2025 City of Tucson/Pima County Outdoor Lighting Code

Table of Contents

Chapter 1 Administration 2
Section
101 Title, Scope and Purpose
102 Applicability
103 Exemptions
104 Permits and Plan Submission Requirements
105 Prohibitions
106 Inspections
107 Violations

Chapter 2 Definitions 7
Section
201 General
202 Defined Terms

Chapter 3 Lighting Areas 9
Section
301 Description of Lighting Areas

Chapter 4 Illumination Levels and Shielding Requirements 11
Section
401 Total Outdoor Light Output and Shielding Requirements
Table 401.1 - Maximum Total Outdoor Light Output Requirements
402 Outdoor Lighting Source Color Temperature
403 Curfew Requirements
404 Motion Sensing Controls

Chapter 5 Sign Lighting 14
Section
501 Illuminated Outdoor Signs
Table 501.5 – Illuminated Sign Curfews

Chapter 6 Recreational Facilities 15
Section
601 Illumination of Recreational Facilities
Table 601.3 Recreational Facilities and Special Use Areas Curfews

Chapter 7 Special Use Areas 16
Section
701 Illumination of Special Use Areas

Chapter 8 Right-of-Ways 17

DRAFT

Chapter 1
Administration

Section 101
Title, Scope and Purpose

101.1 Title. These provisions shall be known as the Outdoor Lighting Code for The City of Tucson, Arizona and Pima County Arizona. They shall be cited as such and will be referred to herein as "this code".

101.2 Scope. The provisions of this code apply to the construction, alteration, movement, enlargement, replacement and installation of outdoor lighting throughout the City of Tucson, Arizona and Pima County, Arizona.

101.3 Purpose and intent. The purpose of this code is to preserve the relationship of the residents of the City of Tucson, Arizona and Pima County, Arizona to their unique desert environment through protection of access to the dark night sky. Intended outcomes include continuing support of astronomical activity and minimizing wasted energy, while not compromising the safety, security, and well being of persons engaged in outdoor nighttime activities. It is the intent of this code to control the obtrusive aspects of excessive and careless outdoor lighting usage while preserving, protecting, and enhancing the lawful nighttime use and enjoyment of any and all property. All light should have a clear purpose, be directed only where it is needed, and no brighter than necessary. It is recognized that developed portions of properties may be required to be unlit, covered, or have reduced lighting levels in order to allow enough lumens in the lighted areas to achieve light levels in accordance with nationally recognized recommended practices and in accordance with the Five Principles for Responsible Outdoor Lighting published by the Illuminating Engineering Society: (1) Use light only if needed; (2) distribute light only where it is needed; (3) use light that is no brighter than needed; (4) control light so it is on only when needed; and (5) use warmer color light when possible.

101.4 Conformance with codes. All outdoor illuminating devices shall be installed in conformance with the provisions of this code, the building code, the electrical code and the sign code of the authorizing jurisdiction as applicable and under appropriate permit and inspection.

Section 102
Applicability

102.1 General. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between the general requirements and a specific requirement, the specific requirement shall be applicable.

102.2 Other laws. Where any provision of federal, state, county, or city statutes, codes or laws conflicts with any provision of this code, the most restrictive shall govern unless otherwise regulated by law.

102.3 Partial invalidity. If any of the provisions of this code or the application thereof is held invalid, such invalidity shall not affect other provisions or applications of this code which can be given effect, and to this end, the provisions of this code are declared to be severable.

102.4 Application of code. The requirements of this code apply to all new construction, additions and alterations to land uses, developments, buildings, structures or light fixtures.

DRAFT

102.4.1 If a major addition occurs on a property, the entire property including legal, non-conforming lighting shall be brought into compliance with the requirements of this code. For purposes of this section, the following are considered to be major additions:

1. Additions of 25 percent or more to any site, whether commercial or residential, in terms of additional dwelling units, gross floor area, seating capacity, or parking spaces, either with a single addition or with cumulative additions subsequent to the effective date of this provision.

2. Additions, modification or replacement of outdoor lighting fixtures legally installed constituting 25 percent or more of the actual lumens for the property, no matter the actual amount of lighting already on a non-conforming site, constitutes a major addition for purposes of this section. Where existing outdoor lighting is modified or replaced and the resulting lighting fixture has a less lumen capacity than the previously existing fixture, the lumen capacity of the modified or replaced fixture shall not be included in the lumen calculations for determining a major addition, but the total of non-conforming lighting shall not be increased.

3. For additions, modifications or replacements of less than 25% refer to Section 102.4.2.

102.4.2 Additions or modifications less than 25 percent to existing uses or lighting shall require a submission of a complete inventory and site plan detailing all existing and any proposed new outdoor lighting. Any new lighting on the site shall meet the requirements of this code with regard to shielding and lamp type; the total amount of lighting after the modifications are complete shall not exceed that on the site before the modifications, or that permitted by this code, whichever is larger.

Exception to 102.4.2:

Exception 1: On existing lighted properties or developments of 5 acres and larger in Lighting Areas E3, E3a and E2 where the quantity and ratings of existing lighting is unknown , not more than 3 fully shielded luminaires, rated 2,000 lumens or less each, may be installed per permit without submission of an inventory and site plan of existing outdoor lighting or preparation of lumen cap calculations. Not more than 10 such fully shielded luminaries may be installed per this exception.

Exception 2: A complete inventory and site plan detailing all existing and proposed new lighting shall not be required if a new existing lighting on the addition is documented as follows:

1. Submit a plan showing the developed area of the proposed addition This is to include the entire building and site area where new work or alteration being done on this permit.
2. Show all new and existing lighting intended to remain within the developed area.
3. All new lighting and all remaining existing lighting within this developed area shall be fully shielded type.
4. Any existing unshielded lighting within this developed area shall be removed.
5. The outdoor lighting with this developed area shall comply with the requirements of Chapter 4.

Exception 3: Complete inventory and site plan detailing all existing and proposed new lighting shall not be required if all new lighting is fully ~~cut off~~ shielded type and installed under a canopy.

102.5 Change of use. Whenever the use of any existing building, structure, or premises is changed to a new use, all outdoor lighting shall be reviewed and brought into compliance with this code before the new use commences.

102.6 Resumption of use after abandonment. If a property or use with non-conforming lighting is abandoned as defined in Chapter 2 of this code, then all outdoor lighting shall be reviewed and brought into compliance with this code before the use is resumed.

102.7 Destruction or deterioration. If a property or use with non-conforming lighting is destroyed by unforeseeable circumstances, or an act of nature or deteriorates to the point it is no longer safely or functionally

DRAFT

usable in its current state as defined by Chapter 2 of this code, then all outdoor lighting shall be reviewed and brought into compliance with this code before use is resumed. This agreement shall not supersede the requirements set forth in 102.4.2

102.8 Alternate materials and methods of construction. The provisions of this code are not intended to prevent the use of any design, materials or method of installation or operation not specifically prescribed by this code, provided any such alternate has been approved. The Building Official may approve any such proposed alternate provided he or she finds that it:

1. Provides at least approximate equivalence to the applicable specific requirements of this code, and;
2. Is otherwise satisfactory or complies with the intent of this code, and;
3. Has been designed or approved by a registered lighting or electrical engineer and is supported by calculations showing that the design submitted meets that intent of the code. This sub-section shall not have the effect of waiving the lumen caps of Chapter 4 of this code.

