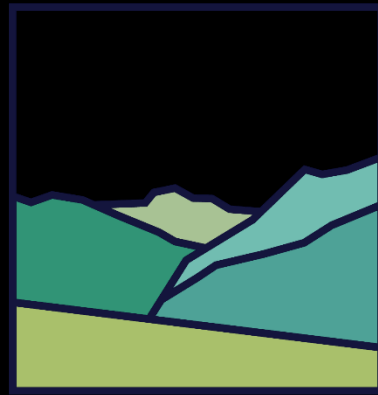


Dark Sky Ordinance

Emigration Canyon Metro Township



Greater Salt Lake Municipal Services District

Planning and Development Services

Discussion Outline



1. Dark Sky Overview
2. General Plan Guidance
3. Breakdown of Planning Commission Comments
4. Next Steps

1. Dark Sky Overview

1

- a. What is a dark sky ordinance?
- b. Why apply a dark sky ordinance?
- c. How is a dark sky ordinance effectively enforced?

What is a Dark Sky Ordinance?

1.a



Dark Sky Ordinance Is:

- A tool for ensuring that municipalities implement good, safe outdoor lighting
- Ensure that all lighting introduced to the community follow the **5 lighting principles identified by the International Dark-Sky Association**

LIGHT TO PROTECT THE NIGHT

Five Principles for Responsible Outdoor Lighting



Illuminating
ENGINEERING SOCIETY



USEFUL



ALL LIGHT SHOULD HAVE A CLEAR PURPOSE

Before installing or replacing a light, determine if light is needed. Consider how the use of light will impact the area, including wildlife and the environment. Consider using reflective paints or self-luminous markers for signs, curbs, and steps to reduce the need for permanently installed outdoor lighting.

TARGETED



LIGHT SHOULD BE DIRECTED ONLY TO WHERE NEEDED

Use shielding and careful aiming to target the direction of the light beam so that it points downward and does not spill beyond where it is needed.

LOW LIGHT LEVELS



LIGHT SHOULD BE NO BRIGHTER THAN NECESSARY

Use the lowest light level required. Be mindful of surface conditions as some surfaces may reflect more light into the night sky than intended.

CONTROLLED



LIGHT SHOULD BE USED ONLY WHEN IT IS USEFUL

Use controls such as timers or motion detectors to ensure that light is available when it is needed, dimmed when possible, and turned off when not needed.

COLOR



USE WARMER COLOR LIGHTS WHERE POSSIBLE

Limit the amount of shorter wavelength (blue-violet) light to the least amount needed.

Why Apply a Dark Sky Ordinance?

1.b

Dark Sky Ordinances are designed to mitigate several issues for communities:

- The degradation of the nighttime visual environment by production of unsightly and dangerous glare;
- Lighting practices that interfere with the health and safety of citizens and visitors;
- Unnecessary waste of energy and resources in the production of too much light or wasted light;
- Interference in the use or enjoyment of property which is not intended to be illuminated at night, and the loss of the scenic view of the night sky due to increased urban sky glow.

Light Pollution Effects:

- Wildlife and Ecosystem
- Energy Waste
- Crime and Safety
- Human Health
- Community Heritage



