



# Town of Simsbury Conservation Commission

933 HOPMEADOW STREET

SIMSBURY, CONNECTICUT 06070

April 25, 2024

Dear Chairman Elliott:

The recently adopted 2024 Plan of Conservation and Development included a number of conservation related implementation items promoting and protecting Simsbury's environment. One of these recommendations is consideration of a text amendment to introduce lighting standards in our Zoning Regulations, based on "dark sky" principles and measures.

DarkSky International is an advocacy group that promotes protection of night skies by limiting unnecessary light pollution and thereby restoring the nighttime environment. Excessive night lighting has been found to have negative impacts on human and animal health, including amphibian and bird populations. It is also unsustainable as it wastes electricity. DarkSky International provides guidance on what lighting specifications should be used as well as a model ordinance for municipalities to consider. A number of CT towns have incorporated DarkSky requirements into their lighting regulations, including the towns of Canton, New Haven, Weston, Milford, Newtown and Stamford. I have attached a draft ordinance to consider for your review.

Please consider this topic a top priority of the Conservation Commission. If there are any further questions on the subject, please let me know. I invite you and any members of the Zoning Commission to a presentation on this topic at the next Conservation Commission meeting on May xx at 7PM.

Sincerely,

Margery Winters, Chair of Conservation Commission

**SUPPLEMENTAL REGULATIONS**  
**SECTION X – EXTERIOR LIGHTING**

**Sec. X-1. Purpose and Intent**

While it is recognized that adequate lighting for safety and security is necessary, Simsbury residents have a right to and should be ensured an environment free from excessive light, light pollution and light trespass that may jeopardize their health, safety or welfare, degrade their quality of life, or impact negatively on the natural environment. This chapter is enacted to protect, preserve and promote the health, safety, welfare and quality of life and the natural environment for the residents of Simsbury through the reduction, control and prevention of excessive light.

The purpose of the exterior lighting regulations is to:

- (a) maximize energy conservation;
- (b) minimize glare and obtrusive light;
- (c) maximize effectiveness of exterior lighting;
- (d) limit light trespass to protect privacy;
- (e) permit reasonable uses of outdoor lighting for nighttime safety utility, security and enjoyment while preserving the ambiance of the night and
- (f) provide guidelines for exterior lighting that will contribute to the safety and welfare of the residents of the Town of Simsbury.

The intent of the exterior lighting regulations is to

- (a) reduce the problems created by poorly designed and/or installed outdoor lighting;
- (b) impose dark sky initiatives to help control light pollution;
- (c) reduce energy use;
- (d) enhance the character of Simsbury by prohibiting the use of internally lighted signs and
- (e) reduce excessive glare that may cause safety problems or have adverse effects upon the use, enjoyment and value of property.

**Sec. X-2. General Provisions**

All exterior illuminating devices shall be installed in accordance with these regulations, the Connecticut Building and Electrical Codes and shall comply with all permit and inspection requirements.

Exterior lighting shall be permitted for private streets, parking areas, and pedestrian walkways intended to serve public facilities, commercial uses, industrial uses, mixed use buildings or multiple family residential communities. Signs may be illuminated pursuant to the sign regulations.

Exterior lighting shall be of such character as to enhance the application for which it is intended and shall be coordinated with the site layout and landscaping plan. Details of exterior lighting shall be presented to the Commission with any application.

**Sec. X-3. Definitions**

**Chase Lighting.** Chase Lighting is when strings of adjacent lights go on and off in a sequence to give the illusion of lights moving along the string.

**Color Temperature, Correlated Color Temperature (CCT).** Color temperature describes the light appearance provided by a light source and is measured in degrees of Kelvin (K) on a scale from one thousand (1,000) to ten thousand (10,000). The lower the Color Temperature the "warmer" the light appears. Typical Color temperatures for incandescent bulbs are between 2,700K and 3,000K. The sun at noon on a clear day produces a light of approximately 5,500K.

**Daylight Adaptation Controls.** Daylight Adaptation Controls automatically turn on or off lights depending on the level of daylight and are controlled either by timers or sensors that measure the amount of daylight.

