



**EAGLE MOUNTAIN CITY**  
City Council Staff Report  
**NOVEMBER 18, 2014**

**Project:** Development Code Addition & Amendment: Chapters 15.70, 17.54.050, 17.55.040, 17.56, 17.72, 17.80, 17.100.060, 17.100.070  
**Applicant:** City Staff  
**Request:** Public Hearing; Action Item

---

**Planning Commission Action**

The Planning Commission recommended approval (3-1) of the proposed code addition and amendments on September 23, 2014 with the following conditions of approval:

- 1) That the hours of lighting not be restricted for residential properties.
- 2) That the hours of lighting for commercial properties be modified from 10:00 p.m. to 11:00 p.m.

**Background**

Staff presented the dark sky ordinance concept to the City Council on May 6, 2014 and received direction to prepare a draft ordinance. Staff drafted a new chapter addressing outdoor lighting standards (Chapter 17.56 Outdoor Lighting Standards) and amended the sign ordinance (Chapter 17.80 Sign Regulations and Permits) to include updated signage lighting requirements. The Planning Commission recommended approval of the proposed code addition and amendments on September 23, 2014 with conditions. Thereafter, the City Council met on October 7, 2014 to consider the proposed ordinance, ultimately tabling the item, but provided feedback which has shaped the current code proposal.

**Lighting Terminology**

**What is the difference between full cutoff and fully shielded?**

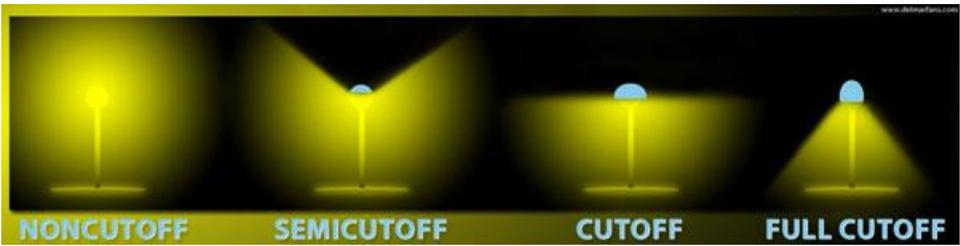
The term full cutoff has and is being used to describe luminaires that have no direct uplight (no light emitted above horizontal). However, in addition to that limitation, the Illuminating Engineering Society of North America (IESNA) definition also requires luminaires to comply with the glare requirement limiting intensity of light from the luminaire in the region between 80° and 90°.

The term full cutoff is often substituted for the term fully shielded. The terms are not equivalent. Fully shielded luminaires emit no direct uplight, but have no limitation on the intensity in the region between 80° and 90°. Luminaires that fall under the IESNA full cutoff, cutoff, semicutoff, and noncutoff definitions, may also qualify as fully shielded. It may be obvious that a luminaire that is characterized as an IESNA full cutoff luminaire is fully shielded, but not as obvious when luminaires with other IESNA classifications may also qualify. Consider a semicutoff luminaire containing a 1000 lumen lamp that has no direct uplight but a candela value of 150 between 80° and 90°. This luminaire is considered to be fully shielded. However, if it were mistakenly labeled a full cutoff luminaire, this can become quite confusing. In 2002, the IESNA chartered a new committee to address the inconsistencies and confusion.

There is also a confusing assumption that a luminaire with a flat lens qualifies as a full cutoff luminaire. While this may be true sometimes, it is not always the case. Depending on the structure of the luminaire, reflections off the housing may result in some amount of direct uplight from the luminaire. Consider the hypothetical luminaire in Figure 14. Reflections from below the lens may result in some direct uplight from the luminaire. The IESNA full cutoff classification also has a limitation on light in the glare zone between 80° and 90°. A flat lens on a luminaire does not guarantee that this requirement is met.

Are the IESNA cutoff classifications a good indicator of direct uplight?

Except for the full cutoff designation, the Illuminating Engineering Society of North America (IESNA) cutoff classifications are not a good indicator of direct uplight, because glare control was the original reason they were developed. A luminaire that has the IESNA full cutoff classification does not have any light going directly upward from the luminaire and will not, if mounted correctly, emit light directly into the sky. The direct uplight from a cutoff luminaire can vary from 0% to 16% of the light output of the lamp(s) in the luminaire, and the uplight from a semicutoff luminaire can vary from 0% to 31% of the lamp light output.

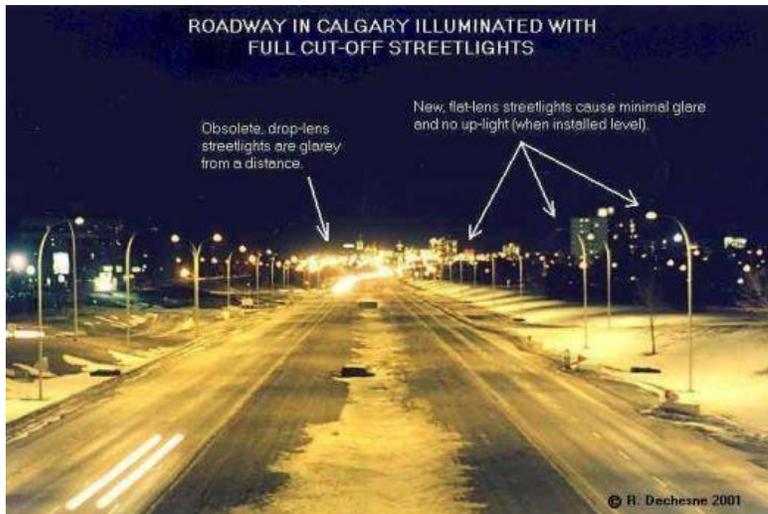
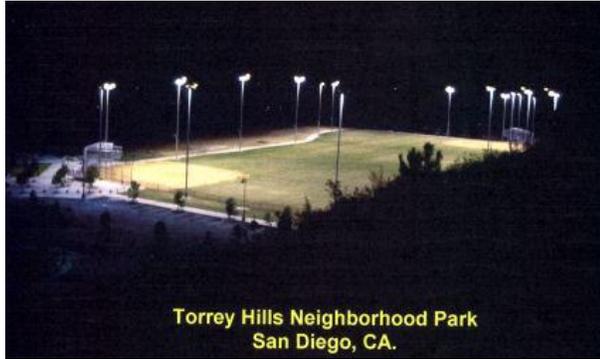


**Changes to Proposed Code**

- Clarified uplighting as only valid for lighting governmental flags and seasonal decorations
- Removed language that would require the removal of mercury vapor lights
- Grandfathering only applies to direct changes to lighting in projects that require a building permit.
- Added definition of seasonal lighting and non-essential lighting
- Spotlights allowed in new-build single-family residential if fully shielded and directed downward
- Shortened overall code to be more legible

Formatted: Strikethrough

**Full Cutoff Implemented**



Attachment(s)

The following changes are proposed:

---

## Chapter 17.56 OUTDOOR LIGHTING STANDARDS

Sections:

- 17.56.010 Purpose
- 17.56.020 Conformance with Applicable Codes
- 17.56.030 Conflict Regulations
- 17.56.040 Applicability
- 17.56.050 General Outdoor Lighting Standards.
- 17.56.060 Outdoor Lighting Standards by Type.
- 17.56.070 Prohibited Lighting.
- 17.56.080 Special Uses.
- 17.56.090 Exemptions and Nonconforming Lights.
- 17.56.100 Plan Submittal and Evidence of Compliance.
- 17.56.110 Approved Materials and Methods of Construction or Installation/Operation.
- 17.56.120 Violations, Legal Actions and Penalties
- 17.56.130 Tables and Information Sheets.
- 17.56.140 Definitions

### **17.56.010 Purpose**

It is the purpose and intent of this Chapter to balance the goals of providing efficient and practical lighting for residents and business in Eagle Mountain City, maintaining the City's rural character, minimizing light pollution that may interfere with the enjoyment, health, safety, and welfare of Eagle Mountain City's citizens and visitors or with the adjacent military activity, and reducing energy consumption.

