

**Community Planning and Economic Development Planning Division Report
Zoning Code Text Amendment**

Date: March 8, 2010

Initiator of Amendment: Council Member Schiff

Date of Introduction at City Council: February 15, 2008

Ward: Citywide **Neighborhood Organization: (If Applicable):** Citywide

Planning Staff and Phone: Brad Ellis, 612-673-3239

Intent of the Ordinance: To modify the lighting standards of service area pump island canopies, instituting a maximum illumination level.

Appropriate Section(s) of the Zoning Code:

Chapter 535: Regulations of General Applicability.

Chapter 536: Specific Development Standards.

Background: The City Council has expressed concern about over-illumination of service area canopies, and the possible effects that illumination and glare has on neighbors and on pedestrian and automobile traffic. Staff has been requested to examine a possible text amendment related to lighting standards of service area pump island canopies, including design and illumination levels. This amendment is intended to solve issues related to glare and brightness caused by over-illumination of the canopies by mandating maximum illumination levels of the service area canopies. A glossary of lighting terms is attached to this report.

There are two primary methods to reduce the glare from under-canopy lighting: blocking direct viewing of the lighting element and controlling the output of the lighting element. The City zoning code already requires that service area canopy light fixtures be completely recessed within the canopy so that the lenses shall not extend beyond the surface of the canopy. This alone dramatically reduces glare because the light is projected downward rather than outward, illuminating only the area intended and not shining directly into motorists' or pedestrians' eyes. Please see the attached photos for examples of traditional drop-down and recessed lighting for comparison. In addition, section 535.590(b)(1) of the zoning code contains the following language regulating illumination levels at the property line:

Lighting fixtures shall be effectively arranged so as not to directly or indirectly cause illumination or glare in excess of one-half (1/2) footcandle measured at the closest property line of any permitted or conditional residential use, and five (5) footcandles measured at the street curb line or nonresidential property line nearest the light source.

With these regulations already in place, staff focused on how to control brightness while still maintaining proper illumination levels for patrons of the business. There are a variety of ways to measure illumination, and after researching different standards staff recommends regulating the average

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output of the lighting fixtures in bare-lamp lumens. Staff considered regulating by wattage but does not feel watts are the best way to control illumination output since watts are a measure of power usage. As lighting technology improves, efficiencies allow greater output while using fewer watts, which would in the long-run allow greater illumination than was originally intended. Staff also considered under-canopy footcandles, but the fluctuation can be quite high under a single canopy depending upon where the reading is taken. The proposed text amendment would mandate that the initial output of all lighting sources on the canopy cannot exceed 40 lumens per square foot. A lumen is a measure of light energy generated by a light source, and is essentially equivalent to one footcandle (see glossary for specifics). This method allows staff on the front end to make easy, informed calculations of the lighting output before the canopy is constructed, with relative ease of measurement for inspection staff.

The Planning Commission and the City Council have placed similar conditions on some recent conditional use permit applications, specifically “The applicant shall ensure lighted canopies on the property will not exceed 60 initial raw lamp lumens per square foot.” Research by staff indicates that “raw” lamp lumens and “bare” lamp lumens are synonymous. “Bare lamp lumens” seems to be more commonly used, so is the language found in the proposed amendment.

Purpose for the Amendment:

What is the reason for the amendment?

What problem is the Amendment designed to solve?

What public purpose will be served by the amendment?

What problems might the amendment create?

The City Council is concerned about glare and brightness from service area canopies and how that can impact neighbors as well as traffic. The City Council is also interesting in reducing light pollution generally, as outlined in the comprehensive plan.

This amendment is intended to solve issues related to glare and brightness caused by over-illumination the canopies. One of the most common complaints related to new automobile convenience facilities is glare and brightness caused by over-illumination. This glare can adversely impact quality-of-life for neighbors as well as cause traffic issues when motorists have trouble with glare and the contrast between the illumination levels on- and off-site.

The public purpose underlying the amendment, as noted above, includes the reduction of light pollution, both generally and specifically as it impacts neighbors. The amendment increases public safety by minimizing glare on automobile traffic.

Staff has considered whether the proposed amendment would result in under-illumination of the area below the service island canopy, reducing the lighting below useful levels. Based on the research, staff does not believe this will happen. The proposed requirement could be varied in accordance with section 525.520(22).

