



New Jersey Model Lighting Ordinance Template for Municipalities

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Purpose

The purpose of these regulations is to establish lighting standards that conserve energy, promote nighttime safety and security, and protect people's rights and quality of life by minimizing light pollution. Additionally, these regulations aim to:

- Reduce light pollution, which is associated with impacts on sleep and circadian rhythms, stress, impaired attention/memory, developmental delays, and increased cancer risk in children and adults.
- Reduce glare and improve public safety through proper lighting, enhancing visibility while minimizing hazards.
- Conserve energy, lower energy costs, and reduce our taxes.
- Protect wildlife, ecosystems, and the environment as a whole.
- Enhance night sky visibility by minimizing upward light glow.
- Prevent light trespass onto adjacent properties and public streets, ensuring fair and responsible lighting practices.
- Enhance good neighbor ethics and provide a mechanism for resolving lighting issues.

Applicability

The following are required to be brought into compliance with the requirements of this ordinance:

- All existing lighting located on properties that are part of an application for development or building permit.
- All future lighting projects, whether they are municipal, commercial, residential, or roadway.
- Any modification, upgrade, replacement, renovation, or addition of a luminaire, including a change in shielding, light level, correlated color temperature (CCT), or orientation.
- **Optional: All existing lighting located on properties that are not part of an application for development or building permit must be brought into compliance with all the requirements of this ordinance within 5 years of the passage of this ordinance.**

The following requirements apply to all existing lighting on properties that are not part of an application for development or a building permit:

- All existing lighting shall comply with the lighting reduction requirements sections of this ordinance (refer to the municipal/commercial lighting requirements section and residential lighting requirements section).
- All existing adjustable flood lights shall be adjusted so that they are aimed directly downward (toward the nadir) and/or retrofitted with shielding until they are replaced with compliant luminaires.
- All existing dimmable lighting shall be dimmed to reasonable light levels until they are replaced with compliant luminaires.

Exemptions

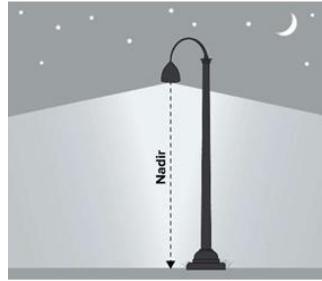
The following shall be exempt from the requirements of this ordinance:

- Lighting used only under emergency conditions.
- Lighting required by federal, state, or county laws or regulations.
- Underwater lighting in swimming pools and other water features.
- Temporary lighting and seasonal lighting; provided that individual luminaires emit less than 50 lumens. Temporary seasonal lighting is excluded from restrictions on flashing, but should not be distracting to drivers. A luminaire used for a seasonal decoration shall be in use for no more than 60 days in a 12-month period and shall be turned off from 11 PM until sunrise.

Municipal and Commercial Lighting Requirements

All outdoor municipal and commercial lighting must be designed, located, installed, and directed in the following manner, unless otherwise exempt or prohibited:

- Outdoor municipal and commercial Luminaires and Luminaire installations shall comply with federal and state law; county and municipal codes; applicable energy and building codes; product safety labeling; the requirements of this ordinance; and shall be subject to the appropriate permit and inspection requirements thereof.
- Outdoor municipal and commercial luminaires shall be certified as DarkSky Approved Luminaires. (See here): <https://darksky.org/what-we-do/darksky-approved/darksky-approved-luminaires-program/luminaires/>
- Light Distribution: Outdoor municipal and commercial Luminaires shall be Fully Shielded and oriented directly downward (towards the Nadir) to prevent glare, sky glow, and light trespass. Luminaires shall emit no light at or above 90 degrees from the Nadir and no more than 5% of their total Lumen output at or above 80 degrees from the Nadir. (See figure below):



- Light Level: Outdoor municipal and commercial lighting shall not exceed the Light Level recommended by the applicable ANSI/IES Lighting Standard.
- Light Spectrum (Color): The correlated color temperature (CCT) for outdoor municipal and commercial luminaires shall not exceed 2700 Kelvin (2700K). (See figure below):



- Light Trespass: Light Trespass emitted from indoor and outdoor municipal and commercial lighting shall measure no greater than 1 Lux on adjacent properties, and no greater than 0.1 Lux on wildlife sensitive areas.
- Illuminated signage shall follow the DarkSky Standards. (See here): <https://darksky.app.box.com/s/yml3stet18kvmbbsyf7bpbbn3jycstsq>
- Roadway billboards shall be turned off from 9 PM until 5 AM.

