

**ZONING ORDINANCE AMENDMENT
OUTDOOR LIGHT FIXTURES CONTROL
FAUQUIER COUNTY
Adopted January 18, 2000**

Article 9

Part 9 9-1000 OUTDOOR LIGHT CONTROL

9-1001 Purpose and Intent

The purpose of this section is to regulate the placement, orientation, distribution and fixture type and size of outdoor lighting. The intent of this section is to encourage lighting that provides safety, utility and security, as well as preventing glare on public roadways, and to protect the privacy of adjoining properties.

9-1002 Conformance with Applicable Codes and Ordinances

All outdoor artificial illuminating devices shall be installed in conformance with the provisions of this Article, and applicable provisions of the Zoning Ordinance. Where there is conflict between the provisions of this Article and applicable provisions of the Zoning Ordinance, the most restrictive shall govern.

9-1003 Approved Materials and Methods of Installation

The provisions of this Article are not intended to prevent the use of any equipment, material or method of installation not specifically prescribed by this Article provided the alternative has been approved by the Zoning Administrator. The Zoning Administrator may approve any such alternative provided that the proposed design provides the approximate equivalence to the specific requirements of this Article.

9-1004 Definitions

1. Outdoor Light Fixtures shall mean outdoor artificial illuminating devices, outdoor fixtures, lamps or other devices, permanent or portable, used for illumination, direction or advertisement. Such devices shall include, but are not limited to search, spot, or flood lights for:
 - a. buildings and structures, including canopies and overhangs
 - b. recreational areas
 - c. parking lot lighting
 - d. landscape lighting
 - e. signs, including billboards
 - f. display and service areas
2. Installed shall mean the initial installation of outdoor light fixtures defined herein, following the effective date of this Article but shall not apply to those outdoor light fixtures installed prior to such date.
3. Shielded, Fully shall mean fixtures that are shielded in such a manner that light

emitted by the fixture, either directly from the lamp or indirectly from the fixture, are projected below a horizontal plane running through the lowest point on the fixture where light is emitted. This means that a fully shielded fixture is one used in such a way that it allows no direct or internally reflected light to shine above the light fixture.

4. Footcandle. A quantitative unit of measure referring to the measurement of illumination incident at a single point. One footcandle is equal to one lumen uniformly distributed over an area of one square foot.
5. Full Cutoff Angle. The angle formed by a line drawn from the light source and a line perpendicular to the ground from the light source, beyond which no light is emitted. Refer to example graphics. (Refer to Figure 2)
6. Initial Lumens. The lumens emitted from a lamp, as specified by the manufacturer of the lamp.
7. Lamp. The component of a luminaire that produces light. A lamp is also commonly referred to as a bulb.
8. Lumen. A standard unit of measurement referring to the amount of light energy emitted by a light source, without regard to the effectiveness of its distribution.
9. Luminaire. A complete lighting unit consisting of a lamp or lamps together with the components designed to distribute the light, to position and protect the lamps, and to connect the lamps to the power supply. A luminaire is also commonly referred to as a fixture.
10. Outdoor Luminaire. A luminaire which is permanently installed outdoors including, but not limited to, devices used to illuminate any site, structure, or sign.
11. Photometric Plan. A point by point plan depicting the intensity and location of lighting on the property.

9-1005 Shielding

All outdoor light fixtures except those exempted by Section 9-1007 and those regulated by Section 9-1006.2 shall be fully shielded as identified in Section 9-1006. A fully shielded fixture must be a full cutoff luminaire or a decorative luminaire with full cutoff optics, and is defined as an outdoor lighting that is shielded or constructed so that all light emitted is projected below a horizontal plane running through the lowest part of the fixtures. The light source visibility shall be shielded from the adjoining property.

9-1006 General Requirements for all Zoning Districts

1. Public or Private Recreational Facilities:
 - a. Primary Playing Areas. Where playing fields or other recreational areas are to be

illuminated, lighting fixtures shall be specified in the Lighting Plan, mounted and aimed so that the illumination falls within the primary playing area and immediate surroundings so that no direct light illumination is directed off site.