Timeliness:

Is the amendment timely?

Is the amendment consistent with practices in surrounding areas?

Are there consequences in denying this amendment?

The amendment is timely because there is a growing interest locally and nationally in reducing light pollution. This amendment would be one of many ways the City can reduce light pollution. The City does see requests for new or rebuilt automobile convenience facilities roughly once a year, and the City Planning Commission and the City Council have added similar language as a condition to recent approvals. This amendment would codify that language, requiring it as a specific development standard to all automobile convenience facilities.

Communities from surrounding areas and peer cities all regulate lighting differently. Some have recently updated their codes, incorporating the latest research and recommendations from diverse sources in an effort to reduce light pollution while other municipalities have not revised their codes in some time. Below is a breakdown of how surrounding communities regulate lighting.

- Bloomington has very specific lighting standards, much taken from the research. Bloomington specifies minimums and maximums in footcandles across a site, for example at entrances, curb cuts, and pedestrian pathways.
- Richfield requires lighting to be recessed, but has no specific requirement for brightness
- Edina has general performance standards, but allows greater illuminance levels than does the City of Minneapolis.
- Golden Valley has regulations similar to Minneapolis' existing regulations, but incorporates a lighting curfew.
- St. Louis Park's regulations are similar to Minneapolis' and references IES standards
- Lakeville and Saint Paul measure illuminance at the property line in footcandles, similar to Minneapolis' current regulations.

Staff conducted research into similar regulations in peer cities as well

- San Diego has general performance standards similar to Minneapolis, but includes a provision based on California code which stipulates maximum energy usage.
- Pittsburgh breaks out by zoning district, and measures at the centerline of the street for some (mostly commercial/industrial) zones, and three feet inside the lot line in others, mainly residential.
- The Cities of Seattle, Portland, Denver, and Milwaukee all regulate using footcandles at the property line.

The consequences of denying the amendment are that the City Planning Commission would continue to address the issue on a case-by-case basis, with the potential for continued over-illumination of service canopies, increasing light pollution and creating glare for neighbors, pedestrians, and motorists.

Comprehensive Plan:

How will this amendment implement the Comprehensive Plan?

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The following policies of the Minneapolis Plan for Sustainable Growth are related to the proposed amendment:

Relevant Policy: 1.2: Ensure appropriate transitions between uses with different size, scale, and intensity.

Relevant Implementation Steps:

- 1.2.2 Ensure that lighting and signage associated with non-residential uses do not create negative impacts for residential properties.

Staff comment: This amendment is designed to minimize or eliminate negative lighting impacts on nearby residential properties.

Relevant Policy: 10.17: Provide sufficient lighting to reflect community character, provide a comfortable environment in a northern city and promote environmentally friendly lighting systems.

Relevant Implementation Steps:

- 10.17.1 Provide high-quality lighting fixture designs that are appropriate to street types and land use, and that provide pedestrian friendly illumination, but minimize glare and dark sky conditions, and other unnecessary light pollution.
- 10.17.8 Update city zoning code to reflect best available practices related to dark skies and the environmental benefits of strategic lighting management.

Staff comment: This amendment will help achieve City goals relating to reducing light pollution and glare. The proposed text recommendation of 40 bare-lamp lumens per square meter corresponds to the amount suggested by the International Dark Sky Association in their Outdoor Lighting Code Handbook.

Relevant Policy: 10.22. Use Crime Prevention Through Environmental Design (CPTED) principles when designing all projects that impact the public realm, including open spaces and parks, on publicly owned and private land.

Relevant Implementation Steps:

- 10.22.7 Locate entrances, exits, signs, fencing, landscaping, and lighting to distinguish between public and private areas, control access, and to guide people coming to and going from the site.

Staff comment: This amendment is designed to limit glare and traffic conflicts while still indicating location of pump islands with sufficient illumination. Limiting brightness under canopies also allows the people under the canopy to better see the surrounding areas.

Recommendation of the Community Planning and Economic Development Planning Division:

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The Community Planning and Economic Development Planning Division recommends that the City Planning Commission and City Council adopt the above findings and **approve** the zoning code text amendment, amending chapter 536, and **return** chapter 535 to author.

Attachments:

- 1) Glossary
- 2) Examples of existing service area canopies
- 3) Reference tables