

CHAPTER 9:

PARKING AND INFRASTRUCTURE STANDARDS

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Chapter 9: Parking and Infrastructure Standards

Section 9.1 Off-Street Parking Requirements for Residential and Non-Residential

(Chapter amended 2/11/15)

The requirements of this section shall be applicable to all new development and changes of use that create the need for parking or increase existing parking demands.

Section 9.1.1 General Design Requirements

- A. Required parking shall be provided on or adjacent to the development site.
- B. Parking areas of all developments shall be designed so that sanitation, emergency and other public service vehicles can serve them without making dangerous or hazardous turning movements.
- C. Every parking area shall be designed so that vehicles cannot extend beyond the perimeter of such area onto adjacent properties or public rights-of-way. Such areas shall also be designed so that vehicles do not extend over sidewalks or bump against or damage any wall, vegetation or other obstruction.
- D. Pedestrian circulation areas shall be designed so that vehicles can proceed safely without posing a danger to pedestrians or other vehicles and without interfering with parking areas.

Section 9.1.2 Parking Area Surfaces

- A. Parking areas shall be graded and surfaced with gravel, asphalt, concrete or other material that will provide equivalent protection against potholes, erosion and dust.
- B. Parking areas that are used for overflow, special events, and peak parking shall maintain healthy, living turf grass, or similar ground cover. The perimeter of such parking areas shall be defined by bricks, stones, railroad ties or other similar materials. Additionally, whenever a parking area abuts a paved street, the ingress/egress area(s) leading from the street shall be paved as provided in Section 9.2.
- C. Except for single family and duplex residences, parking spaces in areas surfaced in accordance with Subsection (1) shall be appropriately demarcated with painted lines and markings.
- D. Parking areas shall be properly maintained in all respects, surfaces shall be kept in good condition (free from potholes, etc.) and parking space lines and markings shall be kept clearly visible and distinct.

Section 9.1.3 Number of Parking Spaces Required

- A. This Ordinance recognizes that the Table of Parking Requirements set forth below cannot and does not cover every possible situation that may arise. Therefore, in cases not specifically covered, the site plan approval body is authorized to determine the parking requirements using this Table as a guide.
- B. Table of Parking Requirements: The use of a numeric value in the “Minimum Parking Spaces” shall mean the number of parking spaces.

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<u>USE</u>	<u>MINIMUM PARKING SPACES</u>
Single Family Dwelling	2 per dwelling unit (including garage)
Multi Family Dwelling	2 per dwelling unit (including garage)
Religious Institution	1 for each 4 seats in primary assembly area
School	5 per classroom
Park/Recreation Area	1 per 2000 sq. ft.
Financial Institution	1 per 300 sq. ft. gross floor area
Medical Office	1 per 150-300 sq. ft. gross floor area
Personal Service Establishment	1 per 300 sq. ft. gross floor area
Office	1 per 300 sq. Ft. gross floor area
Overnight Accommodation Facility	1.5 per room
Country Club/Golf Course	1 per 200 sq. ft. gross floor area; plus 4 for each green
Assisted Care Center	3 for every 5 beds
Bank	1 per 200 sq. ft. gross floor area
Restaurant	1 per 100 sq. ft. gross floor area
Retail Shop	1 per 200 sq. ft. gross floor area more than 8000 sq. ft. 1 per 400 sq. ft. gross floor area 8000 sq. ft. or less
Service Station	1 per 400 sq. ft. gross floor area

Section 9.1.4 Flexibility in Administration Required

- A. This Ordinance recognizes that, due to the particularities of any given development, the inflexible application of the minimum parking requirement set forth above may result in a development either with inadequate parking space or parking space in excess of its needs. The former situation may lead to traffic congestion or parking violations in adjacent streets as well as unauthorized parking on nearby properties. The latter situation results in a waste of space that could be more desirably used for valuable development or environmentally useful open space. Therefore, the Village

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Council may permit deviations from the minimum number of parking spaces and require more parking or allow less parking whenever it finds that such deviations will satisfy the requirements of this Section. This section is also particularly intended to apply to developments where there exists, or is planned to exist, a mixture of uses, such as shopping centers, county clubs, parks/recreation areas, etc. In such cases, this Subsection is designed to prevent the required installation of needless parking spaces.