<p>International Dark-Sky Association Bright Policy on the Application of the Lighting Principles Adopted January 28, 2013, Amended June 26, 2017.</p> <p>Whereas, light pollution is defined by IDA as any adverse impact or effect attributable to the use of artificial light at night, including but not limited to skyglow, glare, spill light, and intrusive night-time lighting; and</p> <p>Whereas, light pollution is known to negatively influence natural ecosystems, human health, public safety, astronomical observations, energy security, and global climate; and</p> <p>Whereas, scientists have identified the emission of short-wavelength ("blue") visible light into the nighttime environment as a significant astronomical and biological concern; and</p> <p>Whereas, the Board adopted the IDA/IES Five Principles for Reasonable Outdoor Lighting; hereafter the "Principles" on February 27, 2010; and</p> <p>Whereas, IDA asserts that outdoor lighting should be designed to minimize the impact on the environment; and</p> <p>Whereas, IDA challenges lighting manufacturers, engineers, and designers to develop and advance more lighting options and positive standards in support of the Principles; and</p> <p>Whereas, IDA urges a short-term conservative goal of no net increase in light pollution per capita and a long-term conservation goal of the restoration of natural darkness; and</p> <p>Whereas, IDA will provide guidance that can be broadly applied, empowering diverse jurisdictions, communities, and citizens to select responsible outdoor lighting.</p> <p>NOW, THEREFORE BE IT RESOLVED, to direct IDA's advocates and technical guidance on the implementation of the Principles, the IDA Board agrees as follows:</p> <ol style="list-style-type: none">1) Responsible outdoor lighting must consider all five principles in its design and installation and only through attention to all five principles will light pollution be minimized to its practical extent;2) Where existing fixtures are replaced, the project should demonstrate how they will reduce light pollution, or at a minimum not increase it;3) Where new installation or lighting retrofit projects are proposed, they should be guided by an associated process to determine if new lighting is necessary and responsible;4) To reduce skyglow, glare, spill light, and over-lighting, darker and narrower lighting should be used and measures for emission of light beyond the intended target, light aimed upwards or above the horizon and low-intensity, high-maintenance impacts;5) To prevent over-lighting, and thereby the level should be as low as reasonably practicable to the minimum values recommended by accredited professional bodies such as IES and CIE and	<p>appropriate for the local environmental setting. IDA will collaborate with professional bodies to ensure that recommended illumination values are well founded in science.</p> <ol style="list-style-type: none">6) New installations should have active controls to reduce illumination levels or extinguish lighting completely based on time of day or occupancy. Such controls are currently common in street outdoor lighting and can substantially reduce light pollution and save energy. Energy conservation rules are increasingly calling for active controls.7) In special circumstances, or where a light source has been the only actual source for the task, because of the disproportionate impact on the nighttime environment, particular attention should be paid to reducing the total emissions of short-wavelength or "blue" light pollution for the purposes of this resolution between the wavelengths of 380nm and 500nm through light source spectrum management.8) To minimize negative environmental impacts, IDA recommends using lamps rated at 2700K CCT¹, phosphor converted amber LEDs or lower filtered LEDs.9) Where higher than 2700K CCT is necessary to meet lighting objectives, keep the total emission of blue light into the environment as low as reasonably possible through low intensities, careful targeting, and reduced operating times.10) Since sensitive sites, such as conservation areas, sensitive wildlife habitat, ecological reserves, parks, astronomical observatories, or staging areas, IDA recommends that lighting installers use 0% blue light and a narrower spectrum of emission.11) Critically sensitive environments should be kept naturally dark.12) IDA recognizes that there is no single solution that will work for all situations; therefore IDA will develop a range of scenarios and practices for common lighting situations. Solutions that result in no net increase in light pollution should be considered a minimum requirement, whereas best management practices would result in the maximum practical restoration of natural darkness.13) Because context matters, IDA recognizes that advocates and lighting professionals need the flexibility to identify how the Principles are best applied within their local area to meet local needs while observing regulatory frameworks, guidelines, procedures, standards and codes, and laws; where targeted or flexible, such decisions should be guided by an appropriate environmental assessment and supported by monitoring of light levels in the surrounding environment.14) IDA will periodically update guidelines in response to changing technology, changes in available market solutions, evolving social values, and scientific progress. <p><small>¹ CCT, short for color temperature or the alternative notation of the spectral color (from 3000K) temperature as described in the CIE 1931 color space. CCT is a measure of the color of the light source, not the color of the light itself.</small></p> <p><small>² IDA recognizes that new technologies are emerging and that the use of CCT for narrow spectrum and efficiency to determine that light is designed, the proper CCT may be used as a reference, a light source should be modified if the source emits too much light or too little light.</small></p> <p><small>³ IDA has partnered with the International Dark-Sky Association to develop a new set of standards for outdoor lighting. The standards are available at https://www.ida.org/standards.</small></p>
--	--

How is a Dark Sky Ordinance Effectively Enforced?

1.c

- City of Moab Outdoor Lighting Ordinance Example...
 - **All outdoor lighting legally existing and installed prior to the effective date** of this Chapter and which is not exempted shall be considered nonconforming and shall be brought into compliance by the property owner as follows:
 - Immediate compliance is required as a condition for approval when applying for a building permit, sign permit, new (nonrenewal) business license, site plan review or similar permit or approval if site improvements, construction, reconstruction, expansion, alteration or modification of existing sites, structures, or uses individually or cumulatively equal or exceed one thousand five hundred (1,500) square feet, or 50% of the existing site or structure, whichever is less.



How is a Dark Sky Ordinance Effectively Enforced?

1.c

- Grand County Outdoor Lighting Ordinance Example...