102.9 Appeals. Any person substantially aggrieved by any decision of the Building Official made in administration of this code has the right and responsibilities of appeal to the Advisory/Appeals Board of this jurisdiction.

Section 103
Exemptions

103.1 Natural gas lighting. Natural gas lighting is exempt from all requirements of this code.

103.2 Temporary exemption. Any person may submit a written request, on a form prepared by the jurisdiction, to the jurisdiction for temporary exemption request. A temporary exemption shall contain the following information:

1. Specific exemption(s) requested.
2. Type and use of outdoor light fixture involved.
3. Duration of time of the requested exemption.
4. Type of lamp and lamp lumens.
5. Total wattage of lamp or lamps and number of lamps to be used.
6. Proposed location on premises of the outdoor lighting fixture(s).
7. Previous temporary exemptions, if any, and addresses of premises there under.
8. Physical size of outdoor light fixture(s) and type of shielding provided.
9. Other data and information that may be required by the Building Official.

103.2.1 Approval and duration. The jurisdiction shall have five business days from the date of submission of the request for temporary exemption to act, in writing, on the request. If approved, the exemption shall be valid for not more than thirty days from the date of issuance of the approval. The approval shall be renewable at the discretion of the Building Official upon consideration of all the circumstances. Each such renewed exemption shall be valid for not more than thirty additional days.

103.2.2 Disapproval and appeal. If the request for temporary exemption is disapproved, the person making the request will have the appeal rights provided in Section 102 of this code.

103.3 Historic Landmark Signs. Lighting for signs listed in the City of Tucson Historic Landmark Sign Registry are exempt from this code except for Section 403 Curfew Requirements.

Section 104
Permits and Plan Submission Requirements

DRAFT

104.1 Permits required. Any owner or authorized agent who intends to install, construct, enlarge, alter, repair, move, or change any outdoor lighting within Pima County jurisdiction, the installation of which is regulated by this code, shall first make application to the Building Official for Pima County and obtain the required permit.

104.2 Permit submission requirements. The applicant for any permit required by any provision of the laws of this jurisdiction in connection with proposed work involving outdoor lighting fixtures shall submit (as part of the application for permit) evidence that the proposed work will comply with this code. The submission shall contain but shall not necessarily be limited to the following, all or part of which may be part or in addition to the information required elsewhere in the laws of this jurisdiction upon application for the required permit:

1. Plans indicating the location on the premises, and the type of illuminating devices, fixtures, lamps, supports, reflectors, and other devices, and a luminaire schedule as outlined in sub-section 104.2.1.
2. Description of the illuminating devices, fixtures, lamps, supports, reflectors, and other devices and the description may include, but is not limited to, catalog cut sheets by manufacturers and drawings (including sections where required).
3. Photometric data, such as that furnished by manufacturers, or similar showing the angle of cutoff or light emissions. Photometric data need not be submitted when the fully shielded performance of the fixture is obvious to the reviewing official.
   Exception: When submittal includes a statement by a registered design professional that the design is in accordance with this code, the requirements of sub-sections 104.2.2 and 104.2.3 shall not apply.

104.2.1 Lumen calculation on plans. There shall be documentation on the plans to demonstrate compliance with the lumen cap per Table 401.1, and which includes the following information:

1. Each exterior luminaire type with the lumens for that type, the quantity of each type and whether the luminaire is fully shielded or unshielded.
2. The total of fully shielded and unshielded lumens for the developed area of a parcel.
3. A statement of the lighting area, the size of the permitted developed area, and the maximum allowed fully shielded and unshielded lumens.

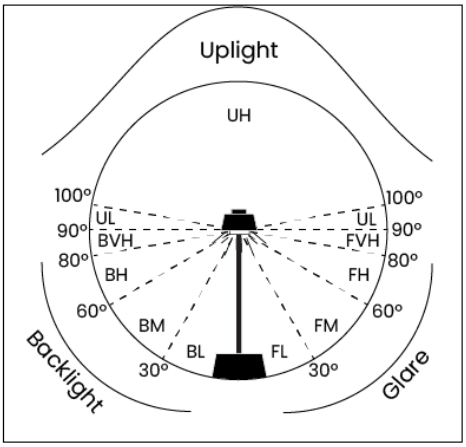
   Exception to 104.2.1: In Lighting Areas E3, E3a and E2, when the total outdoor lighting installation is fully shielded lighting installed under canopies, roof overhangs or eaves, Lumen Calculation shall not be required.

104.2.2 Special inspection note. The plan submission shall contain a note indicating whether a special inspection is required in accordance with Section 106.

104.2.3 Additional submission. The above required plans, descriptions and data shall be sufficiently complete to enable the plans examiner to readily determine compliance with the requirements of this code. If such plans, descriptions and data cannot enable this determination, the applicant shall additionally submit as evidence of compliance such reports or tests as will, provided that these tests shall have been performed and certified by a recognized testing agency.

104.2.4 IES BUG Rating. Light fixtures with an IES BUG rating of U0 shall be considered fully shielded (ANSI-IES TM-15-20).

DRAFT



104.3 Lamp or fixture substitution. Should any outdoor light fixture or the type of light source herein be changed after the permit has been issued, a change request must be submitted to the design professional and Building Official for his or her approval, together with adequate information to assure compliance with this code, which must be received prior to substitution.

Section 105
Prohibitions

105.1 Bottom mounted sign lighting. Bottom mounted outdoor sign lighting attached to the sign structure is prohibited.

105.2 Mercury vapor lamps and fixtures. The use, installation, sale, offer for sale, lease or purchase of any mercury vapor lamp for use as outdoor lighting is prohibited per ARS § 49-1104.

105.3 Laser source light. The use of laser source light or any similar high intensity light for outdoor advertising or entertainment, when projected above the horizontal, is prohibited.

105.4 Searchlights. The operation of searchlights for advertising purposes is prohibited.

Section 106
Inspections

106.1 General. The owner of a property, or the authorized agent of the owner, shall request all required inspections as noted on the permit issued under this code. All inspection requests shall be made at appropriate intervals as noted on the permit and it is the responsibility of the property owner or authorized agent of the owner to assure that all required inspections receive approval from the Building Official and that final inspection approval is obtained prior to placing the permitted outdoor lighting into service. Lumens in this section are total installed lumens prior to any lumen reduction per 104.2.1.

106.2 Special inspection requirement.

106.2.1 Special inspection shall be required when the lumens per net acre are greater than 100,000 or 75% of the allowable lumens per Table 401.1, whichever is less.

106.2.2 Provide special inspection for all Recreational Facility lighting.

106.2.3 Provide special inspection for all Special Uses per Chapter 7.

Section 107
Violations

107.1 Unlawful acts. It shall be unlawful for any person, firm, or corporation to erect, construct, alter, extend, repair, move, remove, install, use or demolish outdoor lighting equipment as regulated by this code, or cause same to be done, in conflict with or in violation of any of the provisions of this code.

