

Memorandum

Department of Planning



To: Planning and Public Works Committee

From: Annisa Kumerow, Planner **AK**

Date: July 23, 2020

RE: **P.Z. 05-2020 City of Chesterfield (Unified Development Code-Article 4)**: An ordinance amending Article 4 of the Unified Development Code to revise regulations pertaining to lighting standards.

Summary

The Unified Development Code (UDC) was approved and adopted by the City Council in June of 2014. The purpose of this request is to amend portions of Article 4, Section 31-04-03 Lighting Standards. This proposed amendment is in relation to direction received from the Planning and Public Works Committee in May of 2020 to pursue updates to the UDC Lighting Standards.

A Public Hearing was held for this request at the June 22, 2020 Planning Commission meeting, and there were no speakers for this item. This project was also presented for vote at the same Planning Commission meeting, at which time the Planning Commission recommended approval by a vote of 8-0.

The changes herein are recommended in order to update the City's lighting code. The proposed amendments to Article 04-03 of the UDC are necessary to permit solar lighting installations and consolidate existing requirements in a more logical fashion.

The ordinance language recommended by the Planning Commission is attached.

Attachments: Amendment to UDC Article 4-03 Lighting Standards
June 22, 2020 Vote Report

Sec. 04-01. PROPOSED LIGHTING STANDARDS

A. Purpose.

1. The purpose of this Section is to provide minimum standards for effective, economical, and attractive outdoor lighting. It is the intent of this Section to:
 - a.) Discourage excessive lighting, to minimize glare and light trespass protecting neighbors from the consequences of stray light.
 - b.) Create a safe environment in hours of darkness.
 - c.) Regulate the type of light fixtures, lamps and standards.

B. Applicability.

1. These regulations shall apply to all outdoor lighting including residential, and all jurisdictions, including public, private, and municipal, except as provided elsewhere in this Article.
2. Single-family residential lots shall be exempted from this section of code; however, nothing in this section shall be construed to exempt single-family lots from complying with Chapter 20: Nuisances.
3. All required lighting installations must be regularly maintained (cleaned, repaired, etc.), such that they always provide acceptable luminance levels and glare control.

C. Architectural Specialty Lighting Package Submittals.

1. The purpose of an architectural specialty lighting package is to provide comprehensive, complementary and unified architectural specialty lighting throughout a single development or contiguous lots under common ownership. If an architectural specialty lighting package exists for a multi-lot development or subdivision, then individual lots within that subdivision or development may not submit their own, separate architectural specialty lighting package. In addition, developments of a certain size, quality, or mix of uses may require special architectural specialty lighting consideration. Therefore, in order to encourage superior design, quality and character, comprehensive architectural specialty lighting packages allow for specialized review of architectural specialty lighting and flexibility from standard site lighting requirements. An architectural specialty lighting package is not required for traditional architectural accent lighting applications or for residential applications, as determined by the Director of Planning. Seasonal holiday displays are exempt from the architectural specialty lighting package regulations.

2. Architectural specialty lighting should highlight and accentuate traditional building detailing and architectural features.
3. The color temperature of architectural specialty lighting should underscore the building materials and character.
4. When non-traditional lighting color is requested, changes in color shall be limited to one change within any 24 hour time period. Modifications to this standard shall require a two-thirds vote of the Planning Commission.
5. Precise lighting applications should highlight distinctive architectural features.
6. All proposed light fixtures should be permanently mounted.
7. Architectural specialty lighting should be unobtrusive in intensity and should not turn a building into an attention-getting device or blanket signage.
8. Architectural specialty lighting shall not interfere with or obscure the public's capacity to receive information, or cause visual confusion by interfering with pedestrian or vehicular traffic. Architectural specialty lighting shall conform to the character of the community, enhance the visual harmony of development, and preserve the public health, convenience, welfare and/or safety within the City of Chesterfield by maintaining the high aesthetic quality of the community.
9. When an architectural specialty lighting package is requested for a proposed or existing development, the criteria for site lighting, as provided for in this Article, may no longer be applicable in its entirety or portions thereof. The reason for the requested modification is to provide for flexible architectural accent lighting criteria that promotes superior design, and is tailored to a specific development which may vary from general ordinance provisions.
10. Consideration of flexibility in architectural specialty lighting criteria is based on a number of review factors including, but not limited to, the physical impact of the proposed architectural specialty lighting package, the quality of the proposed architectural specialty lighting package, and mitigation of unfavorable conditions such as excessive lighting, light spillover, height, and other related conditions and potentially negative impacts. However, in no instance shall architectural specialty lighting applications result in light trespass at the property line.
11. When an architectural specialty lighting package is requested for a development, the following shall be submitted to the Department:
 - a.) A narrative detailing the reasoning for the architectural specialty lighting package request and why it will enhance the proposed

development above what would be permitted through the City of Chesterfield UDC. The narrative shall address how the proposed architectural specialty lighting is architecturally integrated with the building style, materials, and color.