- B. The Village Council may allow deviations from the minimum parking requirements when it finds that:
 - a. A residential development is irrevocably oriented toward a population which has a reduced reliance on personal automobiles; or
 - b. A business is primarily oriented to walk-in trade.
- C. Whenever the Village Council allows or requires a deviation from the presumptive parking requirements established in this Section, the reason therefore shall be stated in the approval.

Section 9.1.5 Parking Space Dimensions

- A. Subject to the following, each parking space shall contain a rectangular area at least nineteen (19) feet long and nine (9) feet wide. Lines demarcating parking spaces may be drawn at various angles in relation to curbs or aisles, so long as the parking spaces created contain the rectangular area required by this section.
 - (a) In parking lots containing ten (10) or more parking spaces, up to twenty percent (20%) of the spaces may contain a rectangular area of sixteen (16) feet in length by eight (8) feet in width and each shall be conspicuously designated as reserved for small or compact cars only.
 - (b) Parking spaces designated for use by handicapped people shall meet the North Carolina State Building Code requirements for handicapped parking.
 - (c) Wherever parking areas consist of spaces set aside for parallel parking, the dimensions of such parking spaces shall not be less than twenty-two (22) feet in length by nine (9) feet in width.
 - (d) Parking spaces located on the perimeter of a parking Lot abutting a perimeter landscape buffer area may have parking spaces eighteen (18) feet long and nine (9) feet wide. Compact car parking spaces in such locations may be eight (8) feet in width by fifteen (15) feet in length.

Section 9.1.6 Parking Aisle

- A. No more than two parking aisles shall abut. Otherwise, parking aisles shall be separated from each other by planted medians. No more than thirty (30) parking spaces shall be contained within one parking aisle.
- B. The travel lanes shall be a minimum of twenty-four (24) feet in width if serving two-way traffic and a minimum of twelve (12) feet in width if serving one-way traffic.
- C. No parking aisle shall dead end.

Section 9.1.7 Loading Space Requirements

- A. The developer shall evaluate the site's needs to determine the number and size of loading facilities and reflect such on the site plan.
- B. Each required loading area shall have adequate, unobstructed means for the ingress and egress of vehicles.
- C. All loading areas shall be located between the building(s) and the rear lot line of the property and/or shall be screened from the view of the street and adjacent properties.

Section 9.1.8 Parking for Non-Residential Buildings and NS Developments. In addition to the parking requirements set forth in this Chapter, required parking shall be provided onsite or adjacent to the development requiring the parking and, if possible, to the rear of buildings. Shared parking areas are encouraged and shall be permitted whenever the Administrator determines that the minimum parking requirements can be met for each use. Parking spaces shall be clearly marked.

Section 9.1.9 Number of Parking Spaces. Parking lot designs shall provide for the necessary number of parking spaces, related landscaping and pedestrian access. Landscaping and/or naturally designed berms shall be used to screen and reduce the visual impact of parking.

Section 9.1.10 Non-Residential Minimum Parking Requirements:

- A. **Minimum Parking Spaces:** Any structure with a ground floor heated area of less than 8000 square feet must have a minimum of four (4) parking spaces; otherwise a minimum of twenty (20) parking spaces are required.
- B. **Pedestrian Crosswalks:** Pedestrian crosswalks shall be incorporated into the design and construction of all areas of pedestrian traffic within the development. The design must also provide safe access for pedestrians at the entrance and egress areas of all businesses.
- C. **Pedestrian Walkway:** The pedestrian walkway shall be a minimum of five feet wide with the walkway paving treatment to be different from the parking lot treatment. When a walkway crosses a driveway, the walkway shall be clearly marked.
- D. **Landscaping:** One of every 12 contiguous parking stalls must be dedicated to trees and landscaping. Landscaping islands shall be incorporated into parking areas. Additionally, landscaping and / or naturally designed berms shall be used to screen and reduce the visual impact of the parking area.