6.6.10 Amortization of Nonconforming Outdoor Lighting

- A. The County shall require the termination of use of any and all nonconforming outdoor lighting fixtures, structures, lamps, bulbs or other devices that emit or generate light which are not otherwise exempted by this Section, pursuant to the amortization schedule contained in this Section 6.6.10.B.
- B. All outdoor lighting legally existing and installed prior to the effective date of this Section, and which is not otherwise exempted, shall be considered nonconforming and shall be brought into compliance by the property owner as follows:
 - 1. Immediately as a condition for approval upon application for a building permit, sign permit, conditional use permit, new (nonrenewal) business license, site plan review or similar County permit or review.
 - 2. Immediately in the case of damaged or inoperative nonconforming lighting upon replacement or repair.
 - 3. Within five (5) years from the effective date of this Section for all other outdoor lighting.



2. General Plan Guidance

General Plan Link: <https://ec-lrp-hub-gslmsd.hub.arcgis.com/>

- **Goal 2.3:** Preserve and enhance ecological features, viewsheds, wildlife corridors, and open space.
 - **Objective 2.3.2:** Preserve and enhance views of the night sky and protections for nocturnal wildlife.
 - *a. Support the adoption of a Dark Sky compliant light-pollution control ordinance.*
- **Goal 5.3:** Preserve and enhance natural areas and ensure that landscapes are functional and diverse.
 - **Objective 5.3.3:** Preserve and enhance views of the night sky and protections for nocturnal wildlife.
 - *Support the adoption of a Dark Sky compliant light-pollution control ordinance.*



3. Breakdown of Planning Commission Comments

3

- a. Statements in support of the ordinance
- b. Things that the ordinance should include
 - 1. Elements and Content
 - 2. Ordinance Layout and Design
 - 3. Example that should/could be followed
 - 4. Specific lighting issues
- c. Things that the ordinance should not include
- d. Questions that should be addressed

Statements in support of the ordinance

3.a

EC needs to have an ordinance on allowable outside lighting, especially meeting dark sky standards.

- Agree
- Agree

Things that the Ordinance Should Include

3.b

1. Elements and Content
2. Ordinance Layout and Design
3. Example that should/could be followed
4. Specific lighting issues

Elements and Content

3.b.1

- The ordinance should have a well-worded **purpose statement** explaining why the ordinance is needed.
 - Moab did a good job of this.
 - I also like, in addition to the Moab purpose statement, that in the Torrey ordinance. However, I recommend that the EC **ordinance not use the phrase "light trespass,"** which is found in the Torrey ordinance. This is because the term "trespass" has a fairly specific legal meaning, and I am not sure that light from one property that can be seen on another property would qualify as a "trespass" as that term is traditionally used.
 - Agreed, both Torrey & Moab have good intent and purpose statements.



CITY OF MOAB ORDINANCE #2019-03

AN ORDINANCE ENACTING SECTIONS 17.09.060-17.09.069 AND SECTION 17.09.465 OF THE MOAB MUNICIPAL CODE ESTABLISHING OUTDOOR LIGHTING AND SIGN ILLUMINATION STANDARDS AND REPEALING INCONSISTENT LIGHTING PROVISIONS

The following describes the intent and purpose of this ordinance:

- a. The City desires to encourage outdoor lighting practices that will minimize light pollution, glare, light trespass, and sky glow to curtail the degradation of the night-time visual environment.
- b. Lighting practices that promote energy conservation are to be encouraged.
- c. Revisions to existing ordinances are necessary to improve night-time safety and security.
- d. Lighting practices are an important component for developing an attractive nighttime appearance in the City.
- e. It is in the best interests of the City that it establish lighting standards, requirements, and processes that are substantially consistent throughout the Moab Municipal Code and substantially with those established by Grand County.
- f. The City finds that this ordinance is necessary, appropriate, and consistent with public health, safety, and welfare.

9-4-1: PURPOSE:

The purposes of this chapter are to:

- A. Encourage outdoor lighting practices that will minimize light pollution, glare, light trespass and sky glow in order to preserve the natural dark of the night sky and to prevent lighting nuisances on properties.
- B. Promote energy conservation.
- C. Maintain nighttime safety, utility and security.
- D. Prevent unnecessary or inappropriate outdoor lighting.
- E. Maintain the rural atmosphere and village character of the town. (Ord., 3-10-2016)



Elements and Content

3.b.1

- We should include a thorough **definitions section**.
 - I recommend that the **definitions section follow the purpose statement**. It is much easier to understand an ordinance if all of the words and phrases it uses are clearly defined at the outset. Every term or phrase that is susceptible of being interpreted differently needs to be clearly defined.
 - Agreed. Definition section, we should be careful to limit definitions to appropriate terms.

