In determining what portion of a property is developed, the following criteria shall be employed:

1. All areas where there are physical improvements (e.g. buildings, parking areas, walkways, driveways, patios, pools, courtyards, walls, accessory structures, etc.) are included as developed areas.
2. All areas of landscaping required by [Chapter 10-18](#) (either vegetative landscape or natural open space) are included as developed areas.