



LAND DEVELOPMENT CODE AMENDMENT

PETITION

PL20180002632

ORIGIN

Growth Management Department (GMD)

HEARING DATES

BCC	TBD
CCPC	11/21/2019
	03/07/2019
	02/07/2019
DSAC	11/06/2019
	02/06/2019
DSAC-LDR	12/18/2018
	10/16/2018

SUMMARY OF AMENDMENT

This amendment establishes standards for outdoor lighting associated with single-family dwelling units in the Estates (E) zoning district. These standards are intended to prevent high-intensity outdoor lighting from negatively impacting neighboring residential properties.

LDC SECTION TO BE AMENDED

4.02.08 Outside Lighting Requirements

ADVISORY BOARD RECOMMENDATIONS

DSAC-LDR
Approval

DSAC
Denial

CCPC
TBD

BACKGROUND

Currently, there are no limitations in the Land Development Code with respect to outdoor lighting on residential properties with single-family dwellings. However, homeowners can purchase a variety of high intensity lighting fixtures at retail outlets which could have negative impact surrounding residential properties. The GMD has been unable to resolve complaints received by the Code Enforcement Division regarding outdoor residential lights shining toward neighboring homes.

At the Board of County Commissioners (Board) meeting on March 13, 2018, a member of the public requested an ordinance to address nuisance lighting on single-family properties (See Agenda Item 7). At the June 21, 2018, Budget Workshop, one Commissioner noted an awareness of lighting problems on residential properties, suggesting a need for County staff to address the issue.

As a remedy, this amendment creates standards applicable to single-family homes in the Estates Zoning District. The amendment requires that outdoor lights that exceed certain wattage or lumens be oriented away from abutting properties and roadways. Additional performance standards are included to ensure that lighting orientation avoids direct impacts on neighboring properties or roadways, including a maximum lighting height of 20 feet. Several exemptions are also included to account for common but unobtrusive lighting scenarios.

These standards represent a combination of lighting standards from nearby communities, including the City of Bonita Springs (See Exhibit A) and the *Joint IDA-IES Model Lighting Ordinance* (See excerpts in Exhibit B). Additionally, the amendment does not apply to commercial or multi-family residential development (three or more units).

Since a building permit is not typically required to install lighting fixtures for single-family dwellings, the proposed standards will be implemented through the code enforcement process when a complaint is issued. If a code violation is reported, homeowners could remedy a potential violation by repositioning the lights, using shielding, or installing new lighting fixtures that comply with the proposed standard. Examples of shielded fixtures are provided in Exhibit B. Other lighting requirements for single-family and multi-family development are provided for informational purposes in Exhibit C.

Figure 1. Comparison of efficacy by power (Joint IDA-IES Model Lighting Ordinance, pg. 19)

Output (Lumens)	Power (Watt)		
	Incan	CFL	LED
500	40	8 - 10	9
850	60	13 - 18	12 - 15
1,200	75	18 - 22	15
1,700	100	23 - 28	18

An explanation of all advisory board recommendations is provided in Exhibit D.

FISCAL & OPERATIONAL IMPACTS

This amendment could result in additional unexpected costs for homeowners by requiring them to replace light bulbs with lower lumens or to replace fixtures altogether. There are no anticipated fiscal impacts to the County associated with this amendment. The amendment will help the Code Enforcement Division to resolve some of the complaints regarding outdoor lighting.

GMP CONSISTENCY

In the limited areas where the Growth Management Plan (GMP) does address outdoor lighting, there is no specificity provided. Only the Conservation and Coastal Management Element (CCME) policies pertaining to wildlife protection, e.g. Policies 7.3.1 and 7.3.2 regarding sea turtles, may have applicability to the dwelling unit types addressed in this LDC amendment but, again, there is no specificity provided. Further, such lighting would have to comply with both this new LDC provision and the CCME policies.

EXHIBITS: A) Lighting Standards in Other Communities, B) Excerpts from Joint IDA-IES Model Lighting Ordinance, C) Residential Lighting Standards, D) Advisory Board Recommendations

Amend the LDC as follows:

4.02.08 - Outside Lighting Requirements

A. Lights on golf courses shall be located and designed so that no light is aimed directly toward property designated residential, which is located within 200 feet of the source of the light.