### **17.56.020 Conformance with Applicable Codes**

All outdoor lighting and lighting fixtures shall be installed in conformance with the provisions of this chapter and the applicable Building Codes currently in effect in the City.

### **17.56.030 Conflict Regulations**

Where any provision of federal, state, county, or city statutes, codes, or laws conflict with any provision of this Chapter, the most restrictive shall govern unless enforcement will result in a violation of the federal, state, county or city statutes, codes, or laws.

### **17.56.040 Applicability**

A. New Lighting. All outdoor lighting installed after the effective date of this Ordinance shall conform to the standards established in this Chapter.

B. Existing Lighting. All lighting installed prior to the effective date of this Ordinance shall not be subject to the requirements of this Chapter, except that any existing lighting that is directly impacted as part of a project that requires an application for an Eagle Mountain City Site Plan or Building Permit is required to be brought into conformance with this Chapter. All lighting shall be upgraded to conform to this Chapter prior to the issuance of Certificate of Occupancy or Final Inspection

C. Public Roadways. This Chapter does not apply to lights owned or maintained by the city, state or federal government which are within any road rights-of-way or used for traffic or safety purposes.

**17.56.050 General Outdoor Lighting Standards.**

- A. Lamp and Shielding. All permanent light fixtures are required to be full cut-off fixtures with the light source fully shielded for all uses and directed downward, including single-family and multifamily residential uses.
- B. Low Pressure Sodium Lighting. Due to their high energy efficiency, long life and spectral characteristics, low pressure sodium (LPS) lamps are the preferred illumination source throughout the city. Their use is encouraged for outdoor illumination whenever it would not be detrimental to the use of the property.
- C. Light Trespass Standard. 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 source. Particular care is to be taken to assure that the direct illumination does not fall onto or across any public or private street or road. Motion sensing light fixtures shall be fully shielded and properly adjusted, according to the manufacturer's instructions, to turn off when detected motion ceases.
- D. Total Outdoor Light Output Standards – Nonresidential and Multifamily Uses.
  - 1. Total outdoor light output shall not exceed 100,000 lumens per net acre for all development except single-family residential uses. This cap is not intended to be achieved in all cases or as a design goal. Instead, design goals should be the lowest levels of lumens necessary to meet the lighting requirements of the site
- E. Total Outdoor Light Output Standards – Single-Family Residential Uses.
  - 1. Outdoor lighting for single-family residential uses is not subject to a lumens per net acre cap, but is subject to the lamp fixture and shielding requirements.
- F. Height. Any lighting fixture attached to a structure shall be placed below the eave or parapet, whichever is lower. Different height restrictions may be imposed as a condition of approval by the Planning Director, Development Review Committee, or Planning Commission.
- G. Commercial Lighting Time Limitations. All non-essential commercial exterior lighting shall only continue in operation until 11:00 p.m. or for as long as the business is open or area is in active use and shall remain off until the business re-opens or until daylight the following day.

**17.56.060 Outdoor Lighting Standards by Type.**

- A. Parking Lot Standards. Parking lot lighting poles shall be sized in such a manner that the top of any fixture does not exceed seventeen feet (17') above adjacent grade. 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. Low pressure sodium (LPS) lamps are encouraged.
- B. Luminaire Mounting Height. Freestanding luminaires within a residential zone, except street lights, shall be mounted at a height no greater than twelve feet (12') from ground level to the top of the luminaries.
- C. Landscape and Accent Lighting. Subject to the approval of the Planning Director or designee, ground-mounted lighting may be allowed to accent unique features of a building and/or surrounding landscaping (such as outstanding architectural features, specimen trees with dense year-round foliage or large native shrub masses). Architectural lighting is allowed provided that a full cutoff light fixture is used, and the source of illumination is directed downward.
- D. Flagpoles. Uplighting for flags is permitted provided the flag is of a government and the maximum lumen output is one thousand three hundred (1,300) lumens.
- F. Signs. See Chapter 17.80, Sign Regulations and Sign Permits.

**17.56.070 Prohibited Lighting.**

- A. Searchlights, laser source lights, strobe or flashing lights, illusion lights or any similar high intensity light shall not be permitted except in emergencies by police and fire personnel or for approved special events. C. Uplighting. Except as specifically allowed in this Chapter and Chapter 17.80, uplighting is prohibited.

**17.56.080 Special Uses.**

- A. Outdoor Recreational Facilities. Lighting for Outdoor Recreation Facilities that does not comply with this Chapter may be approved with the project site plan based on the following:
  - 1. When the proposed lumens per acre exceed the lumens per net acre limits, the installation shall be designed to achieve no greater than the minimum illuminance levels for the activity as recommended by the Illuminating Engineering Society of North America (IESNA).
  - 2. Every such lighting system design shall be certified by a Utah registered engineer as conforming to all applicable restrictions of this Code.
  - 3. Such lighting shall not include any light trespass as determined by the Planning Director or designee.

4. Fully cutoff light fixtures shall be required for fields designed for amateur, recreational or nonprofessional sports activity. For professional level sports facilities where full cut off fixtures are not utilized, acceptable luminaries shall include those which:
  - a. Are provided with internal or external glare control louvers, or both, and installed so as to minimize uplight and off-site light trespass as determined by the Planning Director; and
  - b. Are installed and maintained with aiming angles that permit no greater than 2% of the light emitted by each fixture to project above the horizontal.

**B. Outdoor Display Lots.**

1. All such lighting shall utilize full cutoff fixtures.
2. When the proposed lumens exceed the per acre limits, the installation shall be designed to achieve no greater than the minimum illuminance levels for the activity as recommended by the Illuminating Engineering Society of North America (IESNA).
3. Such lighting shall not include any light trespass as determined by the Planning Director or designee.
4. Every such lighting system design shall be certified by a Utah registered engineer as conforming to all applicable restrictions of this Code.

**C. Service Station Canopies.** All Service Station Canopies shall comply with the following:

1. Shielding. All luminaries shall be flush with the lower surface of canopies and utilize flat glass or plastic covers.
2. Total Under-Canopy Output. The total light output used for illuminating service station canopies, defined as the sum of under-canopy initial bare-lamp outputs in lumens, shall not exceed 40 lumens per square foot of canopy. All lighting mounted under the canopy, except internally illuminated signs, shall be included in the total. Fifty percent of the total lumen output of all lamps mounted within or under a canopy shall be included in the lumen per acre cap.

**D. Other Special Use Lighting.** Lighting for special uses that are not specified in this chapter must be approved by Planning Commission through a conditional use permit or along with a site plan application.

**17.56.90 Exemptions and Nonconforming Lights.**

- A. Emergency lighting, used by police, firefighting, or medical personnel, or at their direction, is exempt from all requirements of this Code for as long as the emergency exists.
- B. Spotlights are permitted for single-family residential provided they are fully shielded and directed downward.
- B. Swimming Pool and Decorative Water Fountain Lighting. Underwater lighting used for the illumination of swimming pools and decorative water fountains is exempt from the lamp type and shielding standards, though they must conform to all other provisions of this Code.
- C. Seasonal Decorations. Seasonal decorations are exempt from this Ordinance.

