

Item 3

GENERAL INFORMATION

Applicant: City of Bloomington

Location: City Wide

Request: Revisions to the standards for exterior lighting and revising the definition of nonconforming site characteristics thereby amending chapters 19, and 21 of the city code.

PROPOSAL

As part of the Zoning Ordinance update project, the staff proposes revising the City Code relating to parking lot and security lighting. The changes would add Section 21.301.07 and amend Sections 19.03, 19.29, 19.38.01, 19.38.12, 19.40.12, 19.51, 19.54, 19.61.01, 19.63.01, 19.63.04, 21.301.06 and 21.504. Based on input from a lighting focus group and the Bloomington Chamber of Commerce, a draft ordinance has been prepared. The proposed ordinance is attached.

ANALYSIS

Since the 1970s, the City of Bloomington required a review of parking lot and security lighting as a development condition of approval. The reviews were completed on a case by case basis which resulted in inconsistency. On August 19, 1996, the City Council adopted a comprehensive revision to the City Code provisions regulating parking lot and security lighting. The new ordinance was adopted after lengthy study that included input from residents and business and community groups. It replaced language first adopted in the 1960s and codified long standing City policies regarding exterior lighting. On November 2, 1998, the City Council adopted parking lot and security lighting ordinance revisions reducing minimum light levels in a residential zone by 25 percent. (2 foot-candles minimum to 1.5 foot-candles) and to required a flat lense design to reduce glare and light pollution. (Staff report attached)

The Planning Division and Police Department staff continued to monitor its implementation. Since the adoption of the ordinance, there have been many lighting technology changes which staff believes warrants several changes to clarify the City Code intent. Staff assembled a focus group of lighting designers, installers and residents to review the regulations and formulate changes. A summary table of the changes is attached to the staff report.

PLAN SUBMISSION REQUIREMENTS

Since 1996, staff has reviewed a variety of plans with inconsistent content and performance results. The ordinance allows a plan to be prepared by any individual with no accountability for accuracy or content.

At post installation inspections it was not uncommon to find plans not prepared and signed by a Lighting Certified professional or Engineer, to be 25 to 50 percent below the levels shown on the plan. In addition, it was not uncommon to see on-site changes to pole heights, fixture types and pole locations which impacted the light levels significantly. As a result, costly and time delaying alternations were required to comply with the approved plans and the City Code.

The proposed amendment requires “Effective January 1, 2009, all plans must be signed by a registered Electrical Engineer or a Lighting Certified (LC) professional certified by the National Council on Qualifications for the Lighting Professions.” The information required on the plan clearly defined to assure the plans are all prepared with consistent data and information and that accountability for a plan is provided. Once a plan is approved, the City Code would require “modifying approved lighting, including lamp or fixture substitution, requires Issuing Authority approval”. This is not an uncommon practice when plans are professionally prepared and signed.

During the review of the regulations adopted in 1996, a concern over energy use was expressed. Staff informed the City Council the Minnesota State Energy Code regulates the amount of energy permitted for a variety of uses. Staff was not aware there is an exemption from the Minnesota Energy Code if a municipality requires greater lighting levels which exceed the energy code. This permits low performance fixtures to be installed to meet the City Code. Staff recommends a requirement that all plans include calculations verifying compliance with the State Energy Code.

CLARIFICATION OF LIGHTING TYPES

The City Code does not directly address lighting for architectural lighting, all exit and entrances, canopy lighting, and other forms of lighting. The City Code requires review of such lighting without identifying design standards. Often, this resulted plans being denied as they failed to meet the policies established for the review. Developers and designers seek clearly defined information to eliminate multiple amendments which often was the result of a case by case review. Staff believes the adoption of standards will reduce subjectivity in review and provide the lighting designer clear information on what is acceptable for a specific property or use.

The proposed amendments set standards for zero cut-off for residential and commercial properties. This includes single family homes. The City Code would prohibit outdoor lighting at a single family home to exceed 3,000 lumens without a 90 degree cut-off. The limits for zero cut-off illumination in other districts would be 6,000 lumens.

Upward lighting for flags and for exterior walls were not regulated staff proposes. Up lighting is regulated to allow up to 15,000 lumens and down lighting on wall surfaces would be limited to 30,000 lumens with maximum lumens per square foot of wall surface. Flagpole illumination is a common request and often results in glare problems. The revised ordinance established criteria for flag lighting. The City Code would allow over twice the illumination used for the flags on the west side of the City Hall.

A common complaint with regard to canopy lighting has been glare. This is the result of drop down lenses being used to illuminate the canopy. Staff added language to clarify the use of canopy lighting to

assure there is minimal glare and optimal lighting on the surface under the canopy. The light fixtures mounted under roof overhangs and canopies must be recessed so that the lens cover is recessed or flush with the bottom surface (soffit) 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 from vertical. Lights must not be mounted on the top or sides (fascia) of the canopy for the purposes of illuminating the canopy.

In recognizing there are several locations which do not utilize a parking lot during the evening hours, staff as proposed a proof of lighting exemption. A parking lot used exclusively for daylight use and secured to prohibit nighttime use would be exempt from the lighting requirements subject to installation of all conduit and material to allow installation at a later date without disturbing the parking lot surface. An example where this could be implemented would be Normandale Junior College where the demand for daytime parking is significant and lighting would not be required with proper monitoring of the lots use.