**Exterior Lighting.** Exterior Lighting is fixed artificial lighting to illuminate outdoor areas. Outdoor areas shall be considered all areas without permanent roofs, or areas not fully enclosed by walls, windows or doors such as porches, canopies or breezeways. The aim of the Exterior Lighting is, by illuminating the area, to maintain or to improve visual performance of the persons conducting human activities.

**Full Cutoff Light Fixture.** A Full Cutoff Light Fixture is a Light Fixture that has no direct light emitted above horizontal and a limited intensity of light from the Luminaire in the region between 80° and 90°.

**Fully Shielded Fixture:** A Light Fixture that allows no emission above a horizontal plane through the Fixture.

**IESNA.** IESNA is the Illuminating Engineering Society of North America, an association of lighting professionals.

**IESNA Type [x] Fixture.** A classification system that describes the light distribution emanating from a Luminaire, from a lateral light distribution (Type I) to a concentric light distribution (Type V)

Type I Light Fixture - light distribution of  $\approx \pm 15^\circ$  from the centerline of light source

Type II:  $\approx \pm 25^\circ$

Type III  $\approx \pm 40^\circ$

Type IV  $\approx \pm 60^\circ$

Type V  $\approx \pm 90^\circ$

**Lamp.** A Lamp is a device that generates and emanates light, such as an incandescent light bulb, LED fluorescent light.

**Linear Lamp.** A Linear Lamp is where the light does not emanate from a point source but from an elongated light source.

**Light Fixture.** A Light Fixture is the assembly that holds the Lamp in a lighting system. It includes the elements designed to give light output control, such as a reflector (mirror) or refractor (lens), the ballast, housing, and the attachment parts.

**Luminaire.** A Luminaire is a complete lighting unit (Light Fixture plus Lamp) consisting of a Lamp or Lamps together with the parts designed to distribute the light, to position and protect the Lamps, and to connect the Lamps to the power supply.

**Maximum Allowable Light Level.** Maximum Allowable Light Level is the highest permitted intensity of a light source measured in lux.

**Pedestrian Lighting.** Pedestrian Lighting is lighting intended to illuminate pedestrian areas such as sidewalks.

**Shutoff.** A mechanism to manually or automatically, e.g., through sensors or timers, turn off lights

**Street Lighting.** Street Lighting is lighting intended to illuminate the roadway to improve traffic safety.

**Streetscape Lighting.** Streetscape Lighting is all lighting that illuminates streets, sidewalks, and areas next to the street such as buildings and landscaping.

**Uniformity Ratio.** The Uniformity Ratio is a measure of how evenly illumination is distributed, as the ratio of maximum-to-minimum illumination levels.

**White Light Source.** White light is the complete mixture of all of the wavelengths of the visible spectrum. A White Light Source is a light source that emits light at a broad band of wave lengths.

#### **Sec. X-4. Scope**

This Chapter shall apply to all Exterior Lighting, including outdoor signs and façade lighting that impact the outdoor environment on all private property within the Town of Simsbury. For all lights owned by the Town and Streetscape Lighting required by the Town on private property, the standards established by the Town of Simsbury Engineering Department, as amended from time to time, shall apply.

#### **Sec. X-5. Applicability**

Any use subject to filing an application for a Site Development Plan or a Special Exception approval by the Commission shall provide a photometric design for the exterior lighting plan. Exterior lighting (luminaire) is required for parking areas and pedestrian walkways where night time lighting is necessary to protect the health, safety and welfare of those people utilizing such facilities.

Uses within the Farming and Residential Zones are subject to these regulations.

#### **Sec. X-6. Prohibited exterior lighting.**

The following Lamps and Light Fixtures shall be prohibited within the Town of Simsbury:

- a. Mercury vapor Lamps;
- b. Low pressure sodium Lamps;
- c. Chase Lighting, blinking, flashing, moving, revolving, or flickering lighting, or lighting that changes in intensity or color, except lighting for temporary seasonal displays, lighting for public safety or required for air traffic safety;
- d. Any Light Fixture that may be confused with or construed as a traffic control device;
- e. Any upward oriented lighting except as otherwise provided for in this Chapter;

- f. Searchlights, beacons, and lasers;
- g. Exposed Linear Lamps that include, without limitation, neon, LEDs, and fluorescent lighting, primarily intended as an architectural highlight to attract attention or used as a means of identification or advertisement except as permitted by this Chapter; and
- h. Any Lamp, except for seasonal displays and landscape ornamental lighting, which is visible beyond the property line on which it is located.