**17.56.100 Plan Submittal and Evidence of Compliance.**

- A. Plan Submittal. Whenever a person is required to obtain a permit for outdoor lighting or signage, a conditional use permit, subdivision approval or any development plan approved by the city, including all city projects, or a building permit, the applicant shall, as part of the application process, submit sufficient information to enable the Planning Director or designee to determine whether proposed lighting complies with this Code. All applications may be subject to review and action by the Planning Commission at the discretion of the Planning Director.
- B. Applications. All applications shall include the following:
  1. A Site Plan indicating the location of all lighting fixtures, both proposed and any already existing on the site.
  2. A description of each illuminating device, fixture, lamp, support and shield, both proposed and existing. The description shall include, but is not limited to, manufacturer's catalog cuts and illustrations (including sections where required); lamp types, wattages and initial lumen outputs.
  3. Such other information that the Planning Director may determine is necessary to ensure compliance with this Code.
- C. Plan Approval. If the Planning Director or designee determines that any proposed lighting does not comply with this Code, the permit shall not be issued or the plan approved.
- D. Lamp or Fixture Substitution. Should any outdoor light fixture or the type of light source therein be changed after the permit has been issued, a change request must be submitted to the Planning Director or designee for approval, together with adequate information to assure compliance with this Code, which must be received prior to substitution.

E. Certification of Installation. For all projects where the total initial output of the proposed lighting equals or exceeds 100,000 lamp lumens, certification that the lighting, as installed, conforms to the approved plans shall be provided by a certified engineer before the Certificate of Occupancy is issued. Until this certification is submitted, approval for use of a Certificate of Occupancy shall not be issued for the project.

**17.56.110 Approved Materials and Methods of Construction or Installation/Operation.**

Approval of Alternatives. The provisions of this Code are not intended to prevent the use of any design, material, or method of installation or operation not specifically prescribed by this Code, provided any such alternate has been approved by the Planning Director or designee. The Planning Director may approve any such proposed alternate if it:

- A. Provides at least approximate equivalence to that applicable specific requirement of this Code, and
- B. Complies with the intent of this Code.

**17.56.120 Violations, Legal Actions and Penalties**

A. Violations and Legal Actions. If, after investigation, the Planning Director finds that any provision of this Ordinance is being violated, the Planning Director or designee shall give notice by hand delivery or by certified mail, return receipt requested, of such violation to the owner and/or occupant of such premises, demanding that the violation be abated within thirty (30) days of the date of hand delivery or of the date of mailing of the notice. The Planning Department staff shall be available to assist in working with the violator to correct said violation. If the violation is not abated within the thirty (30) day period, the Planning Director or designee may institute actions and proceedings, either legal or equitable, to enjoin, restrain or abate any violations of this Ordinance and to collect penalties for such violations.

B. Penalties. A violation of this ordinance, or any provision thereof, shall be punishable by a civil penalty of seventy five dollars (\$75) per day and each day of violation after the expiration of the thirty (30) day period, shall constitute a separate offense for the purpose of calculating the civil penalty.

**17.56.130 Tables and Information Sheets.** The attached figures and information sheets shall be incorporated into Chapter 17.56 as guidelines for the public and the City. The City does not endorse or discriminate against any manufacturer or company that may be shown, portrayed or mentioned by the examples.

**17.56.140 Definitions**

A. "Direct illumination" means illumination resulting from light emitted directly from a lamp, luminary, or reflector and is not light diffused through translucent signs or reflected from other surfaces such as the ground or building faces.

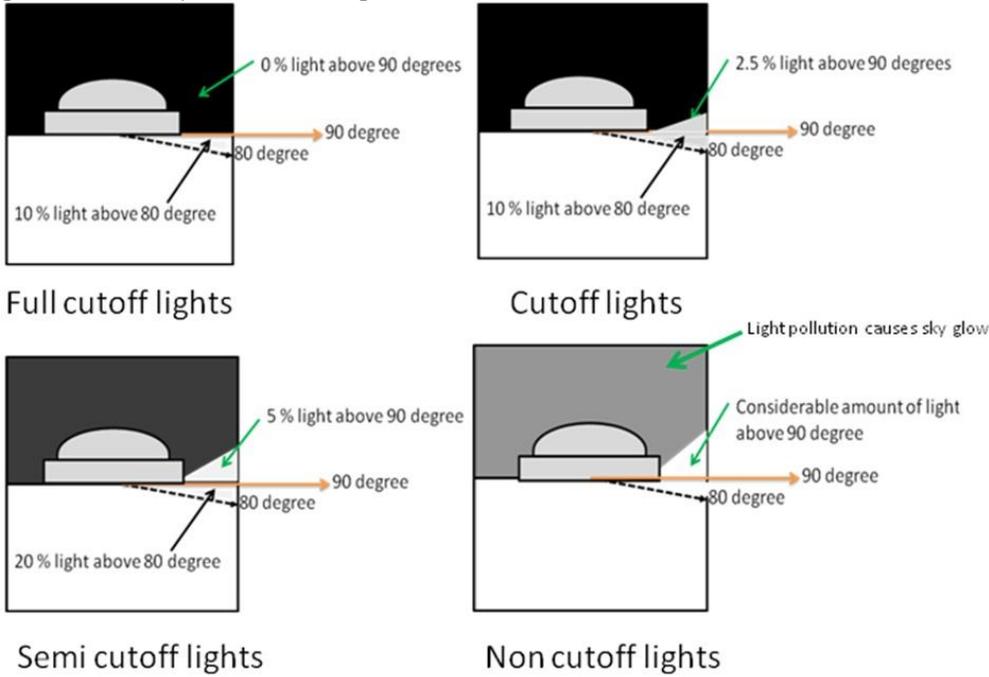
B. "Display lot or area" means outdoor areas where active nighttime sales activity occurs and where accurate color perception of merchandise by customers is required. To qualify as a display lot, 1 of the following specific uses must occur: automobile sales, boat sales, tractor sales, building supply sales, gardening or nursery sales, and assembly lots. Uses not on this list may be approved as display lot uses by the Planning Director or designee.

C. "Foot-candle" means 1 lumen per square foot. Unit of illuminance. It is the luminous flux per unit area in the Imperial system. One foot-candle equals approximately 0.1 (0.093) lux.

D. "Fully shielded light fixture" means a light fixture that is shielded in such a manner that light rays emitted by the fixture, either directly from the lamp or indirectly from the fixture, are projected below a horizontal plane running through the lowest point on the fixture where light is emitted. The term full cutoff is often substituted for the term fully shielded. The terms are not equivalent. Fully shielded luminaires emit no direct uplight, but have no limitation on the intensity in the region between 80° and 90°.

E. "Full cut off light fixture" means fixtures that are independently certified by the manufacturers, and do not allow light to be emitted above the fixture and the fixture reduces glare by limiting the light output to less than 10% at and below 10 degrees below the horizontal.

Figure 17.56.1 Example of Full Cutoff Light Fixture



- I. "Glare" means the sensation produced by a bright source within the visual field that is sufficiently brighter than the level to which the eyes are adapted to cause annoyance, discomfort, or loss in visual performance and visibility; blinding light. The magnitude of glare depends on such factors as the size, position, brightness of the source, and on the brightness level to which the eyes are adapted.
- J. "Installed" means a light fixture attached or fixed in place, whether or not connected to a power source, of any outdoor light fixture.
- K. "Light pollution" means any adverse effect of manmade light.
- L. "Light trespass" means light spill falling over property lines that illuminates adjacent grounds or buildings in an objectionable manner.
- M. "Lumen" means a unit used to measure the actual amount of visible light which is produced by a lamp as specified by the manufacturer.
- N. "Luminary" means the complete lighting assembly, less the support assembly.
- O. "Motion sensing security lighting" means any fixture designed, and properly adjusted, to illuminate an area around a residence or other building by means of switching on a lamp when motion is detected inside the area or perimeter, and switching the lamp off when the detected motion ceases.
- P. "Net acreage" means the remaining ground area of a parcel after deleting all portions for proposed and existing public rights-of-way and undeveloped area.
- Q. Nit means the standard unit of brightness for electronic and digital signage. It is a measure of the light being emitted by the sign in contrast to footcandles which measure the brightness of the surface area or object that is being lighted.
- R. "Non-essential commercial exterior lighting" means any signs, parking lot lighting, display lighting, exterior building lighting, directional lighting or landscape lighting that is primarily for aesthetic or advertising purposes and does not directly contribute to the safety or security of the premises.

