

**SECTION III: A MODEL FLORIDA SEA TURTLE FRIENDLY LIGHTING ORDINANCE
WITH COMMENTARY
LAST REVISED APRIL 15, 2014**

**ORDINANCE NUMBER 20XX-XX
LAND DEVELOPMENT CODE**

ARTICLE 1. BASIS OF ORIDNANCE

[Sections I and II omitted].

Section III. Ordinance Purpose and Objectives

The purpose of this Ordinance is to protect nesting sea turtles on the beaches in the City/County of _____ by ensuring that their nesting habitat is not degraded by artificial light.¹ The objective of the ordinance is to ensure artificial light does not interfere with sea turtle nesting and hatching events through the design and implementation of “sea turtle friendly” lighting systems that properly exclude the beach from their range. In order to further the objective of full implementation, this Ordinance also includes provisions designed to educate residents and beach users in the City/County of _____ on the benefits of sea turtle friendly lighting and provides for monthly inspections to ensure compliance with the acceptable lighting standards.

Section IV. Definitions

1. **Artificial light** means the light emanating from any human-made device.²

¹ There are two forms of artificial light that have the most significant impact on sea turtle nesting habitats. The first is “light trespass” (often called “obtrusive light”), which refers to light spilling out of the area it is intended to illuminate. The second is “glare,” which refers to unwanted source luminance or brightness from an observer’s perspective. Glare occurs when visual field brightness is greater than the luminance to which the eyes are adapted, regardless of whether this light actually illuminates the area in which the observer is located. Glare causes the eye to continually be drawn toward the bright source and may also prevent the observer from adequately viewing an intended target. For example, an outdoor artificial light on a building façade may not measurably illuminate the beach but may still be visible to sea turtle hatchlings. See Philip M. Garvey, *Environmental Impact of On-Premise Identification Sign Lighting With Respect to Potential Light Trespass, Sky Glow, Glare*, United States Sign Council Foundation, ii (2004); Douglas Mace, et al., *Countermeasures for Reducing the Effects of Headlight Glare*, AAA Foundation for Traffic Safety, 13 (2001). An effective lighting ordinance will ideally address both forms of artificial light in order to provide meaningful protection to sea turtle nesting habitats. Because glare, more so than light trespass, presents greater challenges for municipal or county enforcement officers (discussed in detail below), this model ordinance provides two alternative lighting standards to be applied within the Sea Turtle Friendly Lighting District. One standard addresses light trespass alone, while the second (demarcated with an asterisk) incorporates both light trespass and glare. [See footnote 2 for a note on the third major form of artificial light.]

² Fla. Admin. Code 62B-55.002 (2012). In addition to light trespass and glare, a third form of artificial light, “sky glow,” may also have a negative effect on sea turtle nesting habitats. Sky glow refers to general sky brightness caused by the scattering of electric light into the atmosphere, most notably from outdoor lighting in urban areas. Illuminating Engineering Society of North America, *Addressing Obtrusive Light (Urban Sky Glow and Light Trespass) in Conjunction with Roadway Lighting*, Technical Manual TM-10-00, 1 (2000, reaffirmed 2011). Sky glow has long been a concern of astronomers and measures have been taken to reduce its effects. See generally the