#### **Sec. X-7. Exterior Lighting Standards in all Zones**

Exterior lighting shall be positioned so that no direct rays from any such lighting shall fall off the lot except in instances where driveways, pedestrian walkways or parking areas are utilized in common by more than one lot, the lighting may spill over the shared lot lines to reduce energy use and to maintain illumination as needed for security and safety.

All exterior lighting and sign illumination shall be designed, located, installed and directed in such a manner as to:

- a. prevent direct glare or light trespass;
- b. employ soft, transitional light levels which are consistent from area to area;
- c. minimize contrast between light sources, lit areas and dark surroundings;
- d. be consistent with dark sky initiatives and
- e. be confined within the target area.

Any externally mounted, direct light source utilized for commercial uses, industrial uses, multi-family housing communities, institutional uses or any non-residential uses in the residential zone shall not be visible at the property line at ground level or above.

Lighting fixtures for all vehicular areas and pedestrian areas shall be full cut-off type fixtures or IESNA cut-off fixtures as approved by the Commission or shall be fully shielded/recessed fixtures where the lens is recessed or flush with the bottom surface.

Lighting fixtures for building security or aesthetics and any display purposes shall, unless otherwise approved by the Commission, be

- a. top downward (not upward or sideways), and
- b. full cut off, or IESNA cut-off fixtures or fully shielded/recessed.

Lighting designed to highlight flags shall be targeted directly at the flag.

Exterior lighting for outdoor playing fields or other special outdoor activity areas shall be specified, mounted and aimed so that:

- a. their beams fall within the primary playing area and immediate surroundings, and
- b. no light trespass is directed off the site.

All non-essential lighting shall be turned off after business hours, leaving only the necessary lighting for site security. Non-essential lighting shall apply to display, aesthetic, and parking areas.

The height of luminaires shall be the minimum height necessary to provide adequate illumination, but shall not exceed a height of: fourteen (14) feet from the ground to the highest point of the fixture or

pole unless specifically authorized by the Commission in the granting of a site development plan or special exception approval. However, in no instance shall any pole or fixture exceed twenty-four (24) feet in height from the ground to the highest point of the fixture or pole.

Specific allowances for streetscape enhancements and functional lighting requirements are more fully described within the design guidelines for the zone in which a property is located.

#### **Sec. X-8. Design standards.**

All Exterior Lighting shall meet the following requirements:

a. *Maximum Light Levels at Property Line.* The light level at any point on a property line shall not exceed 0.1 footcandles in Residential Zoning Districts, or 0.2 footcandles in all other zoning districts except as follows:

(1) The light emitted by Light Fixtures mounted on a structure built within five (5) feet of a public street right-of-way or sidewalk shall not exceed the maximum allowable light levels for "pedestrian areas" specified in Subsection 155-5.e for the underlying zoning district or use. The Maximum Allowable Light Level shall include any existing or proposed Street or Pedestrian Lighting located within the right-of-way. In no case shall the Maximum Allowable Light Level within the right-of-way, excluding street lights, exceed 0.2 footcandles when measured at the curbline.

(2) In all non-residential zoning districts light levels exceeding 0.2 footcandles at the property line may be approved by the Director of Operations, or designee, upon finding that the increased light levels will not adversely affect an adjacent property owner. Evidence that the light will not adversely affect an adjacent property owner may include, without limitation, a statement from such property owner that it will not be adversely affected by the increased light levels. The maximum allowable light levels specified in Subsection 155-5.e of this section shall not be exceeded when measured on the property line.