107.2 Notice of violation The Building Official is authorized to serve a notice of violation or order on the person responsible for the erection, construction, alteration, extension, repair, moving, removing, demolition or use of any outdoor lighting in violation of this code or in violation of a detail statement or a plan approved hereunder, or in violation of a permit issued under the provisions of this code. Such order shall direct the discontinuance of the illegal action or condition and the abatement of the violation. The property owner or authorized agent of the owner shall comply with the requirements of the notice of violation within the time period given on the notice for abatement of the violation.

107.3 Prosecution of violations. If the notice of violation is not complied with promptly, the Building Official is authorized to request the legal counsel of the jurisdiction to institute the appropriate proceeding at law or in equity to restrain, correct or abate such violation, or to require the removal or termination of the unlawful use of outdoor lighting in violation of the provisions of this code or of the order or direction made pursuant thereto.

107.4 Penalty. Any violation of this code, or any portion of this code, shall be considered a civil infraction and is subject to penalties not to exceed the amount of the maximum fine for a class 2 misdemeanor in accordance with A.R.S. 11-808. Each day of continuance of the violation constitutes a separate violation. Maximum fines are $750.00 for individuals and $10,000.00 for corporations, associations or other legal entities. Enforcement procedures shall be pursuant to those established by each authorizing jurisdiction.

DRAFT

Chapter 2
Definitions

Section 201
General

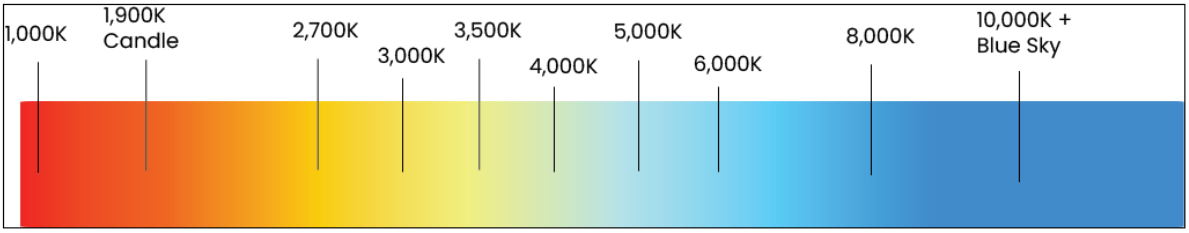
201.1 Scope. Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings indicated in this chapter.

201.2 Interchangeability. Words used in the present tense include the future; words in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

201.3 Terms not defined. Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies.

Section 202
Definitions

CCT (Correlated Color Temperature). The measured color appearance of light emitted by a light source described using a nominal value stated in kelvins (K). Lower CCTs (1900 K and below) appear very warm or amber. Medium CCTs (greater than 1900k not to exceed 2700k) appear "warm white," similar to standard incandescent bulbs. Medium-High CCTs (greater than 2700k not to exceed 3500k) appear warm yellow and yellow, and High CCTs (greater than 3500k) appear "white, "cool white" or "blue."



Curfew. A time established for listed lighting systems to be automatically extinguished.

Deteriorated Property. A property that has been damaged or dilapidated beyond normal reasonable repair by casualty loss, acts of nature, or by severe lack of maintenance to the point it is no longer safely or functionally usable is its current state shall be deemed deteriorated in line with ARS Title 33.

Destroyed Property. A property that by definition has been ruined beyond use, or demolished, either by casualty loss, or by acts of nature, and is unsuitable or unsafe for habitation or normal use shall be deemed destroyed as per U.S. Department of Housing and Urban Development definitions.

Developed Area. All improved surface areas likely to be occupied or regularly visited by people: building, structures, storage, service, and manufacturing areas, assembly areas, parking, loading driveways, and landscaping related to the uses and betterment of the area. This shall not apply to areas that have been cleared only. Only those areas meeting this definition shall be counted in the calculation of allowed lumens. Developed area shall not include areas reserved as *undisturbed open space* or *no-build utility easements*

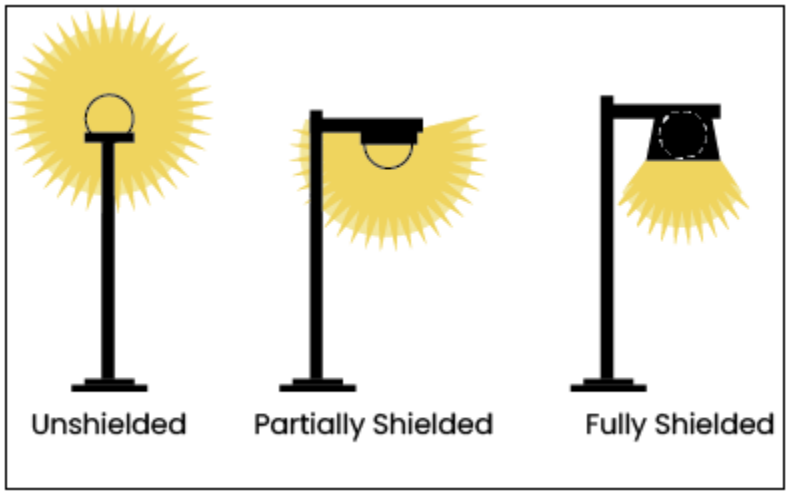
Development Project. Any residential, commercial, industrial or mixed use subdivision plan or development plan which is submitted to the jurisdiction for approval or for permit.

Direct Illumination. Illumination resulting from light emitted directly from a lamp or luminaire, not light diffused through translucent signs or reflected from other surfaces such as the ground or building faces.

Festoon Lighting. A string of light bulbs or globes suspended on a cable or wire between two or more points, such as poles or buildings, creating a decorative and atmospheric illumination.

Fully Shielded Light Fixture. A fully shielded light fixture is a luminaire where no light is emitted at or above an angle of 90 degrees above the nadir. This applies to all lateral angles around the luminaire. Such candela information shall be as determined by a photometric test report from a nationally recognized independent testing laboratory and as certified by the manufacturer. Any structural part of the luminaire providing fully shielded angle shielding shall be permanently attached.

Fully Shielded. A *luminaire* designed or shielded in such a manner that no light is emitted, either directly or indirectly, at or above a horizontal plane running through the lowest light-emitting part of the luminaire. This applies to all lateral angles around the luminaire. Such lighting performance shall be as determined by a photometric test report from a nationally recognized independent testing laboratory. Any structural part of the luminaire providing full shielding shall be permanently attached. Light fixtures with an IES BUG rating of U0 shall be considered fully shielded (ANSI-IES TM-15-20).