Lighting Reduction Requirements:

- Non-motion-activated outdoor municipal and commercial lighting (including billboards and signage) shall be turned off within one hour after closing (hours of operation). Motion-activated lighting shall automatically turn off after 30 seconds of no motion detection and shall have its detector sensitivity adjusted so as not to be triggered by movement outside municipal and commercial property boundaries.

Exemptions: Lighting reductions are not required for any of the following:

- Municipal and commercial entities that operate on a 24-hour basis.

Optional: Automatic Daytime Switching Requirements:

- Controls shall be implemented that automatically extinguish all outdoor municipal and commercial lighting when sufficient daylight is available using a control device or system such as a photoelectric switch, astronomic time switch, or equivalent functions from a programmable lighting controller, building automation system, or lighting energy management system, all with battery or similar backup power or device. (Refer to section C405.2.7.2 of the International Energy Conservation Code).

Exemptions: Automatic lighting controls are not required for the following:

- Lighting under canopies.
- Lighting for tunnels, parking garages, garage entrances, and similar conditions.

Residential Lighting Requirements

All outdoor residential lighting must be designed, located, installed, and directed in the following manner, unless otherwise exempt or prohibited:

- Outdoor residential Luminaires and Luminaire installations shall comply with federal and state law; county and municipal codes; applicable energy and building codes; product safety labeling; the requirements of this ordinance; and shall be subject to the appropriate permit and inspection requirements thereof.
- Outdoor residential luminaires shall be certified as DarkSky Approved Luminaires. (See here): <https://darksky.org/what-we-do/darksky-approved/darksky-approved-luminaires-program/luminaires/>
- Light Distribution: Outdoor residential luminaires shall be Fully Shielded and shall be oriented directly downward (towards the Nadir) to prevent glare, sky glow, and light trespass. Luminaires that emit 50 lumens or less are exempt from this requirement.
- Light Level: Outdoor residential luminaires shall not emit more than 800 lumens (per luminaire).
- Light Trespass: Light trespass emitted by indoor and outdoor residential lighting shall measure no greater than 1 Lux on adjacent properties and no greater than 0.1 Lux in wildlife sensitive areas.
- Light Spectrum: The maximum correlated color temperature (CCT) for outdoor residential luminaires shall be 2700 Kelvin (2700K).

Lighting Reduction Requirements:

- Non-motion-activated outdoor residential lighting shall be turned off from 11 PM and 5 AM.

Roadway Lighting Requirements

All roadway lighting must be designed, located, installed, and directed in the following manner, unless otherwise exempt or prohibited:

- Roadway lighting shall comply with federal and state law; county and municipal codes; applicable energy and building codes; product safety labeling; the requirements of this

ordinance; and shall be subject to the appropriate permit and inspection requirements thereof.

- Roadway luminaires shall be certified as DarkSky Approved Luminaires. (See here): <https://darksky.org/what-we-do/darksky-approved/darksky-approved-luminaires-program/luminaires/>
- Light Distribution: Roadway luminaires shall be Fully Shielded and oriented directly downward (towards the Nadir) to prevent glare, sky glow, and light trespass. Luminaires shall emit no light at or above 90 degrees from Nadir and no more than 5% of their total Lumen output at or above 80 degrees from Nadir.
- Light Level: Roadway lighting shall not exceed the Light Level recommended by the applicable ANSI/IES Lighting Standard.
- Light Trespass: Light trespass emitted by roadway lighting shall measure no greater than 1 Lux on adjacent properties; and no greater than 0.1 Lux on wildlife sensitive areas.
- Light Spectrum: The maximum correlated color temperature (CCT) for roadway luminaires shall be 2700 Kelvin (2700K).
- Roadway lighting may not be installed at heights greater than twenty-five (25) feet.
- Adaptive roadway lighting shall be used. (see Design Criteria for Adaptive Roadway Lighting document by the Federal Highway Administration: FHWA-HRT-14-051)
- Roadway lighting installation or placement shall be limited to locations where the need for a streetlight has been determined, based on objective criteria. The municipality shall adopt a municipal streetlight warranting policy to establish the objective criteria.
- Before roadway lighting installation or replacement, the Municipal Engineer shall determine whether reflective roadway markings or reflective signage are appropriate and safe for the situation instead of roadway lighting. Reflectorized roadway markings, lines, warning signs, informational signs, or other passive means shall be utilized in place of street lighting except at intersections of two or more streets or highways.

