Ivins Night Sky Initiative

improve, preserve, and protect the night sky over Ivins Utah

RECOMMENDATIONS FOR UPDATING THE IVINS OUTDOOR LIGHTING ORDINANCE (CHAPTER 10)

August 6, 2019

Mayor Hart:

We recommend updating the existing Ivins Outdoor Lighting Ordinance.

The existing ordinance, written in 2006, was groundbreaking for its time. While not the first city to take this important step to protect its nighttime environment, Ivins was one of the earliest.

However, new information, scientific research, and technologies have emerged in the past dozen years that should be addressed in an update to the ordinance.

An update also creates a valuable opportunity to secure official designation for Ivins as a "Dark Sky Community" from the International Dark Sky Association. That recognition will enhance our city's reputation for its commitment to "enhance the quality of life for residents and visitors alike," which our General Plan identifies as the city's primary objective.

This document contains the text of the original ordinance (text in black) with recommended changes (text in red). In making our recommendations, we studied ordinances from more than a dozen communities, including: Torrey, Springdale, Helper, Moab and Grand County, Ogden Valley, Kanab, Flagstaff, Sedona, Fountain Hills AZ, Borrego Springs, Camp Verde, Ketchum, and others.

Footnotes provide the source of each recommended change to the ordinance along with additional information and comments. These footnotes are intended to be informative for members of the Planning Commission, City Council, and staff in their review of our recommendations and to be deleted in the final ordinance.

Sincerely,

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INTERNATIONAL DARK SKY ASSOCIATION REQUIREMENTS

The International Dark Sky Association (IDA) requires that our outdoor lighting ordinance contains a number of items for Ivins to be considered for designation as a "Dark Sky Community." Here is a brief summary of the most significant requirements:

- Fully shielded or full-cutoff standard for all fixtures over 1,000 lumens initial lamp output (or equivalent wattages) and partially shielded under 1,000 lumens.
- Maximum correlated color temperature (CCT) of 3,000K.
- Restrictions on the total amount of unshielded and shielded lumens per net acre.
- A provision that clearly: (1) 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, and (2) requires that adaptive controls and curfews be employed in all future installations of public outdoor lighting.
- The City commits to conform with the lighting ordinance for city-owned lighting with a published plan and timeline for completion in no more than 5 years. (Note: Cities may be granted a 3-year extension if progress is taking place.)
- Restrictions on the installation and operation of illuminated signs, including: (1) luminance levels for operation between sunset and sunrise shall not exceed 100 nits, and (2) sign illumination shall be extinguished completely 1 hour after sunset and remain off until 1 hour before sunrise.
- Restrictions on outdoor recreational lighting.
- All privately-owned lighting must comply with the outdoor lighting ordinance within 10 years. *(Note: We address the problem with this requirement in this document and propose a solution.)*

PURPOSE

The purpose of this chapter is to encourage the quantity and level of lighting necessary for safety, security and the enjoyment of outdoor living. The type of lighting and the location of lighting fixtures are key components of effective lighting. It is the intent of this chapter to effectively light areas with lighting fixtures that limit glare, light pollution, and direct light onto the area to be lit to avoid light trespass.

The purpose of this chapter is to assist in implementing the Ivins City general plan that includes the following vision statement:

> *Ivins is a City that values and preserves its scenic beauty and provides a variety of intellectual, educational, cultural, recreational, historic and economic opportunities to its diverse population and visitors. Ivins is a vibrant community that preserves a high quality of life for residents while promoting a resort character.*

Effective outdoor lighting enhances the city's character and identity, promotes a pleasant and soft ambiance, protects astronomical observations, and provides safety and security for persons and property. Excessive light, or light pollution, can be annoying, cause safety problems, reduce privacy, and waste energy resources.

Outdoor lighting has several functions; it must promise immediate good vision and orientation so that an area is usable and safe at night. By means of placement and intensity, lighting is also used to guide pedestrian and vehicular movement and highlight areas where traffic conflicts. Lighting is also used for architectural emphasis and effect, to attract business, and to give a site a particular "personality". All area lighting has the ultimate purpose of providing visibility. Good visibility is achieved through the interaction of intensity, direction, and reflection of light so that an observer can immediately translate received light into terms of shapes, surfaces, distance and movement.

In order to effectively regulate these activities, communities are empowered to establish regulations and standards for all outdoor lighting. This chapter contains standards and guidelines to preserve, protect, and enhance the "night sky" in Ivins City.

This chapter, and any rules, regulations and specifications hereafter adopted, is initiated for the following purposes:

- To promote and protect the public health, safety and welfare by minimizing lighting health and safety risks arising from inappropriate quantities and qualities of lighting;[1]
- To minimize light pollution, light trespass, and glare resulting from the use of outdoor lighting.
- To protect residents from unwanted light that would enter their yards and homes at night;
- To provide adequate light for the safe performance of outdoor tasks at night;
- To enable planning at the design stage with appropriate design guidelines before lighting becomes a statutory nuisance;
- To provide an environmentally sensitive nighttime environment;
- To prevent inappropriate, poorly designed or installed outdoor lighting;
- To encourage quality outdoor lighting design;
- To minimize nighttime impacts on citizens, visitors, domestic and wild animals;
- To facilitate tourism and the enhancement of the visitor experience;
- To develop an attractive nighttime appearance;
- To preserve, protect, and enhance the natural beauty of the "night sky";
- To encourage and promote the conservation of energy resources;
- To promote safety and security for persons and property;
- To maintain and enhance property values;
- To adopt clear standards for all outdoor lighting and to inform the public of those standards;
- To implement the goals and objectives of the Ivins City General Plan;
- To implement the goals and objectives of the Ivins City design guidelines and "Standard Specifications for Design and Construction";
- To eliminate light trespass onto abutting properties;
- To promote appropriate business;
- To allow flexibility for creative lighting;
- To avoid duplicate lighting sources;
- To enhance community personality;
- To comply with adopted state energy codes. ~~(Ord. 2007-11, 2007)~~

[1] Source: Various ordinances for the bullet points in red.



SCOPE AND APPLICABILITY

This chapter, together with the Ivins City general plan, Ivins City zoning ordinance, Ivins City subdivision ordinance, Ivins City design guidelines, and Ivins City "Standard Specifications for Design and Construction" shall guide outdoor lighting within the municipal boundaries of the city. This chapter does not apply to indoor lighting ~~(Ord. 2007-11, 2007)~~ However, light trespass from interior lighting that negatively impacts adjacent properties is also prohibited. [2]

INTERPRETATION

1. Greater Restrictions Prevail: In their interpretation and application the provisions of this chapter shall be considered as minimum requirements. Where the provisions of this chapter impose greater restrictions than any statute, other regulation, ordinance or covenant, the provisions of this chapter shall prevail. Where the provisions of any statute, other regulation, ordinance or covenant impose greater restrictions than the provision of this chapter, the provisions of such statute, other regulation, ordinance or covenant shall prevail.
2. Definitions: Whenever any word or phrase used in this chapter is not defined herein but is defined in related sections of the Utah code or in this code, such definition is incorporated herein and shall apply as though set forth herein in full, unless the context clearly indicates a contrary intention. Unless a contrary intention clearly appears, words used in the present tense include the future, the singular includes the plural, the term "shall" is always mandatory and the term "may" is permissive.
3. Severability of Parts: The various sections, subsections, sentences, phrases and clauses of this chapter are hereby declared to be severable. If any such part of this chapter is declared to be invalid by a court of competent jurisdiction or is amended or deleted by the city council, all remaining parts shall remain valid and in force. ~~(Ord. 2007-11, 2007)~~
4. Repealer: All ordinances and parts of ordinances in conflict with this ordinance are hereby repealed.[3]
5. Other applications: Outdoor lighting for uses, installations, signs, structures, not specifically addressed in this Chapter are prohibited.[4]

[2] Source: Torrey UT

[3] Source: IDA

[4] Source: Ivins Night Sky Initiative



6. In interpreting the provisions of this Chapter, the City shall seek to eliminate all glare and light trespass onto neighboring properties to the greatest extent possible.[5]

[5] Source: Ivins Night Sky Initiative

DEFINITIONS

Unless the context requires otherwise, the following definitions shall be used in the interpretation and construction of this chapter. Words used in the present tense include the future; the singular includes the plural; the word "shall" is mandatory and not directory; the word "may" is permissive. Words used in this chapter, but not defined herein, shall have the meaning first as defined in any other ordinance adopted by the city and then its common, ordinary meaning.

ADAPTIVE CONTROLS: Mechanical or electronic devices, when used in the context of outdoor lighting systems, intended to actively regulate the switching, duration, and/or intensity of light emitted by such systems. Examples of adaptive controls include timers, dimmers and motion-sensing switches.

BACKLIGHT: All the light emanating behind a luminaire.[6]

BOLLARD: A post shaped light fixture that is useful along pathways, garden borders and other areas that require definition at night. These fixtures cast light downward in a full three hundred sixty degree (360°) pattern or have half lenses that confine illumination to one hundred eighty degrees (180°). Bollards shall ~~use cutoff optics~~ be fully shielded and no taller than 48 inches including any base they are mounted on.[7]

BUILDING ENVELOPE: The building envelope is all the elements of the outer shell that maintain a dry, heated, or cooled indoor environment.[8]

CORRELATED COLOR TEMPERATURE (CCT): A measure of the color properties of light emitted by lamps, being equal to the temperature, expressed in kelvins (K), of a blackbody whose spectrum best approximates the spectrum of the light source in question. CCT values are typically provided in lighting manufacturer data sheets.[9]

CURFEW: A period at night during which lighting must be significantly dimmed in output or extinguished in accordance with an expected decrease in human presence.[10]

~~CUTOFF FIXTURE: The IESNA definition of a shielded luminaire where less than 2.5 percent of the light is emitted above ninety degrees (90°) above horizontal, for~~

[6] Source: IDA

[7] Source: Ivins Night Sky Initiative. The City's bollards as well as bollards at the Ice Box Restaurant and the Medical Office Building on Center Street are all under 48 inches.

[8] Source: Ivins Night Sky Initiative

[9] Source: IDA

[10] Source: Ivins Night Sky Initiative

~~purposes of this chapter. Also see definition of Full Cutoff Fixture.~~ (Not needed due to new definition of fully shielded)

DESIGN GUIDELINES: The document adopted by the city council to direct and guide the aesthetics of development in Ivins City.

ELECTRONIC DISPLAY: Any illuminated sign of an informative or advertising nature, whether on- or off-premise, and operable at night, whose content is made visible to the viewer by means of luminous elements under active electronic control and therefore subject to alteration in order to vary the content of the message. Electronic displays may be either static or dynamic in terms of light color and intensity.[11]

EMERGENCY LIGHTING: Temporary lighting required for public safety in the reasonable determination of public safety officials.[12]

EXISTING OUTDOOR LIGHTING: All existing outdoor lighting located on a subject property that is part of a land use application or building permit.