(3) Where a property in a Residential District abuts on a property in a non-residential district, for said property line the 0.1 footcandle limit shall apply.

b. *Aiming of light sources.* All lighting shall be aimed:

(1) Away from any adjacent property lines or public rights-of-way, except in instances where driveways, pedestrian walkways or parking areas are shared adjoining properties; and

(2) Downward but no more than 75 degrees from the vertical, except as permitted in Subsections X-8.d and X-8.m., and only if in compliance with Subsections X-8.a and X-8.b of this Section.

c. *White Light Source Required.* White Light Sources that include, without limitation, LED, metal halide, fluorescent, or induction Lamps, but excluding incandescent and halogen Lamps, shall be required for any Luminaire which exceeds 2,400 lumens that is within a parking lot, driveways, or pedestrian area.

d. *Architectural Lighting of Building Facades.* The lighting of a building facade for architectural, aesthetic, or decorative purposes is permitted subject to the following restrictions:

(1) Upward aimed building facade lighting shall not exceed nine hundred (900) lumens. All upward aimed light shall be fully shielded, fully confined from projecting into the sky by eaves, roofs, or overhangs, and mounted as flush to a wall.

(2) Building facade lighting exceeding nine hundred (900) lumens shall be fully shielded, aimed downward, and mounted as flush to a wall.

(3) Building facade lighting shall be fully contained within the vertical surface of the wall being illuminated.

e. *Unshielded Lighting.*

(1) In all Zoning Districts, Unshielded Lighting emitting more than nine hundred (900) lumens shall be prohibited.

(2) In all non-Residential Districts, Lamps emitting more than nine hundred (900) lumens shall be Fully Cutoff and Shielded, except as otherwise approved by the Town of Simsbury Engineering Department.

(3) In all Residential Districts all Lamps less than nine hundred (900) lumens shall be within a Fully Shielded Fixture or must be within a Light Fixture where the Lamp is obscured from view by a material that diffuses the light. (i.e., frosted or milk-colored materials), except as otherwise permitted in this Chapter.

f. *Signs*. All signs shall be required to meet the standards for this section, in addition to the Regulations of Section 9 of the Town of Simsbury Zoning Regulations.

g. *Lights Adjacent to Residential Districts*. Standards for lights adjacent to Residential Zoning Districts, residential uses, or public rights-of-way: Any Light Fixture located within ten (10) feet of a property line of a residential zoning district, an existing residential use, or within ten (10) feet of a public right-of-way shall be:

(1) Classified as an IESNA Type III or Type IV Light Fixture; and

(2) Shielded on the side closest to the property line, Residential Zoning District, residential use, or public right-of-way.

h. *Full Cutoff Fixtures*. Full Cutoff Fixtures shall be installed in a horizontal position as designed.

i. *Color Temperature*. All Exterior Lighting shall have a Correlated Color Temperature of no more than three thousand (3,000) Kelvin.

j. *Shutoff Requirements*. All Light Fixtures shall have automatic Daylight Adaptation Controls and Shutoffs.

k. *Maximum Pole Heights*. The maximum height of light poles, including the base and Luminaire, shall not exceed the following heights:

(1) In Residential Zoning Districts for surface parking areas with ten (10) or more parking spaces: Fifteen (15) feet.

(2) In Residential Zoning Districts for pedestrian areas parking decks and similar structures higher than five (5) feet above the average finished grade, and parking areas with nine (9) or less spaces: Ten (10) feet.

(3) In all other zoning districts for surface parking areas with ten (10) or more parking spaces: Twenty (20) feet.

(4) In all other zoning districts for pedestrian areas and parking decks and similar structures higher than five (5) feet above the average finished grade, and parking areas with nine (9) or less spaces: Fifteen (15) feet.

l. *Canopy Lighting*. Light Fixtures mounted under canopies used for vehicular shelter shall be aimed downward and installed in a way that the bottom of the Light Fixture is recessed or mounted flush with the bottom surface of the canopy. A Full Cutoff Light Fixture may project below the underside of a canopy. All light emitted by an under-canopy fixture shall be substantially confined to the ground surface directly beneath the perimeter of the canopy. No lighting, except that permitted by **the Section 9 of the Town of Simsbury Zoning Regulations (?)**, shall be permitted on the top or sides of a canopy.

m. *Flagpoles and Statuary*. Flagpoles and statuary may be illuminated by one (1) upwardly aimed Fully Shielded spotlight which shall not exceed three thousand five hundred (3,500) lumens. The Light Fixture shall be placed as close to the base of the flagpole or statuary as reasonably possible.