B. Specific height requirements in zoning districts.

1. GC—Twenty-five (25) feet

2. C-1—Twenty-five (25) feet

3. CF—Twenty-five (25) feet

C. Outdoor lights on Estates zoned lots with single-family dwellings.

1. Each outdoor light or fixture having an aggregate of more than 100 watts for incandescent bulb types, 26 watts for compact fluorescent bulb types, or 18 watts for LED bulb types shall be fully shielded, mounted, or aimed so that:

a) Light from luminaires does not enter the eye directly when viewed from abutting properties or roadways;

b) The luminaire or fixture does not produce direct uplight (no light is emitted above the horizontal plane of the light fixture);

c) The cone of light, including light from reflected surfaces, does not project onto a neighboring property; and

d) The maximum height of lighting fixtures, whether mounted on poles, walls, or by other means, shall be 20 feet as measured from the adjacent grade.

2. Exemptions.

a. Motion activated lighting that extinguishes the lights no more than five minutes after the area is vacated.

b. Security lighting activated on a temporary basis for no more than 30 minutes.

c. Seasonal holiday lighting from November 15 through January 15 and not more than 30 days use in any one calendar year for other times.

d. Underwater lighting in swimming pools and other water features.

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Exhibit A – Lighting Standards in Other Communities

Community	Standard	Citation
City of Bonita Springs	<p>“1. Existing Outdoor Lighting. The following standards apply to existing outdoor lighting installed and in existence as of February 1, 2008.</p> <p>a. Luminaire Standards. The following standards apply to luminaire designs.</p> <p>i. All light fixtures shall have bulbs that are fully recessed within the fixture and may not emit light above horizontal plane;</p> <p>ii. The cone of light shall not project on to a neighboring property.</p> <p>...</p> <p>2. New Outdoor Lighting. The following standards apply to new outdoor lighting installed after February 1, 2008, between the hours of 10:00 p.m. and 6:00 a.m.</p> <p>a. Luminaire Standards. The following standards apply to luminaire designs.</p> <p>i. All light fixtures shall have bulbs that are fully recessed within the fixture and may not emit light above horizontal plane;</p> <p>ii. The cone of light shall not project on to a neighboring property;</p> <p>iii. All luminaires shall have a maximum lamp wattage of 100 watts for incandescent bulb types and 26 watts for compact fluorescent bulb types;</p> <p>iv. Solar lights are encouraged.</p> <p>v. Light from a luminaire that projects on to roadways that causes glare, annoyance, discomfort, or loss of visual ability shall not be permitted;</p> <p>vi. Lighting that is directed in such a manner as to shine light rays above the horizontal plane shall not be permitted;</p> <p>vii. Flashing or moving lights that change at intervals more frequently than once each six seconds shall not be permitted with the exception of low wattage decorative lighting fixtures (comprised by incandescent bulbs of less than 8 watts each or other lamps of output less than 100 lumens each) used for decoration;</p> <p>viii. Luminaires activated by motion detectors shall not remain on for more than 5 minutes and may not be activated by movement that occurs outside property boundaries.”</p>	Chapter 10 Art. III. Div. 3 Sec. 10-102 (d)(1)-(2)

Exhibit A – Lighting Standards in Other Communities

<p>City of Naples</p>	<p>“(a) Permitted exterior lighting. Exterior lighting or light fixtures may be utilized at grade and at the 1st habitable floor of multifamily structures, provided that:</p> <p>(1) The lighting is confined to a front yard facing a public street, or to that portion of the facade facing a public street; and</p> <p>(2) The light source is directed only at the facade of the building.</p> <p>Lighting may also be utilized at grade to enhance landscape features. Exterior lighting shall be designed, arranged or shielded in such manner that all adjacent properties and the public roadways are protected from direct glare.</p> <p>(b) Prohibited lighting. The use of exterior lighting or light fixtures on any portion of the facade or roof of a multifamily structure above the 1st habitable floor shall not be permitted.</p> <p>(c) Exemptions. Warning lights, as required by state or federal agencies, and exterior lights used exclusively for and associated with outdoor walkways, stairs, hallways, pool areas, and living spaces such as balconies, terraces, screened porches, and similar spaces shall be exempt from the requirement as listed in subsection (b) of this section. Nonpermanent lighting, used exclusively during the holiday period from November 15 to January 15, is also excluded from this prohibition.</p> <p>(d) Nonconforming lighting. Nonconforming multifamily structures shall be brought into conformance with this section by April 30, 1998.”</p>	<p>Chapter 56 Art. III Sec. 56-89</p>
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Exhibit A – Lighting Standards in Other Communities