R. "Outdoor light fixture" means an outdoor illuminating device, outdoor lighting or reflective surface, lamp or similar device, permanently installed or portable, used for illumination, decoration, or advertisement. Such devices shall include, but are not limited to, lights used for:

1. Buildings and structures;
2. Recreational areas;
3. Parking lot lighting;
4. Landscape lighting;
5. Architectural lighting;
6. Signs (advertising or other);
7. Street lighting;
8. Product display area lighting;
9. Building overhangs and open canopies;
10. Security lighting.

R. "Outdoor recreation facility" means an area designed for active recreation, whether publicly or privately owned, including, but not limited to, parks, baseball diamonds, soccer and football fields, golf courses, tennis courts, and swimming pools.

S. "Partially shielded light fixture" means a fixture shielded in such a manner that no more than 10% of the light emitted directly from the lamp or indirectly from the fixture is projected at an angle above the horizontal, as determined by photometric test or certified by the manufacturer. Luminaries mounted under canopies or other structures such that the surrounding structure effectively shields the light in the same manner are also considered partially shielded for the purposes of this Code.

T. "Seasonal Decorations" means strings of holiday lights, uplighting or internally lit inflatable or plastic decorations, or other lighting of holiday or seasonal decorations.

U. "Uplighting" means lighting that is directed in such a manner as to shine light rays above the horizontal plane.

V. "Security lighting" means lighting designed to illuminate a property or grounds for the purpose of visual security.

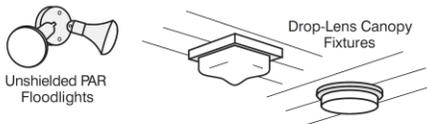
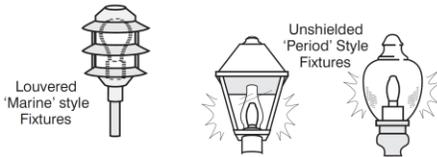
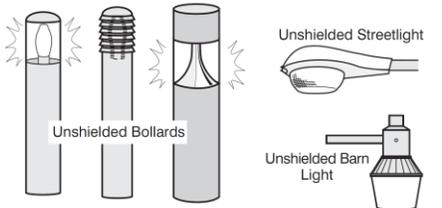
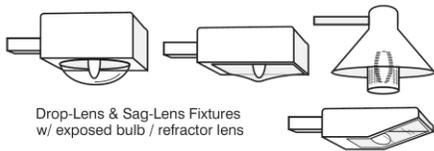
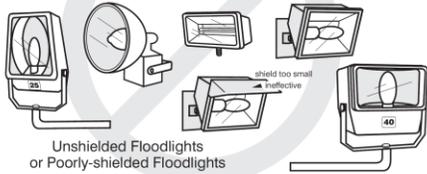
W. "Unshielded fixture" means any fixture that allows light to be emitted above the horizontal directly from the lamp or indirectly from the fixture or a reflector.

X. "Watt" means the unit used to measure the electrical power consumption (not the light output) of a lamp.

## Examples of Acceptable / Unacceptable Lighting Fixtures

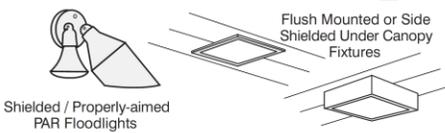
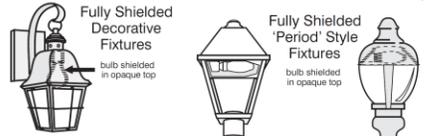
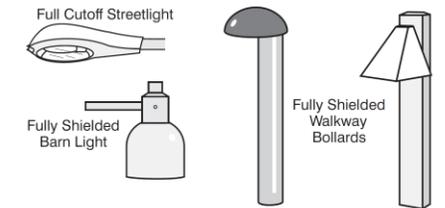
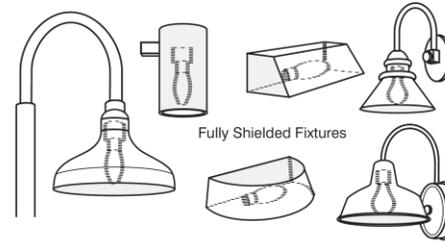
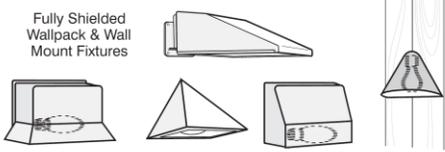
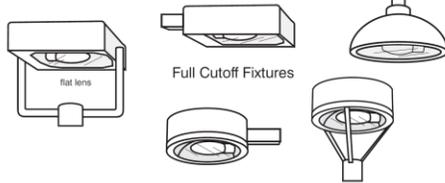
### Unacceptable / Discouraged

Fixtures that produce glare and light trespass



### Acceptable

Fixtures that shield the light source to minimize glare and light trespass and to facilitate better vision at night



**Chapter 17.80  
SIGN REGULATIONS AND SIGN PERMITS**

**17.80.060 General provisions.** The following general provisions and requirements shall apply to all signs and outdoor advertising structures that may be erected or maintained within Eagle Mountain City. The planning director shall approve signs that are in compliance with the regulations and standards contained herein. Signs shall be maintained in accordance with these provisions and standards.

A. Signs Installed in Compliance with Codes. Signs shall be installed according to requirements contained in the International Building and Electrical Codes, as applicable.

B. Traffic Hazards. No sign shall be erected where it may create a traffic safety hazard by: obscuring traffic control signs or signals; confusing drivers by appearing to be a traffic control sign or signal; or obstructing vision at intersections or driveways by being placed within a clear vision triangle. Signs shall not be fastened to traffic control devices, street signs, or utility poles.

C. Signs in Right-of-Way. Unless authorized by specific written agreement with the city, no sign shall be placed in or extend over any public right-of-way except traffic control signs, signs described in this chapter, city events or notices (Pony Express Days, recreation leagues, etc.), and public notices placed by public agencies.

D. Sign Illumination. ~~Permitted signs may have a constant, indirect source of illumination focused on the sign's copy or be internally lit.~~ All temporary signs must be non-illuminated. Allowed permanent signs may be non-illuminated, or illuminated by a constant, indirect source of illumination focused on the sign's copy or be internally illuminated, halo illuminated, or externally indirectly illuminated, unless otherwise specified. All illuminated signs shall comply with the time limitations of Chapter 17.56.060(G). No animated, flashing, blinking, or moving signs shall be permitted, except that animated public service message signs displaying the time of day, temperature, and/or announcements of community events may be permitted by the planning commission. No sign illumination is permitted within the residential zone of the City unless approved by the Planning Director, or approved as part of a conditional use permit or master development plan. Electrical signs and spotlights or other fixtures used for the indirect illumination of signs shall be installed only in compliance with the city's adopted International Electrical Code, International Building Code- and Chapter 17.56 Outdoor Lighting Standards.