- b.) The narrative shall include a description of the location, illumination level, color, dimensions, mounting height, construction material, hours of use, nature (static, shifting, flashing, blinking, animation, graphics, light patterns, etc.), frequency and duration of lighting shifts/changes, brightness, and type of all proposed architectural accent lighting fixtures.
 - c.) Detailed, high-resolution, color elevations drawn to scale of all structures containing proposed architectural specialty lighting fixtures.
 - d.) Night view perspectives or renderings.
 - e.) Photographs of all existing architectural specialty lighting fixtures.
 - f.) Lighting plans indicating the location of all standards and fixtures and the proposed type of illuminating devices, fixtures, lamps, supports, reflectors, and other devices as well as three-dimensional photometric elevations denoting foot-candle levels on all impacted building elevations and adjacent ground areas.
 - g.) A cut sheet will be required for each proposed fixture and associated shielding.
 - h.) Where shielding is not provided in conjunction with the proposed light fixture, information indicating that no light trespass or sky glow will result from the requested fixture is required.
 - i.) Photographs of similar installations or building applications.
 - j.) Photographs of adjacent properties.
 - k.) Other information as required by the City of Chesterfield.
12. Upon review by staff and after receiving recommendation from the ARB, architectural specialty lighting packages shall be submitted to the Planning Commission for review and consideration.
- D. Site Lighting. Site lighting shall be designed to provide the minimum lighting necessary to ensure adequate vision and comfort in parking areas, and to not cause glare or direct illumination onto adjacent properties or streets. The Director of Planning shall approve exterior light fixtures and usage after submittal of items as delineated in sub-section G demonstrate compliance with the standards set forth in this section.

1. All exterior lighting shall be unobtrusive, harmonious with the local area, and constructed or located so that only the intended area is illuminated and off-site glare is fully controlled.
2. Exterior site lighting shall be fully-shielded, cut-off optics, flat-lens enclosed luminaires.
3. The mounting height of all light standards shall not exceed twenty (20) feet.
4. Exterior building lighting shall be architecturally integrated with the building style, material, and color. The color of exterior lamps shall be consistent with that on surrounding buildings.
5. All accent lighting, including Light-Emitting Diodes (LED), and lighting used for signage shall be subject to the approval of the Department.
6. Parking area lighting shall be designed and installed so as to achieve the illumination levels set forth in Table 3 below. Lighting shall be maintained so as to achieve not less than 80% of the minimum illumination level set forth by the following Table 3.
7. The facades of buildings facing I-64/US 40 should utilize accent lighting, as opposed to flood lighting. All lighting shall be mounted at a maximum height of 30 feet.
8. The Director of Planning may permit lighting arrangements exceeding the maximum initial level set forth in Table 3 below to allow lighting designs which substantially exceed the required minimum and average illumination levels. Any plan exceeding the levels below should be accompanied by a statement from a qualified lighting designer providing industry standards and information substantiating the requests.

Table 3: Illumination standards in foot-candles for structures and their parking areas:

	Residential	Commercial	Other
Minimum initial level at any point on the parking area.	0.07	0.5	0.3
Maximum initial level five (5) feet from the base of a light standard.	3.0	8.0	5.0

* For the purpose of this subsection, "commercial" refers to parking areas for any land use, regardless of zoning designation, in which goods or services are offered to the general public on the premises.

- E. Street Lighting. Streetlights shall be required in residential and nonresidential subdivisions in accordance with the criteria set forth in this Section of the UDC. This includes public streets, private streets, and roadway easements. The lighting source may be electric, gas, or solar.