LIGHTING PERFORMANCE STANDARDS

Staff recommends the regulations be simplified by placing the performance standards into a single table for easier reference. A majority of the performance standards are not changing. The following is a synopsis of and explanation for the recommended performance standard changes:

- **Lumens versus Watts:** The maximum light source limits measured in lumens rather than watts. With the changes in technology having high output Light Emitting Diodes (LED), and High Intensity Discharge (HID), limiting the illumination to lumens is a more consistent approach.
- **Luminaire height:** In Residential Districts, staff recommends increasing the height allowed from 25 feet to 28 feet to allow a three foot base. Previously poles were either cut to allow a base or a 20 foot pole was used and the total height was 23 feet.
- **Lighting Curfew:** There is no clearly identified review process to assure the lighting circuits were constructed to allow extinguishing lights which were not required for security purposes. Staff recommends language to clearly emphasize all lights required for security must be on an alternate circuit.
- **Minimum lighting for office buildings:** The minimum parking lot illumination for office buildings is being reduced from 2.0 foot-candles to a minimum of 1.5 foot-candles. A review of development over the past decade has verified that the level of activity is not the same as a high traffic retail establishment. The decrease of the lighting levels to 1.5 foot-candles for office uses would be consistent with the light levels for the west parking lot at City Hall.
- **Emergency entrances and exits:** It is important all entrance and exits are illuminated. Staff recommends that a minimum illumination be provided at each entrance to any structure based on the use of the property.
- **Sidewalk illumination:** The City Code requires all sidewalks be illuminated to 5 foot-candles. Staff recommends clarifying the regulation and varying the illumination level required for all sidewalks within 50 feet of a primary entrance.
- **Inspections:** Staff proposes language requiring an inspection to verify delivery of the approved lamp, fixture, and pole heights prior to installation. Before a building permit

final inspection may occur or a Certificate of Occupancy may be issued, a post-installation inspection by the Issuing Authority must verify compliance with the approved plan depicting the initial foot-candle levels. Individual points may not vary more than 20 percent with the average of all points within 10 percent of the initial foot-candle level on the approved plans. Any deviation beyond these criteria must be remedied prior to the issuance of a Certificate of Occupancy.

- Exemptions: The ordinance clearly list exemptions.
- Light source: Prohibiting lights with a Color Rendition Index (CRI) of less than 50 and Color Temperature less than 2,500 K. As shown in attachments, the ability to distinguish correct color recognition increases with the CRI. For identification purposes for crimes, color is significant. Anything less than a CRI of 50 will significantly increase the likelihood of incorrect color recognitions by a witness. The CRI is a measure of the degree of color shift objects undergo when illuminated by the light source as compared with the color of those same objects when illuminated by a reference source, of comparable color temperature. Light sources differ in their ability to render the color of objects "correctly.
- Conformance triggers: Staff does not recommend any changes in the performance triggers.

MANDATORY COMPLIANCE

The City Code requires that all lighting be in compliance no later than January 1, 2010. This compliance was related to minimum light levels for security purposes. It is not inclusive for pole heights, cut-off angles other performance standards. However, the standards are applicable for any replacements of any lighting pole or luminaire.

As we approach the compliance date, staff estimates over 50 percent of the properties are in compliance. While this is significant, there are many properties which have not been notified and are not aware of the requirements, as well as several properties which have installations which were approved and constructed in accordance to an approved plan. Staff recommends amending the compliance mandate by adding six exemptions. They are:

- (1) The site has an approved lighting plan with installation on or after August 19, 1996;
- (2) The Issuing Authority has approved a lighting plan for the site with phased installation to occur no later than January 1, 2014;
- (3) The site has an approved lighting plan with installation prior to August 19, 1996 that documents illumination levels of no less than 75 percent of the illumination levels required in Section 21.301.07(C)(11) or (12) for the respective use, provided code complying light fixtures are used and illumination levels are maintained as per the approved plan;
- (4) The site or portion thereof is mapped and scheduled for acquisition by January 1, 2020 by a Federal, State or Local government agency. In the event that only a portion of the site is mapped, only that portion is exempt from compliance;
- (5) The site is planned for redevelopment prior to January 1, 2020 as evidenced by an approved Preliminary Development Plan; or

- (6) The City Council has approved a variance exempting compliance due to a hardship or special circumstance.

OTHER CONSIDERATION

The lighting focus group and staff discussed the need to illuminate every parking space to the minimum levels identified in the City Code. A suggestion that portions of a parking lot are not used a majority of the time, therefore, a much lower need for illumination. Variations of the concept were evaluated and not included in the proposed changes. Staff is seeking input from the Planning Commission as to need to illuminate all parking, as currently required, or should staff evaluate alternatives to limit the amount of parking illuminated. The concepts reviewed were:

- A requirement for parking lots in excess of 50 spaces would be required to illuminate 80 percent of the required parking spaces located closest to the building entrance. Examples given are that the 20 percent of the parking at major shopping centers are used less than a few days a year.
- Many locations have more parking provided which exceeds the City Code requirements for the use of the property. An evaluation was included to only require illumination for the Parking required by the City Code.
- Discussions with regard to decreasing the illumination levels as spaces become distant to the building entrance.

RECOMMENDATION

In Case 10000A-08, staff recommends approval of an ordinance to amend Chapters 19 and 21 of the City Code as it relates to exterior lighting and the definition of nonconforming site characteristics.

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