House-side Shielding. A house-side shield is an attachment for an outdoor light fixture, especially streetlights, parking lot lights, or yard lights, that reduces *light trespass.*

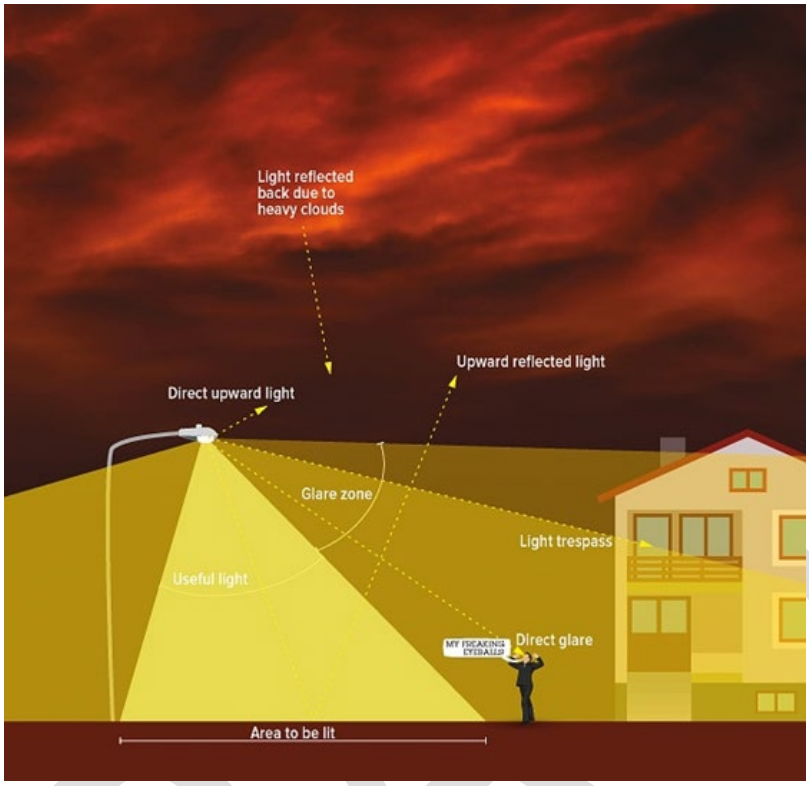
Installed. The attachment, or assembly fixed in place, whether or not connected to a power source, or any outdoor light fixture.

Light Fixture. See also luminaire. Luminaire. The terms Light Fixture and Luminaire may be used interchangeably in this document.

Light Sources.

1. **Incandescent**. An electric light with a wire filament that is heated until it glows. These bulbs are in common use both indoors and outdoors, particularly in residential settings.
2. **Lamp.** Generic term for a man-made source of light. In the context of this Code, the lamp is an electrically powered light bulb, fluorescent, or neon tube, or LED light source.
3. **LED.** Light emitting diode solid state lighting source. LED bulbs are in common use in both residential and commercial applications.
4. **Mercury Vapor.** A gas-discharge lamp that uses an electric arc through vaporized mercury to produce light. Use of Mercury Vapor light sources is prohibited in Tucson and Pima County

Light trespass. Unwanted or intrusive artificial light that extends beyond the property line of the site where the light source is installed, resulting in illumination of another property without permission.



Lighting areas. Refer to Chapter 3 for a full definition of Lighting Areas and a map.

Narrow-Band Amber LED. Quasi-monochromatic source with a maximum radiant flux (in Watts per nm) lying within the 585-605 nm spectral range and having full width half maximum smaller than 18nm. Narrow Band Amber LEDs emit mostly yellow amber light and emit no blue light. This translates to less than 1,700K

Phosphor-Converted Amber LED. Non-white light source that uses a LED with a phosphor to produce a broad amber emission; requirement that less than 7% of the light emitted in 380-780 nm be emitted in 380-500 nm. Phosphor-coated Amber LEDs work by using a phosphor coated filter which works to convert blue light mostly to amber light. This translates to less than 2,000K

Lumen. Unit of luminous flux; used to measure the amount of light emitted by lamps.

Luminaire. The complete lighting assembly, less the support assembly. For purposes of determining total light output, lighting assemblies which include multiple lamps or light sources in a single housing shall be considered as a single luminaire. Two or more luminaires installed less than three feet apart shall be considered a single luminaire.

Opaque. Opaque means that the material shall not transmit visible light.

Outdoor light fixture. An outdoor illuminating device, luminaire or other device that emits light, permanently installed or portable.

Outdoor Light Output - Total. The total amount of light, measured in lumens, from all outdoor light sources. Total outdoor light output is determined as follows:

1. For all lamp types, the initial lumen output, as defined by the lamp manufacturer, shall be the lumen value used.
2. The total light output for each outdoor light fixture shall be based on the largest lamp that the outdoor light fixture is rated to accommodate. For the purpose of compliance with this section, the largest lamp rating for fluorescent and high intensity discharge fixtures shall be based on the installed ballast rating.
3. It shall be permissible to adjust the lamp lumen rating of fluorescent lamps in accordance with the ballast factor for the specific ballast type installed.

Outdoor Recreation Facility. An area designed for active recreation, whether publicly or privately owned, including, but not limited to baseball, soccer, football, golf, tennis, swimming pools, equestrian, and racetracks of any sort.

Person. Any individual, tenant, lessee, owner, or any commercial entity including but not limited to firm, business, partnership, joint venture or corporation.

Right-of-way. An alley, road, street, or highway, and associated sidewalks permanently dedicated for public or private use.

Shield. A component of the Outdoor Light Fixture that blocks the transmission or emission of light as a means of controlling or directing the light emitted from the fixture. A permanently attached shield may be part of the fixture which contributes to the fully shielded lighting performance of the fixture.

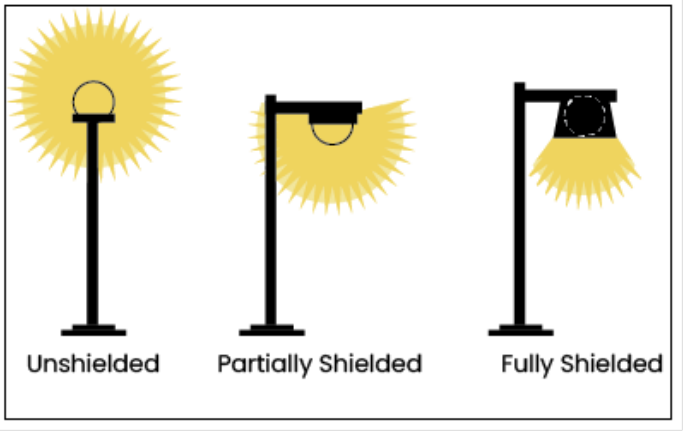
Shielded. See also Fully Shielded Fixture. An Outdoor Light Fixture having shields permanently installed to provide fully shielded photometric performance.

Sign. Every message, announcement, declaration, display, illustration, insignia, surface or space erected or maintained in a location outside and visible to the public for identification, advertising or promotion of the interest of any person, entity, product or service.

Temporary Lighting. Lighting which will not be used for more than one thirty (30) day period within a calendar year, with one thirty (30) day extension. Temporary lighting is intended for uses which by their nature are of limited duration; for example holiday decorations. Civic events, or construction projects.

Undeveloped Area. In a commercial setting, undeveloped areas are those areas of a project that will have now improvements or betterments for the project. This includes areas that have been cleared but are unused for infrastructure. Undeveloped areas shall not be used in the calculation of allowable lumens for a project as there is no expectation of occupation or regular visits by humans.

Unshielded. Any light fixture or luminaire that is not a Fully Shielded Light Fixture.