EXTERNALLY ILLUMINATED SIGN: Any sign or display, whether on- or off-premise, whose information content is made visible to the viewer at night by means of conventional luminaires mounted at some distance above, below, or otherwise away from the surface containing the information or message intended to be consumed by the viewer. For the purposes of this Chapter, such signs are regulated as lighting and are thus subject to all its provisions unless otherwise specifically exempted.[13]

FLOODLIGHT: A fixture designed to "flood" a well-defined area with light.

FLUORESCENT LAMP: A long arc lamp that uses the fluorescence of a phosphor to produce visible light.

FOOT-CANDLE (fc): A standard unit of measure used to specify illuminance; how much light is falling per square foot onto a surface. One foot-candle of illumination arises when one lumen is spread onto one square foot of surface. The amount of light striking a surface, measured by a light meter. One foot-candle equals approximately 0.1 (0.093) lux.[14]

~~FULL CUTOFF FIXTURE: The IESNA definition of a shielded luminaire where none of the light is emitted above ninety degrees (90°) above horizontal, for purposes of this~~

[11] Source: IDA

[12] Source: IDA

[13] Source: IDA

[14] Source: Ivins Night Sky Initiative



~~chapter. Additionally, this requires the luminaire to have a flat lens and may not be angled more than one degree (1°) from horizontal. Also see definition of Cutoff Fixture.~~ [15]

~~FULLY SHIELDED FIXTURE: A fixture with an opaque housing or attachment which prevents a line of sight to the bulb when viewed from another property and which prevents a line of sight to any part of the light source at or above a horizontal plane running through the lowest portion of the fixture.~~

FULLY SHIELDED FIXTURE: An outdoor luminaire constructed so that in its installed position all the light emitted by the luminaire is projected below the horizontal plane passing through the lowest light-emitting part of the luminaire. The luminaire must be shielded in and of itself. Surrounding structures, like canopies, are not to be considered when determining if the fixture is fully shielded. Fully shielded luminaires must be appropriately mounted so that the shielding prevents light from escaping above the horizontal and all light is directed downward. The adjacent figure shows the correct configuration of a fully shielded luminaire, indicating the ninety (90) degree angle between the horizontal plane passing through the lowest light emitting part of the luminaire and the nadir, defined as the local vertical pointing toward the center of the Earth.[16]

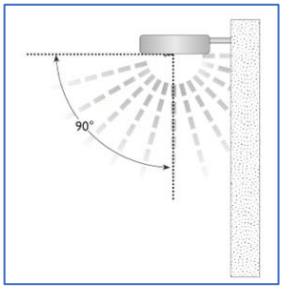


Figure 1: Fully shielded fixture

FULLY SHIELDED FIXTURE – ADDITIONAL SHIELDING: Fully shielded fixtures may cause unacceptable glare and/or light trespass, in which case additional shielding may be required. The goal of outdoor lighting is to provide lighting on the within the property boundaries where the fixture is located. Additional shielding may be required in instances where the light source is visible immediately beyond the property boundaries at a height of 5 feet above ground level.[17]

[15] Not needed because of revised definition of fully shielded fixture

[16] Source: IDA and Torrey UT providing additional clarification

[17] Source: Ivins Night Sky Initiative. Flagstaff has a provision to allow the city to require additional shielding. The Santa Clara Harmon's is an example of additional shielding to eliminate light trespass onto the homes across Pioneer Parkway. Also, our demonstration project for Rocky vista University's parking lot lights which create a glare problem for many nearby homes.

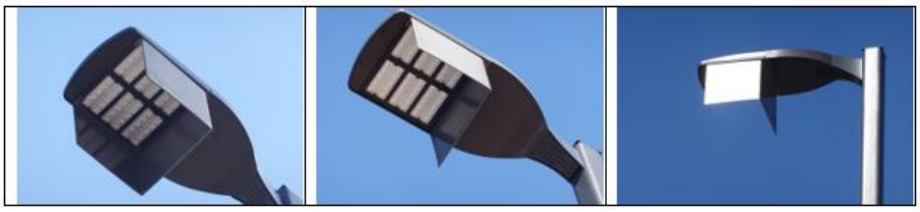


Figure 2: Examples of additional shielding

Mounting height or proximity to property lines may cause the luminous elements of a light fixture to need additional shielding. Above are examples of additional shielding, but additional shielding solutions are not limited to these examples.



Figure 3: Although #3 is a fully shielded fixture, it has the potential to create significant glare and light trespass, which can be reduced with the aid of additional shielding shown in #4

GENERAL PLAN: The document that sets forth general guidelines for proposed future development of the land within the municipality that includes what is also commonly referred to as a "master plan".

GLARE: ~~Light emitting from a luminaire with an intensity great enough to reduce a viewer's ability to see, and in extreme cases causing momentary blindness.~~ Lighting entering the eye directly from luminaires or indirectly from reflective surfaces that causes visual discomfort or reduced visibility.[18]

HARDSCAPE: Permanent hardscape improvements to the site including parking lots, drives, entrances, curbs, ramps, stairs, steps, medians, walkways and landscaping strips and/or buffers that are 10 feet or less in width.[19]

[18] Source: Ivins Night Sky Initiative

[19] Source: Ivins Night Sky Initiative. Defining total hardscape is important for net acre calculations. See more discussion under the footnote for the definition of net acres.

HEIGHT OF LUMINAIRE: The (mounting) height of a luminaire shall be measured as the vertical distance from the ground directly below the centerline of the luminaire to the lowest direct light emitting part of the luminaire.

HOLIDAY LIGHTING: Low-intensity string lights, whose luminous output does not exceed fifty (50) lumens per linear foot, and fully-shielded floodlights, whose luminous output does not exceed one thousand (1,000) lumens and which are aimed and oriented in such a way as to not directly emit any light into the night sky or onto adjoining properties, roads, rights-of-way, operated only during prescribed periods of time during the calendar year.[20]

~~HIGH INTENSITY DISCHARGE (HID) LAMP: Family of bulb type that produces illumination by passing an electric current through a gas, also referred to as a "gas discharge lamp". HID includes low- and high-pressure sodium, mercury vapor, and metal halide.~~ [21]

~~HIGH PRESSURE SODIUM (HPS) LAMP: A HID lamp where light is produced from a mixture of mercury and sodium at high pressure. The lamp produces a yellow or amber effect.~~ [22]

ILLUMINANCE: ~~The intensity of light per unit of area.~~ The total luminous flux incident on a surface per unit area. Illuminance is a measure of the light received by or on a surface. The SI unit of illuminance is lumens per square meter ($cd \cdot sr \cdot m^{-2}$), also known as lux.[23]

~~IESNA: The Illuminating Engineering Society of North America, the ANSI accredited standards writing body for lighting definitions and recommended practices cited in this chapter~~. Illuminating Engineering Society of North America (IESNA): A recognized authoritative body on the science and application of lighting that publishes and promotes recommended practices for a variety of specific lighting applications.[24]

INTERNALLY ILLUMINATED SIGN: Any sign or display, whether on- or off-premise, consisting of translucent surfaces whose message is designed to be made visible at night be means of lamps or other light sources concealed with such surfaces. Sometimes referred to as “cabinet signs”.[25]

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[20] Source: IDA; underlined text = Ivins Night Sky Initiative

[21] IDA recommends discontinuing the reference to specific technologies and instead focus only on lumens, CCTs, and similar measures.

[22] IDA recommends discontinuing the reference to specific technologies and instead focus only on lumens, CCTs, and similar measures.

[23] Source: IDA

[24] Source: IDA

[25] Source: IDA

~~INCANDESCENT LAMP: A lamp in which the light is produced by a filament of conducting material contained in a vacuum and heated by an electric current.~~ [26]

INITIAL LUMENS: ~~The amount of light emitted by a lamp after one hundred (100) hours of operation.~~ The number of lumens of light emitted by a luminaire when the lamp is new, not accounting for any depreciation due to the age of the lamp or environmental conditions that may be detrimental to its performance.[27]

LAMP: ~~The electric bulb or tube within a luminaire that produces the actual light.~~ The bulb or other light-emitting portion of a luminaire, not inclusive of any reflective or refractive optics used to direct light.[28]

~~LASER SOURCE LIGHT: A device containing a substance the majority of whose atoms or molecules can be put into an excited energy state, allowing the substance to emit coherent light in an intense narrow beam~~. Laser. Any form of intense, strongly focused, mono-chromatic light produced by stimulated emission of radiation.[29]

LIGHT POLLUTION: ~~Occurs when night lighting is emitted upwards and obstructs the view of the night sky~~. Light pollution: Any unintended, adverse and/or obtrusive effect of the use of outdoor light at night.[30]

~~LIGHT SOURCE: The lamp and lens, diffuser, or reflective enclosure, also known as a luminaire.~~ (Replaced by Luminaire)

LIGHT TRESPASS: ~~Occurs when outdoor night lighting encroaches onto adjacent properties and/or adjacent public properties. See also definition of Spill Light.~~ A condition in which artificial light emitted from a luminaire on one property, not inclusive of light incidentally scattered or reflected from adjacent surfaces, is directed in such a manner that it is visible from any other property. For the purposes of this chapter, light trespass is declared to be a form of public nuisance.[31]

[26] IDA recommends discontinuing the reference to specific technologies and instead focus only on lumens, CCTs, and similar measures.

[27] Source: IDA

[28] Source: IDA

[29] Source: IDA

[30] Source: IDA

[31] Source: IDA



Figure 4: Example of light trespass

~~LIGHTING FIXTURE: The assembly that holds the lamp in a lighting system. It includes the elements designed to give light output control, such as a reflector (mirror) or refractor (lens), the ballast, housing, and the attachment parts.~~ [32]

~~LOW PRESSURE SODIUM (LPS) LAMP: A HID lamp where the light is produced by radiation from sodium vapor at a relatively low pressure. The lamp produces a yellowish light.~~ [33]

LUMEN: ~~The standard unit used to measure the brightness of the illumination exiting a lamp, provided by the manufacturer.~~ The SI unit of luminous flux, equal to the amount of light emitted per second into a unit solid angle of one steradian from a uniform source of one candela.[34]

Approximate Relationships between bulb types, wattages and lumen levels [35]

Brightness in Lumens	220+	400+	700+	900+	1300+
Standard	25W	40W	60W	75W	100W
Halogen	18W	28W	42W	53W	70W
CFL	6W	9W	12W	15W	20W
LED	4W	6W	10W	13W	18W

LUMINAIRE: ~~A structure that holds an electric lamp and its socket, wiring, and auxiliaries, such as ballasts, reflectors, lenses and attachment parts.~~ A complete lighting assembly, consisting of a lamp, housing, optic(s), and other structural elements, but not including any mounting pole or surface.[36]

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[32] Replaced by Luminaire

[33] IDA recommends discontinuing the reference to specific technologies and instead focus only on lumens, CCTs, and similar measures.