Section 9.2 Driveways

Section 9.2.1 Permit required.

- A. No property owner, agent of the owner, lessee or contract purchaser specifically authorized by the owner shall remove, alter or construct any curb, driveway approach, gutter, pavement or perform any other improvement in any public street or other property owned by or dedicated to the Village without first obtaining a permit from the Administrator authorizing such improvements. Requirements shall apply to new driveways and rebuilding existing driveways. Applying sealer to a paved driveway or placing a new layer of gravel on an unpaved driveway is not considered altering.

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- B. A driveway permit is required prior to the issuance of a building permit for new construction, additions, or changes in use.
- C. Existing driveways shall not be altered within the right-of-way until a permit is obtained. The maintenance of driveways located in or on the right-of-way shall be the responsibility of the property owner.
- D. Failure to secure a permit as described herein or failure to construct the driveway to Village standards or failure to correct or remove existing nonconforming driveway approaches is a violation of the Code of Ordinances and a penalty of fifty dollars (\$50.00) per day may be imposed on the applicant after a thirty (30) day written notification has been given by the Administrator. If the driveway is not removed or brought into compliance within the thirty (30) days, the applicant, shall be denied further permits to work on public streets within the Village of Whispering Pines.
- E. Parking areas that are directly connected to a driveway or directly to a public street will require a permit.

Section 9.2.2 General Requirements

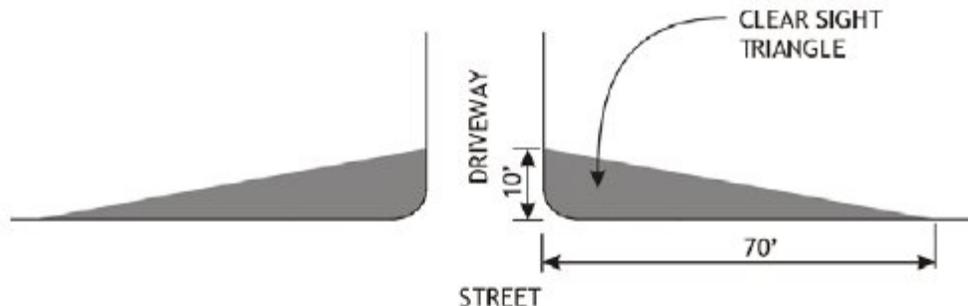
- A. A development permit will not be issued until the Administrator has approved the driveway location and type of construction for single family and duplex residences, and the Village Council has approved the driveway location and type of construction for all other developments. Driveways connecting to streets maintained by the North Carolina Department of Transportation (NCDOT Subdivision) shall require a driveway permit from NCDOT Subdivision prior to receiving a development permit from the Administrator. Any change in contour, location, or type of construction will require a development permit.
- B. In all residential zoning districts, a driveway may service only one Lot except in the RM District where one driveway may serve multiple Lots with approval of the site plan. A single family residential Lot may have only two entry points on a public street, except to the garage if it is located on a second street.
- C. Driveways and culverts must be maintained in order to allow for safe ingress and egress. When a culvert is required, the culvert must be maintained so as to allow the unimpeded flow of water within the road side ditch.

Section 9.2.3 Design Requirements

- A. Driveway material may consist of gravel, asphalt, concrete or brick. Gravel driveways must include an asphalt or concrete apron that covers the entire public right of way. Driveways for non-residential uses must be asphalt or concrete.
- B. Where the roadside ditch allows it, a culvert made of materials approved by the Public Works Director, with a minimum inside diameter of twelve (12) inches, must be installed at the end of the driveway. The culvert must be placed so that the pipe allows unimpeded flow of water in the ditch. No structures or plants may be placed in the ditch. The culvert alignment shall be approved by the Public Works Director to ensure the flow of water through the culvert. In order to minimize the flow of water run off to the street, the paved apron, or the end of a completely paved driveway, must include
 - a. Drainage grating of sufficient size and proper design to “catch” water flowing down the driveway, in either direction and divert it into the roadside ditch. The grating shall be fabricated of material with strength sufficient to withstand the passage of vehicular

traffic. The grating structure shall have a width of at least eighty percent (80%) of the driveway width. It shall have openings for water flow amounting to at least fifty (50) square inches for every one (1) foot of driveway width; or