9-4-2: DEFINITIONS:

For the purpose of this chapter, certain words, phrases and terms used herein shall have the meanings assigned to them by this section:

ACCENT OR ARCHITECTURAL LIGHTING: Lighting of building surfaces, landscape features, statues and similar items for the purpose of decoration or ornamentation; or lighting that does not contribute to the safety or security of residents, guests, employees or customers on a property.

CORRELATED COLOR TEMPERATURE (CCT): A specification of the color appearance of the light emitted by a lamp, relating its color to the color of light from a reference source when heated to a particular temperature, measured in degrees kelvin (K).

DIRECT ILLUMINATION: Illumination resulting from light emitted directly from a lamp, luminary or reflector. This does not include light reflected from other surfaces, such as the ground or building faces.

FLOODLIGHT: A fixture or lamp designed to "flood" an area with light. A specific form of lamp or fixture designed to direct its output in a specific direction. Such lamps are often designated by the manufacturer and are commonly used in residential outdoor lighting.

FULL CUTOFF FIXTURE: An outdoor light fixture designed so that the installed fixture emits no light above the horizontal plane. Full cutoff light fixtures must be shielded in and of themselves. Surrounding structures, like canopies, are not to be considered when determining if the fixture is full cutoff. Full cutoff fixtures must be appropriately mounted so that the shielding prevents light from escaping above the horizontal and all light is directed downward.

INTERNALLY ILLUMINATED: As it relates to signs, any sign which has a light source entirely enclosed within the sign and not directly visible to the eye.

LIGHT POLLUTION: Any adverse effect of manmade light. Often used to denote "sky glow" from cities or towns, but also includes glare, light trespass, visual clutter and other adverse affects of lighting.

LIGHT SOURCE: The part of a lighting fixture that produces light, e.g., the bulb.

LIGHT TRESPASS: Light falling where it is not wanted or needed. Spill light falling over property lines that illuminates adjacent grounds or buildings in an objectionable manner.

MANUFACTURER'S CATALOG CUTS: A publication or other printed material of a lamp or lighting manufacturer offering visual and technical information about a lighting fixture or lamp.

OUTDOOR LIGHT FIXTURE: An outdoor electrically powered illuminating lamp or similar device used for lighting structures, parking lots, pathways, service canopies, recreational areas, signs or other similar outdoor lighting uses.

RECREATIONAL LIGHTING: Lighting used to illuminate sports fields, ball courts, playgrounds or similar outdoor recreational facilities.

SECURITY LIGHTS: Lighting designed to illuminate a property or grounds for the purpose of visual security.

SPOTLIGHT: A fixture or lamp designed to light a small area very brightly. See definition of Floodlight.

TOWER: Any monopole, antenna or the like that exceeds eighteen feet (18') in height.

UNSHIELDED FIXTURE: A fixture that allows light to be emitted above the horizontal either directly from the lamp or indirectly from the fixture or reflector. Any fixture not full cutoff. (Ord., 3-10-2016; amd. 2



17.09.062 Outdoor Lighting - Definitions

A. For the purpose of Sections 060 through 069 and Section 465 of this Chapter, the following definitions apply:

"Accent or Architectural Lighting" means lighting of building surfaces, landscape features, statues, and similar items for the purpose of decoration, ornamentation, creation of visual hierarchy, sense of liveliness, or other purpose unrelated to safety, business operation, or essential lighting function.

"Backlight" means all the light emanating behind a luminaire.

"B.U.G. Rating" means backlight, up-light, and glare rating, which exists on a scale of zero to five (0 to 5) and describes the light output of a luminaire.

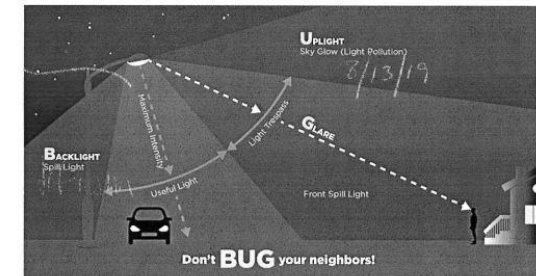


Image by City of Ft. Collins, Colorado and used here with permission.