1. The Director of Planning shall approve street lighting after submittal of items as delineated in sub-section G demonstrate compliance with the standards set forth in this section.
2. Streetlighting Plan. All streetlighting shall be reviewed and approved by the Planning Department, including location, spacing, height, and assembly details. Assembly details shall include illumination levels, lamping, fixtures, enclosure, mast arm, pole, photo cell, and any other devices. The developer shall submit for review and approval such number of copies as requested by the Department of the approved preliminary plat indicating the location of light standards and all assembly details. All light standards shall meet the following requirements:
 - a.) Residential light standards shall be not less than sixteen (16) feet above grade. Non-residential light standards shall be not less than twenty two (22) feet above grade.
 - b.) Lumen output and illumination level shall adhere to standards contained within ANSI / IENSA RP-8-14 Roadway Lighting.
 - c.) Streetlights shall be placed at each street intersection within a subdivision, on street frontage between intersections (in accordance with Table 5 or 6), at each intersection of a street with a pedestrian way, at each circular turnaround (cul-de-sac), and in compliance with all provisions and regulations contained within this section.
 - (1) Exception: In a large-lot subdivision or a subdivision in the NU Non-Urban District utilizing the density development procedure, a streetlight shall be required only at each intersection of a private or public roadway with an existing or proposed public or private street.
 - d.) Streetlights shall be placed along any existing adjacent State, County, or City roadway which does not contain sufficient existing lighting, as determined by the Department.
 - e.) Lighting shall be designed and maintained to avoid unnecessary illumination of residential interiors. Streetlighting shall be unobtrusive and not create any light nuisance or glare.
 - f.) Any gas or electric facilities supplying illumination to streetlights shall be buried a minimum of eighteen (18) inches below grade. All gas or electric piping and wiring to illumination sources shall be contained within the light standards or pole structure.
 - g.) Light standards shall generally not be located within three feet of the street pavement. Where sidewalks are required, streetlight standards shall be located equally between the sidewalk and street

pavement. Variations to this section may be approved by the City Engineer.

- h.) The developer shall submit to the Department a maintenance agreement, a trust indenture, or other similar instrument setting for the person, corporation, trustees, or other agencies responsible for the assessment necessary for the operation and the maintenance of the lighting system within the subdivision, including any subdivision lights located on adjacent State, County, or City roadways.
- i.) To achieve uniformity, Streetlighting Plans shall utilize the same light fixture, standard, and luminaire throughout the development. Exceptions may be approved by the Director of Planning with justification.
- j.) All lighting shall be installed and maintained in accordance with the approved lighting plan, unless modifications are approved by the Department in accordance with City Policy.
- k.) Light criteria for residential subdivisions shall comply with Table 5.

Table 5: Distance Requirement for Residential Subdivision Light Standards

Type of District/Street	Maximum Distance Permitted between Light Standards
Cul-de-sac and loop streets not in special procedure districts	325 feet
Local streets	325 feet
Collector streets	250 feet
Arterial streets not in special procedure districts	200 feet
Arterial streets in R-1, R-1A, R-2, E ½, E-1, E-2, PEU, or PUD	250 feet
Cul-de-sac and loop streets in "R-1" Residence District	400 feet
Cul-de-sac and loop streets in R-1A, R-2, E ½, E-1, E-2, E-3, PEU or PUD	325 feet

- l.) Light criteria for non-residential subdivisions shall comply with Table 6.

Table 6: Distance Requirement for Non-Residential Subdivision Light Standards

Type of District/Street	Maximum Distance Permitted between Light Standards
Cul-de-sac streets, loop streets, local streets	325 feet
Collector streets	250 feet
Arterial roadways not located in "PI", "LI" or "M" District	200 feet
Collector streets in "PI", "LI" and "M" Districts	325 feet
"C-8" and/or "PC" Planned Commercial District	325 feet

F. Use Specific Criteria.

The following uses must adhere to all lighting criteria set forth in this Section of the UDC, in addition to specific requirements as detailed below. These uses include but are not limited to Recreational Facilities, Commercial Holiday Lighting, Outdoor Theatres, Medical Facilities, and Gasoline Stations.

1. Recreational Facilities. Any light source permitted by this UDC may be used for lighting or outdoor recreational facilities (public or private), such as, but not limited to, football fields, soccer fields, baseball fields, softball fields, tennis courts, and horse or show areas, provided all of the following conditions are met:
 - a.) Lighting for parking lots and other areas surrounding the playing field, court, or track shall comply with these lighting standards.
 - b.) All fixtures used for evening lighting shall be fully shielded. To the extent that it is not feasible to use fully-shielded fixtures then lighting shall be designed and provided with sharp cut-off capability, so as to minimize any light nuisance, spill-light, and glare.
 - c.) Illumination of the playing field, court, or track shall not be permitted after 10:30 p.m., except to conclude a scheduled event that was already in progress.

2. Holiday Lighting. Residential and commercial holiday lighting is permissible from November 15 to January 25.
 - a.) Commercial holiday flashing lights are prohibited.
 - b.) Commercial holiday lights are encouraged to be turned off after the close of business.

3. Lighting of Gasoline Station Aprons and Canopies.
 - a.) Lighting levels on gasoline station aprons and under canopies shall be adequate to facilitate the activities taking place in such locations as well as to provide a safe, secure environment.