- b. The paved apron or driveway end must be sufficiently sloped or angled to directly divert all water flow into the ditch and not allow water flow onto the street.
- C. Driveways must be a minimum of ten (10) feet and a maximum of eighteen (18) feet in width.
- D. Driveways must not be closer than three (3) feet to the side property line.
- E. The driveway end may flare out where it joins the roadway pavement. However, the greatest width of the flare may not exceed the nominal driveway width (as specified hereinabove) by more than three (3) feet on each side.
- F. For any driveway, a sight triangle measuring ten feet from the pavement and extending 70 feet from the edge of each side of the driveway shall be required; excluding mailbox placement.



- a. Within the sight triangle, no materials which would impede traffic visibility shall be allowed. Structures, fences and plant materials that extend into the sight triangle between two and one half feet and eight feet in height, as measured from the grade of the street or drive, shall not be allowed.

Section 9.2.4 Inspections

- A. The Applicant shall request an inspection by the Public Works Director 24 hours in advance of any driveway concrete pouring or paving.

Section 9.3 Streets

- A. All streets within a subdivision shall be designed and built in accordance with the standards of this Section and in accordance with the standards of the North Carolina Department of Transportation (NCDOT Subdivision) standards for the type of street based on maximum amount of projected traffic per type of street and the North Carolina Fire Code, Appendix D: Fire Apparatus Access Roads. These standards are considered to be minimum standards and may be increased in a particular instance, where necessary, to make a proposed street conform to sound traffic engineering standards and principles.
- B. Streets shall be designed and located with regard to existing and proposed streets, to the topography of the area, to natural features such as streams and forested areas, to public convenience and safety

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and to the proposed use of land to be served by such streets. All streets shall provide for the continuation or extension of the principal streets in surrounding areas and shall provide reasonable means of ingress and egress for surrounding properties.

- C. Street Layout. Proposed street layout shall be made according to sound land planning practices for the type of development being proposed. All streets must provide for the continuation or appropriate projection of principal streets in surrounding areas and provide reasonable means of ingress and egress for surrounding acreage tracts. So that new Village streets are in keeping with the character of the Village, streets and roads with an uninterrupted straight segment of more than seven hundred fifty (750) feet will not be accepted.
- D. Subdivisions with more than 25 proposed lots shall have a minimum of two entrances to streets so that emergency vehicles will have two separate routes to access houses in such subdivisions at a point not greater than 750 feet from any lot. Subdivisions with 25 or fewer lots may have only one entrance provided that entrance is to a street that itself has a minimum of two entrances.
- E. Street rights-of-way shall meet the following minimum widths:

All Streets	60 feet
Cul-de-sac	60 feet for the street segment with 100 feet at the turn-around

- F. The pavement width of streets shall meet the following minimum widths:

All streets	20 feet
Cul-de-sac street segment	20 feet
Cul-de-sac turnarounds	74 feet

Minimum pavement widths in the one-mile extraterritorial area must meet the requirements of the NCDOT wherever the State standards are stricter.

- G. All intersections shall conform to the applicable requirements set forth in the NCDOT Subdivision Manual.

Street grades shall be as follows:

- (i) Unless necessitated by exceptional topography and subject to approval by the Village Council, the grades shall not be more than six percent nor less than one-half (1/2) percent;
- (ii) Grades approaching intersections shall not exceed five percent for a distance of not less than 100 feet, measured from the intersecting centerlines of such streets;
- (iii) Street grades shall be established wherever practicable in such manner as to avoid excessive grading, promiscuous removal of ground cover and tree growth, and general leveling of the topography.