[34] Source: IDA

[35] Source: Ivins Night Sky Initiative

[36] Source: IDA

LUMINANCE: The amount of light that passes through, is emitted, or reflected, from a particular area, and that falls within a given solid angle. Luminance is a measure of light emitted by or from a surface. The SI unit of luminance is candela per square meter (cd/m2), also known as a nit.[37]

~~MEAN LUMENS: The amount of light emitted by a lamp at the end of useful life. Used for calculation of illuminance demonstrating compliance with these requirements, unless noted differently.~~ [38]

MERCURY VAPOR LAMP: A ~~HID~~ lamp where the light is produced by radiation from mercury vapor. The lamp produces a blue/green light. [39]

MONUMENT SIGN: freestanding sign that is detached from a building or structure and sits on the ground on a solid-appearing base with no exposed structural supports, used to display the name of a business, residential community, or multifamily property.[40]

~~METAL HALIDE LAMP: A HID lamp where the light is produced by radiation from metal halide vapors. The lamp produces a crystal white light. Lamp may be coated or uncoated by a phosphor.~~ [41]

MOUNTING HEIGHT: The height of the photometric center of a luminaire above grade level.[42]

NEON LAMP: A discharge tube filled with luminous gas (neon, argon, xenon or other gases). Tubes are often formed into text, symbols or decorative elements and produce lights of various colors. Replaceable fluorescent lamps are not included in this definition.

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[37] Source: IDA

[38] Not needed since not referenced in the document

[39] Although IDA recommends discontinuing the reference to specific technologies and instead focus only on lumens, CCTs, and similar measures – this is left in because elsewhere this lighting is specifically prohibited.

[40] Source: Ivins Night Sky Initiative

[41] IDA recommends discontinuing the reference to specific technologies and instead focus only on lumens, CCTs, and similar measures.

[42] Source: Ivins Night Sky Initiative



NET ACRE: An acre of any land parcel that is developed, consisting of structures and/or hardscape. The net acreage of a parcel is the gross acreage of that parcel less any acres that are considered undeveloped.[43]

~~NONCONFORMING LUMINAIRES: Luminaires that do not conform to this chapter but existed at the time of the adoption hereof.~~ [44]

OUTDOOR LIGHTING~~: The nighttime illumination of an outside area or object by any handmade device located outdoors that produces light by any means.~~ Lighting equipment installed within the property line and outside the building envelope, whether attached to poles, building structures, the earth, or any other location; and any associated lighting control equipment.[45]

PARTLY (OR PARTIALLY) SHIELDED LUMINAIRE (OR LIGHT/LIGHTING): A luminaire with opaque top and translucent or perforated sides, with the bottom edge of the shield below the plane centerline of the light source (lamp), minimizing light above the horizontal, designed to emit most light downward.[46]

PUBLICLY OWNED LIGHTING: Outdoor lighting equipment owned, operated, and/or maintained by the City and that is situated either on City-owned property or in a public right of way. This term is inclusive of street lighting when owned by the City.[47]

PUMP (SERVICE STATION): Each fuel dispensing nozzle is considered a pump, except that if a customer must select one of two or more nozzles (typically a selection between gasoline and diesel) those multiple nozzles will be treated as one pump.[48]

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[43] Source: IDA. Net acres are used to determine the total amount of lumens permitted for a property. The reason for using net acres is to allow for an appropriate amount of lighting for buildings, drives, walkways, parking areas. Undeveloped land, when part of a property's total lot area, does not need lighting.

[44] Some nonconforming luminaires may be legal, but others may also be prohibited, as discussed in this Chapter.

[45] Source: Ivins Night Sky Initiative

[46] Taken from another location in the City's original 2007 ordinance, plus wording from Ogden Valley.

[47] Source: IDA

[48] Source: Ivins Night Sky Initiative. The service station on 200 E has 6 nozzles that dispense only gasoline and 2 locations where the consumer must choose between a gasoline nozzle and a diesel nozzle. For purposes of this Chapter, the service station has 8 pumps. If there were 8 nozzles that dispense only gasoline and 2 other locations that dispense only diesel, there would be 10 pumps for the purposes of this Chapter.

~~SAFETY LIGHTING: Low level lighting used to illuminate vehicular and pedestrian circulation.~~ [49]

SEARCHLIGHT: Any high-intensity light source whose emission pattern is confined to a narrow beam and whose intended purpose is to draw attention to the locations at which products or services are sold. Sometimes referred to as a "skybeam".[50]

SECURITY LIGHTING: Lighting designed to illuminate a property or grounds for the purpose of visual security. This includes fully shielded lighting designed to remain on during nighttime hours in the absence of business activity as well as motion sensing lighting fixtures. Lights controlled by motion sensors shall not be triggered by movement or activity located off the property on which the light is located.[51]

SPILL LIGHT: Undesired light falling beyond the desired and allowable target. See definition of Light Trespass.

SPORTS LIGHTING: Lighting designed for active recreation, whether publicly or privately owned, including, but not limited to, parks, baseball and softball diamonds, soccer and football fields, golf courses, tennis courts, roping/equestrian activities and swimming pools. Requires special construction permit. This lighting is to be directed toward, and intended to facilitate, play or recreation on outdoor surfaces, or to illuminate spectator viewing stands, but not for illumination of any other part of a connected or adjacent property.[52]

SPOTLIGHT: Any lamp that incorporates a reflector or a refractor to concentrate the light output into a directed beam of less than twenty-five degrees (25°) in a particular direction.

STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION: The standards and construction requirements for improvements as published by Ivins City, most recent edition.

STREET LIGHTING: Lighting installed by or at the direction of a governmental agency to illuminate public roadways and adjacent walking surfaces.

SUBDIVISION ORDINANCE: The Ivins City subdivision ordinance as presently adopted and as amended hereafter by the city council.

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[49] References to "safety lighting" have been taken out and replaced with more descriptive language.

[50] Source: IDA

[51] Source: Ivins Night Sky Initiative

[52] Source: IDA



TEMPORARY LIGHTING: Non-permanent lighting installations installed and operated for a duration not to exceed thirty (30) days, and whose use is regulated by the City.[53]

UNSHIELDED LUMINAIRE (OR LIGHT/LIGHTING): A luminaire capable of emitting light in any direction including downwards. Unshielded luminaires are prohibited. However, partially unshielded luminaires are permitted as defined and controlled by this Chapter.[54]

UPLIGHTING: Direct light emitted above the horizontal. See definition of Light Pollution.

WATT: The standard unit used for measuring the amount of electrical energy used.

ZONING ADMINISTRATOR: Ivins City staff that is designated by the city manager to administer provisions of this chapter.

ZONING ORDINANCE: The city zoning ordinance as presently adopted and as amended hereafter by the city council. ~~(Ord. 2007-11, 2007)~~

[53] Source: IDA

[54] Source: Ivins Night Sky Initiative



GENERAL STANDARDS AND CRITERIA

Listed herein are standards and criteria for lighting. It is important to note that the intent of this section is to effectively regulate lighting, and it is not the intent of this section to limit creative lighting solutions. Creative approaches to lighting are encouraged and viable alternatives to these standards and guidelines may be substituted if the alternatives can be demonstrated to meet the intent of this chapter and do not otherwise violate this chapter.

~~(1) Type of Lights Recommended:~~ [55]

- ~~(a) Incandescent or tungsten halogen lamps. Allowed for some landscape lighting or residential safety lighting, generally less than sixty (60) watts, twenty (20) watt limitation for landscape lighting.~~
- ~~(b) Compact fluorescent lamps. Allowed for some landscape lighting or residential safety lighting, generally less than forty (40) watts, twenty-six (26) watt limitation for landscape lighting.~~
- ~~(c) Metal halide lamps. Generally permitted for sports lighting and specifically approved outdoor merchandising.~~
- ~~(d) High pressure sodium lamps. Preferred for street lighting, in limited wattages and mounting heights.~~
- ~~(e) Low pressure sodium lamps. Permitted for street lighting, in limited wattages and mounting heights.~~

~~(2)~~ Conformance with Applicable Codes: All outdoor electrically powered illuminating devices installed after the effective date of this Chapter[56] shall be installed in conformance with the provisions of this chapter, building codes, the electrical code, and sign ordinance, with appropriate permits and inspection. Reference applicable IESNA publications. Earlier installations shall be in conformance with the previous version of this Chapter, adopted in 2007, unless and until they are subject to the provisions of this Chapter if stated elsewhere.[57]

Application. In case of a conflict between any of the provisions of this Chapter, the most restrictive shall apply.[58]

The provisions of this chapter shall apply to all new development of real property that involves:[59]

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[55] IDA recommends discontinuing the reference to specific technologies and instead focus only on lumens, CCTs, and similar measures.

[56] Source: Ivins Night Sky Initiative

[57] Source: Ivins Night Sky Initiative

[58] Source: Ivins Night Sky Initiative

[59] Source: Ivins Night Sky Initiative, including numbered list



1. New construction for which a development permit is required;
2. Remodeling of an existing building or structure for which a development permit is required; provided, however, that compliance with the requirements of this Chapter is required for a remodel of an existing building or structure only with respect to the remodeled portion of the existing building or structure; or
3. Installation of new outdoor luminaires for any purpose.

The City shall have the authority to request additional information from any application or property owner in order to achieve the purposes of this Chapter.[60]

Non-conforming installations

All outdoor lighting luminaires that were lawfully installed prior to the effective date of this chapter, but that do not comply with the requirements of this chapter, are declared to be legal non-conforming luminaires.[61]

The City will encourage property owners to voluntarily bring nonconforming exterior lighting into compliance with this chapter. Where appropriate, the City may also provide information about possible third-party assistance and expertise available to homeowners and businesses in bringing their exterior lighting into compliance with this chapter.[62]

All legal non-conforming luminaires may continue to be used and maintained after the adoption of this Chapter, but shall be brought into compliance with its requirements upon the first to occur of any of the following:[63]

1. New Uses, Buildings and Major Additions or Modifications. If the total cumulative increase in floor area is greater than 50% for single-family

[60] Source: IDA

[61] Source: Ivins Night Sky Initiative

[62] Source: Torrey UT, modified to divert financial assistance responsibility from the City to third parties, such as utilities, retailers, and the Ivins Night Sky Initiative.

[63] Source: Sedona AZ and Helper UT for numbered list #1 through #4. These are clearer than IDA, which states these conditions: (1) An application for a design review, conditional use, subdivision permit, or building permit; (2) A change of use of the property; (3) Any renovation to the property equal to or exceeding twenty (20) percent of its assessed value; (4) More than fifty (50) percent of the total appraised value of a structure, as determined from the records of the county's appraisal district, is destroyed; (5) A determination by the City that the legal non-conforming luminaire constitutes a public hazard or nuisance; (6) A certificate of occupancy is issued for a property previously determined by the City to be abandoned for at least six (6) months; (7) The replacement of any legal non-conforming luminaire with new lighting equipment, not inclusive of lamps or similar consumable parts.



residential or greater than 25% for all other uses, or if the total cumulative cost of any exterior modification, alteration or repair is greater than 25% of the valuation of the building as determined by the City, then all outdoor lighting fixtures shall meet the requirements of this Chapter for the entire site, including previously installed and any new outdoor lighting. Cumulative modification or replacement of outdoor lighting constituting 25% or more of the permitted lumens for the parcel, no matter the actual amount of lighting already on a nonconforming site, shall constitute a major addition for purposes of this section.

