



## **Memorandum**

**To:** Town Council  
**From:** Thomas Dansie, Town Planner  
**Date:** February 5, 2021  
**Re:** IDA Dark Sky Community Designation - Changes to Outdoor Lighting Ordinance

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### ***Executive Summary***

The Council has directed staff to work toward International Dark Sky Association (IDA) Dark Sky Community Designation for Springdale. Pursuant to this direction staff has been working with the IDA to prepare an application for designation.

In order to qualify for Dark Sky Community Designation the Town will be required to implement dark sky programming and education, monitor the quality of the night sky, document successes in reducing light pollution, and obtain support from partner organizations. Staff is working on all these items and has developed a plan to accomplish them. These are all feasible and beneficial activities for the Town to complete.

However, Dark Sky Designation will also require changes to the Town's outdoor lighting ordinance. Based on previous discussions regarding outdoor light regulation in Springdale these changes may be more problematic to implement.

Staff requests direction from the Council on how to proceed.

### ***Outdoor Lighting Ordinance and IDA Requirements***

Perhaps the most significant requirement for Dark Sky Community Designation in Springdale is the adoption of an outdoor lighting ordinance that meets IDA requirements. In 2009 the Town adopted an outdoor lighting ordinance. That ordinance established the baseline for dark sky regulation in Springdale, and it satisfies most of the IDA requirements. The Town has made several revisions to the 2009 ordinance in recent years, each with the intent of clarifying outdoor lighting standards. These revisions have helped move the Town's ordinance closer to full compliance with IDA requirements. However, there are still a number of aspects of the Town's outdoor lighting ordinance that do not meet IDA requirements.

In order to meet IDA requirements to qualify as a Dark SKY Community, the Town must make the following additions and revisions to its outdoor lighting ordinance<sup>1</sup>:

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<sup>1</sup> See the attached IDA ordinance review letter for an in-depth analysis of the Town's outdoor lighting ordinance with respect to compliance with IDA standards.

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).

Some of these additions and revisions are fairly easy to make and will be non-consequential for the Town (e.g. those standards regarding sports field lighting). However, other changes will have a significant impact on the Town and will require careful consideration.

For example, the Town recently revised its ordinance to *remove* the sign illumination curfew (#7 in the list above) due to concerns about impacts on local businesses. Likewise, when the Town adopted its lumen per acre standard (#1 in the list above) it specifically exempted properties in residential zones from this standard over concerns about the burden such a requirement would place on residential development and homeowners. And the Planning Commission has previously attempted to develop a standard for the luminance levels for signage (#6 in the list above) but has been unsuccessful in crafting a regulation that would be easily understandable for applicants and feasible to enforce for the Town.

Further, some of these requirements will have financial implications for the Town. The Town will be required to include adaptive controls on all new public lighting (these controls automatically reduce light levels, or turn lights off, depending on ambient light conditions). The Town considered including adaptive controls in the recently installed SR9 street lights, but opted against doing so because of the increased cost. While the Town would not need to retroactively equip existing public lighting with adaptive controls, all new public lighting would need these controls, thereby increasing the initial capital cost of the lights<sup>2</sup>.

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<sup>2</sup> Staff notes that adaptive controls can reduce the ongoing operational cost of public lighting by reducing light levels or turning lights off when not needed, thereby saving on power costs.

Staff has had discussions with IDA staff regarding how strict the lighting ordinance requirements are for Dark Sky Community designation. We have inquired if there is any leeway or flexibility in these standards to accommodate the Town's unique needs. IDA staff have responded unequivocally that there is no flexibility in the Dark Sky Community Designation standards. The Town must meet all the requirements fully in order to qualify for Dark Sky Community Designation.

Thus, the Town Council needs to determine if it is willing to make changes to the outdoor lighting ordinance that have previously been unsupported in the community in order to qualify for Dark Sky Community Designation.

***Requested Direction***

Staff requests direction from the Council regarding the Town's willingness to make changes to the Town's outdoor lighting ordinance necessary for IDA Dark Sky Community Designation.

If so, staff will work with the Planning Commission on preparing the required ordinance revisions and will proceed with the Dark Sky Community Designation application.

If not, staff will continue to plan for night sky awareness programming and education, will work to improve the quality of the dark night sky through enforcement of the existing outdoor lighting ordinance, and will take other actions to enhance the dark night sky. But staff will not proceed with formal application to become an IDA designated Dark Sky Community.



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
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