- H. The names of the streets in a proposed subdivision shall be reviewed and approved as part of the preliminary plat. The names of new streets shall not duplicate or be similar to the names of existing streets anywhere in Moore County. Where a new street extends or continues an existing street, the name of the existing street shall be used for the new street. Street name signs that comply with the Village, NCDOT and the National Highway Association Standards shall be placed at all street intersections. All street names shall be approved by the County. The developer shall install the street signs, as approved by the Village, at such location as directed by the Public Works Director after consultation with the Police and Fire Rescue Chiefs. The developer shall be required to replace or repair any street sign which is damaged during construction. (Amended 2/26/14)

- I. All streets shall be cleared and graded to provide adequate drainage. The finished grade, cross-section and profile shall be approved as part of the construction plans.
- J. The subdivider shall install the road base and paving necessary to meet the requirements of this Ordinance and the NCDOT Subdivision Manual.
- K. If the adjacent property is undeveloped and the street must be a dead end street temporarily, the right-of-way shall be extended to the property line. A temporary cul-de-sac shall be provided for all temporary dead-end streets, with the notation on the subdivision plat that land outside the normal street right-of-way shall revert to the abutters whenever the street is continued.
- L. Traffic control devices such as stop and yield signs shall be approved by the Administrator after consultation with the Police Chief, Fire Rescue Chief and Public Works Director and shall be installed by the developer according to the NCDOT SUBDIVISION Manual and as shown on the construction plan.
- M. Proper sight distances shall be maintained at all intersections of streets. There shall be a clear sight distance in the triangular area formed by the intersecting street right-of-way lines and a straight line connecting points on said street right-of-way lines in accordance with this Ordinance. No obstruction shall be permitted in this area.
- N. The following standards shall apply to Non-Residential Development:
 - 1. All points of ingress and egress and access roads shall be designed, constructed and maintained according to applicable standards of the North Carolina Department of Transportation;
 - 2. Highways, State and Secondary Roads, or Private Road(s)/Street(s) Other than a development subject to the requirements set forth in the Highway Overlay District, where a Lot abuts a highway, state secondary road or private road/street ingress to and egress from the Lot may occur by way of the highway, state secondary road or private road/street or by way of a reverse frontage or access road:
 - (a) For Lots having more than five hundred (500) feet of frontage on a highway, state secondary road, points of ingress and egress shall be no closer than five hundred (500) linear feet. However, a separate point of ingress only and a separate point of egress only on the same Lot shall be allowed provided they are no closer than two hundred (200) linear feet;
 - (b) For a Lot having less than five hundred (500) feet of frontage on a highway or state secondary road, only one point of ingress and egress on that highway shall be allowed;
 - (c) Ingress to and egress from a corner Lot shall be limited to the more minor thoroughfare and shall be prohibited within two hundred (200) feet from the intersection of the more major thoroughfares.

Section 9.4 Exterior Lighting Standards

Section 9.4.1 Purpose and Scope

The purpose of this Section is to control light trespass, pollution and glare, achieve dark sky compliance while not adversely affecting motorists, pedestrians, and land uses of adjacent properties inside the Village limits and within the ETJ of the Village except where existing state and municipal regulations preclude such jurisdiction.

Levels of illumination (light) to achieve a certain function or desired effect should also reduce or eliminate the hazardous aspects and nuisances of glare and lighting trespass for exterior lighting installation.

The intent of this Section is to preserve and protect the nighttime use and enjoyment of all property through the use of good lighting practices and systems. With good design standards and professional installation and design, lighting systems can be installed to control glare and light trespass, and to conserve energy while maintaining security and productivity.

Section 9.4.2 Residential Subdivisions

This Section applies to roadway, entry way and common facility lighting for Single Family residential subdivisions of five (5) or more homes and Multi-family residential developments as follows:

- A. Roadway Lighting: Roadway lighting, if applicable, must conform to the general type(s) of fixture classification(s) and lighting standards described in the following subsections. A conforming streetlight shall be provided at street intersections within residential subdivisions. These areas are characterized by low ambient light levels and are found in suburban and rural residential areas.

- B. Entry Way Lighting: Entry way lighting, by which motor vehicle traffic accesses the community roadways and any applicable signage, shall be subject to the provisions of the following subsections.