2. **Beach** means the zone of unconsolidated material that extends landward from the mean low water line to the place where there is marked change in material or physiographic form, or to the line of permanent vegetation.³
3. **Cumulatively** means illumination by numerous artificial light sources that as a group illuminate any portion of the beach.
4. **Directly illuminate** means illumination as the result of an artificial light source and visible to an observer standing on the beach.
- 4.1 ***Directly visible** means the point source of an artificial light (e.g. bulb, lamp, or glowing element) are visible to an observer standing on the beach.
5. **Dune** means any mound, bluff or ridge of loose sediment, usually sand-sized sediment, lying upland of the beach and deposited by any natural or artificial mechanism, which may be bare or covered with vegetation and is subject to fluctuations in configuration and location.⁴
6. **Egress lighting** means emergency lighting used in commercial buildings as a safety precaution for power outages that allows individuals to safely navigate their way out of the building.
7. **Fully shielded** means that a light fixture is constructed in such a manner that the point source of light of the fixture is not directly visible from the beach.
8. **Full cut-off** means a lighting fixture constructed in such a manner that all light emitted by the fixture, either directly from the point source, or indirectly by reflection or refraction from any part of the point source, is projected below the horizontal plane as determined by photometric test or certified by the manufacturer.
9. **Glare** means unwanted source luminance or brightness visible to the eye of an observer located on the beach, regardless of the observer's distance from the light source or whether the light source measurably illuminates any area of the beach.⁵
10. **Illuminance** means the amount of light projected from a source that reaches a surface from any distance, lighting fixture array, or direction.⁶
11. **Illuminate** means that more than zero footcandles of artificial light can be measured.
12. **Indirectly illuminate** means illumination as a result of an artificial light source when the artificial light source is not visible to an observer standing on the beach, but the lumen output is reaching the beach. This definition does not include illumination generated from interior lighting that conforms to the requirements of Section II.7 under Article III of this ordinance (requiring tinted windows).
- 12.1 ***Indirectly visible** means visible as a result of the reflection of the point source of an artificial light (e.g. bulb, lamp, or glowing element) on structures, buildings, or landscaping visible to an observer

work of the International Dark Sky Association, available at www.darksky.org. This form of artificial light, however, is beyond the scope of this model ordinance.

³ Fla. Admin. Code 62B-33.002 (2012).

⁴ *Id.*

⁵ Definition adapted from: Philip M. Garvey, *Environmental Impact of On-Premise Identification Sign Lighting With Respect to Potential Light Trespass, Sky Glow, Glare*, United States Sign Council Foundation, ii (2004).

⁶ *Id.* at 5.

standing on the beach. This definition does not include illumination generated from interior lighting that conforms to the requirements of Section II.7 under Article III of this ordinance (requiring tinted windows).

13. **Light trespass** means light spilling out of the area purposefully illuminated.
14. **Long wavelength** means a luminaire emitting light wavelength of 580 nanometers or greater.
15. **Luminance** means the physical measure of the stimulus, which produces the sensation of brightness.⁷
16. **Nesting season** means the period from May 1 through October 31 of each year for all areas within the City/County of all counties except Brevard, Indian River, St. Lucie, Martin, Palm Beach, and Broward. Nesting season for Brevard, Indian River, St. Lucie, Martin, Palm Beach, and Broward counties means the period from March 1 through October 31 of each year (*due to the earlier nesting times for Leatherback Sea Turtles in these counties*).⁸
17. **Nighttime** means the locally effective time period between sunset and sunrise.⁹
18. **Outdoor area** means any portion of a property that could have an artificial light source not attached to a permanent structure, and is not primarily lighting a parking area or roadway.
19. **Point source** means the bulb, lamp, or glowing elements of a fixture from which light is emitted.
20. **Sea turtle** means any turtle, including all life stages from egg to adult, of these species: Green (*Chelonia mydas*), Leatherback (*Dermochelys coriacea*), Loggerhead (*Caretta caretta*), Hawksbill (*Eretmochelys imbricata*), and Kemp's Ridley (*Lepidochelys kempi*).¹⁰
21. **Tinted glass** means any glass treated to achieve an industry-approved, inside-to-outside light transmittance value. Such transmittance is limited to the visible spectrum (400-700 nanometers) and is measured as the percentage of light that is transmitted through the glass.

ARTICLE II. SEA TURTLE LIGHTING DISTRICT

Section I. Applicability

1. An overlay district, known as the *Sea Turtle Friendly District*, is hereby established within the City/County of _____.
2. The *Sea Turtle Friendly District* shall include all properties within the City/County of _____ that may directly, indirectly, or cumulatively illuminate the beach with artificial light at any time, and regardless of whether those properties are beachfront properties.
 - 2.1 *The *Sea Turtle Friendly District* shall include all properties within the City/County of _____, regardless of whether those properties are beachfront properties, that either 1)

⁷ *Id.* at ii.

⁸ *Id.*

⁹ Fla. Admin. Code 62B-55.002 (2012).