<p>City of St. Augustine Beach</p>	<p>Sec. 4. - Wall treatments, applied decoration. (a) Window area. The maximum window area pervious to interior lighting shall be ten (10) percent of exterior wall area. (b) Wall treatment. Wall treatment shall generally be lusterless and shall not contain areas illuminated by neon or similar lighting, murals, paintings, reflective surfaces, or other areas designed or intended to attract attention to the structure, provided that temporary seasonal holiday signs or lights may be permitted consistent with the requirements of the "Nights of Lights" celebration of the City of St. Augustine or emphasizing historic American holidays, meaning those days made a public holiday by the laws of Florida, the laws of the United States or by resolution of the city commission. (c) Lighting. The maximum height for all site lighting shall be eighteen (18) feet. All exterior lighting fixtures shall be oriented and designed so as not to interfere or distract attention of the drivers of vehicles upon adjacent streets or highways. All exterior lighting fixtures shall be shielded so as not to allow a direct light source to be visible on any adjacent residential property. Light spillage from within a building or reflected from surfaces of building shall be fully buffered by landscape so as not to impact adjacent residential properties.</p>	<p>Article XIII Appendix A. Sec. 4</p>
<p>Lee County (Upper Captiva Planning Area)</p>	<p>“All outdoor lighting, including lighting on docks and bulkheads, must be designed, installed, located, and maintained to be hooded, shielded, and/or aimed downward.”</p>	<p>Art. XI Division 4 Sec. 33-1736</p>
<p>City of Sanibel</p>	<p>“All exterior lighting shall be designed and installed to prevent glare and light trespass. Light shall not be allowed to cause glare affecting motorists, bicyclists, or other users of roads, driveways and bicycle paths. Light shall not trespass over property lines.” <i>(More detailed standards follow this section)</i></p>	<p>Art. XIV Div. 4 Sec. 12-997 (c)</p>
<p>Marco Island</p>	<p>“(a) Regulation of the intensity and glare of outdoor lighting shall be as follows: (1) No lighting source shall cause more than 1.0 footcandle of illumination to fall on adjoining residential single-family (RSF) zoned property.” <i>(Additional shielding standards follow this section)</i></p>	<p>Chapter 6 Art. V Sec. 6-145</p>

Exhibit A – Lighting Standards in Other Communities

Volusia County	No person may install, construct, erect, maintain, or control any outdoor lighting or outdoor lighting fixture on a residential structure, or on its surrounding premises, which directly illuminates beyond the adjacent residential structure's property line, between sunset and sunrise. For the purposes of this section, adjacent property shall include all property within 360 degrees of the subject property, notwithstanding an intervening right-of-way. For the purposes of this section, property line shall be an invisible plane extending vertically at a 90-degree angle from ground level to a point above the height of the highest structure on either the subject property or the adjacent property.	Sec. 50-480
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Exhibit B – Excerpts from Joint IDA-IES Model Lighting Ordinance