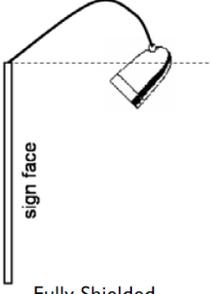
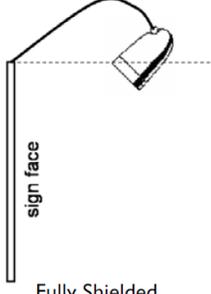
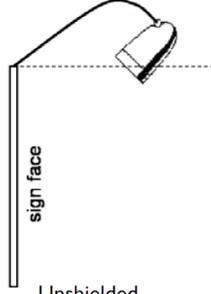
a. Type of Sign Illumination. The type of sign illumination as otherwise set forth in this chapter:

1. Halo-Type Illumination. The light source is concealed behind an opaque face and the rays of illumination are projected outwards toward the edge of the sign, forming a "halo" effect around the exterior of the sign.
2. Internal Illumination. The light source is concealed entirely within a sign which makes sign graphics visible by transmitting light through a translucent or semi translucent material.
3. External, Indirect Illumination. The light source is exposed and directed toward the sign face but is shielded or concealed from view with proper shields or glass lenses to avoid glare. Examples of external illumination include gooseneck light fixtures and ground-mounted light fixtures

B. Externally Illuminated Sign Standards

1. External illumination for signs shall comply with all provisions of this chapter, and is included within the total outdoor light output limits of Chapter 17.56.060(D), and shall comply with applicable lamp source and shielding restrictions.
2. Except as provided in Subsection C, externally illuminated signs shall be illuminated only with steady, stationary, fully shielded light sources directed solely onto the sign without causing glare.
3. A light fixture mounted above the sign face may be installed with its bottom opening tilted toward the sign face provided:
  - a. The bottom opening of the light fixture is flat (i.e., it could be covered by a flat board allowing no light to escape); and,
  - b. The uppermost portion of the fixture's opening is located no higher than the top of the sign face (Figure 17.80.060-1). Light fixtures aimed and installed in this fashion shall be considered fully shielded for purposes of calculating the total outdoor light output limits of Chapter 17.56.060(D).

Figure 17.80.060-1 External Light Fixture Shielding

Permitted and Prohibited External Sign Lighting Configurations		
Allowed	Allowed	Not Allowed
 <p>sign face</p> <p>Fully Shielded</p>	 <p>sign face</p> <p>Fully Shielded</p>	 <p>sign face</p> <p>Unshielded</p>

2. Internally Illuminated Sign Standards. Internally illuminated signs shall either be constructed with an opaque background and translucent text and symbols, or with a colored (not white, off-white, light gray, or cream) background and generally lighter text and symbols (Figure 17.80.060-2). Lamps used for internal illumination of internally illuminated signs shall not be counted toward the total outdoor light output limits of Chapter 17.56.060(D).

Figure 17.80.060-2 Internal Lighting Standards

Light Background Not Allowed	Colored Background Allowed	Opaque Background Allowed
<b>RESTAURANT CAFE</b>	<b>GAS STATION</b>	<b>HOTEL</b>

a. Other internally illuminated panels or decorations not considered to be signage according to this chapter (such as illuminated canopy margins, building faces, or architectural outlining), and shall be subject to the standards applicable for such lighting, including but not limited to the lamp source, shielding standards, and total outdoor light output limits established in Chapter 17.56.060(D).

3. Neon Sign Standards. Neon sign lighting shall be included within the total outdoor light output limits of Chapter 17.56.060(D).

4. Single-Color LED Sign Standards. Single-color LED signs shall come equipped with dimming technology that automatically adjusts the display's brightness based on ambient light conditions and comply with maximum night time brightness.

a. Single-Color LED signs shall not exceed a maximum illumination of 200 NITS during nighttime hours (between dawn and dusk) and a maximum illumination of 5,000 NITS during daylight hours.

5. Time Limitations. All signs shall be turned off by 11:00 p.m. or when the business closes, whichever is later. Signs subject to time limitations are required to have functioning and properly adjusted automatic shut-off timers.

E. Compatibility. The design of signs, including materials and form, shall be compatible with the building or use to which they are an accessory.

F. Maintenance of Signs. Signs and their supporting structures shall be maintained so as not to create a health or safety hazard, or constitute a nuisance. Signs and their supporting structures shall also be maintained in good repair and operation and shall be repaired, repainted, relettered or otherwise maintained in good visual condition so as to not be an aesthetic detriment to the immediate and surrounding areas.

G. Abandoned Signs. Any sign that is not structurally sound or no longer serves to inform or attract the public, including illegible signs and signs advertising or identifying abandoned uses, shall be considered abandoned and shall be removed as required by this chapter. [Ord. O-06-2010 § 2 (Exh. A); Ord. O-12-2009 § 2 (Exh. A); Ord. O-26-2008 § 2 (Exh. A § 16.6); Ord. O-18-2008 § 2 (Exh. A § 16.6); Ord. O-17-2006 § 2 (Exh. 1 § 16.6); Ord. O-23-2005 § 3 (Exh. 1(1) § 16.6)].

#### **Chapter 15.70.090**

##### **Underground distribution for new subdivisions.**

D. Street Lighting. Street lighting will be installed throughout all developments using the following criteria:

1. Street lights will be installed at all intersections with the only exception being where a four-way intersection has an offset of less than 100 feet.
2. Street lights will be installed at a minimum spacing of 300 feet and a maximum spacing of 600 feet. They will be installed at the closest property line to the midpoint between the lights on either side.
3. Street lights placed between corners will be shown on the electrical construction drawing, and will indicate the direction that the street light will be aimed. Street lights at intersections may aim to the center of the intersection or may be set at a 90-degree angle along collector and larger roads.
4. Any street that extends more than 600 feet without an intersection will have a street light at approximately the midpoint.
5. Each street light will be installed so that the street light pole is located 24 inches from the top back of the curb to the center of the pole in a public utility easement or public right-of-way.
6. Streetlights shall be located at least 10 feet from fire hydrants.
7. A ground wire shall be connected to the street light pole using NEC-approved methods and a separate ground wire shall be run from the pole base to the closest secondary pedestal or transformer. If the street light is fed from a secondary pedestal, an eight-foot by five-eighths-inch copper-clad ground rod must be installed at the pedestal, and street light ground will be attached to the ground rod using the NEC-approved connector.
8. Pole. A 14-foot aluminum street light pole shall be used. The pole shall be manufactured by Holophane and shall be green with base. All bases must be embedded in concrete with a standard bolt pack. The hole shall be 20 inches in diameter and four feet deep unless approved otherwise by the energy department manager.
9. Luminaire. The luminaire shall be of a style that is approved by the city **in conformance with Chapter 17.56**. ~~A luminaire that reduces all skyward light shall be 50 watt high pressure sodium light and shall have a shield to keep light off of houses.~~

#### **Chapter 17.55.040**

##### **General provisions for nonresidential and multifamily off-street parking facilities.**

- A. Materials for Parking Areas. Parking areas shall consist of concrete, asphalt, or other impervious materials approved in the Eagle Mountain City Construction Standards and Specifications manual.
- B. Maintenance of Parking Areas. Pavement, striping, landscaping, and lighting are required to be maintained in all parking areas. During times of snowfall, parking areas shall be cleared of snow as soon as is practical and possible.
- C. Parking Area Access. Parking areas serving more than one structure may use a common access. Common access locations shall be based upon acceptable standard design geometry, road alignment, and traffic volumes of the surrounding public streets. All nonresidential and mixed-use structures must be designed so that vehicles are not required to back up onto the public street.
- D. Lighting in Parking Areas. Parking areas shall have adequate lighting to ensure the safe circulation of automobiles and pedestrians. Such lighting shall be directed in such a way as to not be a nuisance to adjacent properties or uses. ~~Light shields may be required.~~ **Parking lot luminaries shall be in conformance with Chapter 17.56.**
- E. Location of Parking Areas. Required off-street parking areas for nonresidential uses shall be placed within 600 feet of the main entrance to the building.
- F. Storm Water Runoff. All parking areas other than single-family and two-family dwellings shall be reviewed and approved by the city engineer for adequate drainage of storm water runoff.
- G. Headlight Screen. Headlight screening is required around the perimeter of all parking areas adjacent to residential uses, or as deemed necessary by the planning director. A headlight screen shall consist of a berm, fence, wall, or landscaping consisting of at least three and one-half feet in height and capable of blocking headlight glare. Headlight screening may also be provided by buildings.
- H. Parking Lot Slopes. Parking lots shall not have slopes on which vehicles park greater than five percent. [Ord. O-23-2005 § 3 (Exh. 1(1) § 11.4)].