- b.) All lighting illumination levels and fixtures shall comply with the provisions of the City of Chesterfield Lighting Standards.
- c.) All lamp source types and illuminance levels shall meet the guidelines of the IESNA.
- d.) Areas on the apron away from the gasoline pump islands used for parking or vehicle storage shall be illuminated in accordance with the requirements for parking areas set forth in Section 04-03.D. of this Article. If no gasoline pumps are provided, the entire apron shall be treated as a parking area.
- e.) Areas around the pump islands and under canopies shall be illuminated so that the minimum horizontal illuminance at grade level is no more than 5.5 foot-candles. The ratio of average to minimum illuminance shall be no greater than 4:1. This yields an average illumination level of no more than 22.0 foot-candles.
- f.) Light fixtures mounted on canopies shall be recessed so that the lens cover is recessed or flush with the bottom surface of the canopy and/or shielded by the fixture or the edge of the canopy so that light is restrained to no more than 85 degrees beyond the vertical plane.

G. Submittal Requirements.

Submission Contents. The Applicant for any site development plan, site development concept plan and site development section plan shall also submit a lighting plan that shall comply with this UDC. Lighting plans are approved by the City of Chesterfield. The following information shall be included in the plan:

1. A diagram indicating the location of all standards and fixtures and the proposed type of illuminating devices, fixtures, lamps, supports, reflectors, and other devices as well as a photometric plan denoting foot-candle levels;
2. A description of the illuminating devices, fixtures, lamps, color of lights, supports, reflectors, and other devices;
3. A cut sheet will be required delineating all light standards and fixtures.

H. Prohibitions.

1. The operation of searchlights for advertising purposes is prohibited.
2. The use of laser source light or any similar high intensity light for outdoor advertising, when projected above the horizontal, is prohibited.

3. With the following exceptions, all lamp source types are acceptable provided they are installed in equipment which meets the Illuminating Engineers Society's requirements:
 - a.) The use of mercury vapor lamps and low pressure sodium lamps is discouraged.
 - b.) Fluorescent lamps with a color rendering index greater than 70 and color temperatures between 3000°K and 4100°K are required.
4. Neon.
 - a.) Neon Prohibited. The use of visible neon tubing as a sign or for architectural element, whether located on the exterior or interior of a wall or window, if visible from the street is prohibited.
 - b.) Request for Exception: Requests for the allowance of neon as an architectural feature shall be made to the Planning Commission as an Architectural Specialty Lighting Package in accordance with subsection C.

I. Times of Operation.

1. Exterior lighting for security purposes may be on from dusk to dawn.
2. Non-security lighting, other than that used for special and infrequent occasions, shall not be on past approved hours of operation, if any, or 11:00 p.m., whichever is later.

J. Airport Lighting.

1. Airport lighting which is required for the safe and efficient movement of aircraft during flight, take off, landing, loading, unloading, servicing areas and taxiing is exempt from the provisions of this UDC. All other outdoor lighting at airports shall comply with this UDC.
2. Strobe lights on communication towers and other hazards to aerial navigation, required by the Federal Aviation Administration (FAA) during the daytime and permitted but not required at night, may not be used at night. Other lights used at night on such structures shall not be brighter than the minimum required by the FAA.

K. Exemptions.

1. "Grandfathered" Existing Fixtures. All other outdoor light fixtures lawfully installed prior to and operable on the effective date of this UDC are exempt from all requirements of it unless:
 - a.) It involves removing or replacing existing light fixtures with light fixtures that will increase the foot-candle level above the originally

approved level or changes the shielding of the fixture from what was originally approved; or

b.) Fossil fuel light is used.

2. Fixture Design Exemptions. The Planning Commission may approve decorative light fixtures as an alternative to shielded fixtures when it can be proven that there will be no off-site glare light trespass in excess of .5 foot-candle and the proposed fixtures will improve the appearance of the site.

a.) Lamp or Fixture Substitution. Should any outdoor light fixture, or the type of light source be subject to a lighting plan required by this UDC, be changed after zoning authorization or the issuance of a permit, a change request must be submitted to the City of Chesterfield for approval, together with adequate information to assure compliance with this UDC. Such submittals and approval must be received prior to substitution.

3. Temporary Exemptions. Lighting that is required for a lawful use, where compliance with this UDC would substantially impair its use, shall be considered for a temporary exemption by the Planning Commission.

a.) Any person may submit a written request to the Director of Planning for consideration of a temporary exemption. Temporary exemption requests shall contain:

(1) Specific exemption or exemptions requested.