Prohibited Lighting

The following types of lighting shall be prohibited, unless otherwise specified:

- Metal halide and mercury vapor light sources.
- Electric insect killers in unoccupied spaces.
- Blinking, flashing, rotating, moving, strobe, or search lights.
- Exposed strip lighting is used to illuminate building facades or signs.

Administrative Requirements

Permit Application

Submittal: Whenever a building, subdivision, site plan, or outdoor lighting permit is applied for, an outdoor lighting plan and manufacturer specification sheets for each luminaire model must be submitted along with a compliance statement that the proposed work will comply with all [ordinance] requirements. The outdoor lighting plan must follow one of the following:

- Schedule Method: Only available for renovation and Residential Use lighting; projects to be documented using a spreadsheet format by listing the Luminaire identifications (i.e.,

- manufacturer, model number, type), Luminaire quantities, installation locations, and Lumen outputs for each; or
- Calculation Method: Available for all project types but required for sports lighting and when specifically requested by the planning commission; an outdoor lighting design shall be prepared by a certified lighting professional or licensed professional engineer using lighting design software and Luminaire .IES files. This outdoor lighting plan shall include:
 - Luminaire identification (model number), installation locations, mounting heights, targeted directions, buildings, and other physical objects within the site that could affect the lighting outcome.
 - Site plan and Illuminance calculation plots demonstrating conformance with this ordinance, including the sports lighting luminous-intensity Light Trespass limit.

Review: Submitted spreadsheets, site lighting plans, and compliance affidavits shall be subject to review and approval by the administrator or designee. The administrator shall have the authority to refer to an application to the planning and zoning commission or the historic commission if deemed appropriate.

Appeals: Any appeals related to decisions regarding outdoor lighting shall be made to the administrator or designee.

Enforcement and Penalty:

Each municipality will have its own ordinance and regulations from which to cite specific references on enforcement and penalties. This section should be tailored to cite those specific sections as applicable to ensure enforcement and that penalties can be administered.

Enforcement: Unless otherwise noted in this ordinance, the administrator, or designee, shall be responsible for implementing, administering, and enforcing this ordinance, including investigations of alleged violations. A private right of action may also constitute enforcement of the requirements within this ordinance.

Penalty: Any non-exempt property owner who does not meet the requirements of this ordinance shall be in violation. A person, firm, or corporation found to have violated, disobeyed, omitted, neglected, or refused to comply with any provisions of this ordinance shall be issued a notice and administrative citation as provided by the municipal code. Any person, firm, or corporation found to have violated any portion of this ordinance shall correct the violations within ninety (90) days of the citation date. Each day a violation continues beyond ninety (90) days of the citation date without having been corrected shall be a separate offense.

For municipalities without standard citation penalties or injunctive relief, a monetary fine is recommended for each citation.

Private Action: Any person adversely affected by lighting that does not meet the requirements of this ordinance shall have a private cause of action for nuisance against the person, firm, corporation, utility, or municipality responsible for such lighting.

Grievance Procedure Template:

This grievance procedure establishes a formal municipal process for residents to report and seek resolution of concerns related to light trespass—unwanted or excessive artificial light that adversely affects the enjoyment, health, or property of another.

Scope

This procedure applies to complaints involving:

- Private property lighting, such as residential or commercial lighting.
- Municipally owned lighting, including streetlights, facilities, parks, and emergency services.

Step-by-Step Complaint Process

Step 1: Informal Resolution Attempt

Residents are encouraged to contact the source of the lighting (neighbor or relevant municipal department) to discuss the concern and attempt to resolve the issue informally. Documentation of this effort is helpful but not required.