¹⁰ Fla. Admin. Code 62B-33.002 (2012).

directly, indirectly, or cumulatively illuminate the beach with artificial light at any time or 2) whose artificial lighting may directly or indirectly be visible to an observer standing on the beach, regardless of whether the light illuminates the beach.

3. The provisions of this Ordinance apply to all buildings and related infrastructure, including landscaping, as well as all other activities within the *Sea Turtle Friendly District*.

[Comment: This model ordinance establishes an overlay district for the purpose of implementing the ordinance. None of the ordinances reviewed used this approach and the ordinance could be applied by simply consolidating (2) and (3) above and making it applicable to:

- “all properties within the City/County of _____ that may directly, indirectly, or cumulatively illuminate the beach with artificial light at any time, and regardless of whether those properties are beachfront properties.” **OR**
- *all properties within the City/County of _____, regardless of whether those properties are beachfront properties, that either 1) directly, indirectly, or cumulatively illuminate the beach with artificial light at any time or 2) whose artificial lighting may directly or indirectly be visible to an observer standing on the beach, regardless of whether the light illuminates the beach”

However, creating a district may have other benefits, including incorporating other Sea Turtle Friendly practices not related to lighting, as well as raising awareness through signage, and so on].

Section II. Annual Public Notice

At least thirty days prior to the commencement of every sea turtle nesting season, the City/County of _____ shall provide written notice of the provisions contained in this Ordinance to each property within the *Sea Turtle Friendly District*.

ARTICLE III. LIGHTING PROVISIONS

Section I. Standards Applicable to All Lighting in the *Sea Turtle Friendly District*

Alternative 1:

All lighting in the Sea Turtle Friendly District shall be designed so that the point source of light or any reflective surface of the light fixture shall not directly, indirectly, or cumulatively illuminate the beach.

[Comment to Alternative 1. Alternative 1 provides an objective standard by which to control illuminance of the beach caused by artificial light, where illuminance is defined as the amount of light projected from a source that reaches a surface from any distance, lighting fixture array, or direction.¹¹ To measure illuminance, one measures the light that reaches a surface at some distance from the source.¹² Such a standard is easily measured in the field by an average light meter (such as a meter purchased from a camera store).¹³

An ordinance that focuses exclusively on the objectively measurable illuminance of a beach, however, addresses only the issue of light trespass, that is, light that spills out of the area purposefully illuminated;

¹¹ Philip M. Garvey, *Environmental Impact of On-Premise Identification Sign Lighting With Respect to Potential Light Trespass, Sky Glow, Glare*, United States Sign Council Foundation, 5 (2004).

¹² *Id.*

¹³ Carl Shaflick, *Environmental Effects of Roadway Lighting*, Department of Civil Engineering of the University of British Columbia, 9 (1997).

the negative effects of glare are left unregulated by Alternative 1.¹⁴ Technical reports in the field of light engineering have acknowledged the limitations inherent in local ordinances that address only light trespass problems: “While such regulations enable easy measurement by municipal officials, they do little to help those who are troubled by ‘bright’ luminaire that may be located blocks—even miles—away in an otherwise dark field of view.”¹⁵ While Alternative 1 provides an objective measurement for enforcement of lighting standards within the Sea Turtle Friendly District, it fails to address potential negative impacts of glare generated by light sources *visible* from the beach but that do not necessarily *illuminate* the beach.]

***Alternative 2:**

All lighting in the Sea Turtle Friendly District shall be designed so that the point source of light or any reflective surface of the light fixture shall not directly, indirectly, or cumulatively illuminate the beach, nor shall it be directly or indirectly visible to an observer standing on the beach.

[**Comment to Alternative 2.** Alternative 2 addresses both forms of artificial light that may affect sea turtle nesting habitats, illuminance *and* glare. Under Alternative 2, illuminance may be measured objectively with a light meter as under Alternative 1. However, glare (light visible from the beach that does not necessarily illuminate the beach) presents a challenge for objective measurement by municipal or county enforcement officers in relation to sea turtle nesting habitats.