2. Minor Additions. If the total cumulative increase in the floor area is 50% or less for single-family residential or 25% for all other uses, or if the total cumulative cost of any exterior modification, alteration or repair is less than 25% of the valuation of the building as determined by the City, then full conformance of the existing portion of the building or structure is not required. However, such projects shall require the submission of a complete inventory and Site Plan detailing all existing and any proposed new outdoor lighting.
3. New Lighting. Any new lighting on the site shall meet the requirements of this Chapter with regard to shielding and lamp type; the total outdoor light output after the modifications are complete shall not exceed that on the site before the modification, or that permitted by this Chapter, whichever is larger.
4. Resumption of Use after Abandonment. If a property or use with nonconforming lighting is abandoned, then all outdoor lighting shall be reviewed and brought into compliance with this Chapter before the use is resumed.
5. (Note: consider this footnote.)[64]
6. (Note: Consider this footnote)[65]

Conformity shall occur prior to issuance of a certificate of occupancy, final inspection or final plat recordation, when applicable. For other permits, the applicant shall have

[64] A new IDA requirement: All private lighting must comply within 10 years. It does not show in IDAs minimum requirements list prior to mid-2018. I have excluded that requirement in this draft because I believe it was not required under the IDAs 2015 guidelines which I have been told we can apply under. Helper UT: All private and public existing lighting must comply within 5 years. Kanab (draft): All lighting must comply within 15 years for all residential and commercial lighting to comply. I do not believe it is appropriate to require compliance from grandfathered properties, so strike this.

[65] Source: Torrey UT - Properties that change ownership, whether residential or commercial, must bring exterior lighting into compliance with this chapter. I believe this would be difficult to manage and onerous as well, so strike this.

a maximum of thirty (30) days from date of permit issuance to bring the lighting into conformance.[66]

Exemptions

~~(21) Exempt Lighting:~~ The following lighting shall be exempt from the provisions of this chapter:

1. Publicly owned lighting, subject to requirements and restrictions stated elsewhere in this Chapter and other Ivins City ordinances.[67]
2. ~~Holiday lighting, as long as it does not create a hazard or nuisance from glare.~~ Holiday lighting is permitted for decorative purposes, if it does not create a hazard or nuisance from glare and/or light trespass, between November 15 of one calendar year and January 15 of the following calendar year. The total quantity of light meeting this definition permitted is not limited, but excessive displays are liable to be declared public nuisances. All holiday lighting must be fully extinguished each night by 11 P.M. during the allowed period.[68]
3. String, festoon, and similar lighting, provided that the emission of no individual lamp exceeds fifty (50) initial lumens, and no installation of such lighting exceeds, in the aggregate, three thousand (3,000) lumens.[69]
4. Lighting required by law to be installed on motor vehicles.[70]
5. Traffic control signals and devices.
6. ~~Temporary emergency lighting in use by law enforcement or government agencies or at their direction.~~ Emergency lighting, only for as long as emergency conditions so identified by qualified personnel continue to exist. This includes the activities of law enforcement, fire and other emergency services.[71]
7. Temporary lighting, used for a period not to exceed thirty (30) days in any one-year period for festivals, celebrations, or other public activities.
8. Security lighting controlled by a motion sensor switch that remains on for no longer than ten (10) minutes after activation but shall in all cases be shielded and directed to the areas where such lighting is required. Lights controlled by

[66] Source: IDA

[67] Source: Ivins Night Sky Initiative

[68] Source: IDA. Fountain Hills AZ: lighting in residential areas shall be minimized after 11pm and shall be removed within 2 weeks after the holiday (this is "nicer" but subjective).

[69] Source: IDA

[70] Source: IDA

[71] Source: IDA



motion sensors shall not be triggered by movement or activity located off the property on which the light is located.[72]

9. Lighting employed during repairs of roads, utilities and similar infrastructure, including unshielded lighting, provided that such lighting is deployed, positioned and aimed such that the resulting glare is not directed toward any roadway or highway.[73]
10. Temporary lighting required to save life, limb or property from imminent peril, if use persists only during the hours of the peril.[74]
11. Temporary construction lighting used for a period not to exceed thirty (30) days in any one-year period.
12. Temporary lighting allowed under the permitting process.[75]
13. Temporary lighting for theatrical, television, performance areas and construction sites.[76]
14. Underwater lighting in swimming pools and other water features. [77]
15. Lighting specified or identified in a specific use permit. [78]
16. Any form of lighting whose use is mandated or otherwise governed by any legal jurisdiction higher than that of the City.[79]
17. Lighting described in this Chapter with different specifications or requirements, such as recreational lighting.[80]
18. Lighting required by law under the authority of any legal jurisdiction higher than that of the City is exempt from the requirements of this chapter.[81]
19. Temporary lighting allowed under the permitting process, if any.[82]

Correlated Color Temperature (CCT)

~~(3) Color: Warm lighting colors are strongly recommended. The blue-white colors of metal halide and mercury vapor lamps are generally prohibited. Lamps emitting a color temperature in excess of four thousand (4,000) Kelvin are also prohibited.~~

[72] Source: Ivins Night Sky Initiative

[73] Source: IDA

[74] Source: IDA

[75] Source: IDA

[76] Source: Various ordinances

[77] Source: Various ordinances

[78] Source: Various ordinances

[79] Source: IDA

[80] Source: Various ordinances

[81] Source: Various ordinances

[82] Source: Various ordinances



The correlated color temperature (CCT) of outdoor lamps must not exceed 2,200 degrees Kelvin for all properties except single-family residential properties and 2,700 degrees Kelvin for single-family residential properties to minimize the amount of harmful blue light in the nighttime environment.[83]

Light Trespass

No luminaire shall create conditions of light trespass.[84] All light fixtures, including security lighting, shall be aimed and shielded so that the direct illumination shall be confined to the property boundaries of the light source. Direct illumination shall not fall onto or across any public or private street or road and no lamp shall be visible beyond the property boundary.[85] No spill lighting is permitted.

Allowed illuminance values

Illuminances resulting from all lighting installations shall conform to the edition of the recommended practices of the IESNA current at the time of installation. Designs shall ensure that resulting illuminances neither fall below the IESNA-recommended minimum value for the specific application involved, nor exceed the recommended maximum value. Permit applications for lighting installations shall include photometric calculations and/or models demonstrating achievement of the required illuminance values on target surfaces.[86]

Fully Shielded Fixtures

All outdoor lighting, emitting more than ~~two thousand (2,000)~~ one thousand (1,000)[87] initial lumens, shall be ~~full cutoff fixtures~~ fully shielded with fixtures installed and aimed in such a way so that no light is emitted above the horizontal and no lamp is visible beyond the property boundary.[88] All luminaires shall be fully shielded within twenty-five (25) feet of adjacent single- and multi-family residential property lines.[89]

For luminaires under one thousand (1,000) lumens:[90] ~~For luminaires under one thousand eight hundred (1,800)~~ lumens ~~the bulb must be frosted glass or installed~~

[83] IDA requires a maximum color temperature of 3,000K. Some communities, such as Fountain Hills AZ, have set a maximum of 2,700K.

[84] Source: IDA

[85] Source: Ivins Night Sky Initiative

[86] Source: IDA

[87] IDA requires fully shielded lighting for luminaires over 1,000 lumens

[88] Source: Ivins Night Sky Initiative

[89] Source: Various ordinances

[90] Source: Torrey UT for the numbered list. IDA requires full shielding over 1,000 lumens.



~~behind a translucent cover. Shielding may be accomplished by: Full cutoff fixtures, Design, Shielding, Visors, Louvers, Other devices~~

1. The fixture has a top that is completely opaque such that no light is directed upward.
2. The fixture has sides that completely cover the light source and are made of opaque or semi-opaque material. Fixtures with opaque sides may have incidental decorative perforations that emit small amounts of light. Semi-opaque 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 glass, are not allowed.
3. The light source (light bulb or filament) must not be visible from any point outside the property on which the fixture is located."

Spotlights controlled by motion sensors having a light output less than one thousand (1000) lumens per lamp are exempt from the full shielding requirement, provided:

1. 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.
2. 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.
3. The fixture must be hooded or shielded to the extent necessary to prevent glare on adjacent properties or roadways.

Pathway lights less than eighteen inches (18") in height are exempted from the fully shielded fixture requirement, if the total light output from each pathway light is less than three hundred (300) lumens.

Architectural lights, water feature illumination and sign illumination are all exempted from the fully shielded requirement, provided such illumination meets all other applicable standards of this Chapter.

Limit on Lumens Per Net Acre

Limit on lumens per net acres in unshielded fixtures. Outdoor lighting that is not subject to the full shielding requirement shall be partially shielded. No lighting shall be unshielded unless specifically exempted in this Chapter. Partially shielded lighting shall not exceed 5,500 lumens per net acre for all properties.[91]

[91] Source: Sedona for the lumens limit. IDA recommendation: 10,000 lumens for commercial and 5,000 lumens for residential. As a comparison, 10,000 lumens is equivalent to approximately 770 watts of incandescent lighting, or 13 60-watt light bulbs. Other lumen

Limit on lumens per net acres in total fixtures. Outdoor lighting for unshielded, partially shielded, and fully shielded lighting combined shall not exceed:

- 60,000 lumens per net acre for commercial and industrial properties, including hotels, motels, and developments that contain a mix of uses for the net acres occupied by non-single-family lots. [92]
- 30,000 lumens per net acre for multifamily properties including those used for overnight accommodations, short term rentals, RV Parks, or other non-single-family uses.
- Single-family residential properties are exempted from a lumens per net acre limit in total fixtures.[93]

Fully shielded light fixtures installed under canopies or building overhangs where all parts of the light fixture are located at least five feet from the nearest outdoor opening, canopy edge, or overhang edge shall be included in the total net acre lumens by adding only 25 percent of the lumen outputs of the lamps used.[94]

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limits: Grand County: 5,000 commercial, 1,000 residential. Kanab: Residential: 900 lumens at main entry & 375 lumens for fixtures excluding main entry; Output of unshielded fixtures shall not exceed 10% of total site lumens. Sedona: 5,500 lumens for non-residential and multifamily. Helper UT: 5,000 for non-residential and multifamily.