**Chapter 17.100.060**  
**Architectural requirements.**

- A. Mechanical Equipment. All mechanical equipment shall be located or screened and/or other measures taken so as not to be visible from any public or private streets. Screens shall be aesthetically incorporated into the design of the building whether located on the ground or roof. Rooftops of buildings shall be free of any mechanical equipment unless completely screened from all horizontal points of view. Screening materials shall conform to the color scheme of the primary building. Measures taken to shield mechanical equipment from view, other than screening, must be approved by the city council after recommendation from the planning commission.
- B. Windows. Windows are encouraged as accents and trim.
- C. Building Lighting. Plans for exterior building lighting shall be approved as part of the site plan approval. Building lighting shall be **fully** shielded and directed downward so that the light source is not visible from beyond the property where the structure is located. Lighting shall **be in conformance with Chapter 17.56.** ~~not project above structures or flagpoles, nor beyond the property line.~~
- D. Trash Enclosures, Storage Areas, and External Structures. Landscaping, fencing, berms or other devices integral to overall site and building design shall screen trash enclosures, storage areas, and other external structures. Trash and storage areas shall be comparable to the proposed or existing building and with surrounding structures. These areas shall be well maintained and oriented away from public view. The

consolidation of trash areas between business and the use of modern disposal and recycling techniques are encouraged. Chain link fences and fencing with vinyl slats are prohibited.

E. Exterior Materials. Buildings shall be finished with high-quality materials. Building elevations shall be submitted that indicate all colors, styles, materials and other proposed building treatments.

F. Landscape Guidelines. All site plans shall conform to the landscaping guidelines established by the city.

G. Parking Lot and Street Lighting. All parking lot light fixtures shall be installed to prevent light glare from adversely affecting adjacent properties. Pole-mounted fixtures are required in lots or along roads. Lighting of all pedestrian pathways is required. Lighting will be judged as to how adequately it provides for the health and safety of citizens. Design and location of standards and fixtures shall be specified on the site development drawings. Illumination shall be controlled so that glare or excessive direct light will not adversely affect neighboring areas. All streetlights and interior parking lot lights shall meet the city's adopted design standards for lighting.

H. Enclosed Uses. All uses established for any commercial or industrial uses shall be conducted entirely within a fully enclosed approved building except those uses deemed by the city council in consideration of the prior recommendation of the planning commission to be customarily and appropriately conducted in the open. Uses which qualify for this exception are vegetation nurseries, home improvement centers with lumber and/or vegetation nurseries, outdoor cafes or auto dealerships. Approved seasonal temporary uses, such as Christmas tree lots, shall be exempt from this requirement.

I. Businesses Moving into Existing Buildings. New businesses moving into existing conforming or nonconforming buildings shall comply with the requirements of this section where possible prior to a business license being issued.

J. Nuisances. All commercial uses shall be free from objectionable odors, noises, hazards or other nuisances. [Ord. O-16-2010 § 3 (Exh. B); Ord. O-18-2008 § 2 (Exh. A § 20.6); Ord. O-23-2005 § 3 (Exh. 1(1) § 20.6)].

#### **Chapter 17.100.070**

##### **Application.**

The property owner or an authorized agent shall make application on forms created by the planning director. No site plan application shall be processed without the submission of the application, all the supporting materials as required by this chapter, and processing fee. Incomplete applications shall not be processed under any circumstance. When the city's ordinances require a conditional use and/or subdivision approval, these applications may be processed concurrently with a site plan.

A. Supporting Materials. The site plan application shall be submitted with the materials listed in this section. The planning director and planning commission may determine and require that additional items not listed herein be submitted in order to evaluate the proposed site plan application. If a development has been previously reviewed (conditional use or subdivision approval), or the applicant believes that some of the required supporting materials are not applicable, then the applicant may submit a written statement to identify and clarify why they believe these materials are not needed for review of the project. Upon review of this statement, the planning director may waive the requirements of certain materials relating to improvements that have been reviewed and approved in a previous application process or are not found to be applicable to the project. The following materials must be submitted with a complete application, unless

otherwise waived as allowed herein. The number of hard copies and electronic copies, as well as the appropriate format of each, will be determined by the planning director.

1. Ownership Affidavit. A document detailing all covenants, grants of easement or other deed restrictions applicable to the site and an ownership affidavit shall be submitted.
2. Vicinity Map. A vicinity map (which can be included on the site plan) showing the general location and indicating the approximate location of the subject parcel.
3. Context Plan. A context plan including the existing features on the property and within 200 feet of the proposed site plan property line. Existing features include, but are not limited to, buildings, roads, ingress and egress points, landscaping areas, pedestrian paths, and property names.
4. Survey. The survey prepared and stamped by a Utah-registered land surveyor listing the metes and bounds, legal description, and the gross acreage within the subject parcel.
5. Site Plan. A site plan, prepared and stamped by licensed and/or certified professionals including, but not limited to, architects, landscape architects, engineers, surveyors, or other professionals deemed necessary by the planning director. The city may require plans prepared by any or all of the above-noted professionals. The site plan shall contain the date, scale, north arrow and the following items:
  - a. Boundaries of the subject parcel and the entire parcel (where the project does not occupy the entire parcel of which it is part).
  - b. Existing and proposed streets, watercourses, easements and other rights-of-way, and section lines.
  - c. Locations, dimensions, uses and heights of all proposed buildings and structures, including overhangs, porches, stairwells, and balconies, and the locations of all structures on adjoining properties.
  - d. Access points, provisions for vehicular and pedestrian circulation on site and off site, interconnection to adjacent sites and dimensions of such access and circulation.
  - e. Acceleration and deceleration lanes, and dimensions thereof, if required.
  - f. Off-street parking and loading areas complying with Chapter 17.55 EMMC and indicating the required number of stalls and aisles scaled to the correct dimensions, the correct number of handicapped-accessible parking spaces, lighting, landscaping and irrigation, the percentage of landscaping to impervious surfaces, and pedestrian walkways.
  - g. Screening and buffering provisions, including types and heights of existing and proposed buffering and fencing elements.
  - h. Location and treatment of refuse collection areas, storage areas, mechanical equipment, and external structures.
  - i. Location and size of existing utilities and general location of utility access points and hookups.
  - j. Location, type and size of all signage including advertising and directional signage.
  - k. Tabulation of square footage devoted to various land uses, ground coverage by structures and other impervious surfaces.
  - l. Location of existing and proposed curb, gutter, sidewalk, park strip and edge of asphalt, to be signed and stamped by a licensed professional engineer.