Light engineers have studied the issue of glare primarily in the contexts of light pollution and roadway safety. Technical reports in this field identify two primary categories of glare, namely disability glare (created by a light so bright, such as the headlights of another car, that it results in a measurable reduction in a driver’s ability to perform visual tasks)¹⁶ and discomfort glare (created by a bright light that causes a level of subjective discomfort or annoyance).¹⁷ Engineers have created formulas by which to identify objective thresholds for ordinances addressing disability glare using measures of light source luminance (a different measure than *illuminance*) and background luminance.¹⁸ In contrast, discomfort glare is a highly subjective measurement dependent on the sensitivity of the driver.¹⁹

Although objective thresholds for light brightness causing disability glare may be set in the context of roadway safety, the disability/discomfort distinction does not apply to sea turtle nesting habitats. In relation to sea turtles, “there is no single, measurable level of artificial brightness on nesting beaches that is acceptable for sea turtle conservation.”²⁰ Research suggests that if a light can be seen by an observer on the beach, then the light can affect sea turtles.²¹ This includes both light *directly* visible from the beach and light reaching the beach *indirectly* by reflecting off trees and buildings.²²

¹⁴ See footnote 1, *supra*.

¹⁵ Illuminating Engineering Society of North America, *Addressing Obtrusive Light (Urban Sky Glow and Light Trespass) in Conjunction with Roadway Lighting*, Technical Manual TM-10-00, 2 (2000, reaffirmed 2011).

¹⁶ Douglas Mace, et al., *Countermeasures for Reducing the Effects of Headlight Glare*, AAA Foundation for Traffic Safety, 15 (2001).

¹⁷ *Id.* at 16.

¹⁸ *Id.*

¹⁹ Philip M. Garvey, *Environmental Impact of On-Premise Identification Sign Lighting With Respect to Potential Light Trespass, Sky Glow, Glare*, United States Sign Council Foundation, 17 (2004).

²⁰ Blair E. Witherington and R. Erik Martin, *Understanding, Assessing, and Resolving Light-Pollution Problems on Sea Turtle Nesting Beaches*, Florida Marine Research Institute and the Florida Fish and Wildlife Conservation Commission, v (2000).

²¹ *Id.* at 16.

²² *Id.*

This no tolerance policy on light reaching the beach presents a challenge for objective enforcement of the ordinance, as a determination as to whether light is directly or indirectly visible from the beach naturally depends on the particular ocular sensitivities of each individual enforcement officer or reporting citizen. However, subjective enforcement methods of this nature have been upheld by Florida courts.

Although there is not yet case law in Florida addressing a challenge to a lighting ordinance, a helpful analogy may be drawn between the lighting ordinance's "directly or indirectly visible" measurement and a common standard contained in Florida noise ordinances and statutes, "plainly audible." In *State v. Catalano* 104 So. 3d 1069 (Fla. 2012), the Florida Supreme Court resolved a split between the 5th DCA and 2nd DCA as to whether the "plainly audible" standard used for the regulation of noise levels was unconstitutionally vague, overbroad, arbitrarily enforceable, or impinging on free speech rights. The Court stated that to withstand constitutional scrutiny for vagueness, "statutes do not have to set determinate standards or provide mathematical certainty."²³ Instead, a statute must "provide persons of common intelligence and understanding adequate notice of the proscribed conduct."²⁴ The Court held that the "plainly audible" standard met this requirement:

Although it is true that each police officer may have different auditory sensitivities, the "plainly audible" beyond twenty-five feet standard provides fair warning of the prohibited conduct and provides an objective guideline—distance—to prevent arbitrary and discriminatory enforcement so that basic policy matters are not delegated to policemen, judges, and juries for resolution on an ad hoc and subjective basis.²⁵

The Court went on to discuss numerous other cases within the state and around the country in which similar statutes were upheld in the face of vagueness challenges.²⁶

The "plainly audible" statute in *Catalano* was struck down, however, for the alternative reason that it swept too broadly and infringed on the right to play amplified music, an established fundamental right protected under the Free Speech Clause of the First Amendment.²⁷ In order to avoid invalidation of the lighting ordinance on this ground, a local government may consider including an exception to the ordinance's prohibitions for sources of light that may implicate fundamental rights such as an art installation. It is unlikely a court would classify the typical lighting of property as a fundamental right.