- C. Common Facilities Lighting: Common facilities consisting of, but not limited to, Club Houses, Pool Houses, Recreational Halls, Sports Facilities, Maintenance Buildings as well as common grounds, walkways and parking areas are considered to be subject to the provisions of the following subsections.

Section 9.4.3 Permitting and Approval Process

The applicant for any permit required for work involving outdoor lighting for non-residential projects with a gross floor area of more than three thousand (3,000) square feet, residential projects other than single family dwellings of more than five (5) units, all vehicular canopies and all outdoor display areas shall submit documentation at time of site plan or plot plan approval that the proposed lighting plan complies with the provisions of this lighting standard. The submission shall contain, but not be limited to the following:

- A. A lighting plan to scale that shows a point-by-point foot-candle array on a ten foot (10') by ten foot (10') grid in a printout format indicating the location and aiming of illuminating devices. The printout shall indicate compliance with the maximum average maintained foot-candles, light trespass and uniformity required by this lighting standard.

- B. Description of the fixture types, lamps, poles, mounting height, raised foundations and the IESNA cutoff classification or ratings from the IESNA lighting classification system for the fixture and other devices (including but not limited to manufacturers or electric utility catalog specification sheets and/or drawings).

The above required plans and descriptions shall be sufficient to enable the Administrator to readily determine compliance with the requirements of this code. Projects that are not required to submit items identified in this Section are still subject to comply with the provisions of these lighting standards and may be required to provide this information upon request by the Village at a later date.

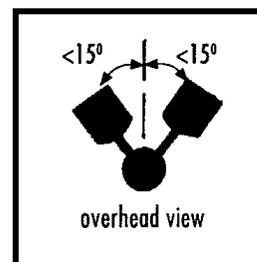
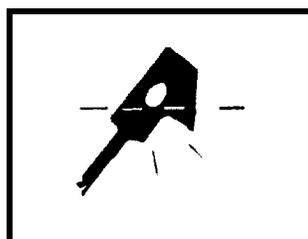
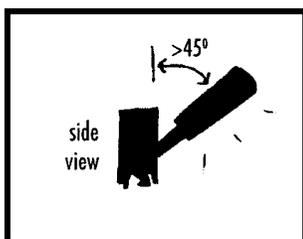
Section 9.4.4 Exemptions

- A. Lighting of the United States of America and State of North Carolina flags.
- B. Circus, fair, carnival, or other similar civic/community events.
- C. Construction and emergency lighting are 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.
- D. Underwater lighting used for illumination of swimming pools and fountains.
- E. Holiday lighting.

Section 9.4.5 General Standards for Site Lighting

All outdoor site lighting shall conform to the following standards:

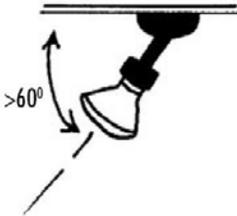
- A. A lighting plan shall be provided for review as part of the site plan or preliminary plat submission. The lighting plan shall demonstrate a consideration for reduced energy consumption through the selection of energy efficient fixtures and shall be dark sky compliant.
- B. Unless otherwise specified in the following subsections, the maximum light level shall be 0.5 maintained foot-candles at any property line in a residential district, or on a lot occupied by a dwelling, congregate care or congregate living structure. Floodlights shall not be aimed at residential property.
- C. All floodlights shall be installed such that the fixture shall be aimed down at least forty-five (45) degrees from vertical. Flood lights and display lights shall be positioned such that any such fixture located within fifty feet (50') of a public street right-of-way or residentially zoned district is mounted and aimed perpendicular to the right-of-way and with a side-to-side horizontal aiming tolerance not to exceed fifteen (15) degrees from perpendicular to the right-of-way, unless side shielded. Under no circumstances shall a side shielded floodlight exceed forty-five (45) degrees from perpendicular. Floodlights shall not be permitted in or aimed towards residential districts.