- m. Type of construction of all structures, presence or absence of fire sprinkling and location of existing and proposed fire hydrants.
- n. Location of all existing and proposed irrigation systems, both on site and on adjacent properties, including, but not limited to, ditches, pipes, and culverts.
- o. A statement on the site plan that all applicable elements of the Americans with Disabilities Act accessibility guidelines will be adhered to.
- p. The piping of all existing irrigation ditches which affect the site.
- q. The names of all adjacent property owners.

6. Landscaping Plan. A landscaping plan prepared and stamped by a licensed landscape architect, indicating the location, spacing, types and sizes of landscaping elements, sprinkler system plans, existing trees, if any, and showing compliance with the landscaping or buffering requirements of the appropriate zoning district. The landscaping plan shall include, at a minimum, the following information:

- a. The location and dimension of all existing and proposed structures (when feasible), property lines, easements, parking lots, power lines, rights-of-way, ground signs, refuse areas, and lighting.
- b. The plant names (both botanical and common name), location, quantity, and size of all existing and proposed plants. The proposed plan should indicate the size of the plant material at maturation.
- c. The landscaping plan should also exhibit the existing landscaping 20 feet beyond the property lines.
- d. Existing and proposed grading with contours at one-foot intervals for areas with grades less than five percent. Areas in excess of five percent shall have contours shown at two-foot intervals.
- e. Plans showing the irrigation system shall also be included in the landscaping plan submittal.
- f. Proposed and existing fences and identification of the fencing materials.
- g. A summary of the total percentage of landscaped areas, domestic turf grasses, and drought-tolerant plant species along with the estimated cost of all the improvements.

7. Grading, Drainage, and Erosion Plan. A grading, drainage, and erosion plan prepared and stamped by a licensed engineer shall be submitted. The report shall contain the drainage basin map and a plan view of the overall storm water system. The grading, drainage, and erosion plan shall address the following issues: description of features and hydrological conditions; drainage basin and sub-basin; drainage facility design criteria; infrastructure design criteria; grading plan; and erosion control. Specifically, the report shall contain, at a minimum, the following information:

- a. The existing roadways, drainage ways, vegetation and hydrological conditions of a 10-year, 24-hour event and a 100-year, 24-hour event.

- b. The major basin descriptions referencing all major drainage reports such as FEMA, major drainage planning reports, or flood insurance maps and the basin characteristics and planned land uses.
  - c. The sub-basin description showing the historical drainage pattern and off-site drainage patterns both upstream and downstream of the property.
  - d. A general discussion of how the proposed system conforms to existing drainage patterns and off-site upstream drainage will be collected to protect development.
  - e. The water quality evaluation showing the water quality shall not be degraded from existing storm water quality including how solids are collected and not allowed to be discharged into downstream waters and how oils and greases are separated from storm water.
  - f. Maintenance plan and procedure for storm water system; thorough narrative of all charts, graphs, tables or other information included in the report describing how it affects the proposed development.
  - g. Infrastructure design criteria showing the piping is sized to handle the peak intensity of the 10-year storm event; all detention basins are sized to handle 100-year storms while discharging at a maximum 10-year, 24-hour historical rate; a 10-foot traffic lane in both directions is maintained at all locations within the development; and that the roadway and infrastructure will handle a 100-year storm event without flooding homes or damaging public property.
  - h. Grading plan showing soil map depicting unique soil features such as collapsible soil, rock features, etc.; a grading plan showing all cut and fill areas within a development including: the identification of slopes; fill and cut depths; and rock features within 10 feet of post-grade soil surface.
  - i. Erosion control shall show: how erosion will be controlled during construction; explanation and design showing that such construction debris and silts will not be collected by storm water system; show and design for all cut and fill slopes will not be eroded and how these areas will be restored to their natural vegetative state.
8. Lighting Plan. A lighting plan, which indicates the illumination of all interior areas and immediately adjoining streets showing the location, height, lumen output and type of lighting proposed.
9. Elevations. Elevations of all buildings, fences and other structures viewed from all sides indicating heights of structures, the average finished grade of the site at the foundation area of all structures, percentage of building materials proposed, and color of all materials. A letter of approval from the applicable architectural review committee must also be submitted.
10. Traffic Impact Study. A traffic impact study (completed by a professional that is competent in the field of traffic engineering) may be required if it is estimated by the city engineer that the project could generate traffic impacts that require further study or that may require site improvements to transportation facilities. Said study shall include, but not be limited to, the following: an analysis of the average daily trips generated by the proposed project; an analysis of the distribution of trips on city street systems; a description of the type of traffic generated; and recommended on-site improvements that may mitigate negative traffic impacts.
11. Phasing Plan. If the site plan is to be developed in phases, a plan that shows the phasing of the development must be submitted.

12. Water Rights. Documentation of sufficient water rights for the proposed project must be provided.

13. Utility Demands. A summary projecting the utility demands that the development will create for communication lines, water, electricity, natural gas, and sewer.

14. Electronic Files. Electronic files of all the drawings for the project must be submitted.

15. Signage Plan. A signage plan shall be submitted as required by Title 1 Section 15.7.2 and in accordance to the submittal requirements contained in EMMC 17.80.040(A).

16. Public Notice. Addressed and stamped envelopes (the city's address will be the return address on the envelopes) of property owners located within 600 feet of the proposed site plan (including a minimum of at least 25 adjacent property owners).

17. Fee. The processing fee required by the current consolidated fee schedule approved by the city council. [Ord. O-16-2010 § 3 (Exh. B); Ord. O-18-2008 § 2 (Exh. A § 20.7); Ord. O-11-2008 § 2 (Exh. A § 20.6); Ord. O-23-2005 § 3 (Exh. 1(1) § 20.7)].

# Light Outputs of Internally Illuminated Signs

Christian B. Luginbuhl, U.S. Naval Observatory Flagstaff Station

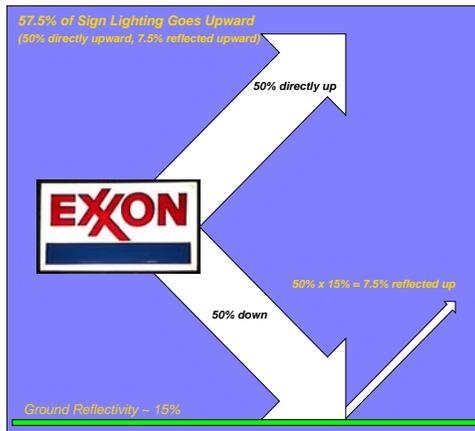
Presented at the International Dark-Sky Association Annual Meeting, Tucson Arizona, 17-19 March 2002  
Revised from paper presented March 2001

## Summary

Internally illuminated signs produce light that is by nature unshielded; about 50% escapes directly into the night sky. Different styles of signs produce substantially different outputs, however. White-background signs are found to emit 7 times the output of a typical colored-background sign, and about 30 times the output of a typical opaque-background sign. The brighter sign styles are also a source of glare in high-traffic and pedestrian areas, and are considered less legible by many persons, particularly those with ageing eyes.

Lighting or sign codes that restrict the styles of internally illuminated signage to the lower-output styles can substantially reduce light pollution while maintaining or even improving the visibility and legibility of signs.

## Most Light From Signs Ends Up In The Sky



## Sign Styles

There are three general types of internally illuminated signs:

### White Background

colored copy  
black copy



### Colored Background

white copy  
colored copy



### Opaque Background

white copy  
colored copy



## Measuring Sign Light Output

To convey information at night, signs must be illuminated. But there are choices about how signs are illuminated that can make big differences in both how effective they are in conveying information, and how much light is needed.