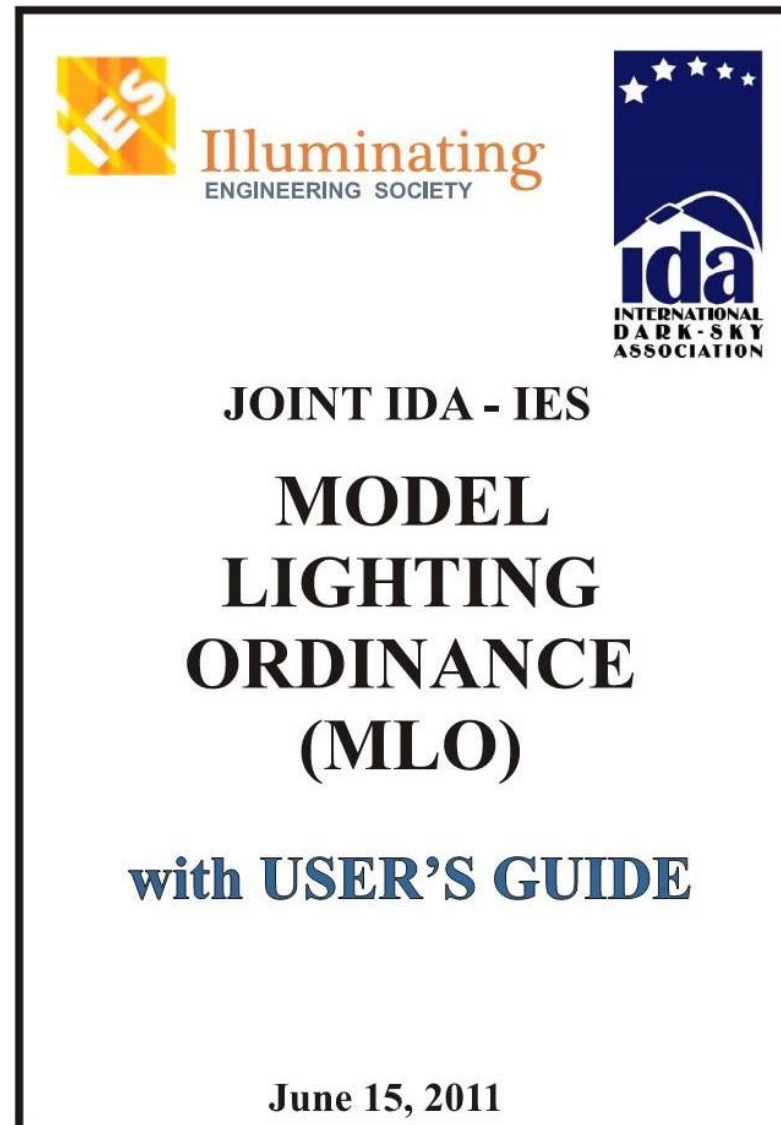


Exhibit B – Excerpts from Joint IDA-IES Model Lighting Ordinance

III. GENERAL REQUIREMENTS - User's Guide

This Section sets out the requirements that apply to all lighting, both residential and non-residential.

Each adopting jurisdiction should incorporate their existing standards as to when compliance with new regulations is required, when repair or remodeling triggers compliance and if the new ordinance will be retroactive to existing development. The Applicability section of this model ordinance should serve as a guide if the adopting jurisdiction does not have standards or policies in place. Likewise, the adopting jurisdiction should use their existing policies and definitions of what constitutes public monuments, and temporary and/or emergency lighting. Community attitudes and precedents should be taken into account in deciding to regulate seasonal holiday lighting.

EXEMPTIONS - User's Guide

This is standard language intended to prevent conflict of laws and to give the community the ability to set specific lighting requirements in special plans and under use permits. It can be amended to conform to similar language in other ordinances. For example, while public monuments, statuary, and flags should be lighted, the lighting also should be limited to avoid excess.

Lighting for streets, roads, and highways is usually regulated by a street lighting ordinance, and is not covered by this model ordinance. However, since street lighting can affect nearby areas, some recognition of its effect is appropriate. (See Section XI)

SIGN LIGHTING - User's Guide

A sign lighting ordinance is strongly recommended if not already in place. It should carefully limit lighting to prevent over-lighted signs from being used to circumvent lighting ordinances.

III. GENERAL REQUIREMENTS - Ordinance Text

A. *Conformance with All Applicable Codes*

All outdoor lighting shall be installed in conformance with the provisions of this Ordinance, applicable Electrical and Energy Codes, and applicable sections of the Building Code.

B. *Applicability*

Except as described below, all outdoor lighting installed after the date of effect of this Ordinance shall comply with these requirements. This includes, but is not limited to, new lighting, replacement lighting, or any other lighting whether attached to structures, poles, the earth, or any other location, including lighting installed by any third party.

Exemptions from III.(B.) The following are not regulated by this Ordinance

- a. Lighting within public right-of-way or easement for the principal purpose of illuminating streets or roads. No exemption shall apply to any lighting within the public right of way or easement when the purpose of the luminaire is to illuminate areas outside the public right of way or easement, unless regulated with a streetlighting ordinance.

Note to adopting agency: if using the street lighting ordinance (Section XI), this exemption should read as follows:

Lighting within the public right-of-way or easement for the principal purpose of illuminating roads and highways. No exemption shall apply to any street lighting and to any lighting within the public right of way or easement when the purpose of the luminaire is to illuminate areas outside of the public right of way or easement.

