



**MCKENNA**

# Memorandum: Exterior Lighting

**TO:** Grosse Pointe Woods Planning Commission  
**FROM:** Brigitte Smith Wolf, AICP  
**SUBJECT:** Exterior Lighting Requirements to Consider  
**DATE:** March 22, 2024

This memorandum is to provide an overview of considerations to make in regards to regulating exterior lighting as well as a summary of current lumen levels along the Mack Avenue Corridor.

## **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):

- Street lights 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.
  - Many hundreds of FC with the meter situated below the wall sconces; bottoms of sconces roughly 5-feet above the 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.
  - 8 FC away from building at parking lot.
  - 0.7 FC at sidewalk along Torrey and near the parking lot entrance.

**HEADQUARTERS**  
235 East Main Street  
Suite 105  
Northville, Michigan 48167

○ 248.596.0920  
F 248.596.0930  
**MCKA.COM**

**Communities for real life.**



- The parking lot light fixtures needed to be shielded as the 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.

**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.

Inclusion of the following should be considered in the Zoning Ordinance:

- 1) *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 and from centerline of Mack Ave.	0.5 fc
Gas Station (under canopy only)	20.0 fc

- 2) *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 particular consideration to protecting residential uses.
- 3) *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.
- 4) *Consistent Fixtures.* The type and design of lighting must be consistent throughout a site.
- 5) *Impact.* Lighting must be arranged so as to not adversely affect driver visibility on rights-of-way.
- 6) *Decorative Lighting.* Buildings within the C and C-F districts must feature decorative lighting on all façades which face the public right-of-way or residentially zoned or used property. Wall pack type lighting is prohibited.
- 7) *Gas Station Lighting.* Lighting under gas station canopies is limited to fully recessed lighting fixtures.
- 8) *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 30days 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.
- 9) *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 4,000 lumens per fixture.
- 10) *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.