(2) Type and use of outdoor light fixture involved.

(3) Duration of time for the requested exemption.

(4) Type of lamp and calculated lumens.

(5) Total wattage of lamp or lamps.

(6) Proposed location on premises of the outdoor light fixtures.

(7) Previous temporary exemption, if any.

(8) Physical size of outdoor light fixtures and type of shielding provided.

(9) Such other data and information as may be required by the Director of Planning.

b.) Approval Duration. If approved, temporary exemptions shall not be valid for longer than 30 days from the date of issuance. Approvals

may be renewable upon the discretion of the Director of Planning and each such renewal shall not be valid for more than 30 days.

L. Appeal.

Decisions of the Director of Planning regarding the application of this Section of the UDC may be appealed to the Board of Adjustment in accordance with applicable procedures as established by the Board of Adjustment.

M. Penalty for Violation.

This Section of the UDC and the requirements thereof are exempt from the warning and summons for violation set out in Article 08 of the UDC.



**IV. B
VIII.C**

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Planning Commission Public Hearing & Vote Report

Meeting Date: June 22, 2020

From: Annisa Kumerow, Planner

Location: City of Chesterfield

Petition: **P.Z. 05-2020 City of Chesterfield (Unified Development Code-Article 4)**

PROPOSAL SUMMARY

The Unified Development Code (UDC) was approved and adopted by the City Council in June of 2014. The purpose of this Public Hearing is to amend portions of Article 4, Section 31-04-03 Lighting Standards. This proposed amendment is in relation to direction received from the Planning and Public Works Committee in May of 2020 to pursue updates to the UDC Lighting Standards.

The proposed changes were directed by the Planning and Public Works Committee and require a Public Hearing and recommendation from the Planning Commission. After the vote is taken by the Planning Commission, this project will be presented before the Planning and Public Works Committee for a recommendation to City Council.

REQUEST

The changes herein are recommended by Staff in order to update the City's lighting code. The proposed amendments to Article 04-03 of the UDC are necessary to clarify and consolidate existing requirements in a more logical fashion, while eliminating outdated sub-sections of UDC Lighting Standards. A summary of the changes is described below:

Removal of requirements related to former lighting methods

The existing lighting code contains specific fixture lamp types. The fixture lamp types listed in code are obsolete, and do not allow for current lighting methods, such as solar and LED technology.

Revision of illumination standards

Currently, the lighting code specifies illumination standards in the form of minimum and maximum footcandles, average maintained footcandles, and uniformity ratios. While the intent of the multiple illumination standards was to reduce light pollution, glare, and spillover, the multiple forms of illumination standards is cumbersome. The inclusion of lighting standards in the form of minimum and maximum footcandles is sufficient, as average maintained footcandles and uniformity ratios are addressed by qualified lighting professionals. Furthermore, the lighting code contains specific language to address light pollution, glare, and spillover.

Revision of streetlighting standards

Staff proposes that the lighting code be amended to allow for electric, gas, and solar as energy sources for streetlighting. Additionally, staff proposes that the tables regarding illumination standards for streetlighting be removed. Lumen output and illumination level are proposed to adhere to standards contained within ANSI/IESNA RP-8-14 Roadway Lighting.

Removal of outdated sub-sections

The current lighting code contains use-specific lighting criteria. The following items identify sub-sections pertaining to use-specific criteria to be removed, followed by staff analysis:

- Outdoor Theaters
The lighting criteria for outdoor theaters specifies requirements relating to marquee signage. The appropriate mechanism for marquee signage is through the Sign Package process delineated in Article 04-05D of the UDC.
- Medical Facilities
The sub-section regarding lighting for medical facilities contains requirements specifying that lighting shall be unobtrusive and harmonious with the local area. These requirements are addressed in other areas of the lighting code.

Consolidation of requirements

The existing lighting code is duplicative and unclear. Several revisions to the lighting code are proposed in order to consolidate existing requirements in a more logical order. The criteria relating to lighting for planned districts and special procedures has been consolidated into the general lighting code, as the regulations are addressed in other areas of the lighting code. There is no functional difference in lighting code review between planned zoning districts and conventional zoning districts.

UDC Article 4 Section 4-03 incorporating the requested revisions is attached to this report and Staff is recommending approval by the Planning Commission. After the vote is taken by the

Planning Commission, this project will be presented before the Planning and Public Works Committee for a recommendation to City Council.

Attachments

1. Public Hearing Notice
2. Amendment to UDC Article 4-03 Lighting Standards
3. Existing UDC Article 4-03 Lighting Standards