- b. Lighting for public monuments and statuary.
- c. Lighting solely for signs (lighting for signs is regulated by the Sign Ordinance).
- d. Repairs to existing luminaires not exceeding 25% of total installed luminaires.

Exhibit B – Excerpts from Joint IDA-IES Model Lighting Ordinance

LIGHTING CONTROLS - User's Guide

This section requires all outdoor lighting to have lighting controls that prohibit operation when sufficient daylight is available, and to include the capability, either through circuiting, dimming or alternating sources, to be able to reduce lighting without necessarily turning all lighting off.

III. GENERAL REQUIREMENTS (cont.) - Ordinance Text

- e. Temporary lighting for theatrical, television, performance areas and construction sites;
- f. Underwater lighting in swimming pools and other water features
- g. Temporary lighting and seasonal lighting provided that individual lamps are less than 10 watts and 70 lumens.
- h. Lighting that is only used under emergency conditions.
- i. In lighting zones 2, 3 and 4, low voltage landscape lighting controlled by an automatic device that is set to turn the lights off at one hour after the site is closed to the public or at a time established by the authority.

Exceptions to III. (B.) All lighting shall follow provisions in this ordinance; however, any special requirements for lighting listed in a) and b) below shall take precedence.

- a. Lighting specified or identified in a specific use permit.
- b. Lighting required by federal, state, territorial, commonwealth or provincial laws or regulations.

C. Lighting Control Requirements

1. Automatic Switching Requirements

Controls shall be provided that automatically extinguish all outdoor lighting when sufficient daylight is available using a control device or system such as a photoelectric switch, astronomic time switch or equivalent functions from a programmable lighting controller, building automation system or lighting energy management system, all with battery or similar backup power or device.

Exhibit B – Excerpts from Joint IDA-IES Model Lighting Ordinance

CURFEW REQUIREMENTS - User's Guide

The intent is to reduce or eliminate lighting after a given time. Benefits include reduced environmental impact, longer hours of improved astronomy, energy savings, and improved sleeping conditions for residents. Additionally, some police departments have indicated that post-curfew light reductions make drive-by patrolling easier because it allows them to see further into and through a site.

The authority should determine the time of curfew and the amount of lighting reduction based on the character, norms and values of the community.

Typically, curfews go into effect one hour after the close of business. Restaurants, bars and major entertainment facilities such as sports stadiums, may require the curfew go into effect two hours after the close of business. The authority may elect to have no curfew for facilities with shift workers and 24 hour operations, or to extend the curfew time to meet specific needs. The MLO can be modified to address those concerns.

Areas without street lights or with very low ambient light levels should consider turning off all non-emergency lighting at curfew while commercial areas or urban areas may prefer a reduction in lighting levels. A reduction of at least 30% is recommended for most uses.

III. GENERAL REQUIREMENTS (cont.) - Ordinance Text

Exceptions to III.(C.) 1. Automatic lighting controls are not required for the following:

- a. Lighting under canopies.
- b. Lighting for tunnels, parking garages, garage entrances, and similar conditions.

2. Automatic Lighting Reduction Requirements

The Authority shall establish curfew time(s) after which total outdoor lighting lumens shall be reduced by at least 30% or extinguished.

Exceptions to III.(C.) 2. Lighting reductions are not required for any of the following:

- a. With the exception of landscape lighting, lighting for residential properties including multiple residential properties not having common areas.
- b. When the outdoor lighting consists of only one luminaire.
- c. Code required lighting for steps, stairs, walkways, and building entrances.
- d. When in the opinion of the Authority, lighting levels must be maintained.
- e. Motion activated lighting.
- f. Lighting governed by special use permit in which times of operation are specifically identified.
- g. Businesses that operate on a 24 hour basis.

Exhibit B – Excerpts from Joint IDA-IES Model Lighting Ordinance

V. RESIDENTIAL LIGHTING - User's Guide

This section applies to single family home, duplexes, row houses, and low rise multi-family buildings of 6 dwelling units or less.

RESIDENTIAL LIGHTING EXCEPTIONS

The exceptions allow for typical lighting that might exceed the specified limits.