#### **Sec.X-8. Maximum light standards.**

No Luminaire shall be permitted in excess of the levels specified in this Section.

a. General Zoning District Requirements.

	Residential Zoning Districts	All other Zoning Districts
Maximum Allowable Light Level (measured in footcandles)	5.0 at building entries	5.0 at building entries
	3.0 in surface parking areas, used exclusively for residential uses; 5.0 for non-residential uses in residential districts, within parking structures and under buildings	5.0 in parking areas
	3.0 along pedestrian walkways	3.0 along pedestrian walkways
	2.0 in common open space areas	2.0 in storage areas
Maximum uniformity ratio (maximum to minimum)	15:1	10:1
Maximum lumen rating for a Full Cutoff Luminaire shielded from view of adjacent streets and properties	8,500 - parking areas of 10 or more spaces for exclusively residential uses; 14,000 - parking and loading areas for non-residential uses in Residential Districts	14,000 - parking and loading areas 8,500 - pedestrian areas
	4,000 - walkway lights and common areas	
	1,800 - stairways and entryways	

b. *Special Uses Requirements.* The general zoning district requirements may be modified for the following uses:

- (1) Private and or commercial recreational and athletic uses: The lesser of thirty (30) footcandles or the IESNA recommended standards for the specific sports venue (playing fields only).
- (2) *Public recreational and athletic uses:* The IESNA recommended standards for the specific sports venue (playing fields only).
- (3) *Automobile Service Stations:* 20.0 footcandles under service station canopies only.
- (4) *Car Dealerships:* 15.0 footcandles within vehicular display areas only
- (5) *Drive-Thru establishments:* 5.0 footcandles at drive-up windows

**Sec.X-9. Lighting plans.**

a. *Lighting Plans Required.* A lighting plan shall be submitted with any building permit application in which Exterior Lighting is proposed or required. The lighting plan shall include:

- (1) A site plan showing the location of all buildings and building heights, parking, and pedestrian areas on the lot or parcel;



- (2) The location and description including mature height of existing and proposed trees and the location of Light Fixtures on adjacent properties or the street right-of-way within ten (10) feet of the subject property;
  - (3) The location and height above grade of all proposed and existing Light Fixtures on the subject property;
  - (4) The type, initial lumen rating, color rendering index, and wattage of each Lamp source;
  - (5) The general style of the Light Fixture such as Cutoff, lantern, coach light, globe, and a copy of the manufacturer's catalog information sheet and IESNA photometric distribution type, including any shielding information such as house side shields, internal, and/or external shields;
  - (6) Control descriptions including type of controls (timer, photocell, motion sensor, astronomical, etc.), the Light Fixtures to be controlled by each type, and control schedule when required;
  - (7) Aiming angles and diagrams for sports Light Fixtures; and
  - (8) A light calculation which shows the maximum light levels on a grid not to exceed ten (10) feet by ten (10) feet across the entire site and a minimum of ten (10) feet beyond the lot or parcel property line. The grid shall also indicate maximum to minimum uniformities for each specific use area such as parking and circulation areas, pedestrian areas, and other common public areas.
- b. *Exemptions from Lighting Plan Requirement.* No Lighting Plan is required.
- (1) When all proposed lighting is provided by fixtures of nine hundred (900) lumens or less, or
  - (2) For a single detached dwelling unit on an individual lot.
- c. *District Lighting Plans.* The Town of Simsbury Zoning Board may, by Special Exception, approve a District Lighting Plan with lighting standards differing from this on the following conditions and findings:
- (1) All District Lighting Plans shall be subject to Special Exception Review pursuant to **Section 11 (?)** of the Town of Simsbury Zoning Regulations;
  - (2) In addition to application requirements of Section X. of the Town of Simsbury Zoning Regulations, a review pursuant to **Subsection 11 (?)** shall be required; and
  - (3) The District Lighting Plan creates a public benefit.