Section II. Exterior Lighting Affixed to Structures

1. All lighting affixed to the exterior of permanent structures shall be long wavelength and fully shielded.
2. All non-egress lighting affixed to the exterior of permanent structures shall not directly, indirectly, or cumulatively illuminate the beach.
- 2.1 *All non-egress lighting affixed to the exterior of permanent structures shall not directly, indirectly, or cumulatively illuminate the beach, nor shall it be directly or indirectly be visible to an observer standing on the beach.

²³ *State v. Catalano* 104 So. 3d 1069, 1076 (Fla. 2012).

²⁴ *Id.* at 1075.

²⁵ *Id.* at 1076.

²⁶ *See, e.g., Davis v. State*, 272 Ga. 818, 820 (2000) (finding that a statute which prohibits amplified sound from a vehicle which is "plainly audible" at 100 feet is not vague and stating that it would belie credibility to find that persons of ordinary intelligence do not know what it means for amplified sound to be "plainly audible" at a distance greater than one-hundred feet).

²⁷ *State v. Catalano* 104 So. 3d 1069, 1080 (Fla. 2012).

3. Lighting at egress points shall be limited to the minimum number of fixtures and footcandles necessary to meet federal, state, and local safety requirements.²⁸
4. Lighting affixed to the exterior of permanent structures shall consist of either²⁹:
 - a. Wall or ceiling down-light fixtures, equipped with a well-recessed light source and interior dark-colored, non-reflective baffles or louvers, mounted at a maximum height, measured from the bottom of fixture, of eight feet above the adjacent floor or deck, or
 - b. Louvered wall fixtures, equipped with downward-directed louvers that completely hide the light source, with the bottom of fixture mounted 12 inches or less above the adjacent floor or deck, or
 - c. Bollard-type fixtures, which do not extend more than 42 inches above the adjacent floor or deck, measured from the bottom of fixture, equipped with downward-directed louvers that completely hide the light source, and externally shielded on the side facing the beach.
5. Balcony lights on the seaward and shore-perpendicular sides of permanent structures shall be turned off at all times during nighttime in sea turtle nesting season.
6. Interior locations including but not limited to stairwells, elevators, parking garages, or courtyards that allow light to escape through windows or other openings shall not directly, indirectly, or cumulatively illuminate the beach.
- 6.1 *Interior locations including but not limited to stairwells, elevators, parking garages, or courtyards that allow light to escape through windows or other openings shall not directly, indirectly, or cumulatively illuminate the beach, nor shall they be directly or indirectly visible to an observer standing on the beach.
7. All windows and glass doors on the seaward and shore-perpendicular sides of any structures shall be designed for a light transmittance value³⁰ of 15% or less through the use of tinted glass, window film, or screens.
8. Emergency lights shall be on a separate circuit and activated only during power outtages or other situations in which emergency lighting is necessary for public safety.

Section III. Outdoor Areas

1. All lighting of outdoor areas shall be long wavelength and fully shielded.
2. Outdoor lighting that projects light upward shall be prohibited.
3. Lighting of outdoor areas shall consist of either:³¹

²⁸ See Fla. Building Code, Chapter 10, Section 1006.

²⁹ [Adapted from] “Multi-Family, Public Facility and Commercial Lighting Guidelines” in *Marine Turtle Lighting Guidelines*, Florida Department of Environmental Protection (2013) (unpublished draft on file with the authors).

³⁰ Light Transmittance Value means the percentage of light that is transmitted through the glass from the inside to the outside of the window or door. See Fla. Admin. Code 62B-55.002 (20) (2012).