Landscape Lighting - While not common in residential areas, it can cause light pollution and light trespass if it is not controlled.

Lighting controlled by Vacancy (Motion) Sensor - Reduces light pollution and light trespass and should be encouraged.

RESIDENTIAL LIGHTING EXAMPLE

In this example on the following page, five different luminaires are used on a residential property. Each luminaire must comply to meet the requirements. The site plan following shows luminaire types followed by a tabulation of each luminaire, whether or not it is fully shielded, lamp type, and initial luminaire lumens. If the luminaire lumens are not known, multiply the initial lamp lumens by the luminaire efficiency. If the efficiency is not known, multiply the initial lamp lumens by 0.7 as a reasonable assumption. The maximum allowable lumen values come from Table G, based on the shielding classification and location on the site. In this case, each luminaire complies with the requirements of Table G.

Comparison of efficacy by power
(120 Volt Incandescent lamps)

Output (Lumens)	Power (Watt)		
	Incan	CFL	LED
500	40	8 - 10	9
850	60	13 - 18	12 - 15
1,200	75	18 - 22	15
1,700	100	23 - 28	18

V. RESIDENTIAL LIGHTING - Ordinance Text

A. General Requirements

For residential properties including multiple residential properties not having common areas, all outdoor luminaires shall be fully shielded and shall not exceed the allowed lumen output in Table G, row 2.

Exceptions

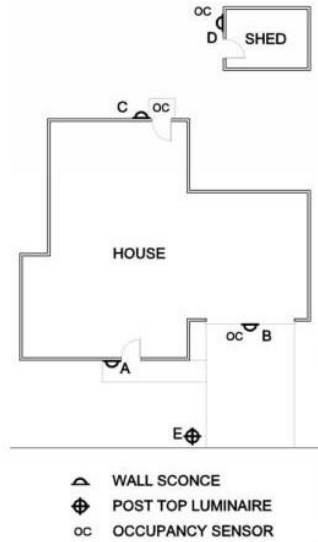
1. One partly shielded or unshielded luminaire at the main entry, not exceeding the allowed lumen output in Table G row 1.
2. Any other partly shielded or unshielded luminaires not exceeding the allowed lumen output in Table G row 3.
3. Low voltage landscape lighting aimed away from adjacent properties and not exceeding the allowed lumen output in Table G row 4.
4. Shielded directional flood lighting aimed so that direct glare is not visible from adjacent properties and not exceeding the allowed lumen output in Table G row 5.
5. Open flame gas lamps.
6. Lighting installed with a vacancy sensor, where the sensor extinguishes the lights no more than 15 minutes after the area is vacated.
7. Lighting exempt per Section III (B.).

B. Requirements for Residential Landscape Lighting

1. Shall comply with Table G.
2. Shall not be aimed onto adjacent properties.

Exhibit B – Excerpts from Joint IDA-IES Model Lighting Ordinance

V. RESIDENTIAL LIGHTING - User's Guide



Property Type: Residential Lighting Zone 1								
Luminaire Type	Location	Luminaire Description	Fully Shielded	Lamp Type	Initial Luminaire Lumens*	Maximum Allowed Initial Luminaire Lumens (Table G)	Controls	Compliant
A	Front Entry	Decorative wall sconce	No	9W CFL	420	420	None	Yes
B	Garage Door	Fully shielded wall pack	Yes	23W CFL	1050	1260	Occupancy Sensor	Yes
C	Back Entry	Decorative wall sconce	No	7W CFL	280	315	Occupancy Sensor	Yes
D	Shed Entry	Fully shielded wall pack	Yes	40W INC	343	1260	Occupancy Sensor	Yes
E	Driveway	Fully shielded post top	Yes	13W CFL	1260	1260	None	Yes

*Initial Luminaire Lumens are calculated by multiplying the total initial lamp lumens by the luminaire efficiency. If the luminaire efficiency is not known, assume an efficiency of 70% and multiply the lamp lumens value by 0.7.