DRAFT

Use – Abandonment of. The relinquishment of a property, or the cessation of the use or activity by the owner or tenant for a period of six months, excluding temporary or short-term interruptions for the purpose of remodeling, maintaining, or otherwise improving or rearranging a facility. A use shall be deemed abandoned when such use is suspended as evidenced by the cessation of activities or conditions which constitute the principal use of the property.

DRAFT

Chapter 3
Lighting Areas

Section 301
Description of Lighting Areas

301.1 Lighting Areas. Lighting areas are defined as follows:

301.1.1 Lighting Area E3. Lighting area E3 is the urban area circumscribed by the Tucson city limits, but not including any area within the physical boundaries of Lighting Area E3a as described below. Additional locations in lighting area E3 include:

1. The area bounded by the Rillito River on the north, Interstate Highway 10 on the West, and the Tucson city limits on the south and east.
2. The area northwest of Ft. Lowell Road and Alvernon Way bounded by the Rillito River on the North and the Tucson city limits on the west, south and east.
3. The area north of Los Reales Road from Country Club Road on the west and Interstate 10 Highway on the east bounded by the Tucson city limits on the west, north and east.
4. The area east and west of Kolb Road at Valencia Road bounded on the north, south, east and west by the Tucson city limits and extending southeast to Interstate 10 Highway and Rita Road.
5. The area within the entire city limits of the City of South Tucson.

301.1.2 Lighting Area E3a. Lighting area E3a is a special area south and west of Mt. Lemmon defined as follows: the Pinal County line on the north, along the center line of the Santa Cruz River, to the center line of Rillito River, to the center line of Tanque Verde Creek, then along the centerline of Tanque Verde Creek to a point 1500 feet north of the northwesterly most corner of Saguaro National Park East, then to said northwesterly corner, then due east to the border of the Santa Catalina District of the Coronado National Forest, then north and west along the border of the Santa Catalina District of the Coronado National Forest to the Pinal County Line. Additional locations in lighting Area E3a include:

1. The area south and east from the joining of the Tanque Verde Creek and Pantano Wash, bounded on the south and west by the Pantano Wash, on the south and east by the Tucson city limits and the north by the Tanque Verde Creek.

301.1.3 Lighting Area E2. Lighting area E2 is an area falling outside all other lighting areas defined herein.

301.1.4 Lighting Area E1a. Lighting areas E1a are special areas around astronomical observatories and include all areas within 15 miles of the summit of Kitt Peak and 12.5 miles of the summit of Mount Hopkins, and those areas within any national park, monument, or forest boundary. The area in the northeast corner of Pima County bounded to the north by Pinal County, to the west by the Santa Catalina District of Coronado National Forest, to the south by Saguaro National Park East and to the east by Cochise County is also included in Lighting Area E1a. In these areas, the preservation of a naturally-dark environment, both in the sky and in the visible landscape, is considered of paramount concern.

301.1.5 Lighting Area E1b. Lighting area E1b includes the circular area twenty-five miles in radius the center of which is the summit of Mount Hopkins.

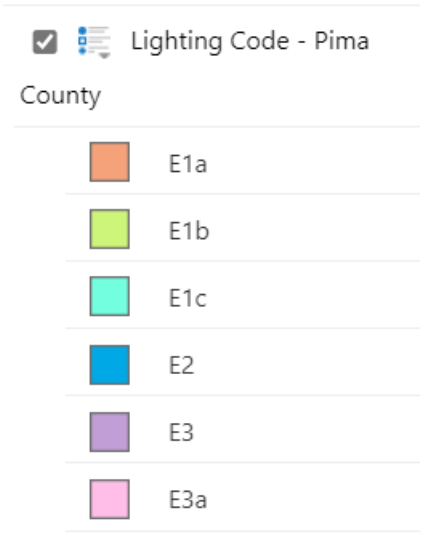
DRAFT

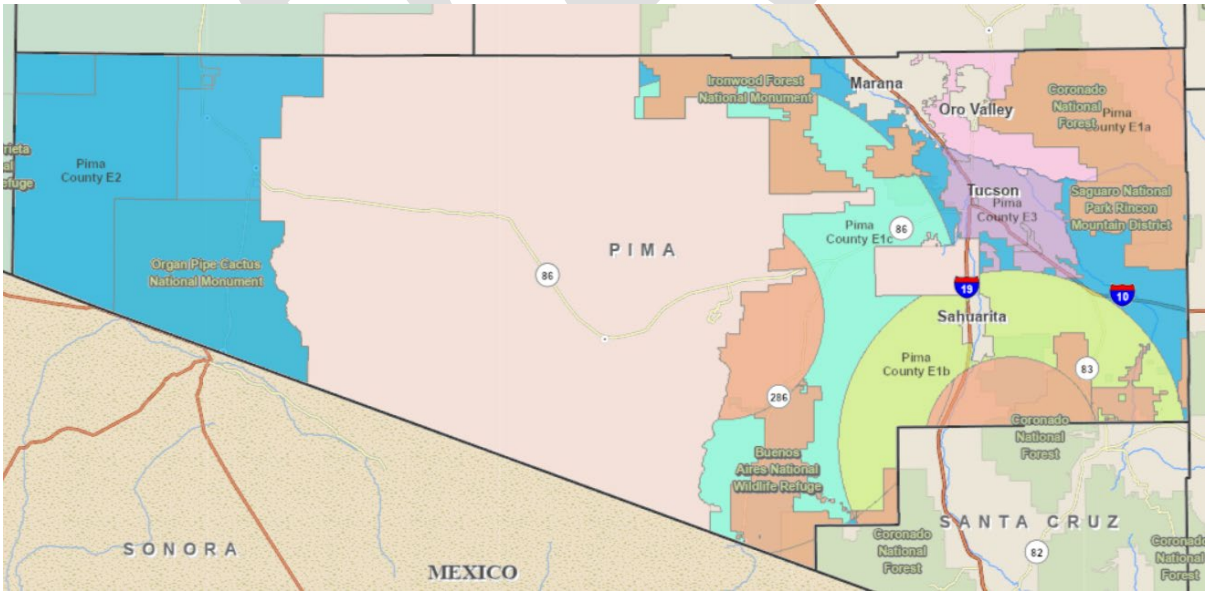
301.1.6 Lighting Area E1c. Lighting area E1c includes the circular area thirty-five miles in radius the center of which is the summit of Kitt Peak.

301.2 Properties in more than one lighting area. A property located in more than one of the lighting areas described within this chapter shall be considered to be only in the more restrictive lighting area.

301.3 Map of Lighting Areas. Lighting areas may be viewed at Pima County PimaMaps.

1. Select "Layers"
2. Select "Regulatory"
3. Select the box to the left of "Lighting Code – Pima County"





Chapter 4
Lighting Sources, Illumination Levels and Shielding Requirements

Section 401
Total Outdoor Light Output and Shielding Requirements

401.1 General. Table 401.1 provides requirements for the total light output permitted per acre for the different lighting areas, fixture shielding requirements, and limitation of light trespass. These requirements shall be met for all lighting installations subject to this code, unless specifically exempted by Chapters 5, 6, 7, and 8.