[92] Source: Ivins Night Sky Initiative. Sedona's limit is 100,000 lumens for all but single-family. Helper UT: 15,000 lumens for non-residential and multifamily and 10,000 for single-family. Fountain Hills AZ: 100,000 for commercial, industrial, lodging; 50,000 for multifamily; single-family is exempt. IDA recommendation: 25,000 commercial, 5,000 residential. Grand County: 50,000 commercial, 20,000 multifamily, 10,000 for residential lots over ½ acre and 5,000 under ½ acre. Note: Residential used for overnight accommodations, short term rentals, or other commercial uses shall comply with the residential standards for total light output. Torrey: 25,000 commercial; 5,000 residential. Kanab: Residential: 1,260 lumens for each shielded fixture; 600 lumens for each landscape light; 1,125 lumens for each shielded directional flood lighting fixture; total outdoor maximum = 25,000 lumens: Kanab – commercial: (1) Drive-up windows: luminaires must be within 20 feet horizontal distance of the center of the window. 2000 lumens in residential areas and 4000 lumens in commercial areas per drive-up window, (2) Vehicle service station: lumens per installed pump: 4000 residential and 8000 commercial, (3) Nonresidential Streetlights shall be limited to one-thousand five hundred (1500) lumens, unless otherwise recommended by the Public Works Department, (4) Lights on major intersections on state highways shall be limited to three-thousand (3000) lumens, unless otherwise recommended by the Public Works Department, (5) Parking area lights are encouraged to be greater in number, lower in height and lower in light level, as opposed to fewer in number, higher in height and higher in light level. Parking lot lighting shall not exceed IESNA recommended illuminance (foot-candle) level and are encouraged to utilize the lowest range available. Sedona: 100,000 lumens for all development except single-family residential.

[93] Source: Sedona

[94] Source: Flagstaff

This cap on lumens per net acres in total fixtures is not intended to be a required minimum. It is a maximum. The goal for outdoor lighting should be to achieve the lowest levels of lumens necessary to meet the lighting requirements of the site, within the limits stated above.[95]

Limit on Lumens Per Net Acre: Examples

The examples in the box below show how net acre lumens are calculated, and the limits set are reasonable. In the final ordinance remove this example or replace it with a factual example. Although we estimated lumen output for these luminaires, the estimates are based on similar luminaires where we know the specifications.[96]

Lumens per net acre examples

Mountain Shadows Commercial Center on 200 East has 10 recessed lights in the entry overhang (800 lumens each estimated), 3 parking lot lights (6,000 lumens each estimated), and 2 wall packs (5,000 lumens each estimated). The property is approximately 0.63 acres. So, 36,000/0.63 = 57,142 lumens, below the maximum allowed.

Family Dollar has 2 parking lot poles with 4 luminaires, fluorescent lighting under the entry canopy, and 4 wall mounted lights and sits on approximately 1.08 acres. The 9 lights would have to average almost 7,000 lumens each to get a net acre total of 60,000 lumens.

Spotlights

Spotlights shall be aimed or directed toward the ground and no light shall be aimed at neighboring property or create direct glare for motorists.

Searchlights, Floodlights, Etc.

Searchlights, floodlights, laser source lights, strobe or flashing lights, illusion lights, or any similar high intensity light shall not be permitted except in emergencies by public safety personnel or at their direction.

Site Shielding

In certain cases, additional shielding may be required to mitigate glare or light trespass. The need for additional shielding shall be considered as part of the development review process described in the Ivins City subdivision ordinance. In addition, the City may require additional shielding after luminaires have been installed if it determines that any luminaires create glare and/or light trespass onto adjoining properties.[97]

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[95] Source: Ivins Night Sky Initiative

[96] The lumen estimates are based on lights at Red Mountain Resort, where we are conducting an analysis of the Resort's outdoor lighting at the request of their management. As a result, we have specifications for their outdoor lighting.

[97] Source: Ivins Night Sky Initiative



Uplighting

Uplighting (light pollution) is prohibited unless the light is shielded in a manner that confines the light to the surface of a building facade or other object of illumination, without spill light.

Light Curfews

1. ~~Commercial and industrial lighting shall be turned off within thirty (30) minutes of close of business, except that lighting within forty feet (40') of a building, outside display areas, or other areas requiring security lighting shall not exceed two (2) initial lumens per square foot.~~ In all non-residential zones, all exterior lighting shall be extinguished by 11 P.M. or within one (1) hour of the end of normal business hours, whichever occurs later. Businesses whose normal operating hours are twenty-four (24) hours per day are exempt from this provision, however total outdoor brightness (lumens) shall be reduced by at least 50%.[98]
2. Multifamily residential properties used for overnight accommodations, short term rentals or other commercial or business uses shall comply with the requirements above for non-residential zones.[99]
3. ~~Lighting for signage, except monument signs, shall be turned off thirty (30) minutes after the close of business~~. [100]
4. ~~Sports lighting shall be turned off by eleven o'clock (11:00) P.M., except to conclude a specific sporting event that is underway.~~
5. Lighting reductions are NOT required for any of the following:[101]
    a. Single-family residential properties.
    b. Outdoor lighting where only one single fixture exists on the entire property.
    c. Lighting required by Code for steps, stairs, walkways and building entrances.

[98] Source: IDA, underlined = IVINS NIGHT SKY INITIATIVE.

[99] Source: Ivins Night Sky Initiative

[100] Source: Ivins Night Sky Initiative. If the City decides to permit monument signs to remain lit after close of business, then the following conditions should apply: (1) The sign must not be within 1,000 feet of a residential zone, (2) signs shall use semi-opaque materials for sign text and logos such that the light emanating from the sign is diffused. Transparent or clear materials are not allowed for sign text and logos. Non-text portions of the sign (e.g., background and graphics other than the logo) shall be made of completely opaque material. (3) The sign illumination shall be dimmed by at least 50% after 11pm or close of business, whichever is later.

[101] Source: Ivins Night Sky Initiative



d. Lighting for city-owned outdoor recreational facilities shall comply with restrictions listed for these facilities elsewhere in this Chapter.

e. Lighting governed by special use permit in which times of operation are specifically identified.

f. Where lighting levels must be maintained for safety reasons or special events.

Drive-up Windows[102]

- Luminaires must be within 20 feet horizontal distance of the center of the window.
- Luminaires shall not exceed a total of 2,000 lumens per drive-up window.

Landscape Lighting

The primary function of landscape lighting is to provide illumination for pathways, steps, and entrances to buildings.

~~1.~~ Pathway Lighting: The intent of pathway lights is to provide pools of light to help direct pedestrians along the path, not to fully illuminate the path. Steps and path intersections should be illuminated for safety. The maximum foot-candle permitted on the ground is one horizontal foot-candle or less. ~~Two (2) types of lights may be selected: three and one-half foot (3'6") bollards with louvers or ten-foot (10') pole mounted down directed luminaires. Lights must be shielded.~~ Bollards are permitted. Pole mounted luminaires are not permitted.[103]

2. Highlighting, Backlighting: Only low voltage systems are permitted. Lights must be partially shielded, and light must not be directed off the property being lighted. A maximum foot-candle permitted at ten feet (10') is 0.6 horizontal foot-candles from the light source. Uplighting is prohibited except where demonstrated to be nonpolluting at a power density of twenty (20) watts per ten (10) square feet of landscape area.

[102] Source: Kanab. Luminaires must be within 20 feet horizontal distance of the center of the window. Kanab allows 2,000 lumens in residential areas and 4,000 lumens in commercial areas per drive-up window. Ivins does not have the quantity/intensity of commercial development that Kanab has, so we selected the lower limit for all zones in Ivins.

[103] Source: Ivins Night Sky Initiative. The problem with any pole mounted luminaire, even when fully shielded, is that it creates glare for those nearby simply because the luminaire is mounted above eye level. That problem does not exist with bollards. If the City decides to permit pole mounted lights, the pole height should be limited to 8 feet and mounted well within the property boundary (25 feet from the property boundary) and provide additional shielding to prevent the bulb (light source) from being visible at the property line.



3. The lighting of vegetation and other landscape features shall comply with the regulations established in this chapter.

Signs

~~(20) Signs: Signs, including directional, project entrance, freestanding, building, and monuments signs shall comply with the following requirements:~~

~~(a) Shielded: All lighting fixtures shall be aimed and shielded so that light is directed only onto the sign facade and not aimed at adjacent streets, roads, or properties.~~

~~(b) Mounting: Lighting fixtures shall be mounted so as to light only the sign. Lighting fixtures producing more than one thousand eight hundred (1,800) initial lumens must, and all lighting is encouraged to, be mounted above sign and directed downward towards sign.~~

~~(c) Maximum: A maximum of forty (40) initial lumens per square foot of sign surface is permitted. This figure is the total amount of initial lumens produced by all lamps used to illuminate the sign, divided by the area of the sign.~~

~~(d) Signs in Residential Zones: Signs that abut residential zones shall be designed, placed, and landscaped in such a manner so that the lighting does not trespass onto residential properties.~~

~~(e) Signs in Commercial Zones: Signs shall have no visible light source and only low intensity lighting.~~

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. All sign lighting is included in the calculation of total light output for a property. All internally illuminated signs shall consist of only opaque and translucent surfaces.[104] Sign design shall not contain more than 25% white, including lettering.[105] Internal lights must not exceed a correlated color temperature (CCT) of 2,700K.[106]

[104] Source: Torrey UT, underlined = Ivins Night Sky Initiative

[105] Source: Helper UT

[106] source: Adapted from Helper which limits lights to 3,000K if equal to or greater than 1,500 lumens.



Illuminated Signs

Notwithstanding the requirements of any other Ivins City Ordinance regulating the use of outdoor signs, whether on- or off-premises, all the following restrictions shall apply for illuminated signs:[107]

1. Prohibition in residential zones. No illuminated sign of any kind shall be installed on any parcel zoned residential.
2. Top-down lighting. Externally illuminated signs shall be lit only from the top of the sign, with fully shielded luminaires designed and installed to prevent light from spilling beyond the physical edges of the sign.
3. Internally illuminated signs shall be subject to all the following requirements:
    a. Curfew. Light sources shall be extinguished completely after 11 P.M. or at the end of normal business hours, whichever is later, and remain off until one (1) hour before sunrise. If permitted to be lit after 11 P.M., the illumination shall be reduced by at least 50%.
    b. Luminance levels. Luminance levels during permitted operating hours shall not exceed 100 nits. This figure is measured under conditions of a full white display.
    c. Internally illuminated signs shall use semi-opaque materials for sign text and logos such that the light emanating from the sign is diffused. Transparent or clear materials are not allowed for sign text and logos. Non-text portions of the sign (e.g., background and graphics other than the logo) shall be made of completely opaque material.
    d. Size limit. The luminous/illuminated surface area of an individual sign shall not exceed 30 square feet.[108]
    e. Permitted location. Signs shall not be placed within one thousand (1,000) feet of another off-premise sign or within one thousand (1,000) feet of a residential area.[109]

[107] Source: IDA, including the numbered items 1 through 3c; source of underlined text: Ivins Night Sky Initiative

[108] Source: Ivins Night Sky Initiative. Ivins currently limits the total sign area to 40 sq.ft. (Chapter 21 – 16.21.116). The 30 square foot limit is for the illuminated portion of the sign, allowing for an opaque border/structure.

[109] This is more restrictive than IDA, which says: … within 1,000 feet of another off-premise sign on the same side of an arterial street or highway, regardless of face orientation, or within 1,000 feet of a residential area.