Exhibit B – Excerpts from Joint IDA-IES Model Lighting Ordinance

IX. TABLES (cont.) - Ordinance Text

Table G - Residential Lighting Limits

Lighting Application	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Row 1 Maximum Allowed Luminaire Lumens* for Unshielded Luminaires at one entry only	Not allowed	420 lumens	630 lumens	630 lumens	630 lumens
Row 2 Maximum Allowed Luminaire Lumens* for each Fully Shielded Luminaire	630 lumens	1,260 lumens	1,260 lumens	1,260 lumens	1,260 lumens
Row 3 Maximum Allowed Luminaire Lumens* for each Unshielded Luminaire excluding main entry	Not allowed	315 lumens	315 lumens	315 lumens	315 lumens
Row 4 Maximum Allowed Luminaire Lumens* for each Landscape Lighting	Not allowed	Not allowed	1,050 lumens	2,100 lumens	2,100 lumens
Row 5 Maximum Allowed Luminaire Lumens* for each Shielded Directional Flood Lighting	Not allowed	Not allowed	1,260 lumens	2,100 lumens	2,100 lumens
Row 6 Maximum Allowed Luminaire Lumens* for each Low Voltage Landscape Lighting	Not allowed	Not allowed	525 lumens	525 lumens	525 lumens

* Luminaire lumens equals Initial Lamp Lumens for a lamp, multiplied by the number of lamps in the luminaire

TABLE G RESIDENTIAL LIGHTING - User's Guide

Residential Light Levels

Most residential lighting has traditionally used incandescent lamps which are identified by their wattage. However, since new technologies provide more light for fewer watts, it is no longer possible to regulate residential lighting solely by providing a maximum wattage. Table G, therefore, lists maximum initial luminaire lumens only.

Exhibit B – Excerpts from Joint IDA-IES Model Lighting Ordinance



USER'S GUIDE - Page 35

X. DEFINITIONS - Ordinance Text	
<i>Emergency conditions</i>	Generally, lighting that is only energized during an emergency; lighting fed from a backup power source; or lighting for illuminating the path of egress solely during a fire or other emergency situation; or, lighting for security purposes used solely during an alarm.
<i>Footcandle</i>	The unit of measure expressing the quantity of light received on a surface. One footcandle is the illuminance produced by a candle on a surface one foot square from a distance of one foot.
<i>Forward Light</i>	For an exterior luminaire, lumens emitted in the quarter sphere below horizontal and in the direction of the intended orientation of the luminaire.
<i>Fully Shielded Luminaire</i>	A luminaire constructed and installed in such a manner that all light emitted by the luminaire, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal plane through the luminaire's lowest light-emitting part.
<i>Glare</i>	Lighting entering the eye directly from luminaires or indirectly from reflective surfaces that causes visual discomfort or reduced visibility.
<i>Hardscape</i>	Permanent hardscape improvements to the site including parking lots, drives, entrances, curbs, ramps, stairs, steps, medians, walkways and non-vegetated landscaping that is 10 feet or less in width. Materials may include concrete, asphalt, stone, gravel, etc.
<i>Hardscape Area</i>	The area measured in square feet of all hardscape. It is used to calculate the Total Site Lumen Limit in both the Prescriptive Method and Performance Methods. Refer to Hardscape definition.

ORDINANCE TEXT - Page 35

Exhibit C – Residential Lighting Standards

National Electrical Code- Article 210 Branch Circuits (Applicable to single- and multi-family development)

210.70 – Lighting Outlets Required

(A) Dwelling Units

(2) **Additional Locations.** Additional lighting outlets shall be installed in accordance with (A)(2)(a), (A)(2)(b) and (A)(2)(c).

(a) (not applicable)

(b) For dwelling units, attached garages, and detached garages with electrical power, at least one wall switch-controlled lighting outlet shall be installed to provide illumination on the exterior side of outdoor entrances or exits with grade level access. A vehicle door in a garage shall not be considered as an outdoor entrance or exit.

(c) Where one or more lighting outlet(s) are installed for interior stairways, there shall be a wall switch at each floor level, and landing level that includes an entryway, to control the lighting outlet(s) where the stairway between floor levels has six risers or more.

* * * * *

Collier County LDC

4.05.02 D. – Design Standards (Off-Street Parking and Loading) (Applicable to residential development with off-street parking)

Parking lots shall be so lighted, if lighted, as to shield **streets** and all **adjacent** properties from direct glare, excessive light, and hazardous interference with automotive and pedestrian traffic. For projects subject to architectural design standards, see LDC section 5.05.08 F. for related provisions.