401.2 Total outdoor light output. The total amount of light, measured in lumens from all outdoor light sources. Total outdoor light output shall be the sum of lumen rating of all installed outdoor lighting fixtures as defined by lamp manufacturers. Total outdoor light output shall not exceed the lumen limits listed in Table 401.1. In the table, "total" means the sum of fully shielded and unshielded light.

401.2.1 Determining compliance. For determining compliance with this chapter, the total lumens is the sum of the following:

1. One hundred percent of the lumens from outdoor light fixtures installed on grade, on poles, and installed on the top or sides of buildings of other structures.
2. Fifty percent of the lumens from underwater light fixtures unless the fixture is aimed at an angle of less than 45 degrees above the horizontal; in which case the calculated lumens is calculated at 10 percent of the rated lumens.

Add diagram providing visual reference

3. Fully shieled fixtures installed under canopies and overhangs that extend no less than 24 inches beyond the mounting surface of the fixture shall be counted as zero lumens when installed no greater than 24 inches below the canopy overhang, or eave.

Add diagram providing visual reference

4. Unshielded light fixtures installed under canopies, building overhangs, or roof eaves shall be calculated at 100 percent of the luminaire total light output. Installation under canopies, overhangs or roof eaves shall not provide fully shielded classification of unshielded light fixtures.

401.3 Shielding requirements. All light fixtures that are required to be fully shielded shall be installed in such a manner that the shielding, or fully shielded effect, is effective and permanent.

401.4 Light trespass. All lights shall not provide unwanted or intrusive artificial light that extends beyond the property line of the site where the light source is installed, resulting in illumination of another property without permission.

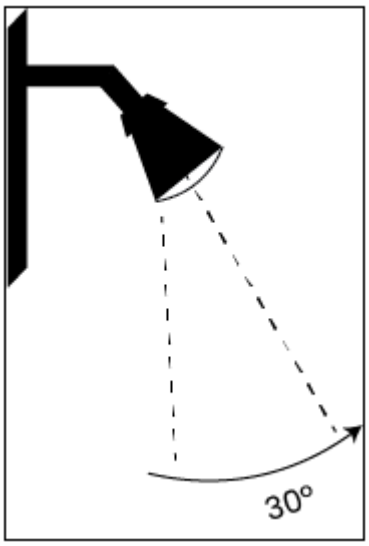
401.4.1 Mounting height. All lighting abutting residential property shall be installed not higher than 10 feet above grade at the property line and no higher than a line rising 20 degrees above the 10 feet until 100 feet from the property line, measured perpendicular to the lot line.

401.4.2 House Side Shields. Outdoor lighting fixtures closer to the lot line than the mounting height of the fixture, measured perpendicular to the lot line, abutting residential property shall have exterior house-side shields.

DRAFT

401.4.3 Fixtures within 25 feet of residential lot lines. Luminaires installed within 25 feet of abutting residential property line shall be fully shielded.

401.4.4 Flood and spot lamps. When visible from any abutting residential property, flood or spot lamps shall be aimed straight down (vertical) or at an angle not to exceed 30 degrees away from vertical.



401.5 Unshielded lighting. Unshielded fixtures or lighting sources shall not exceed 3,000 lumens per luminaire.

Exception to 401.5: Unshielded lighting installed in accordance with chapters 5 and 6.

401.6 Optional compliance method for single family residential compliance. In lieu of calculating total lumens per Section 401.2, a single residential lot of any size shall be considered in compliance with the Lumen Cap if it has a maximum of 5 – 850 lumen (60 watt incandescent or 13 watt compact fluorescent) Full Cut-Off luminaires in Lighting Areas E3, E3a & E2 or a maximum of 4 – 550 lumen (40 watt incandescent or 9 watt compact fluorescent) in Areas E1c, E1b & E1a. If this option is utilized, no unshielded luminaires are allowed.

401.7 Seasonal Decorations. Seasonal decorations using unshielded low-wattage lamps (not exceeding 7 watts each) shall be exempted from the Lumen Caps of Table 401.1 from Thanksgiving to the 15th of January each year. This exemption is not applicable to Lighting Area E1a.

401.8 Festoon lighting. Festoon lighting shall contribute to total lumens.

DRAFT

Table 401.1 – COMMERCIAL LIGHTING
Maximum Total Outdoor Light Output Requirements
Lumen Caps: Developed Area Lumens per Acre

COMMERCIAL OPTION 1 – AMBER

OPTION 1 - AMBER	LIGHTING AREA					
	E3	**E3a**	**E2**	**E1c**	**E1b**	**E1a**
Option 1A- Mostly amber LED, all lighting fully-shielded (1,2)	**E3 PC Amber**	**E3a PC Amber**	**E2 PC Amber**	**E1c NB Amber**	**E1b NB Amber (3)**	**E1a NB Amber (3)**
Total lumens (amber + non-amber) All lighting shall be fully-shielded	280,000	200,000	156,000	125,000	48,000	18,000
Limit on non-amber lighting sources	23,800	13,600	10,600	6,000	3,000	3,000
Limit on unshielded light sources	0	0	0	0	0	0
Option 1B- Mostly amber LED (1,2)	**E3 PC Amber**	**E3a PC Amber**	**E2 PC Amber**	**E1c NB Amber**	**E1b NB Amber (3)**	**E1a NB Amber (3)**
Total lumens (amber + non-amber / fully shielded + non-fully-shielded)	238,000	136,000	106,000	120,000	45,000	N/A
Limit on non-amber lighting sources	23,800	13,600	10,600	6,000	3,000	N/A
Limit on unshielded light sources, all allowable CCT per 402.1	8,000	6,600	2,700	2,700	2,700	N/A

COMMERCIAL OPTION 2 – MOSTLY 2200K CCT

OPTION 2 – MOSTLY 2200K CCT	LIGHTING AREA					
	E3	**E3a**	**E2**	**E1c**	**E1b**	**E1a**
Option 2A- Mostly 2200K CCT or warmer, all fully shielded (1,2)	**E3**	**E3a**	**E2**	**E1c**	**E1b (3)**	**E1a (3)**
Total lumens (2200K CCT + >2200K CCT) All lighting shall be fully shielded	250,000	150,000	62,000	N/A	N/A	N/A
Limit on light sources rated greater than 2200K CCT	50,000	30,000	12,400	N/A	N/A	N/A
Limit on unshielded light sources	0	0	0	0	0	0

DRAFT

Option 2B- Mostly 2200K CCT or warmer (1,2)	E3	E3a	E2	E1c	E1b (3)	E1a (3)
Total lumens	175,000	100,000	47,000	N/A	N/A	N/A
Limit on light sources rated greater than 2200K CCT	35,000	20,000	9,400	N/A	N/A	N/A
Limit on unshielded light sources	11,000	9,000	2,700	N/A	N/A	N/A