Electronic Display Signs

Electronic display signs are prohibited, except as follows: Tuacahn High School may continue to operate one electronic display sign.[110]

Backlit Signs [111]

1. The light source shall not be visible.
2. Backlit signs shall only allow indirect illumination to emanate from the sign. For example, signs that create a "halo" effect around sign copy are allowed.
3. Backlit signs shall emit less than 1,000 lumens.

Illuminated Window Signs [112]

1. Businesses may display a maximum of two (2) illuminated window signs positioned to be primarily visible outside the business structure.
2. Illuminated window signs shall not exceed three and one-half (3.5) square feet in area.
3. Illuminated window signs shall not be illuminated when the business is closed.

Service Station Canopy Lights

All luminaires shall be mounted recessed into the lower surface of service station canopies and shall be fully shielded and utilize only flat lenses or windows. Shielding must be provided by the luminaire itself, and not by surrounding structures such as canopy edges.[113]

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[110] Source: Ivins Night Sky Initiative. However, if Ivins decides to permit electronic display signs, then in addition to all of the restrictions in this section, IDA adds the following restrictions: Message dwell time: Messages appearing on electronic displays shall not be displayed for less than thirty (30) seconds, and shall require no longer than 0.25 seconds to transition from one message to another. Moving and/or flashing text or images are prohibited. Additional restrictions from Helper UT: The luminous surface area of an individual EMC shall not exceed 10 square feet. The device owner or the permit holder shall continuously monitor signs twenty-four (24) hours per day, including monitoring the reliability of hardware, software, network and other support infrastructure. Signs shall contain a default mechanism so that in the event 50% or more of an EMC's LED emitters have failed, the sign will immediately revert to an unlit black screen and remain in such condition until the malfunction is corrected.

[111] Source: Torrey UT, however they state the signs shall be low wattage – we made this more specific.

[112] Source: Torrey UT.

[113] Source: IDA



The bulb, light source, or diffusers are not visible from locations off the property.[114]

All luminaires shall be shielded sufficiently to ensure that no light source is visible from or causes glare or light trespass on public rights-of-way or adjacent property.[115]

For service stations in or next to a residential area, lighting shall be of less intensity (to be determined by the City Council) and shall be considerate of these residential areas.[116]

Service Station Lighting

"Gas stations began to increase their level of lighting, not for any real safety concerns, but for marketing purposes. If safety were the primary goal they would be lit much more dimly so the adaptation and glare problems (of bright lighting) would be reduced."

Alan Lewis
Past President
Illuminating Engineering Society of North America

Excerpt from "The End of Night, by Paul Bogard, 2014

Total lumens allowed: 4,000 lumens per pump or 20 lumens per square foot of canopy, whichever results in the least lumen output. All lighting mounted under the canopy including any lighting within signage, except lamps mounted within the pumps used to illuminate price, quantity, and transaction information, shall be included in the total lumens for the property.[117]

All lighting mounted under the canopy shall be included in the total net acre calculation.[118]

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[114] Source: Torrey UT and Helper UT

[115] Source: Ketchum ID

[116] Source: Goleta CA, underlined source = Ivins Night Sky Initiative; Flagstaff: 20 lumens per square foot in zone 1 and 40 lumens in other zones.

[117] Source: Flagstaff: 20 lumens per square foot in zone 1 and 40 lumens in other zones. Zone 1 is a small area at the edge of the city, however it is an indication that the 20 lumens limit is not unreasonable. Sedona: A limit of 40 lumens per square foot of canopy. Kanab limits to 4,000 lumens per pump in some zones and 8,000 lumens per pump in more intensive commercial areas. We believe that Ivins does not have enough zoned land to develop similarly intensive commercial areas, so we should set the limit at 4,000 lumens per pump. Note: Sedona only counts 50% of the canopy lumens towards total net acre lumen limits.

[118] Source: Various

Lumens under canopy example

The service station on 200 E has a canopy covering approximately 1,680 sq.ft. with 12 under canopy lights and 4 double-sided pump stands (for a total of 8 pumps).

Based on the canopy area, under canopy lights can total a maximum of 33,600 lumens, or 2,800 lumens per light. Based on the number of pumps (8), total lumens would be limited to 32,000 (8 pumps x 4,000 lumens per pump), or 2,667 lumens per light.

In this example, the service station (if it was new construction) would be limited to 32,000 total lumens, or 2,667 lumens per light in this case (or more lumens per light if fewer lights).

While not an apples-to-apples comparison, Red Mountain Resort has a canopy attached to a maintenance building with 6 under canopy LED lights that are 700 lumens each. These provide adequate lighting.

Lighting of Flags

U.S. Code states that: *It is the universal custom to display the flag only from sunrise to sunset on buildings and flagstaffs in the open. However, when a patriotic effect is desired, the flag may be displayed twenty-four hours a day if properly illuminated during the hours of darkness.*

Property owners are encouraged to not illuminate flagpoles at night, but rather to hoist flags after dawn and lower flags before sunset.[119] However, the lighting of federal or state flags shall be permitted provided that the light is a narrow beam spotlight rather than a floodlight, carefully aimed to avoid creating a source of glare. ~~(maximum lumen output of 6,000 lumens per flag).~~[120]

If flags are illuminated at night, lighting of up to a total of two (2) flags per property is permitted with the following conditions:[121]

1. The flags must either be the flag of the United States of America or the flag of the State of Utah for illumination to be permitted.
2. <u>If nighttime illumination is used, flagpoles with a height greater than 20 feet above ground level are not permitted.</u>[122]

[119] Source: IDA

[120] Note: 6,000 lumens is comparable to a 400-watt incandescent bulb, which seems excessive.

[121] Source IDA, including the numbered list, except underlined portions source = Ivins Night Sky Initiative

[122] Source: Ivins Night Sky Initiative. IDA does permit flagpoles taller than 20 feet to be illuminated, but only illuminated with a fully shielded fixture from the top, with a maximum output of 800 lumens. This fixture is protective of the night sky, but the lamp is clearly visible from below which is a glare concern. When choosing between protecting the night sky or

3. If ground-level illumination is used, flagpoles may be illuminated with up to two (2) spot type luminaires, utilizing shields or diffusers to reduce glare, whose maximum combined lumen output is 75 lumens per linear foot of pole height, measured from the level of the luminaire above grade to the top of the flagpole, with a maximum of 1,300 total lumens. Luminaires are to be mounted so that their lenses are perpendicular to the flagpole and the light output points directly toward the flag(s).[123]

Security Lighting

Appropriate security lighting is allowed in compliance with the general provisions of this chapter including shielding, direction, color, and measurement.

1. Commercial: Security lighting is permitted within forty feet (40') of a building, in outside display areas, or other areas requiring such lighting. Security lighting may remain on after the close of business for security purposes, reduced to defined illuminance levels.
2. Residential: All security lighting shall be fully shielded and shall be set on a timer or motion detector. Infrared sensor spotlights are the recommended light type for security. Lights controlled by motion sensors shall not be triggered by movement or activity located off the property on which the light is located. Motion sensing light fixtures shall be adjusted according to the manufacturer's instructions to turn off no more than 10 minutes after detected motion ceases.[124]

Roadway/Streetlights

All streetlights shall be in accordance with Ivins City standard specifications, including the requirement that all new streetlights be fully shielded with a maximum correlated color temperature (CCT) of 2,200K. ~~except as indicated below for nonstandard lighting:~~ [125]

~~1. Full Cutoff Fixtures: All new lighting for streets or highways shall be full cutoff fixtures.~~
~~2. Light Source: Streetlights shall preferably use high pressure sodium.~~ [126]

protecting neighbors, we choose to protect neighbors. Kanab (draft): can illuminate up to 25' pole from below with 60 lumens per foot; if illuminated from above, maximum lumens = 800.

[123] Source: IDA, with the underlined portion from Ketchum ID

[124] Source: Various ordinances

[125] Eliminate this section and the numbered list because it is covered in the City's Standard specifications, section 2.10 Lighting design, which requires full shielding and a maximum 2,200K color temperature.

[126] IDA recommends discontinuing the reference to specific technologies and instead focus only on lumens, CCTs, and similar measures.



~~3. Height: Streetlights shall not exceed twenty-five feet (25') in height.~~
~~4. Nonstandard Poles: Metal poles that are used to mount light fixtures shall be painted black, brown, or other colors that blend with the surrounding terrain. Fiberglass poles shall be likewise painted or intrinsically colored. Wooden poles shall be naturally stained or painted in colors that blend with the surrounding terrain.~~
~~5. Noncomplying Streetlights: Existing street and highway lights that do not meet the requirements of this chapter shall be brought into compliance as part of the Ivins City capital facilities improvements plan as funds become available.~~
~~6. Location: Roadway and street lights, as a minimum, should be placed: At intersections and crosswalks on major collector streets and arterials unless within one hundred twenty-five feet (125') of an adjacent streetlight.~~
~~7. At intersections and crosswalks on minor collector or residential collector streets unless within two hundred fifty feet (250') of an adjacent streetlight.~~
~~8. Exceptions: Exceptions may be made by the city engineer or public works director if crosswalks and street signs along collector and arterial streets are provided with alternative lighting as proposed by a developer.~~

Trails

Trails lighting shall be low level bollards (~~below eye level where possible~~[127]), shielded, and designed to meet all requirements established in this chapter and in accordance with the "Standard Specifications for Design and Construction". Bollards shall not be necessary where a trail is within one hundred feet (100') of a streetlight. Other low-level lighting alternatives shall be considered during the development process on a case by case basis.

Project Entrance Lighting

~~(a) Design:~~ The design of the fixtures shall blend with the general theme of the project, project signage, and should be integrated into entry landscaping as approved by the development process.

Parking Lots

Parking lot lights are encouraged to be greater in number, lower in height, and lower in light level, as opposed to fewer in number, higher in height, and higher in light level.[128]

1. ~~Full Cutoff~~ Fully Shielded Fixtures: All lighting shall be ~~full cutoff~~ fully shielded fixtures. ~~as defined by the Illuminating Engineering Society of North America (IESNA).~~ Additional shielding shall be required if the light source is visible

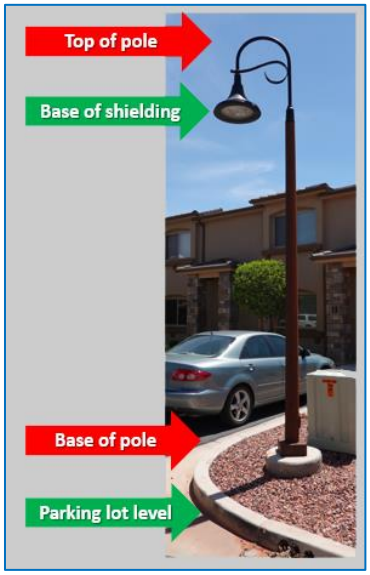
[127] Source: Ivins Night Sky Initiative

[128] Source: Ketchum ID



immediately outside the property boundary at a height of five feet (5') above grade.[129]

2. Appropriate Location: Entrances, exits, and barriers should be emphasized.
3. All post mounted parking lot lights shall be set back from property lines a distance equal to two and one-half (2.5) times the height of the pole unless an internal or external shield prevents the light source being visible from outside the property boundaries.[130]
4. Integrate with Landscaping: All parking lot lighting should be integrated into landscape areas wherever possible.
5. Height: ~~Height of parking area light poles should be in proportion to the building mass and height, and no more than fourteen feet (14') high.~~ The point where light is emitted from the luminaire (base of shielding in this image) shall be no higher than 12 feet (12') above the level of the parking lot surface in all zones.[131]



6. Maximum: A maximum of two (2) initial lumens per square foot of parking lot surface is permitted.
7. Spot or Flood Lighting Prohibited: Spot or flood lighting of parking lots from a building or other structure is not permitted.
8. Compliance Required: Parking lot lighting shall comply with all other requirements of this chapter.