- a. Ground-level downward-directed fixtures, equipped with interior dark-colored, non-reflective baffles or louvers, mounted either with a wall mount on walls or piles facing away from the beach, or
 - b. Bollard-type fixtures, which do not extend more than 42 inches above the adjacent floor or deck, measured from the bottom of fixture, equipped with downward-directed louvers that completely hide the light source, and externally shielded on the side facing the beach.
4. Lighted signs shall not be located on the seaward and shore-perpendicular sides of any structures, and shall not directly, indirectly, or cumulatively illuminate the beach.
 - 4.1 *Lighted signs shall not be located on the seaward and shore-perpendicular sides of any structures, and shall not directly, indirectly, or cumulatively illuminate the beach, nor shall they be directly or indirectly visible to an observer standing on the beach.
 5. Pond lights and fountain lights shall not be located on the seaward and shore-perpendicular sides of any structures, and shall not directly, indirectly, or cumulatively illuminate the beach.
 - 5.1 *Pond lights and fountain lights shall not be located on the seaward and shore-perpendicular sides of any structures, shall not directly, indirectly, or cumulatively illuminate the beach, nor shall they be directly or indirectly visible to an observer standing on the beach.
 6. Fire pits shall be located landward of the most seaward dune and shielded with an opaque structure or partition, and shall not directly, indirectly, or cumulatively illuminate the beach.
 - 6.1 *Fire pits shall be located landward of the most seaward dune and shielded with an opaque structure or partition, and shall not directly, indirectly, or cumulatively illuminate the beach, nor shall they be directly or indirectly visible to an observer standing on the beach.

Section IV. Parking Areas And Roadways

1. All lighting of parking areas and roadways shall be long wavelength, fully shielded, and full cut-off.
2. Parking area and roadway lighting shall be shielded from the beach via vegetation, natural features, or artificial structure rising from the ground that prevent artificial light sources, including but not limited to vehicular headlights, from directly, indirectly, or cumulatively illuminating the beach.³²
- 2.1 *Parking area and roadway lighting shall be shielded from the beach via vegetation, natural features, or artificial structure rising from the ground that prevent artificial light sources, including but not limited to vehicular headlights from directly, indirectly, or cumulatively illuminating the beach and that ensure such light is not directly or indirectly visible to an observer standing on the beach.
3. Lighting of roadways shall produce no more than 1.0 footcandles (on average) of light in any location.³³
4. Lighting of parking areas and roadways shall consist of either³⁴:

³¹ [Adapted from] "Landscape Lighting Guidelines" in *Marine Turtle Lighting Guidelines*, Florida Department of Environmental Protection (2013) (unpublished draft on file with the authors).

³² [Adapted from] "Parking Area and Roadway Lighting Guidelines" in *Marine Turtle Lighting Guidelines*, Florida Department of Environmental Protection (2013) (unpublished draft on file with the authors).

³³ *Id.* at Table 7.3.1.

- a. Ground-level downward-directed fixtures, equipped with interior dark-colored, non-reflective baffles or louvers, mounted either with a wall mount on walls or piles facing away from the beach, or
 - b. Bollard-type fixtures, which do not extend more than 42 inches above the adjacent floor or deck, measured from the bottom of fixture, equipped with downward-directed louvers that completely hide the light source, and externally shielded on the side facing the beach, or
 - c. Embedded roadway lighting systems, or
 - d. Pole-Mounted Lights, if required, which shall adhere to the restrictions located in subsection (5).
5. Pole-mounted lights shall only be used in parking areas and roadways when mounting the lights at lower elevations cannot practicably comply with minimum light levels set forth in applicable federal and state laws designed to protect public safety. If required, pole-mounted lights shall be:
- a. Located on the landward sides of buildings in locations that will not directly, indirectly, or cumulatively illuminate the beach,
 - a.1 *Located on the landward sides of buildings in locations that will not directly, indirectly, or cumulatively illuminate the beach, or in which they will not directly or indirectly be visible to an observer standing on the beach.
 - b. Mounted no higher than 12 feet above the ground on arterial roadways or 20 feet above the ground if required on Department of Transportation right-of-ways³⁵, and
 - c. Full cut-off, downward-directed onto non-reflective surfaces.
6. Equipment yards, storage yards, and temporary security lights shall also adhere to the lighting restrictions contained in this Section.