COMMERCIAL OPTION 3 – ALL ALLOWABLE CCT FULLY SHIELDED

OPTION 3	LIGHTING AREA					
	E3	E3a	E2	E1c	E1b	E1a
Option 3A- All allowable CCT fully shielded (1,2)	**E3**	**E3a**	**E2**	**E1c**	**E1b (3)**	**E1a (3)**
Total lumens – all lighting shall be fully shielded	160,000	96,000	40,000	28,000	25,000	12,500
Limit on unshielded light sources	0	0	0	0	0	0
Option 3B- All allowable CCT, mostly fully shielded (1,2)	**E3**	**E3a**	**E2**	**E1c**	**E1b (3)**	**E1a (3)**
Total lumens (Fully shielded + unshielded)	110,000	63,000	30,000	18,000	11,000	N/A
Limit on unshielded light sources	7,000	5,700	2,700	2,700	2,700	N/A

Notes to Table 401.1

1. Use any one of the three options, 1, 2, 3 for the developed area.
2. This refers to all land-use zoning classification for multiple family uses including apartments and condos, commercial, and industrial sites.
3. In addition to the lumen caps given in the table above, the maximum illumination level under any canopy in Lighting Area E1a shall not exceed 30 lumens per square foot and in Lighting Area E1b shall not exceed 55 lumens per square foot of canopy area.
4. Other than amber LED, light temperature maximum is 3000K.

DRAFT

TABLE 401.2 – RESIDENTIAL LIGHTING

RESIDENTIAL OPTION 1 – ALL LIGHTING

	Lighting Area as Defined in Chapter 3					
All residential zoning (1)	**E3**	**E3a**	**E2**	**E1c**	**E1b(5)**	**E1a(5)**
Total (fully shielded plus unshielded)	55,000	39,000	24,000	15,000	12,000	12,000
Limit on unshielded component	11,000	9,000	2,700	2,700	2,700	0

RESIDENTIAL OPTION 2 – AMBER SOURCES

If at least 75% of the installed lumens are from Amber sources, then the total lumens in the table, for all areas, may be increased by 50% for fully shielded components only

	Lighting Areas as Defined in Chapter 3					
All residential zoning(1)	E3	**E3a**	**E2**	**E1c**	**E1b(2)**	**E1a(2)**
Total (fully shielded plus unshielded)	82,500	58,500	36,000	22,500	18,000	18,000
Limit on unshielded component	11,000	9,000	2,700	2,700	2,700	0

Notes to Table 401.2

1. This refers to all residential land-use zoning, such as single family detached and duplexes. Up to 4 units
2. In addition to the lumen caps given in the table above, the maximum illumination level under any canopy in Lighting Area E1a shall not exceed 30 lumens per square foot and in Lighting Area E1b shall not exceed 55 lumens per square foot of the canopy area.
3. Other than amber LED, light temperature maximum is 3000K.

Section 402
Outdoor Lighting Source Color Temperature

402.1 Rated Color Temperature. The rated color temperature of light sources (lamps and fixtures) shall not exceed 3000K.

Exception No. 1: Recreation and Special Use Lighting complying with Chapters 6 and 7 of this Code.
Exception No. 2: Existing legal, non-conforming light fixtures may be relamped with greater than 3000K rated lamps when 3000K or lower rated lamps are not manufactured for such fixtures

DRAFT

Section 403
Curfew Requirements

403.1 Unshielded Light Sources. Unshielded lighting shall be extinguished between 11:00 P.M. and sunrise the following day.

Exception No. 1: Unshielded lighting installed for the illumination of the flag of the United States of America.
Exception No. 2: Unshielded lighting installed in accordance with Section 601.2 shall be turned off in accordance with the curfew requirements of Section 601.3.
Exception No. 3: Unshielded lighting on installations classified as Residential Zoning in accordance with Footnote 2 to Table 401.1.2.

403.2 Illuminated Signs. Refer to Section 501.5.

403.3 Recreational Facilities. Refer to Section 601.3.

403.4 Special Use Areas. Refer to Section 701.4.

403.5 Outdoor Lighting Controls.

403.5.1 The means of controlling the specific "off" curfew shall be by a 24-hour timing device that includes stand-by power to maintain the time and program for a minimum of 6 hours.

403.5.2 Whenever any curfew "off" time is required by this Code, a permanent sign or notice shall be installed at the time control device stating the required turn-off time. Such sign or notice may be installed within the cover of the time control device such that it is visible whenever the device is set or adjusted. Suggested wording is as follows:

"Set off time for Sign no later than 10:00PM MST in accordance with City of Tucson/Pima County Outdoor Lighting Code. Penalty for non-compliance per Outdoor Lighting Code Section 107.4. Penalties shall not exceed $750.00 for individuals and $10,000.00 for other legal entities." (Adjust wording as needed for type of lighting to which curfew applies and the applicable curfew time.)

403.5.3 Separate timer. Whenever a curfew "off" time is required for this code, all outdoor lighting affected by the curfew shall be maintained on a timer separate from any lighting timers not programmed for this curfew.

403.6 Illumination of the flag of the United States of America.

403.6.1 For nighttime illumination of the flag of the United States of America, flagpoles shall be outfitted with a pole top downward illuminating light fixture. Lumens in these fixtures shall be calculated as part of the unshielded lighting totals unless the fixture meets the requirements for fully shielded lighting.

404 Motion Sensing Controls

404.1 **Motion Sensing Controls.** Motion Sensing Controls shall be provided for building and pole mounted light fixtures which illuminate parking lots, driveways, pedestrian areas and other open outdoor areas.

Exception No. 1: Light fixtures mounted 12 feet above grade level and below.
Exception No. 2: Lighting installed in accordance with Chapters 6, 7, and 8.
Exception No. 3: Lighting installed under canopies or in open parking garages.
Exception No. 4: Legal, non-conforming existing light fixtures

Exception No. 5: Fully shielded light fixtures installed for the illumination of the United States Flag and mounted over 12 feet above grade level.

404.2 **Motion Sensing Controls Operation:** Motion sensing controls shall automatically dim fixtures to 50 percent or less of the full rated light output per the following:

1. During any time when no activity has been detected for 15 minutes or more.
2. Sensing and dimming shall be done pr fixture or per pole basis.

DRAFT

Chapter 5
Sign Lighting

Section 501
Illuminated Outdoor Signs

501.1 External illumination of on-site signs. External illumination for on-site signs shall conform to all provisions of this code. In particular, such lighting shall conform to the lamp source, shielding requirements, color temperature, and lumen caps of Chapter 4.

501.2 Illumination of off-site signs prohibited. Electrical illumination of outdoor off-site signs is prohibited, except that the use of lighting fixtures legally installed in Areas E2 and E3 prior to the effective date of this code may continue, provided such fixtures are mounted on the top of the sign structure, shall not be illuminated between the hours of 11:00 P.M. and sunrise the following day, and comply with all other provisions of this code.

501.3 Internal illumination of signs. The requirements of this paragraph apply to totally enclosed and unenclosed signs where the lamp is not directly visible from any viewing angle. A lamp concealed behind opaque or translucent material is considered not directly visible.

501.3.1 Lumen cap. Outdoor internally illuminated signs are exempt from the lumen caps described in Chapter 4.
501.3.2 Color temperature. Rated lamp color temperature shall not exceed 4400K.
501.3.3 Prohibited installations. Outdoor internally illuminated signs shall not be installed in Lighting Area E1a.