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[129] Source: Ivins Night Sky Initiative. Note: This is worded to limit the visibility of the light source to someone standing just outside the property boundary. The topography of Ivins slopes consistently to the south, so far enough to the south of a luminaire the light source might be visible – but that's not the intent. The intent is to prevent light trespass immediately beyond the boundary.

[130] Source: Various; underlined = IVINS NIGHT SKY INITIATIVE. Torrey UT: All post mounted parking lot lights shall be set back from property lines a distance that is determined appropriate by the planning commission.

[131] Source: Ivins Night Sky Initiative. Note the design of the light pole in the image and the pole's base relative to the parking lot surface. The goal should be to define the height of the light source above the parking lot, not the pole height. The "base of shielding" for the parking lot lights at the Mountain Shadows Commercial Center on 200E are approximately 12 feet above the level of the parking lot. Torrey UT sets limits at 14' for commercial zones and 6' for residential zones. Ketchum ID uses a formula: 3+(D/3) where D is the distance in feet to the nearest property boundary. Example: The pole is 25 feet from the property boundary, so 3+(25/3) = a maximum pole height of 11.33 feet. Helper UT: 16 foot maximum with a setback from property lines at a distance determined appropriate by the Planning Commission.

9. Metal Poles: If metal poles are used to mount light fixtures, they shall be painted black, brown, or other colors that blend with the surrounding terrain.

10. Wooden Poles: Wooden poles shall be naturally stained or painted in earth tones.

Sports Facility Lighting

1. Fully Shielded: All sports lighting shall be fully shielded, or be designed or provided with sharp, cutoff capability, to minimize uplight, spill light, and glare to the greatest practical extent.[132]
2. ~~Turned Off:~~ Curfew: All sports lighting shall be turned off within thirty (30) minutes of the completion of the last game, practice, or event. In no case shall recreational lighting occur after eleven o'clock (11:00) P.M. except to conclude a specific sporting event that is underway. All events shall be scheduled to complete all activity and lights turned off by 11:00 P.M.[133]
3. ~~IESNA Certificate~~ Illuminance levels: All new sports lighting fixtures shall not exceed the minimum standard illumination levels for sports lighting as established by IESNA. All new sports lighting shall require site specific computer calculations and a printout demonstrating that such lighting meets IESNA standards and does not otherwise violate this chapter, including required time of day and lighting curfew.
4. Compliance: All sports lighting shall meet the requirements of this chapter.
5. Class of play. The design and installation of lighting for outdoor sports and similar activities shall follow the illuminance and uniformity guidelines of the IESNA12 according to the appropriate class of play.[134]
6. Purpose. Field lighting provided exclusively for illumination of surface of play and adjacent viewing stands and not for any other application, such as lighting a parking lot.[135]
7. Illuminance levels. Illuminance levels must be adjustable based on the task allowing for IESNA-recommended values during active play as well as for lower output during other times, such as when field maintenance is being actively performed.[136]

[132] Source: IDA

[133] Source: Ivins Night Sky Initiative

[134] Source: IDA

[135] Source: IDA

[136] Source: IDA



8. Off-site impacts. Impacts of the lighting to any other properties shall be limited to the greatest practical extent possible. The maintained vertical illuminance at the property line shall not exceed 10 lux at any time.[137]
9. Automatic shutoff. The recreational lighting shall be fitted with mechanical or electronic timers to prevent lights being left on accidentally overnight by enabling them to be automatically extinguished to ensure lights are not left on after the curfew or when the facilities are not in use.[138]

Outdoor amphitheaters[139]

Outdoor amphitheaters may use illumination to light the performance area of the amphitheater and for the safety of the public. The following standards apply to all amphitheater lighting:

1. Lighting used to illuminate the performance area must be either directed spotlighting or fully shielded lighting. If directed spotlighting, the light source must be located and designed such that it is not visible beyond the property boundaries.
2. Special effects lighting. As part of its performances, Tuacahn periodically lights a portion of Red Mountain. Although this light is visible beyond Tuacahn's property boundaries, it is used only for special effect in the performances and shall only be turned on during performances.
3. Lighting used to illuminate the performance area shall only be turned on during performances or rehearsals.
4. Lighting used to illuminate the seating areas, pathways, and other areas of the amphitheater shall be fully shielded, turned off within one hour of the end of the performance, and must meet all standards of this chapter.

Residential Lighting

This section applies to both single-family and multifamily properties.

1. All exterior luminaires on porches, garages, and entryways shall be fully shielded to prevent glare onto adjacent property or public rights of way and light pollution into the night sky. Luminaires shall be directed at walkways or entries and shall not be directed upward.

[137] Source: IDA

[138] Source: IDA

[139] Source: Torrey UT and Kanab (draft) and underlined = Ivins Night Sky Initiative. The current ordinance does not provide for amphitheaters, which is an important asset in Ivins, so this section is intended to provide protection for this use.



~~2. Compact fluorescent fixtures are permitted.~~ [140]

3. Security lighting shall be fully shielded and shall be set on a time or motion detector. Infrared sensor spotlights are the recommended light type for security. Lights controlled by motion sensors shall not be triggered by movement or activity located off the property on which the light is located.[141]

4. Private sport court facilities:

    a. shall use fully shielded fixtures and shall not use the lights after eleven o'clock (11:00) P.M. Pole height for mounting fixtures ~~should~~ shall not exceed ~~twenty feet (20')~~ 12 feet (12').[142]

    b. All sports lighting poles shall be painted black, brown, or other colors that blend with the surrounding terrain.

    c. Additional shielding may be required to mitigate glare or light trespass. The need for additional shielding will be considered as part of the review process performed by the Planning Commission prior to it recommending approval of any private sports court facility.[143]

Hillsides, Ridgelines, and Special Cases

In certain cases (such as, but not limited to, properties on or near ridgelines or hillsides), additional shielding may be required to mitigate glare or light trespass. The need for additional shielding will be considered as part of the review process performed by the Planning Commission prior to it recommending approval of any development.[144]

Towers

1. All monopole, antenna, tower or support facility lighting not required by the federal aviation administration (FAA) or the federal communications commission (FCC) is prohibited.[145]
2. When lighting is required by the FAA or the FCC, such lighting shall not exceed the minimum requirements of those agencies. Collision markers should have a dual mode for day and night to minimize impact to the night sky and migrating birds.
3. All other lighting used on the property not regulated by the FAA or FCC shall conform to this chapter.

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[140] IDA recommends discontinuing the reference to specific technologies and instead focus only on lumens, CCTs, and similar measures.

[141] Source: Various

[142] Source: Ivins Night Sky Initiative

[143] Source: Ivins Night Sky Initiative

[144] Source: Torrey UT

[145] Source: Torrey UT for numbered list items



Prohibited Lighting

The following outdoor lighting shall be prohibited, except as specifically exempted here or elsewhere in this Chapter:

1. Unshielded Lighting: Unshielded lighting for any purpose is prohibited.
2. Flashing, Blinking, Intermittent Lights: Flashing, blinking, intermittent lights or other lights that move or give the impression of movement are prohibited. Holiday lighting is permitted.[146]
3. Building Mounted Lights Under Most Conditions: Spotlights may not be affixed to buildings for the purpose of lighting parking lots or sales display lot areas. Fully shielded fixtures may be attached to buildings to light walkways and parking lot spaces adjacent to buildings.
4. Laser Lighting: All laser lighting is prohibited.
5. ~~Searchlights: All searchlights are prohibited.~~ Searchlights, skybeams, and similar lighting, except as required by response personnel during emergency conditions.[147]
6. Neon: ~~All neon lighting must be shielded.~~ Except when used in window signage from the interior, neon or luminous tube lighting is prohibited.[148]
7. Linear Fluorescent Lamps. ~~Generally, not allowed. (Ord. 2007-11, 2007)~~
8. Outdoor floodlighting by projection of light above the horizontal plane running through the lowest light-emitting portion of a luminaire with respect to grade.[149]
9. Any luminaire that uses mercury vapor lamps.[150]
10. Outdoor wall pack style fixtures, unless fully shielded, are prohibited.[151]
11. Outdoor barn-light style fixture, unless it includes a full opaque reflector instead of the standard translucent lens, is prohibited.[152]

[146] Exempted elsewhere

[147] Source: IDA

[148] Source: Kanab (draft) prohibits new neon outdoor lighting. Torrey UT is similar – used language similar to Torrey, which states - Except when used in window signage, neon or luminous tube lighting, either when outdoor mounted or indoor mounted if visible beyond the property boundaries is prohibited

[149] Source: IDA

[150] Source: IDA, Kanab (draft)

[151] Source: Kanab (draft)

[152] Source: Kanab (draft)



REVIEW PROCEDURES

Single-Family Residential

All single-family home outdoor lighting shall comply with this chapter.

All Developments Except Single-Family Residential

Lighting plans are required. All building plans, commercial sign permit applications, conditional use permits, and subdivision applications shall include a detailed lighting plan that shows evidence that the proposed lighting fixtures and light sources comply with this chapter.

Lighting plans shall include the following:

1. Plans or drawings indicating the proposed location of lighting fixtures, height of lighting fixtures, and type of illumination devices, lamps, supports, shielding, and reflectors used along with installation and electrical details.
2. Illustrations, such as those contained in a manufacturer's catalog, of all proposed lighting fixtures.
3. Photometric data, such as that furnished by manufacturers, showing illumination levels in wattage and lumens per lamp and lighting fixture.
4. Total initial lumens for the developed area.
5. Initial lumens for any specialized lighting.
6. Initial lumens per square foot of externally illuminated sign surface.
7. Site specific computer calculations for all parking lots, sports fields, and similar large-scale lighted areas. Include assumptions, depreciation factors, complete calculation areas and summary information.