"Correlated Color Temperature" (CCT) is a specification of the color appearance of the light emitted by a lamp, relating its color to the color of light from a reference source when heated to a particular



Elements and Content

3.b.1

- I like how all of the ordinances require a **lighting plan be submitted for approval** on new building applications.
 - Agreed, lighting plan should be required

17.09.068 Outdoor Lighting - Application and Review Procedures

A. Lighting Plan

All sign permit applications, subdivision applications, site plan applications, building permit applications, and other development review applications within any zoning district shall include a 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 on the premises, and type of illumination devices, lamps, supports, shielding and reflectors used and installation and electrical details.
2. Illustrations, such as contained in a manufacturer's catalog cuts, of all proposed lighting fixtures. For commercial uses, photometric diagrams of proposed lighting fixtures are also required. In the event photometric diagrams are not available, the applicant must provide sufficient information regarding the light fixture, bulb wattage, and shielding mechanisms for the planning commission to be able to determine compliance with the provisions of this chapter.
3. A table showing the total amount of proposed exterior lights, by fixture type, wattage, lumens, and lamp type.

B. Approval Procedure:

1. The lighting plan for all new development shall be submitted for approval concurrent with the associated application process.
2. A certificate of occupancy shall not be issued until such time as the property is subject to a post installation nighttime inspection by the City's Zoning Administrator.

9-4-4: APPLICATION AND REVIEW PROCEDURE:

A. Lighting Plans Required: All sign permit applications, building permit applications and design development review applications shall include a lighting plan that shows evidence that the proposed lighting fixtures and light sources will comply with this chapter and shall include the following:

1. Plans or drawings indicating the proposed location of lighting fixtures, height of lighting fixtures on the premises, and type of illumination devices, lamps, supports, shielding and reflectors used and installation and electrical details.
2. Illustrations, such as contained in a manufacturer's catalog cuts, of all proposed lighting fixtures. For commercial uses, photometric diagrams of proposed lighting fixtures are also required. In the event photometric diagrams are not available, the applicant must provide sufficient information regarding the light fixture, bulb wattage and shielding mechanisms for the planning commission to be able to determine compliance with the provisions of this chapter.
3. A table showing the total amount of proposed exterior lights, by fixture type, wattage, lumens and lamp type.

B. Approval Procedure:

1. The lighting plan for all new development shall be submitted for approval concurrent with the associated application process. (Ord., 3-10-2016)
2. A certificate of occupancy shall not be issued until such time as the property is subject to a postinstallation nighttime inspection by the building inspector. (Ord., 3-10-2016; amd. 2016 Code)



Elements and Content

3.b.1

- I think we should have a clearly worded section on **allowable exemptions** and how they can be approved
 - such that the ordinance has flexibility in dealing with special situations.
 - Agree. Just as what is allowed and not allowed should be clearly spelled out, so should exemptions be clearly spelled out.
 - Agreed, exemptions.



9-4-10: EXEMPTIONS:

The following shall be exempt from the requirements of this chapter:

- A. Holiday lighting from November 15 to January 15 as long as it does not create a hazard or nuisance to surrounding businesses or residences.
- B. Traffic control signals and devices.
- C. Temporary emergency lighting in use by law enforcement or government agencies, or at their direction.
- D. The lighting of federal or state flags; provided, that the light is a narrow beam aimed and shielded to illuminate only the flag. Flag lighting should use appropriate illumination levels to light the flag, while at the same time fulfilling the purposes of this chapter.
- E. Low voltage LED lights and solar lights used to illuminate pathways in residential areas, provided the lights are installed no more than eighteen inches (18") above the adjacent ground level and have caps that direct the light downward.
- F. The planning commission, as part of its review as outlined in this chapter, may approve lighting that does not conform to these standards if need is established. An applicant requesting such lighting is required to provide proof of requirements of property insurance or findings of competent research demonstrating the need for the requested lighting. The planning commission may attach other conditions to the approval of such lighting that will make the lighting comply with the spirit of this chapter. (Ord., 3-10-2016)