- b. Recreation Parking Areas. Lighting for these parking areas shall meet the requirements identified in 9-1006.5.
2. Outdoor Illumination of Building, Landscaping and Signs. The unshielded outdoor illumination of any building or landscaping is prohibited. Lighting fixtures used to illuminate an outdoor advertising sign either shall be by directed ground lighting sign or mounted on the top of the sign, and shall comply with shielding requirements.
3. All outdoor lighting fixtures, including display lighting, shall be turned off after the close of business, unless needed for safety or security, in which case the lighting shall be reduced to the minimum level necessary.
4. Gasoline Station/Convenience Store Aprons and Canopies.
 - a. The Lighting fixture bulbs shall be recessed into a canopy ceiling so that the bottom of the fixture is flush with the ceiling so that light is restrained to no more than 85 degrees from vertical as shown in Figure 1.
 - b. As an alternative to recessed ceiling lights, indirect lighting may be used where the light is directed upward and then reflected down from the underside of the canopy. In this case, light fixtures shall be shielded so that direct illumination is focused exclusively on the underside of the canopy.
 - c. Lights shall not be mounted on the top or sides (facia) of the canopy, and the sides of the canopy shall not be illuminated.
 - d. The lighting for new facilities (pump islands and under canopies) shall have a minimum of 1.0 footcandle at grade, and the average horizontal illumination cannot exceed 10 footcandles at grade level, subject to a uniformity ratio (ratio of average to minimum illuminance) no greater than 4:1. The standards herein are based on the Illuminating Engineering Society of North America (IESNA) RP-33, Lighting for Exterior Environments.
5. All Parking Lots, Loading and Display Areas. This lighting requirement applies to townhouse and multi-family, educational, institutional, commercial recreation, public, commercial business and retail, motor vehicle related, wholesaling, and limited and general industrial use categories identified within the Zoning Ordinance.
 - a. Lighting for all parking, display and loading areas shall not exceed an average horizontal illumination level of 2.5 footcandles. All lighting fixtures serving these areas shall be cut-off fixtures as defined by the Illuminating Engineering Society of North America (IESNA);
 - b. Maximum Mounting Height*

Residential: 20 feet

Non-Residential: 25 feet

* Height is measured from the ground surface to the bottom of the lighting fixture.

6. Mercury Vapor. The installation of mercury vapor fixtures is prohibited, except for agricultural buildings, paddocks and similar use areas in RA and RC zoning districts. For residential structures on agricultural property, lighting must be full cut-off fixtures, or retrofitted with, for example, the Hubble Sky Cap and illumination shielded downward.
7. Spillover light, vertical or horizontal, from parking area luminaires onto public roads and property in residential or rural Rural Agricultural (RA) and Rural Conservation (RC) zoning districts shall not exceed one-half (1/2) footcandle at the property line.

9-1007 Exemptions

1. Nonconforming Fixtures. Outdoor light fixtures installed prior to the effective date of this Article are exempt from the provisions of this Article, provided, however, that no change in use, replacement, and structural alteration of outdoor light fixtures shall be made unless it thereafter conforms to the provisions of this Article.
2. Lighting which is not subject to this chapter by state or federal law.
3. Roadway and Airport lighting and security lighting controlled and activated by motion sensor devices for a duration of fifteen (15) minutes or less.
4. Lighting of the United States of America or Commonwealth of Virginia flags and other non-commercial flags expressing constitutionally protected speech.
5. Temporary circus, fair, carnival, or civic uses.
6. Special Conditions. The Zoning Administrator may grant an exemption to the requirements of Section 9-1006 only upon a written finding that there are conditions warranting the exemption and that there are no conforming fixtures that would suffice.
7. Construction and Emergency Lighting. Lighting necessary for construction or emergencies is exempt from the provisions of this Article provided said lighting is temporary and is discontinued immediately upon completion of the construction work or abatement of the emergency necessitating said lighting.
8. Lighting associated with agricultural uses structures, such as a barn, paddock area. Residential buildings and parking associated with a farm or other agricultural uses are not exempted from the lighting requirements contained herein.

9-1008 Applications

1. Any person submitting a site plan or applying for a building, electrical or sign permit to

install outdoor lighting fixtures shall as a part of said application submit evidence that the proposed work will comply with this Article.