#### **Sec.X-10. Exemptions and Modifications**

The standards of this Chapter shall not apply to the following types of Exterior Lighting: The following luminaries are exempt from this Section:

- (1) all hazard warning luminaries required by Federal regulatory agencies;
- (2) Ornamental Lighting: Low voltage (twelve (12) volts or less), low wattage ornamental landscape lighting fixtures, and solar operated light fixtures having self-contained rechargeable batteries, where any single Light Fixture does not exceed one hundred (100) lumens.
- (3) Seasonal Lighting Displays: Lighting displays operated for a period not to exceed sixty (60) contiguous days for a given display or a total of one hundred twenty (120) days in a given calendar year for all displays.
- (4) Historic Lighting: The Chief Building Official may grant an exception from the provisions of this Chapter if they find that:
  - (a) The lighting fixture is located on a property listed on the National or State Register of Historic Sites, a Town of Simsbury Historic District or the **Simsbury Cultural Resources Inventory (?)**;
  - (b) The lighting fixture is of historic significance to the property; and
  - (c) Removal of or a modification to the lighting that would otherwise be required to come into compliance with the requirements of this section would have an adverse impact on the historic character of the property.

- (5) Public safety lighting used by the police or fire department or other emergency services temporarily in case of an emergency.
  - (6) Occupational safety lighting as required by law.
  - (7) Temporary Lighting: The **Director of Operations (?)**, or designee, may, upon written request and in writing, grant an exemption from the requirements of this Chapter for temporary outdoor activities such as, fairs, carnivals, sporting events, concerts, or promotional activities, provided:
    - (a) The length of time that the temporary lighting is to be consecutively used is no longer than fifteen (15) consecutive days, and no more than thirty (30) days in total per calendar year; and
    - (b) The proposed temporary lighting is designed in such a manner as to minimize light pollution, light trespass, and glare as much as feasible.
  - (8) Approved Architectural Lighting, as defined in Sec.X-8.d shall be permitted to remain for the life of such decorative lighting scheme.
- b. Exemptions. Exemptions from the standards of this Chapter may be granted under if the Director of Operations, or such Director's designee, finds, upon written request and in writing the following:
- (1) Additional lighting beyond the standards of this Chapter is necessary to improve public safety or security;
  - (2) The granting of an exemption is consistent with the purpose of this Chapter and will not be injurious to the neighborhood or otherwise detrimental to the public welfare; and
  - (3) The exemption provides the minimum relief required.
- c. Equivalent Material. The provisions of this section are not intended to prevent the use of any design, material or method of installation not specifically prohibited by this section provided any such alternate has been approved by the Chief Building Official and any such alternative provides an approximate equivalent method of satisfying the standards of this Chapter.

#### **Enforcement.**

- a. This article shall be enforced through the civil citation process by the Zoning Enforcement Officer or their designees and/or the Chief Building Official or their designees. The Town Manager may appoint one (1) or more Town employees to issue citations pursuant to the provisions of this article.
- b. The citation hearing procedure (Chapter 97, Citation Hearings, of the Code), adopted by Ordinance 746 Supplemental, pursuant to Section 7-152c of the Connecticut General Statutes, as amended, shall apply to citations issued for a violation of this article, except that no Officer or employee of the Town of Simsbury exercising zoning or building department authority may be appointed to be a hearing officer on such matters.
- c. The Chief Building Official, or designee, shall not issue a Certificate of Occupancy unless the applicant provides certification that the Exterior Lighting as installed complies with the approved Lighting Plan and the requirements of this Chapter unless waived or amended by the Director of Operations, or such Director's designee, in writing. The certification shall be submitted in a format prescribed by the Chief Building Official and reviewed by the Department of Buildings. The certification shall be completed by the architect, electrical engineer, electrical contractor, or lighting consultant responsible for the plans or the final installation.
- d. Fines. The fine for a violation of this article shall be one hundred dollars (\$100.00) for each such occurrence of a violation and an additional one hundred dollars (\$100.00) for each such day that such violation continues.

**Compliance required.**

All Exterior Lighting on private property that is not explicitly approved by the Town of Simsbury Engineering Department and does not conform to the above standards shall be brought into compliance no later than one (1) year after the effective date of this Chapter, with exception of the following which require immediate compliance:

- a. Installation and operation of a Lamp that is prohibited under Section 6. of this Chapter
- b. All Fixtures shall be aimed consistent with the requirements of Subsection X-8.b of this Chapter.