E. Exemptions to Fully Shielded Fixture Requirements:

1. All lights exempted by this section shall be included in the calculation of total light output.
2. Fixtures having a total light output less than one thousand (1,000) lumens are exempted from the fully shielded requirement provided the following criteria are met:
 - a. The fixture has a top that is completely opaque such that no light is directed upwards.
 - b. The fixture has sides that completely cover the light source and are made of opaque or 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 or lightly tinted colored glass, are not allowed.
 - c. The light source must not be visible from any point outside the property on which the fixture is located.
3. Spotlights controlled by motion sensors having a light output less than one thousand (1,000) lumens per lamp are exempted from the fully shielded requirement provided:
 - a. The fixture is a spotlight or other type of directed light that shall be directed straight down; and
 - b. The fixture must not be placed in such a manner that results in illumination being directed outside the property boundaries where the light fixtures are located.
 - c. Lights controlled by motion sensors shall not be triggered by movement or activity located off the property on which the light is located.
4. Pathway lights less than eighteen inches (18") in height are exempted from the fully

Elements and Content

3.b.1

- 19. Enforcement and Penalties - The ordinance should also have some teeth.



- C. The City shall perform two (2) audits of all outdoor lighting in the City, one two (2) years and the other four (4) years after the effective date hereof. These audits will identify all lighting that does not conform to the standards of this Chapter. The results of these audits will be made available to the public.

9-4-12: VIOLATIONS:

The following constitute violations of this chapter:

- A. The installation, maintenance or operation of any lighting fixture not in compliance with the provisions of this chapter if such fixture is installed subsequent to the date when this chapter is formally adopted.
- B. The alteration of outdoor lighting fixtures after a certificate of occupancy has been issued without the review and approval of the planning commission when such alteration does not conform to the provisions of this chapter.
- C. Failure to shield, correct or remove lighting that is installed, operated, maintained or altered in violation of this chapter.
(Ord., 3-10-2016)



Elements and Content

3.b.1

- 20. Torrey addresses the issue of Hillsides, Ridgelines and Special Cases. I think this is an issue that needs to be addressed requiring additional shielding to mitigate glare and light trespass coming from sources above. I'm not really sure how this problem can be mitigated we should discuss this issue.

9-4-8: HILLSIDES, RIDGELINES AND SPECIAL CASES:

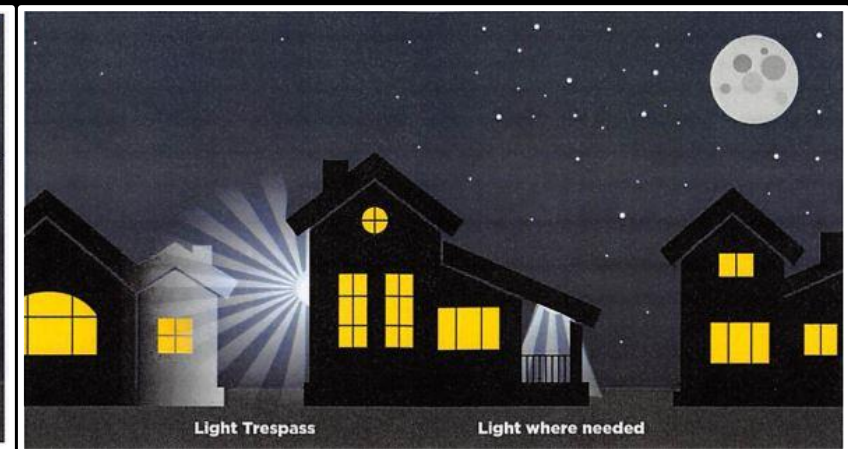
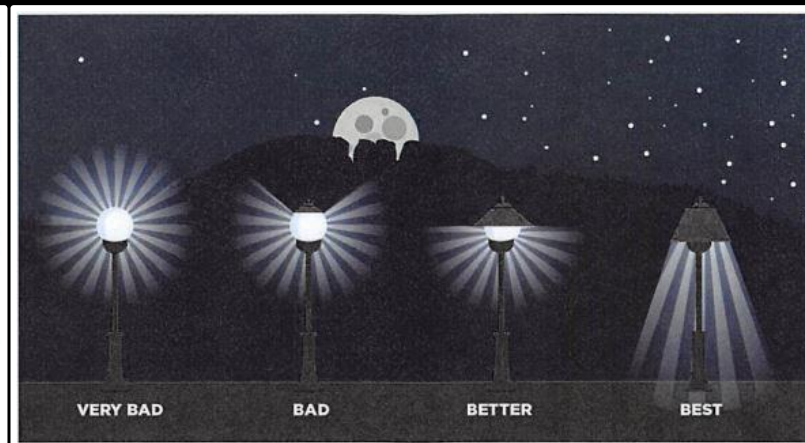
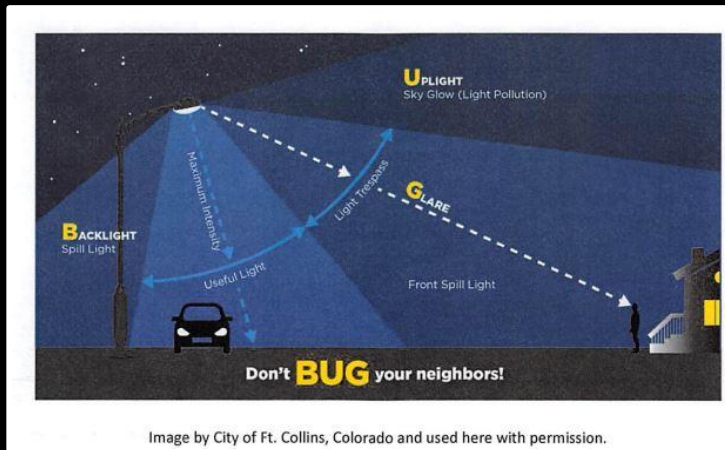