In this study, the light output of internally illuminated signs is estimated through a three-step process:

1. We first measure the brightness of signs, including various colors in background and copy.
2. We next measure signs to determine how much is typically background, how much is "copy"
3. Finally, we use these two sets of numbers to model the light output of three groups of sign styles: white-background, colored-background, and opaque background.

### 1. How Bright Are Sign Colors?

Over 160 measures of 7 colors on 58 internally-illuminated signs were made. The following summarize the results:

Color	Average Luminance (candela/sq.meter)	Number of Measures
White	412	61
Yellow	201	12
Red	30	42
Green	17	9
Blue	7.0	26

### 2. Signs Are Background and Copy - How Much of Each?

A selection of 14 signs was measured to determine the "Copy Area Ratio" (CAR), the ratio between area devoted to "copy" and the area of the entire sign. The CAR was found to vary from 0.14 to 0.63, with an average of 0.32.

### 3. With These Brightnesses and Copy Fraction, How Bright Are Signs?

Sign Model	Light Output (lumens/sq.meter)
<b>White Background</b>	
Red Copy on White Background	911
Blue Copy on White Background	887
Black Copy on White Background	880
Typical	887
<b>Colored Background</b>	
White Copy on Red Background	479
Yellow Copy on Blue Background	217
Red Copy on Blue Background	45
Typical	130
<b>Opaque Background</b>	
White Copy on Black Background	414
Red Copy on Black Background	30
Blue Copy on Black Background	7
Typical	30

## Comparing Light Pollution Impacts from Signs and Other Sources

Here we compare the amount of uplight produced by various internally-illuminated sign styles with uplight generated by other lighting. Light pollution has many other dimensions, including glare, aesthetics, clutter and confusion, and trespass, and differing sign styles could be compared along these lines as well.

### Estimating Total Light Output of Signs and Other Lighting Uses

The total light output from signs and other lighting in a community depends on:

1. The amount of commercial land - signs are used on commercial properties (mostly), and not on residential property!
2. The allowed size and number of signs - sign area
3. How well shielded other lighting is
4. How much other lighting is used (lumens)

Any comparison or sign uplight to other uplight sources is strongly affected by these factors, and no general conclusions are applicable in detail to all communities.

As one set of examples, we compare uplight amounts from signs and other lighting under the following sets of conditions:

1. Sign size: 100 square feet (9.3 square meters)
2. Commercial parcel size: one acre (one sign per one acre)
3. Other lighting: four different scenarios.
  - 50,000 lumens/acre, including 5,500 lumens/acre unshielded (Flagstaff Zone II Standards)
  - 100,000 lumens/acre, including 5,500 lumens/acre unshielded (Flagstaff Zone III Standards)
  - 100,000 lumens/acre and 10% uplight (Garstang model)
  - 200,000 lumens/acre and 10% uplight (Garstang model)

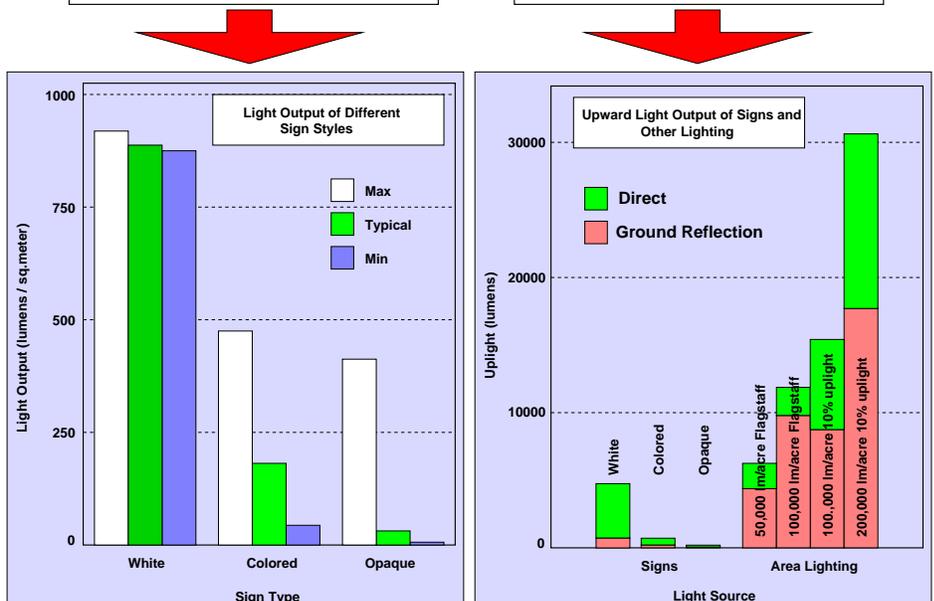
### Other Lighting Can Dominate If Not Well Controlled

Some development projects in communities with no lumens per acre or illumination caps exceed the highest levels shown here by large margins. Typical convenience store / service station combinations in recent years can exceed 1,000,000 lumens/acre; lighting in other situations can often exceed 500,000 lumens/acre. The last two examples of lighting shown under 3 above may be representative of typical lighting practices in the commercial districts of most communities where rational amounts of lighting with a typical mix (w/o lighting code) of shielded and unshielded fixtures is used. As can be seen from the comparison below, sign lighting can be a large relative contributor to upward-directed light only when other lighting is under tight control.

The figure below compares the uplight produced by signs and area lighting. To determine these figures, we assume 57.5% of all unshielded lighting (signs and unshielded lighting) goes upward. Further, we assume that 65% of the lumen totals for area lighting escapes the fixture.

### Individual Signs Will Vary!

It is important to note that this analysis does not predict the output of individual signs; it does predict the average for large numbers of signs. If a lighting code requires colored (or opaque) background signs, for example, it will reduce light output from signs, on average, by about 85% (or 95%) compared to a community where only white-background signs are used. The fractional reduction for an entire community, including not only commercial but also roadway, sports, and residential lighting, will be smaller, and will depend very strongly on the community, its size and lighting practices.



**ORDINANCE NO. O-       -2014**

**AN ORDINANCE OF EAGLE MOUNTAIN CITY UTAH  
AMENDING CHAPTERS 15 AND 17 OF THE EAGLE MOUNTAIN CITY  
MUNICIPAL CODE**

**WHEREAS**, the Eagle Mountain City Council (the “Council”) met in regular meeting on October 7, 2014, to consider, among other things, amending Chapters 15 and 17 of the Eagle Mountain City Municipal Code to amend the development approval process; and

**WHEREAS**, the City Administrator and City Attorney advised the Council that they believe that it is in the best interest of the City to amend Chapters 15 and 17 of the Eagle Mountain City Municipal Code; and

**WHEREAS**, the Council determined that it is appropriate to amend Chapters 15 and 17 of the Eagle Mountain City Municipal Code.

**NOW, THEREFORE, BE IT ORDAINED** by the Council that Chapters 15 and 17 of the Eagle Mountain City Municipal Code are amended and restated as set forth in Exhibit A, attached hereto and incorporated herein.

Adopted this 7<sup>th</sup> day of October, 2014.

EAGLE MOUNTAIN CITY, UTAH

By: \_\_\_\_\_  
Chris Pengra, Mayor

ATTEST:

\_\_\_\_\_  
Fionnuala B. Kofoed  
City Recorder

## CERTIFICATION

The above ordinance was adopted by the City Council of Eagle Mountain City on the 7<sup>th</sup> day of October, 2014.

Those voting aye:

- Adam Bradley
- Donna Burnham
- Ryan Ireland
- Richard Steinkopf
- Tom Westmoreland

Those voting nay:

- Adam Bradley
- Donna Burnham
- Ryan Ireland
- Richard Steinkopf
- Tom Westmoreland

---

Fionnuala B. Kofoed  
City Recorder

# EXHIBIT A