Section V. Pool Areas

- 1. Lighting of pool decks, pool facilities, swimming pools, and spas shall be long wavelength and fully shielded.
- 2. Above-water lighting of pool decks, pool facilities, swimming pools, and spas shall be turned off during nighttime in sea turtle nesting season when closed. The use of an automatic timer is acceptable.
- 3. Above-water lighting of pool decks, pool facilities, swimming pools, and spas shall otherwise adhere to the applicable requirements for acceptable light fixtures contained in Section 1 and Section 2 of this Part.
- 4. Underwater lighting of pools or spa light shall:
 - a. Be downward-directed,

³⁴ [Adapted from] “Parking Area and Roadway Lighting Guidelines” in *Marine Turtle Lighting Guidelines*, Florida Department of Environmental Protection (2013) (unpublished draft on file with the authors).

³⁵ *Id.*

- b. Not directly, indirectly, or cumulatively illuminate the beach, and
- c. Produce no more than 0.5 footcandles of light above the water surface.

4.1 *Underwater lighting of pools or spa light shall not directly, indirectly, or cumulatively illuminate the beach, nor shall it be directly or indirectly visible to an observer standing on the beach.

Section VI. Pier Structures

- 1. Lighting of pier structures projecting over the beach or over water shall be:
 - a. Long wavelength and fully shielded, and
 - b. Mounted as low to the deck as possible to prevent light pollution or spillage beyond the walking surface, and
 - c. Shall consist of:³⁶
 - 1. Recessed railing down-light fixtures, equipped with downward-directed louvers and interior dark-colored, non-reflective baffles, or
 - 2. Bollard-type fixtures, which do not extend more than 42 inches above the adjacent floor or deck, measured from the bottom of fixture, equipped with downward-directed louvers that completely hide the point source of light, and externally shielded on the side facing the beach, or
 - 3. Embedded lighting systems.

Section VII. Dune Crossovers And Beach Access Points

- 1. Lighting of dune crossovers and beach access points shall be prohibited.³⁷

Section VIII. Special Events, Motor Vehicles, and Temporary Lighting

- 1. Lighting associated with a special event that may directly, indirectly, or cumulative illuminate the beach shall not be authorized during nighttime in sea turtle nesting season.
- 1.1 *Lighting associated with a special event that may directly, indirectly, or cumulatively illuminate the beach or directly or indirectly be visible to an observer standing on the beach, shall not be authorized during nighttime in sea turtle nesting season.

³⁶ [Adapted from] “Pier Lighting” in *Marine Turtle Lighting Guidelines*, Florida Department of Environmental Protection (2013) (unpublished draft on file with the authors).

³⁷ The prohibition of lighting on dune crossovers and beach access points is the most protective approach for sea turtles and is recommended by the Florida Fish and Wildlife Conservation Commission, the agency responsible for lighting permit review. DEP’s proposed *Marine Turtle Lighting Guidelines* section on Dune Crossovers and Beach Accesses currently provides for some lighting landward of the landward toe of the most seaward dune. *Marine Turtle Lighting Guidelines*, Florida Department of Environmental Protection (2013)(unpublished draft on file with the authors). Such a provision may be difficult to remain in compliance with - given the shifting nature of Florida’s beach dune system.

2. The operation of all motorized vehicles, except emergency and law enforcement vehicles or those permitted on the beach for sea turtle conservation or other research and conservation, shall be prohibited on the beach at nighttime during sea turtle nesting season.³⁸
3. All temporary construction lighting shall be³⁹:
 - a. Long wavelength and fully shielded,
 - b. Turned off during nighttime in sea turtle nesting season, or if temporary lighting is deemed necessary during sea turtle nesting season it shall be allowed from 6:00am to 9:00pm, must be restricted to the minimal amount necessary, and shall incorporate all the standards of this Section,
 - c. Mounted less than eight feet above the adjacent floor or deck, measured from the bottom of fixture, and
 - d. Restricted to the minimal number of footcandles necessary to conform to the applicable construction safety regulations.

3.1 *All temporary construction lighting shall be turned off during nighttime in turtle nesting season.

ARTICLE IV. COMPLIANCE AND ENFORCEMENT PROCEDURES

Section I. Beach Lighting Inspector

1. A position, known as the City/County of _____ *Beach Lighting Inspector*, is hereby established.

[**Comment:** While the model creates a beach lighting inspector, local governments may choose to identify someone already on its staff, such as a code enforcement officer, for the position. It is most important that the designated individual receive appropriate training].