In certain cases (such as, but not limited to, properties on or near ridgelines or hillsides), additional shielding may be required to mitigate glare or light trespass. The need for additional shielding will be considered as part of the review process performed by the planning commission prior to approval of any business or residence. (Ord., 3-10-2016)

Ordinance Layout and Design

3.b.2

- We should also use **good graphics**.
 - Several of the ordinances you provided have **good graphics**.
 - Related to that, Grand County's ordinance has good examples/drawings of acceptable and non-acceptable fixtures.
 - 10. Having good graphics and definitions will make it easier for everyone to understand the ordinance requirements.
 - Agreed, easy to understand graphics is a must.



Example That Should/Could be Followed

3.b.3

- If we follow the **MLO format**
 - We will likely only need to allow L-ZO, L-Z1 and L-Z2 lighting zones.
 - The others are suitable only for much more heavily developed communities.
 - Agreed, lighting zones.
- We will want to specifically deal with **street lighting**.
 - It is used in all of the cities that you provided ordinances for us to review, but we have precluded the use of street lighting in Emigration Canyon.
 - We will want a carefully worded statement on this.
 - We should discuss whether to totally preclude them or allow them under very stringent
 - Agreed, street lighting needs to be carefully studied.

Specific Lighting Issues

3.b.4

- 13. I like how Moab addressed **allowable light color (Kelvin range)** and light sources.
 - I also liked the Torrey ordinance treatment of this.
 - Agree with Tim, Moab has a easy to understand allowable light color and light sources section.
- 16. I like how Torrey and at least one of the other ordinances actually listed **prohibited lighting** such as flashing lights, blinking lights, search lights and lasers.
 - Agree. Just as what is allowed should be clearly spelled out, so should what is not allowed be clearly spelled out.
 - Agreed, prohibitions.
- 17. Several of the ordinances included **time limitations** for when lights needed to be turned off and/or requiring them to be controlled by timers or motion sensors.
 - This will likely be controversial, but it needs to be addressed.
 - There are quite a few home facade lights and driveway lights that are left on all night long.
 - This is also a very interesting, and possibly controversial subject.
 - Agreed, timers & light sensors.

Common Relationships between bulb types, wattages and lumen levels

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



6.6.7 Lighting Color

All exterior lighting shall utilize light sources with correlated color temperature not to exceed 3,000 Kelvin (K).

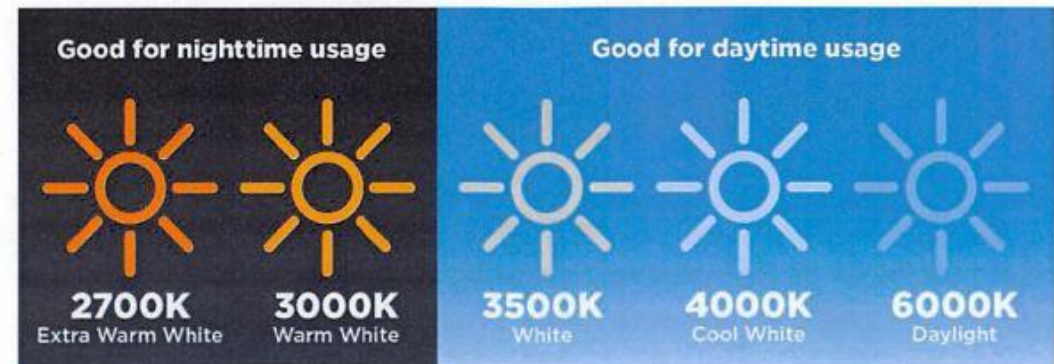


Image by City of Ft. Collins, Colorado and used here with permission.