Evidence of Compliance with Codes

All lighting plans shall include certification by a licensed electrical engineer that the lighting fixtures proposed by the plan conform to the requirements of this chapter, building and electrical codes. ~~(Ord. 2007-11, 2007)~~

PUBLICLY OWNED LIGHTING

1. Warranting. New installations of outdoor lighting will only be installed on public properties and rights-of-way upon determination by the City that a public safety hazard exists in the area to be lit, and that the hazard can only be effectively mitigated using outdoor lighting and not through some other passive means, such as reflectorized roadway paint or markers.[153]

[153] Source IDA for numbered list; underlined Source: Ivins Night Sky Initiative – clarifying streetlights and bollards don't shut off at 11pm and changing the IDA language from



2. Curfew. All lighting not adaptively controlled, excluding street and sidewalk lighting, must be fully extinguished by 11 P.M., or within one hour of the end of occupancy of the structure or area to be lit, whichever is later.
3. Adaptive controlling. All new installations of outdoor lighting on public properties and rights of way must be regulated with adaptive controls such that the lighting of areas is restricted to times, places and amounts required for safe occupancy.
4. Compliance. On or before five (5) years from the date Ivins City has been designated as a "Dark Sky Community" by the International Dark Sky Association, all City-owned outdoor lighting shall comply with this Chapter. This may be done through replacement or retrofitting.

APPROVAL PROCEDURE

Small Scale Applications

Lighting plans for developments of one acre or less shall be approved by the Ivins City zoning administrator.

New Development

New development applications shall include a detailed lighting plan that will be approved as part of the development approval in compliance with the Ivins City subdivision ordinance, the conditional use permit, or the building permit. The submittal shall contain, but shall not necessarily be limited to, the following:[154]

1. Plans indicating the location on the premises, and the type of illuminating devices, luminaires, lamps, supports, other devices, etc.
2. Description of the illuminating devices, luminaires, lamps, supports and other devices, etc. This description may include but is not limited to manufacturer data sheets, drawings and photometrics (including sections where required).

Sign Applications

Sign applications shall include a detailed lighting plan that will be approved as part of the sign application approval.

Compliance with This Chapter

All lighting approvals shall be granted only in compliance with this chapter.

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compliance within 5 years of passing the ordinance to 5 years from being designated by IDA, which will occur after the ordinance passes, if at all.

[154] Source: IDA, including numbered list.



Suspension, Revocation, Or Modifications to The Lighting Plan

The zoning administrator may suspend, revoke, or require modification of any lighting plan that is not in compliance with this chapter.

Lamp or Fixture Substitution

If any outdoor light fixture or the type of light source therein is proposed to be changed after a lighting plan has been approved, a change request must be submitted to the zoning administrator for approval. Adequate information to assure compliance with all codes must be provided and the change request must be received prior to substitution. ~~(Ord. 2007-11, 2007)~~

TEMPORARY PERMITTING

Lighting allowed by temporary exemption. Temporary lighting that does not conform to the provisions of this Chapter may be approved at the discretion of the City subject to submission of an acceptable Outdoor Lighting Permit.[155]

1. Permit term and renewal. Permits issued shall be valid for no more than thirty (30) calendar days and subject to no more than one renewal, at the discretion of the Planning Director, for an additional thirty (30) calendar days.
2. Conversion to permanent status. Any lighting allowed through by permit that remains installed after sixty (60) calendar days from the issue date of the permit is declared permanent and is immediately subject to all the provisions of this Chapter.
3. Permit contents. A request for temporary exemption to any provision of this Chapter shall contain minimally the following listed information:
    a. Specific exemptions requested;
    b. Previous temporary exemptions, if any;
    c. Duration of time requested exemption;
    d. Type and use of exterior light involved;
    e. Type, wattage and initial lumens of proposed lamps;
    f. A plan with proposed luminaire locations; and
    g. Manufacturer data sheets for proposed luminaires.
4. In addition to the above data, the City may request any additional information which would enable a reasonable evaluation of the request for temporary exemption.

[155] Source: IDA, including numbered list



APPEAL PROCEDURE

The applicant or any person aggrieved by a final decision, determination, or requirement imposed regarding this chapter may appeal according to the provisions set forth in title 16, chapter 30 of this code. ~~(Ord. 2007-11, 2007)~~

ENFORCEMENT

The Ivins City zoning administrator is authorized as the enforcing officer for this chapter, and shall enforce all provisions, entering actions in court if necessary, and his failure to do so shall not legalize any violations of this chapter. ~~(Ord. 2007-11, 2007)~~

Administrative guidance

The Ivins City zoning administrator is authorized to promulgate one or more interpretive documents to aid in the administration of, and compliance with, this Chapter.[156]

1. Violations. It shall be unlawful to install or operate any outdoor lighting luminaire in violation of any provision of this Chapter. Any person violating any provision of this Chapter shall be guilty of a misdemeanor. Each day during which the illegal erection, maintenance and use of such non-conforming lighting continues shall be considered to constitute a separate offense.
2. The City shall also have the right to bring a civil action to enforce the provisions of this Chapter and to seek remedies as allowed by law, including, but not limited to injunctive relief, monetary damages; or other relief as directed by a court with jurisdiction over the matter.
3. Alternative relief:
    a. Civil penalties. In lieu of criminal prosecution, a civil penalty up to $500.00 a day may be assessed when it is shown that the defendant was notified of the provisions of this Chapter and committed acts in violation of this Chapter or failed to take action necessary for compliance with this Chapter; and other available relief.
    b. Stop work orders. In the event work is not being performed in accordance with this Chapter, the City may issue a stop work order and all work shall immediately cease on the entire project for which a permit is issued. No further work shall be undertaken on the project if a stop work order is in effect.

[156] Source: IDA, included numbered list



ADDENDUM

This section contains examples of permitted and prohibited lighting. The images were taken from other ordinances without permission. We recommend the final document include better examples and preferably photographs of actual luminaires and examples of acceptable installations where possible.

Examples of Acceptable/Unacceptable Lighting fixtures



Figure 5: Acceptable & unacceptable fixtures

The lights on the left are nonconforming. Those on the right can be used in most cases. However, the mounting height and proximity line may cause them to need additional shielding to prevent the luminous elements from being visible from any other property.[157]

[157] Source: Ivins Night Sky Initiative - image taken without permission

Potentially Conforming Fixtures

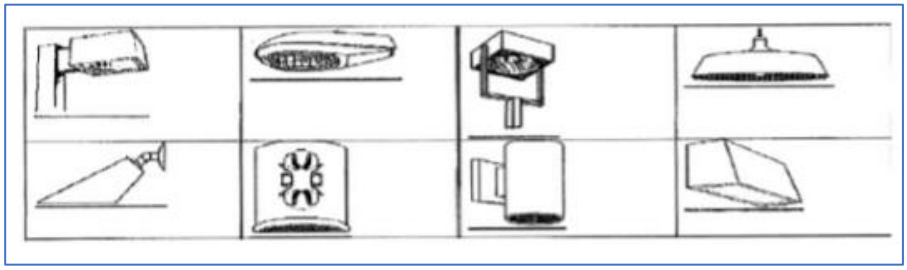


Figure 6: Potentially conforming fixtures

Examples of fixtures that may conform to the provision to not allow light to escape above a horizontal plane running through the lowest point of the luminous elements if they are closed on top and mounted such that the bottom opening is horizontal. Note that the mounting height and proximity to the property line, or internal optics may cause them to need additional shielding to prevent the luminous elements from being visible from any other property.[158]

Non-conforming fixtures

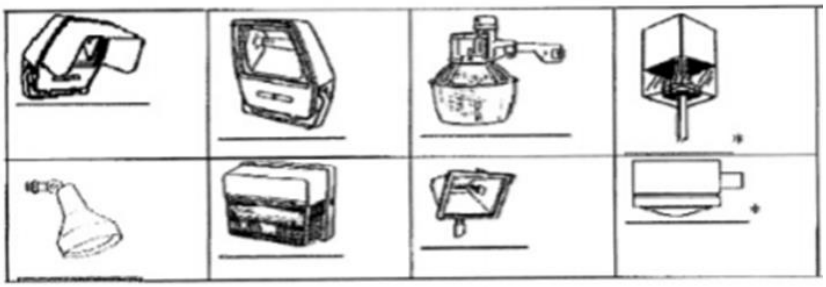


Figure 7: Non-conforming fixtures

Examples of fixtures that do not conform to the provision to not allow light to escape above a horizontal plane through the lowest point of the luminous elements.[159]

Examples of Acceptable Wall Packs



Figure 8: Examples of acceptable wall packs

[158] Source: Ivins Night Sky Initiative – image taken without permission

[159] Source: Ivins Night Sky Initiative - image taken without permission

Acceptable Shielding of Barn-Style Fixtures



Figure 9: Acceptable shielding of barn-style light fixtures

Examples of Partially-Shielded Fixtures

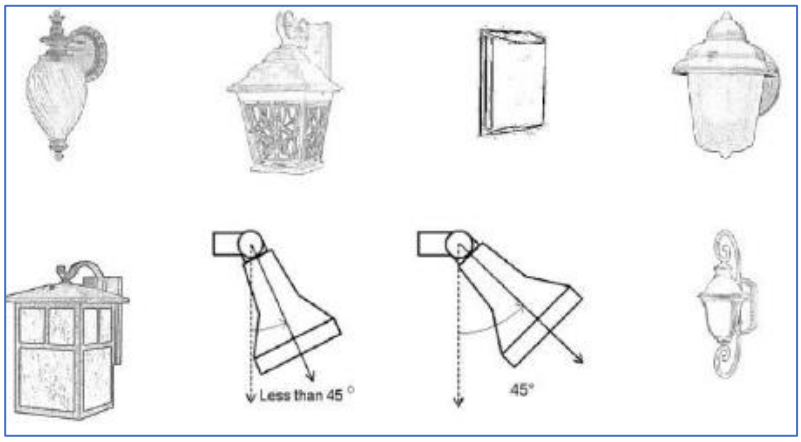


Figure 10: Examples of partially shielded lighting fixtures

Permitted and Prohibited Sign Lighting Configurations

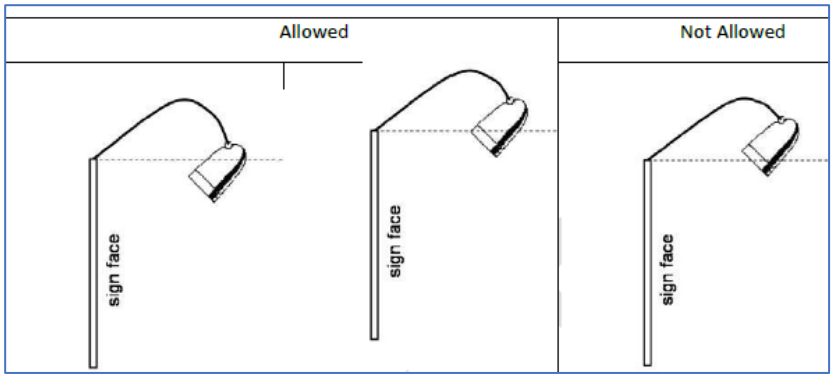


Figure 11: Permitted and prohibited external sign lighting configurations