501.4 Exposed Lamps. Lamps not concealed from view by opaque or translucent material shall be considered outdoor lighting and shall conform to the lamp source, shielding requirements, color temperature, and lumen caps of Chapter 4.

501.5 LED, LCD, Plasma Screen and Similar Signs: Outdoor LED, LCD, Plasma and Similar signs shall comply with Sections 501.3.1 and 501.3.3. Further, they shall be limited to a maximum luminous intensity of 200 nits (candela per square meter), full white mode, from sunset to sunrise.

501.6 Sign illumination curfew. Illuminated signs shall be turned off at the curfew times listed in Table 501.5 or when the business activities cease, whichever is later. Signs shall be turned off when the business activity relating to the sign has ceased for 30 days or more. Controls shall comply with Section 403.5.

Table 501.5
Illuminated Sign Curfews

Lighting Area	E3	E3a	E2	E1b or c	E1a
Commercial and Industrial Zoning or Land Use (1)	12:00 A.M.	12:00 A.M.	11:00 P.M.	11:00 P.M.	X
All Residential Zoning or Land Use (1)	11:00 P.M.	11:00 P.M.	10:00 P.M.	9:00 P.M.	X

Notes to Table 501.5

1. "Land Use" refers to the predominant use of land surrounding the parcel on which the sign is located.
2. "X" means "not allowed".

DRAFT

Chapter 6
Recreational Facilities

Section 601
Illumination of Recreational Facilities

601.1 Lighting not directly related to athletic areas. All site lighting not directly associated with the athletic playing areas shall conform to the lighting standards described in this ordinance, including but not limited to the lamp type and lumens per acre limits of Chapter 4.

601.2 Lighting for athletic fields requiring full color rendition. Lighting for athletic fields, courts or tracks shall be exempt from the lumens per acre limits of Chapter 4. All such lighting shall utilize fully shielded luminaires that are installed in a fashion that maintains the full shielded characteristics unless certified by a registered engineer that such shielding is impractical. Every such lighting system design shall be certified by a registered engineer as conforming to all applicable restrictions of this ordinance. Where fully shielded fixtures are not utilized, acceptable luminaires shall include those which:

1. Are provided with internal and /or external glare control louvers and installed so as to limit direct up-light to less than 5 percent of the total lumens exiting from the installed fixtures and minimize off-site light trespass and;
2. Are installed and maintained with minimum aiming angles of 25 degrees downward from the horizontal. Said aiming angle shall be measured from the axis of the luminaire maximum beam candlepower as certified by independent testing agency.

601.3 Curfew requirements.

601.3.1 Event Schedule. All events shall be scheduled so as to complete all activity before the curfew listed in Table 601.3. Illumination of the playing field, court or track shall be permitted after the curfew only to conclude a scheduled event that was unable to conclude before the curfew due to unusual circumstances. Lighting may remain on up to one hour after the conclusion of play in order to allow for any required field maintenance that must take place at the end of play. Timing devices for recreational facilities may include a manual override setting which returns to the established program within 1 hour.

601.3.2 Allowable operation and turn-on controls. Athletic field lighting not conforming to the shielding and lumen caps of Chapter 4 shall not be operated, except during those days and times when the athletic event occurs. Turn-on of the lighting shall be activated by manual control of the lighting system. The Building Official may approve automatic controls for lighting turn on if they provide equivalent assurance that the lighting will not be operating at times when the facilities are not in use.

601.3.3 Automatic Controls. Automatic controls shall comply with Section 403.5.

Table 601.3
Recreational Facilities and Special Use Areas Curfews

E3	E3a	E2	E1b or c	E1a
12:00 A.M.	11:00 P.M.	11:00 P.M.	10:00 P.M.	X

"x" means not allowed.

DRAFT

Chapter 7
Special Use Areas

Section 701
Illumination of Special Use Areas

701.1 Special Use Areas Defined. This chapter applies to lighting for outdoor sales areas and outdoor manufacturing areas.

701.2 Lighting not associated with special use areas. All outdoor lighting not directly associated with the special use areas shall conform to the lighting standards described in this ordinance, including but not limited to the lumen per acre limits, shielding requirements, color temperature and curfew requirements of Chapter 4.

701.3 Lighting for special use areas. Lighting for special use areas is exempt from the lumens per acre limits of Section 401. All such lighting shall utilize fully shielded luminaires that are installed in a fashion that maintains the fully shielded characteristics. Every such lighting system design shall be certified by a registered lighting or electrical engineer as conforming to all applicable restrictions of this code.

701.4 Curfew requirements. Special Use Area lighting shall be turned off at the curfew times listed in Table 601.3 or within thirty minutes after closing of the business, whichever is later. Automatic controls shall comply with Section 403.5

701.5 Lighting for special use areas after curfew. Outdoor lighting operated after curfew times listed in Table 601.3 shall comply with the lumen per acre limits, shielding, source color temperature and curfew requirements of Chapter 4.

DRAFT

Chapter 8
Right-of-Ways

Section 801
Illumination of Right-of-Ways

801.1 Lighting of Right-of-Ways. Lighting of public and private right-of-ways shall be fully shielded or comply with Section 401.4. In addition, lighting shall comply with source color temperature of Section 402.1. The lighting system performance shall be demonstrated by a computer program printout of the maintained illumination levels produced from the right-of way lighting fixtures certified by a registered design professional.

Exception No. 1: Traffic signal indications.
Exception No. 2: Chapter 4, except where specifically referenced in this Section.

801.2 Definitions:

Right-of-Way types-
Expressway – A divided major roadway for through traffic, with partial control of access and generally with interchanges at major crossroads.
Major Roads – The part of the roadway system that serves as the principal network for the through traffic flow. The routes connect areas of principal traffic generation and important rural roadways leaving the city.
Collector Roads – Roadways serving traffic between major and local streets. These are streets used mainly for traffic movement within residential, commercial and industrial areas.
Local Roads – Local streets are used primarily for direct access to residential, commercial, industrial, or other abutting property.

801.3 Illumination levels of Right-of-Ways. The maximum average illumination level, as demonstrated by the computer printout, along the entire right-of way being illuminated and over the right-of-way area only, shall be:

Expressway	1.4 footcandles
Major Roads	1.5 footcandles
Collector Roads	1.0 footcandles
Local Roads	Prohibited, except 0.4 footcandles in area E3 and at signalized intersections and marked pedestrian crossings.

Existing luminaires on local roads may be retrofitted with fully shielded (luminaires with the design not to exceed 0.4 footcandles average maintained as described in 801.1.

The uniformity ratio of average to minimum illumination shall not be greater than the values for uniformity in the latest version of IES RP-8.00.

801.4 Illumination level of intersections. The maximum maintained average illumination in the intersection area shall be 2 times the average of the maintained footcandles of the two types of roads at the intersections. Intersections of Collector & Local Roads shall be 1.6 footcandles maximum and at Local & Local Roads shall be 1.4 footcandles maximum.

801.5 Minimum source efficacy. The minimum source efficacy to be used for light fixtures used in public right-of-way illumination shall be 60 lumens per watt.

DRAFT