Things That the Ordinance Should not Include

3.c

- 5. There are a number of uses addressed by the other city ordinances that **we won't need** to such as lighting at gas stations.
 - a. Hopefully, that will make this effort a bit easier.
 - b. Agreed, we are a rural area with minimal lighting intensity. We should be able to simplify our ordinance considerably, although we should and keep future development in mind.
- 11. I was surprised to see Eagle Mountain and Sedona encourage or require **Low Pressure Sodium lights**.
 - a. I recognize that they are less invasive to night sky interference, but they have very poor color resolution which I think makes them problematic from a public safety point of view. It's very old technology.
 - i. I would support not allowing them.
 - b. I do not know enough about such lights (as well as lots of the technical aspects of illumination) to provide an intelligent comment. However, I wonder about the phrase "**public safety point of view.**" What is meant by the phrase?
 - c. Agreed. We should only allow the **latest technologies** in lighting with energy efficiency as a driving requirement.

Questions That Should be Addressed

3.d

- 2. It would be good to know what we might already have enacted and if there **are any requirements already** in place by the County or State that we need to conform to.
 - Agree - will our legal counsel advise us on this?
 - Canyon FCOZ Outdoor Lighting Standards here:
 - https://emigrationcanyon.municipalcodeonline.com/book?type=ordinances#name=19.73.110_Night_Lighting
- 3. We will want to make sure that our proposal **is in compliance with the recently adopted General Plan**.
 - Agree - will our legal counsel advise us on this?
 - General Plan Supports the Adoption of a Dark-Sky Ordinance
- 4. Some of the ordinances from the cities you provided incorporate **sign illumination** as well as outdoor lighting.
 - The Model Lighting Ordinance (MLO) suggests that sign illumination controls should be part of the **signing ordinance**, not the outdoor lighting ordinance. I agree with this.
 - Agreed. Sign Illumination requirements in the signing ordinance.
 - The general CZ applied in the Canyon is limited as to what signage is appropriate...
 - This may be a non issue...
 - We need to investigate this a little bit further.
- 15. Most of the ordinances grandfather in **existing lighting prior to the effective date of the ordinance**.
 - That said, Grand County has a 5-year requirement for non-conforming lighting to be made conforming.
 - I don't know that we will want to go to that extent, but it is worth discussing.
 - Perhaps there may be some egregious cases that should be required to be remedied within a reasonable period of time.
 - This is a very interesting subject, and however existing lighting that does not conform to the EC ordinance is to be treated, the ordinance needs to be very precise with the language used. For starters, I recommend that terms and phrases like "grandfathered" and "nonconforming use(s)" not be used as they, like "trespass" have fairly specific, loaded legal meanings.
 - Agreed, in discussing this issue with one of our MTC members, they felt that grandfathering existing nonconforming lighting might be a hard sell, particularly to the MTC who are elected.

Next Steps

- Reach out to **State Resources**
 - Guidance / Things we should have in mind
 - IDA Utah Chapter's Lighting Ordinance Committee
 - Heidi Hoven
 - Heidi.Hoven@audubon.org
 - Dark Sky Cooperative
 - Lisa Stoner
 - Assistant Director of Outreach and Education at the Institute of Outdoor Recreation and Tourism.
 - lisa.stoner@usu.edu
- Breakdown of **Best Available Examples**
 - Looking Like Moab, Torrey, and Grand County have received the most attention so far
 - We will look for any other examples... Geographically more relevant...
- Ordinance **Draft**
 - Share with State Resources and Attorney
- Ordinance **Dress Up**
 - Create a series of graphic references to accompany ordinance
- Ordinance **Revision**
 - Planning Commission / Council opportunity to feedback for revision of Ordinance
- Ordinance **Adoption**

Thank You for Your Time!

- Questions and Comments
- Dark Sky Lighting Ordinance Walkthrough
 - <https://utah.maps.arcgis.com/apps/MapSeries/index.html?appid=1cb7caaa1aa543dea3c813ec9f1f7f93#>