2. It shall be the duty of the City/County Manager to appoint the *Beach Lighting Inspector*. The *Beach Lighting Inspector* shall have the necessary training and technical knowledge to enable them to effectively carry on the duties of this office.
3. The *Beach Lighting Inspector* shall be responsible for:
 - a. Inspecting the entire beach within the jurisdictional boundaries of the City/County of _____ every month during sea turtle nesting season to determine the extent of compliance with this Ordinance.
 - b. In the event of the finding of a violation at a particular public or private property, conducting further inspections at the property every night beginning on the night after the deadline date given on the written notice of violation. These follow-up inspections shall continue until the lighting has been brought into compliance with this Ordinance.

³⁸ See Fort Lauderdale, Broward County, Florida, Municipal Code Ord.C-03-9, §6-47 (2012).

³⁹ [Adapted from] “General Lighting Guidelines” in *Marine Turtle Lighting Guidelines*, Florida Department of Environmental Protection (2013) (unpublished draft on file with the authors).

4. It shall be unlawful for any person to interfere with, or in any manner hinder the *Beach Lighting Inspector*, or any of their assistants, while in the discharge of their duties under the terms of this Ordinance.
5. It shall be unlawful for any person to knowingly conceal or disable any lighting on a property before it has been inspected by the *Beach Lighting Inspector*.

Section II. Notice of Violation

1. Upon finding any violation of this Ordinance, the *Beach Lighting Inspector* shall deliver a written notice of the violation of this Ordinance to the property owner and direct said owner to promptly remove or cure such lighting arrangement not in compliance with this Ordinance.
2. The time allowed for making the repairs shall be stated in the notice and should the responsible party neglect or refuse to remove or cure the unacceptable lighting arrangement within the specified time stated in the notice, the party so offending shall commit a violation of this Ordinance and be punished as provided in Section 3 of this Part.

Section III. Penalties

1. Any person who takes any action or omission in violation of any provision of this Ordinance and fails to cure such violation after proper notice is provided, shall be subject to a fine of up to \$250 per day per violation for initial violations, and \$500 per day per violation for repeat violations.⁴⁰ All penalties incurred as a result of violation of this Ordinance shall continue to accrue until such violations are cured.
2. The City/County of _____ shall have the right to encumber such property in violation of this Ordinance with a lien for an amount equal to the total amount of fines owed at the time such lien is recorded.

Section IV. Sea Turtle Friendly Fund

1. A Sea Turtle Friendly Fund is hereby established within the City/County of _____.
2. All funds collected as a result of the issuance of fines under Section 3 of this Part shall be deposited in the Sea Turtle Friendly Fund. The funds in this account shall be used for:
 - a. Grants to property owners for the installation of light systems that comply with this Ordinance and reduce the amount of artificial beach lighting,
 - b. Educational materials to inform the general public on the threats of artificial lighting to sea turtles, including but not limited to signs, door knockers, pamphlets, stickers, public service announcements, and other awareness campaigns, and
 - c. Other reasonable efforts to protect the sea turtle population within the City/County of _____, including but not limited to research and conservation projects.
3. The City/County of _____ may contribute funding from other sources into the Sea Turtle Friendly Fund for uses consistent with the purposes set forth above.

⁴⁰ See Fla. Stat. § 162.09(2)(a) (2012).

ARTICLE V. OTHER CLAUSES

Section I. Conflict With Other Ordinances

If this Ordinance conflicts with any other ordinance or requirement of the City/County of _____, unless such ordinance is specifically directed at public safety, then this Ordinance shall control during sea turtle nesting season.

Section II. Severability

If any Article, Part, or Section of this Ordinance is invalidated for any reason, the effected portion may be eliminated or modified to correct the reason of invalidation, if feasible without materially altering or negating the Ordinance Goals and the principles of Sea Turtle Friendly Lighting.

Section III. Effective Date

The City/County of _____ Sea Turtle Friendly Lighting Ordinance shall become effective upon recommendation by _____ and approval by the _____.