* * * * *

6.06.03 – Streetlights (Applicable to streetlights only)

- A. Streetlights shall be designed and installed utilizing the IES standards for each **street**, intersection at required intervals along each **street** and at the end of each **cul-de-sac**. The IES standards for this **street** lighting are per IESNA RP 8.00, except as below:
- B. At the entry/exit of any residential or commercial **development** approved through a SDP, SDPA, or PPL located on a public **collector** or **arterial street**, the following additional standards shall apply. For projects subject to architectural design standards, see LDC section 5.05.08 F. for related provisions.
 - 1. At the points where the edges of pavement of the entrance road meet the intersecting **right-of-way** line, the illumination level shall be at or between, a minimum of 2.0 foot candles and maximum of 5.0 foot candles. In cases when this Code may conflict with any other lighting codes, requirements, policies, or recommendations relating to the

Exhibit C – Residential Lighting Standards

spillover of light outside of project boundaries, public safety needs shall be evaluated by staff and shall take precedence in the required placement of fixtures.

1. A full cutoff fixture is required on both sides of each entry or exit outside of the intersecting public **right-of-way** except when located at a single-lane one-way driveway. In such case, one (1) fixture will be allowed but it shall meet minimum required foot-candle values. If the applicant can show the existing illumination levels from existing roadway lighting meet the required foot candles through a photometric lighting plan (calculated or by field measurement) certified by an engineer, licensed in the State of Florida, the county manager or designee may waive or modify the requirement for additional lighting at the point where the entry road intersects the public **right-of-way**.
- C. All sidewalks not directly lighted by street lighting that interconnect **developments** must be lighted to pedestrian level standards per IESNA RP-8-00.
- D. Wherever, in the opinion of the County Manager or designee, based on an engineer's determination, a dangerous condition is created by sharp curves, irregularities in **street** alignment, or other similar circumstances, additional lights may be required. Streetlights and mounting poles shall be wired for underground service. All conduits and casing to be placed under the roadway required for the lights must be installed during each construction phase prior to roadway subbase completion. Streetlights shall be designed and installed in either of 2 ways:
1. Where streetlights are to be installed on **private streets**, the developer, through an electrical engineer registered in the State of Florida, shall design and install the **street** lighting system subject to the approval of the County Manager or designee. Upon completion of the streetlights, they shall be owned, operated, and maintained by the property owners' association, a **condominium** association, cooperative association, or other similar entity, or the public utility furnishing the electric service.
 2. Where the streetlights are to be installed on **public streets**, the developer may elect to initiate a municipal services benefit or taxing unit in coordination with the County Manager or designee in order to provide **street** lighting. If the municipal services benefit or taxing unit is approved by the BCC, the County Manager or designee shall authorize the public utility to design, install, and maintain the **street** lighting system at no cost to the County's general fund. If no municipal services benefit or taxing unit is created for public **streets**, the provision of this section shall govern the design, construction, and maintenance of streetlights.

Exhibit D – Advisory Board Recommendations

DSAC-LDR Subcommittee Recommendation

The DSAC-LDR Subcommittee reviewed a previous version of this amendment on October 16, and December 18, 2018, and recommended approval with no changes to the amendment.

DSAC Recommendation

The DSAC reviewed a previous version of this amendment on February 6, 2019, and recommended denial but indicated it was amenable to several changes to the amendment, including:

- Increasing the wattage of lighting to which the provision is applicable,
- Clarifying the ambiguity regarding the direction of lights, and
- Allowing timers and motion sensors to be used to comply with the new standards.

The DSAC reviewed the amendment again on November 6, 2019, and recommended denial, indicating that the amendment is too restrictive, too subjective, and is an over-broad response to a problem that is not widespread. Additionally, it was noted that this amendment would create a different standard for the Estates that does not apply elsewhere.

CCPC Recommendation

The CCPC reviewed the amendment on February 7, 2019, and recommended modifying the standards to address higher lighting levels and provide foot-candle standards that will be easier to enforce. Additionally, the CCPC suggested requiring shielding and to consider the differences in ambient lighting in urban and rural settings when establishing maximum light levels.

The CCPC reviewed the amendment again on March 7, 2019, however, it was determined that a footcandle standard may not be effective on small sites. Staff requested additional time to revise the amendment and the CCPC recommended using standards from other communities and the *Joint IDA-IES Model Lighting Ordinance*.