

OUTDOOR LIGHTING ORDINANCE TASK FORCE UPDATE ON DRAFT ORDINANCE

Purpose - The purpose of this Outdoor Lighting Ordinance of the City of Cambridge is to regulate outdoor lighting in the city, the intent being to permit an amount of outdoor lighting that is appropriate to allow for the safe use and enjoyment of outdoor areas, while also mitigating potential nuisance in the form of light trespass and glare to abutters and the public at large, reducing light pollution and promoting energy conservation.

- General Requirements for New Fixtures and Replacement Fixtures:
 - This is a municipal ordinance with review and enforcement by ISD.
 - There will be a 3-month educational period after the adoption of the ordinance prior to the effective date.
 - **Conformance with All Applicable Codes** – currently, property owners are required to pull a permit for any electrical work, including any lighting that is hardwired. This proposed ordinance does not change that requirement.
 - Property owners must comply with the new lighting standard after the effective date for all **new light fixtures and replacement light fixtures or replacement light bulbs**.
 - Licensed electrician will complete electrical permit and **sign affidavit** that the **new or replacement fixtures** comply with the new lighting design standard.
 - All **existing fixtures installed prior to the new ordinance** will need to comply with the new lighting standard within 5 years of the effective date of the new ordinance. The City wants to provide a reasonable amount of time for property owners to meet the new design standard while implementing the new limits when any bulb or fixture is installed or replaced.
 - All lighting complaints will be assessed under the applicable codes and permitting requirements. If the light fixture was not installed with the appropriate permits under the applicable standard then it will be required to meet the new lighting ordinance.

- Property Owners can choose one of two standards to follow (must choose one – can't mix and match)
 - Prescriptive Standard – new lighting design standard outlines fixture lumen limits, fixture mounting heights, and fixture design. Licensed electrician will sign affidavit that the new or replacement fixtures comply with the new lighting design standard. This will address any fixture that is included in the electrical permit application since all fixtures need to come into compliance within 5 years. This standard will be the easiest to achieve for most residential and commercial property owners. The Prescriptive Standard Lighting Chart is included in this document.
 - Performance Standard – outlines a limit on light crossing a property boundary. If a property owner decides to follow the Performance Standard, then they choose one of two options:
 - 8 LUX Rule at Property Line
OR
 - LEED Light Pollution Credit Option – The requirements under the Light Pollution Credit may change from time to time and the applicant will be held to the latest provision. The current version can be found at the following website:
<http://www.usgbc.org/node/2600382?return=/credits>

If the applicant wants to utilize a performance standard, then a construction control affidavit must be completed by a licensed architect or professional engineer and include a lighting plan as defined by the ordinance. This standard will be followed by property owners that are willing to hire a lighting engineer and architect to produce a complex lighting plan. This will also help address light pollution from interior sources if the property owner chooses to use the calculation option under LEED or the 8 LUX rule at Property Line.

- Applicability for Existing Fixtures:
 - Existing lighting can be re-lamped to bring the fixture into compliance with lumen levels. However, after 5 years, the fixture will be required to meet shielding and mounting height requirements.

- Enforcement by ISD and Response to Complaints
 - Anyone can make a complaint about an exterior light. Once a complaint is made the Inspector will try to determine when the fixture was installed and if the necessary electrical permit was pulled.
 - Was an Electrical Permit pulled? – If not, the fixture will be required to comply with the new lighting ordinance.
 - After 5 years from the effective date of the new ordinance, if the fixture does not comply with the new standards then ISD will specify remedial actions to achieve compliance or the property owner can apply for an Administrative Exemption to grant a partial or complete waiver of the ordinance requirements.
 - If the property owner applies to the Commissioner of ISD for an Administrative Exemption, they must demonstrate that compliance with the new lighting ordinance is:
 - unreasonable hardship; or
 - detrimental to public health, safety or welfare.





The Commissioner of ISD has the authority to create a path to compliance, when appropriate, for property or business owners under certain circumstances, including but not exclusive to current sanitary or housing standards.

- Good Neighbor Brochure and educational campaign is under development to promote new standard.

- Exemptions from General Requirements, Applicability – (*City buildings are NOT exempt.*)
 1. Lighting within public ways for the principal purpose of illuminating public ways. No exemption shall apply to any lighting within a public way when the purpose of the luminaire is to illuminate areas outside the public way, unless provided in the ordinance.
 2. Lighting for public parks and public art that are commissioned, owned, or operated by a city, state, federal agency or that is required by the City to be accessible to the general public.
 3. Lighting for public monuments, statuary, and national flag.
 4. Architectural lighting that has received a Certificate of Appropriateness from the Cambridge Historical Commission.
 5. Architectural lighting of structures or buildings listed on the National Register of Historical Places.
 6. Lighting solely for signs as regulated under Article 7.000 of the Cambridge Zoning Ordinance.
 7. Temporary lighting for theatrical, television, and performance areas with proper permits.
 8. Temporary lighting for work areas at construction sites with proper permits.
 9. Underwater lighting in swimming pools and other water features
 10. Seasonal lighting in connection with holidays or traditions in use for not longer than 60 days and then completely removed and not operated again for a period of at least 30 days.
 11. Hospital emergency departments, including associated helipads
 12. Lighting that is only used under emergency conditions
 13. Lighting required by federal or state regulations

Prescriptive Standard Lighting Implementation Chart w/ Typical Fixtures & Bulb Power Limits

This can apply to all private property owners in Cambridge. The basis for this format is to provide the user with a simple process to follow that will achieve a reduction in light trespass and light pollution without negative impact to safety. These standards provide a dramatic reduction in excess light without limiting the property owner to the number of fixtures.

| Outdoor Lighting Category | Maximum Initial Lumens Per Light Fixture | Maximum Height | Shielding and Direction | Examples of Typical Fixtures | Examples of Typical Lamp or Bulb Power in Watts w/ 120v circuit: Incandescent CFL LED |
|--|--|---|---|--|--|
| Unshielded or partly shielded light fixture (general) | 390 | 12 feet above the surface of the area to be illuminated. | |  | 25 watt – Incandescent 7 watt – CFL 4 watt - LED |
| Unshielded or partly shielded light fixture located in a front yard between the building and street | 630 | 12 feet above the surface of the area to be illuminated. | |  | 40 watt – Incandescent 10 watt – CFL 5 watt - LED |
| Fully shielded or shielded directional light fixture for entries, walkways, open spaces or buildings | 1,050 | 12 feet above the surface of the area to be illuminated. | Must be fully shielded or directed away from all properties that are abutting or located across a street. |  | 60 watt – Incandescent 13 watt – CFL 10 watt - LED |
| Fully shielded or shielded directional light fixture for automobile surface parking areas, driveways or outdoor loading bays | 1,260 | 14 feet above the surface of the parking area, driveway or loading bay. | Must be fully shielded or directed away from all properties that are abutting or located across a street. |  | 75 watt – Incandescent 18 watt – CFL 15 watt - LED |