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All flood lamps emitting approximately six hundred fifty (650) (50 halogen watts) or more lumens shall be aimed at least sixty (60) degrees down from horizontal, shielded, or equipped with a motion sensor control that automatically cuts light(s) on when motion is detected and then after a brief time delay (10 minutes or less) after the last motion is detected, automatically cuts the lights off. Lamps shall be aimed such that the main beam from the light source is not visible from adjacent properties or the public street right-of-way.

60° down from Horizontal



Shielded

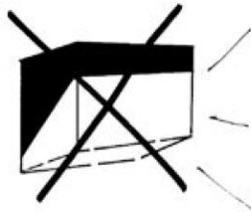


Motion Sensor Control

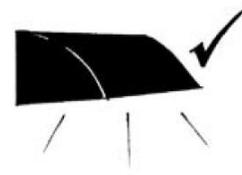


- D. All wall pack fixtures shall be full cutoff fixtures.

Noncutoff Wallpack



Full Cutoff Wallpack



- E. Where land elevations to be lighted are higher or lower than a nearby highway, residential dwelling or other type of facility and the lighting installation causes offensive light trespass and/or glare, the Administrator may require internal or external shields to be installed on the fixtures at the time of the installation or afterwards. If shields do not correct the problem sufficiently, the Administrator may direct that one or more of the following measures must be implemented:
- Change the aiming of offending fixtures,
 - Change the location and/or mounting height or the offending poles,
 - Change the light distribution pattern and/or type of offending fixtures or
 - Remove the offending poles and fixtures from the site.

Section 9.4.6 Light Measure Technique

Light level measurements shall be made at the property line of the property upon which the light to be measured is being generated. If measurement on private property is not possible or practical, light level measurements may be made at the boundary of the public street right-of-way that adjoins the property of the complainant or at any other location on the property of the complainant. Measurements shall be made at finished grade (ground level), with the light-registering portion of the meter held parallel to the ground pointing up. The meter shall have cosine and color correction and have an accuracy tolerance of no greater than plus or minus five percent (5%). Measurements shall be taken with a light meter that has been calibrated within the previous two years. Light levels are specified, calculated, and measured in foot-candles (FC). All FC values are maintained foot-candles unless specified otherwise. See maintained foot-candles in the definitions section for maximum allowed light loss factors.



Section 9.4.7 Specifications for Lighting in Outdoor Areas (Residential and Non-Residential)

- A. Other than flood lights and flood lamps, all outdoor area and parking lot lighting fixtures of more than two thousand (2,000) lumens shall be full cutoff fixtures, or comply with Subsection 9.7.E below. Dusk-to-dawn open bottom non-cutoff security lights must be fully shielded to provide a full cutoff light distribution. Flood lights and flood lamps must be pointed downward at a minimum angle of 65 degrees or more.
- B. All outdoor lighting shall be provided by a LED light, of similar type, on any one site. This applies to all street light fixtures and to area and parking lot light fixtures that are mounted on a pole or to the side of a building. Exceptions must be approved by the Administrator.
- C. The mounting height of all outdoor lighting, except outdoor sports field lighting and outdoor performance area lighting shall not exceed thirty-seven (37) feet above finished grade, unless approved by the Administrator as having no adverse effect. The heights of outdoor lighting shall be determined by Village Council in connection with the approval of a lighting plan for any subdivision, multifamily or commercial development.

All new dusk-to-dawn security lights shall be full cut-off fixtures with a maximum rating of nine thousand (9,500) lumens with a mounting height not to exceed twenty five (25) feet. These new dusk-to-dawn utility type open bottom fixtures installed in residentially zoned areas must be equipped with a reflector shield that provides a full cutoff light distribution. An approved alternative is to install a different type of fixture that has a full cutoff light distribution with a maximum rating of nine thousand five hundred (9,500) lumens.