2. The lighting plan application shall include at least the following:
 - a. A site plan drawn to scale showing building(s), landscaping, parking areas and proposed exterior lighting fixtures;
 - b. Location of all post, canopy, supports and light fixtures, including the height of each fixture, for any building, structure, parking, display and loading areas;
 - c. Specifications of the illuminating devices, lamps, supports, and other Devices, including designation as Illuminating Engineering Society of North America (IESNA) "cut-off" fixtures. This description may include but is not limited to manufacturers catalog cuts, and drawings including sections where required;
 - d. Plan shall show locations of all pole mounted and building mounted fixtures and a numerical 25 foot by 25 foot grid of lighting levels, in footcandles, that the fixtures will produce on the ground (photometric report). The photometric report will indicate the minimum and maximum footcandle levels within the lighted area of the site. The minimum (lowest number) is usually at the outer edges of the illuminated area or between two fixtures. The average light level is determined by adding the footcandle value of all the points in the grid and dividing by the total number of points.

This information is available from the manufacturer of the specified fixture.
(Refer to Figure 3 for an example of this report style)
3. The above required plans and descriptions shall be sufficiently complete to enable the Zoning Administrator to readily determine whether compliance with the requirements of this Article will be secured. If such plans and descriptions cannot enable this ready determination, by reason of the nature or configuration of the devices, fixtures or lamps proposed, the applicant shall submit evidence of compliance by certified test reports as performed by a recognized testing lab.

9-1009 Issuance of Permit for Lighting on Private Property

Prior to issuance of a building, electrical or sign permit, the Zoning Administrator shall determine that the submitted plans and details for said permit are in conformance with this Article. The stamping of the plans and the signature of the director or his designated representative and the date of the signature shall indicate that the plans are in conformance.

9-1010 Amendment to Permit for Lighting on Private Property

Should the applicant desire to substitute outdoor light fixtures or lamps to be installed on private property after a permit has been issued, the applicant shall submit all changes to the Zoning Administrator for approval, with adequate information to assure compliance with this Article.

9-1011 Appeals

Except for street lighting within the right-of-way and for temporary exemptions as provided in Section 9-1007.1-5, any applicant's appeal of the Zoning Administrator's decision shall be made to the Board of Zoning Appeals, and the procedures of the Zoning Ordinance and shall apply.

9-1012 Request for Temporary Exemptions

1. Request. Any person may submit a written request on a form prepared by the Zoning Administrator for a temporary exemption to the requirements of this Article.

The Request for Temporary Exemption shall contain the following information:

- a. Specific exemptions requested.
- b. Type and use of exterior light involved.
- c. Duration of time for requested exemption.
- d. Type of lamp and calculated lumens.
- e. Total wattage of lamp or lamps.
- f. Proposed location of exterior light.
- g. Previous temporary exemptions, if any.
- h. Physical size of exterior light and type of shielding provided.

In addition to the above data, the Zoning Administrator may request any additional information which would enable a reasonable evaluation of the Request for Temporary Exemption.

The fee for a temporary exemption shall be as required for a variance to the Zoning Ordinance.

2. Appeal. The Zoning Administrator, within five (5) days from the date of the properly completed Request for Temporary Exemption, shall approve or reject in writing the Request. If rejected, the individual making the Request shall have the right of appeal to the Board of Zoning Appeals.

FIGURE 1
GASOLINE STATION/CONVENIENCE STORE APRONS AND CANOPIES

Source: *Outdoor Lighting Manual for Vermont Municipalities*, Chittenden County Regional Planning Commission, May 1996, PTI Publications Center (Publication Order Number (DG/95-308)).

FIGURE 2
CUTOFF FIXTURES

Source: *The Outdoor Lighting Pattern Book*, Lighting Research Center, Rensselaer Polytechnic Institute, 1996, ISBN 0 07 037188-1, Library of Congress Card Catalog Number 96-41377.

FIGURE 3

COMPUTER GENERATED LIGHT LEVEL GRID EXAMPLE FOR PARKING
LOT LIGHTING PLANS

Computer generated light level grid, with readings
in tenths of footcandles.