



Memorandum: Exterior Lighting

TO: Grosse Pointe Woods Planning Commission
FROM: Brigitte Smith Wolf, AICP
SUBJECT: Exterior Lighting ZO Language
DATE: April 19, 2024

This memorandum provides language to consider adding to the Zoning Ordinance to better regulate and set guidance on exterior lighting. Information summarizing current lumen levels along the Mack Avenue Corridor is still included in this memo.

ZONING ORDINANCE STANDARDS

Section 50-6.1. Site Plan G. Preparation and contents of site plan does allow for the Building Department or Planning Commission to request a more detailed lighting plan and/or photometric study to assure adequate protection of surrounding properties.

ZONING ORDINANCE ADDITION - PROPOSED

We propose exterior lighting standards be added to **Article 5 – Site Standards** as a new section: **50-5.22 Exterior Lighting**.

The addition would read as the following:

50-5.22 Exterior Lighting

The purpose of this section is to protect the health, safety, and welfare of the public by encouraging lighting practices and systems that will minimize glare and light trespass while recognizing the need for buildings and sites to be illuminated for safety, security, visibility, and enhancement. This section provides standards for exterior lighting with measurable indicators to improve visibility and minimize nighttime lighting disturbances more consistently and proactively.

- A. *Regulating Illumination Levels by Footcandles.* Existing and proposed lights may not exceed the following maximum intensity levels (measured at a height of 5-feet above grade).

Location/Use	Maximum Level of Illumination (footcandles “fc”)
Overall average for the site	5.0 fc
At any point within the site or from the public right-of-way along the front facade	10.0 fc
At rear property line	0.5 fc



At the sidewalk along the front property line, for properties at 0 lot line (no setback)	3.0 fc*
At the sidewalk along the front property line, for properties with buildings of a front setback greater than 5 feet	1.0 fc
Gas Station (under canopy only)	20.0 fc

**This could be reduced further. We can discuss it at Tuesday's Planning Commission meeting.*

- B. *Shielding.* All exterior lighting, excluding accent lighting in residential districts, must be fully cut off and shielded so the surface of the source of the light is not visible, and is directed downward and shielded away from adjacent properties, with consideration to protecting residential uses.
- C. *Non-Essential Lighting.* Non-essential lighting must be turned off after business hours, except for the minimum necessary security lighting. The use of a motion detector or other automatic timing system of security lighting is encouraged.
- D. *Consistent Fixtures.* The type and design of lighting must be consistent throughout a site.
- E. *Impact.* Lighting must be arranged so as to not adversely affect driver visibility on rights-of-way.
- F. *Decorative Lighting.* Buildings within the C and C-F districts must feature decorative lighting on all façades which face the public right-of-way. Wall pack type lighting is prohibited.
- G. *Gas Station Lighting.* Lighting under gas station canopies is limited to fully recessed lighting fixtures.
- H. *Sign Lighting.* Illuminated signs must comply with the footcandle measurements of the overall site and cannot cause the site to exceed the maximum allowable footcandles at any point within the site or from the public right-of-way.
- I. *Exempt Lighting.* The following are exempt from the requirements of this Article:
 - a. Required exit signs and safety lights for stairs and ramps.
 - b. Temporary holiday lights (provided that such lighting is installed no more than 60-days prior to, and 30 days following, the holiday such decorations represent).
 - c. Lights required by the Federal Aviation Administration, or other federal or state agency.
 - d. Interior lights.
 - e. Temporary lights necessary for construction or emergencies.
- J. *Prohibited Lighting.* The following lights are prohibited:
 - a. Rope lights (including neon, except when used in outlined tubing signs) around and within window and door openings.
 - b. Aerial lasers and/or "searchlight" style lights.
 - c. Flashing, moving, or intermittent lights (including lighting that changes colors).
 - d. Other intense lights, defined as having a light source exceeding 3,000 lumens per fixture.
- K. *Special Exception Lighting.*
 - a. Lighting systems not complying with the requirements of this Article, but consistent with its intent, may be considered by the Planning Commission, subject to special land use approval. This includes instances of: a) Sport fields and stadiums. b) Public monuments, public buildings, government facilities, and religious institutions. c) Any other lighting application determined to be appropriate by the Planning Commission. 2)
 - b. The Planning Commission must find that the proposed lighting will not create unwarranted glare, sky glow, or light trespass. The applicant must demonstrate that every reasonable effort has



been made to mitigate obtrusive light and artificial sky glow, supported by a signed statement from a registered engineer or by a lighting certified professional describing the mitigation measures.

DEFINITIONS:

Lumens – A measurement of light emitted by a source. It can be LED, fluorescent, halogen or incandescent. Also known as “brightness” or “light output.” Reference point: A standard 100-watt incandescent light bulb produces about 1,500 – 1,700 lumens.

Footcandles – A unit of illumination: defined as one lumen per square foot.

CURRENT LIGHTING LEVELS

Footcandle measurements were taken along the corridor at several commercial properties along Mack Avenue, here are the findings (averages; RC = footcandle):

- Streetlights at boulevard = 1 FC
- Ornamental post lights at boulevard = 5 FC
- US/American Mattress
 - 9 FC at corner of Mack and Huntington.
 - 9 to 15 FC along the Mack Ave. sidewalk.
- Crispelli = 15 FC along sidewalk, just as US Mattresses.
- Bucharest Grill (These have changed not, since the Building Department had the facility include further shielding to the exterior parking lot lights.)
 - 12 FC along sidewalk.
 - 27 FC along building at parking lot – has since been reduced.
 - 8 FC away from building at parking lot.
 - 0.7 FC at sidewalk along Torrey and near the parking lot entrance.
 - The parking lot light fixtures needed to be shielded as they define the very definition of “light trespassing”. From the Torrey sidewalk/street, people should not be able to look directly at the fixtures themselves. Added shields have been required to be added to address this, while still allowing for the parking lot to be lit properly.
- A nearby corner gas station averaged 5 FC along the outside edges of the pumps, and 20 FC directly beneath the canopy covering the cars and pumps.
- Much of the business corridor lighting at other cities our Building Official has tested were well below the 13 FC average of the readings taken on Mack between Torrey and Huntington.
- The three parking lots recently tested at the City of Berkley yielded high averages of 10 FC and low of 5 FC with 1 FC along the sidewalks.

Unfortunately, I was not able to find any example language that pertains specifically to halo or back lighting. Further consideration can be given to craft language specific to Grosse Pointe Woods to avoid issues with halo or back lighting.