- D. Open Parking Facilities - For lighted parking lots the minimum light level shall be no less than 0.2 footcandles. All light levels are measured at ground level. The minimum light level requirements vary depending on the activity classification. The specified minimum FC value above 0.2 FC as outlined in the following table means that the lowest light level point or location in the parking lot must not exceed the minimum stated FC value in the table (i.e. 0.9 FC for large shopping centers). An average to minimum uniformity ratio of 4:1 means that the average FC to minimum FC ratio cannot be worse (higher) than 4:1. See the following table:

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Minimum Light Levels for Open Outdoor Parking Facilities*		
Use/Task	Maintained Footcandles	Uniformity Avg/Min
Residential and Multi-family <ul style="list-style-type: none"> • Low to medium vehicular/pedestrian activity 	Range from 0.2 Min to 0.7 Min	4:1
Industrial/Commercial/Institutional <ul style="list-style-type: none"> • High activity, i.e. large shopping centers/fast food facilities, major athletic/civic cultural events • Medium/low activity, i.e. community shopping, office parks, hospitals, commuter lots, cultural/civic/recreational events, residential neighborhood shopping, industrial employee parking, schools, church parking 	0.9 Min Range from 0.2 Min to 0.7 Min	4:1 4:1

* Source: IESNA 8th Edition Lighting Handbook; Modifications: Medium and Low Activity Level recommendations have been combined and modified.

Notes:

1. Illumination levels are horizontal on the task, e.g. pavement or area surface.
2. Uniformity ratios dictate that average luminance values shall not exceed minimum values by more than the product of the minimum value and the specified ratio. For example, for commercial parking medium/low activity, the average foot candles shall not be in excess of 2.8 (0.7 x 4).
3. The Administrator shall be responsible for determining the activity level for a development. Any project that requests a light level that exceeds the foot candle values outlined above must demonstrate a need for a higher light level, meet lighting trespass described herein and be approved by the Administrator.

Section 9.4.8 Lighting for Vehicular Canopies

Areas under a vehicular canopy shall have an average maximum horizontal illuminance of twenty (20) maintained footcandles (FC). Areas outside the vehicular canopy shall be regulated by the standards of subsection 9.7.7 D above. Lighting under vehicular canopies shall be designed so as not to create glare off-site. Acceptable methods include one or both of the following:

- A. Recessed fixture incorporating a lens cover that is either recessed or flush with the bottom surface (ceiling) of the vehicular canopy that provides a full cutoff or fully-shielded light distribution.
- B. Surface mounted fixture incorporating a flat glass that provides a full cutoff or fully-shielded light distribution.

Section 9.4.9 Outdoor Sport Field/Outdoor Performance Area Lighting

- A. The mounting height of outdoor sports field and outdoor performance area lighting fixtures shall not exceed eighty (80) feet from finished grade unless approved by the Village Council.
- B. All outdoor sports field and outdoor performance area lighting fixtures shall be equipped with a glare control package (louvers, shields, or similar devices).

- C. The fixtures must be aimed so that their beams are directed and fall within the primary playing or performance area. The maximum light level shall be 0.5 maintained footcandle at any property line in a residential district, or on a lot occupied by a dwelling or Assisted Care Living Facility.
- D. The hours of operation for the lighting system for any game or event shall not exceed one hour after the end of the event.

Section 9.4.10 Lighting of Buildings

- A. Lighting fixtures shall be selected, located, aimed, and shielded so that direct illumination is focused exclusively on the building façade, plantings, and other intended site features, and away from adjoining properties and the public street right-of-way.
- B. Illumination on any vertical surface or angular roof shall not exceed 5.0 maintained footcandle.
- C. Where possible, lighting fixtures shall be directed downward rather than upward. The Administrator can waive this requirement in cases where it is impractical.

Section 9.4.11 Lighting of Permanent Signs

Signs must always be lighted from the top down to reduce light pollution, unless otherwise approved by the Administrator.

Section 9.4.12 Walkways, Bikeways, and Parks (Lighted Sections Only)

The walkway, pathway, or ground areas that are to be lighted shall be illuminated to a level of at least 0.2 average horizontal maintained footcandles and no more than 0.5 average horizontal maintained footcandles.

Section 9.4.13 Temporary lighting for special events of short duration. Typically these are low wattage or low voltage applications for public festivals, and the observance of holidays, carnivals, and celebrations.