Step 2: Submit Formal Complaint

If the issue is unresolved:

- Complete the Light Trespass Complaint Form (available on the Municipality's website or at the Clerk's Office).
- Provide the following:
 - Complainant name, address, and contact information.
 - Location of the offending light source.
 - Description of the problem (e.g., hours of illumination, brightness, effects on property).
 - Any supporting evidence (photos, measurements, correspondence).
 - If applicable, description of informal resolution attempts.

Submit the form to: Municipal Zoning or Code Enforcement Officer

[Insert mailing address, email, and/or submission portal]

Step 3: Investigation and Evaluation

- Within 15 business days, the Municipality will review the complaint and may:
 - Conduct a site visit during affected hours.
 - Use a light meter to determine if the lighting exceeds ordinance limits.
 - Review compliance of the fixture(s) with Municipal lighting standards.
- The Municipality may request access to the complainant's property for accurate measurement.

Step 4: Determination and Notice

- The Municipality will issue a written response to the complainant and property owner within 30 business days of receiving the complaint, indicating:
 - Whether a violation has been found.
 - What corrective action is required (if any).
 - A timeline for remedy (typically 30 days, unless extended for cause).

Appeals Process

- Either party may appeal the determination within 10 business days to the Municipal Administrator or designated hearing officer.
- The appeal must state:
 - The reason for disagreement.
 - Any new information not previously considered.
- A final written decision will be rendered within 20 business days.

Enforcement

- If corrective actions are not implemented as directed, the Municipality may:
 - Issue notices of violation, fines, or other enforcement actions as permitted under municipal code.
 - In cases involving municipal lighting, a review will be scheduled by the appropriate department (e.g., DPW, Police, or Public Works) to implement changes.

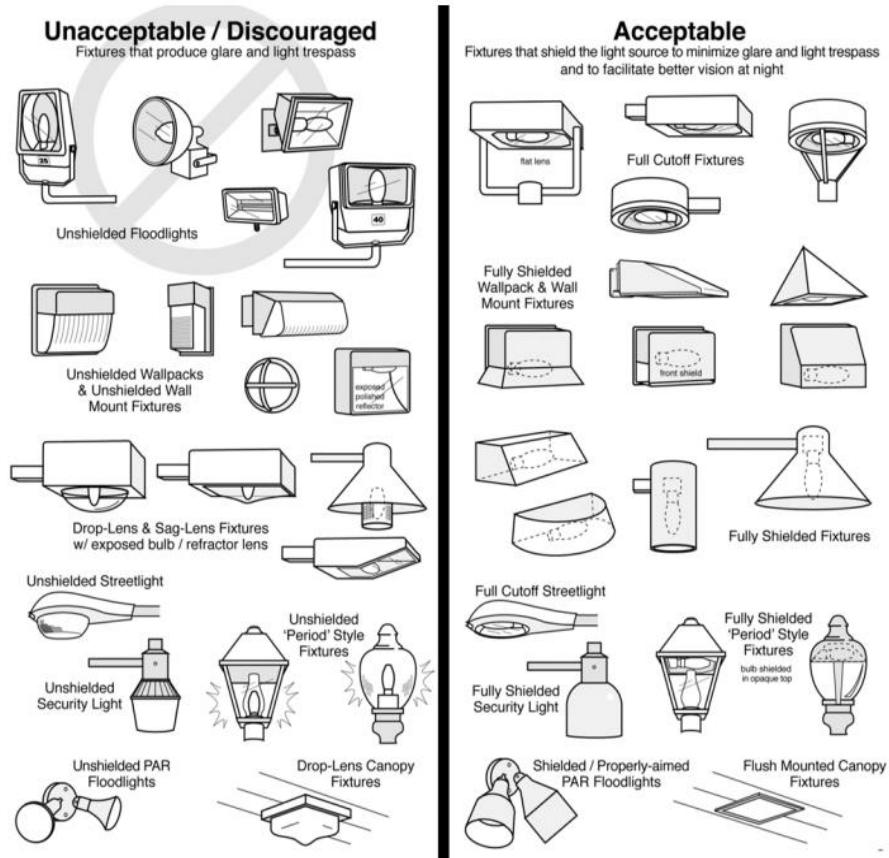
Retaliation Prohibited

No person shall be retaliated against for filing a light trespass complaint in good faith. Concerns about retaliation may be reported to the Municipal Administrator.

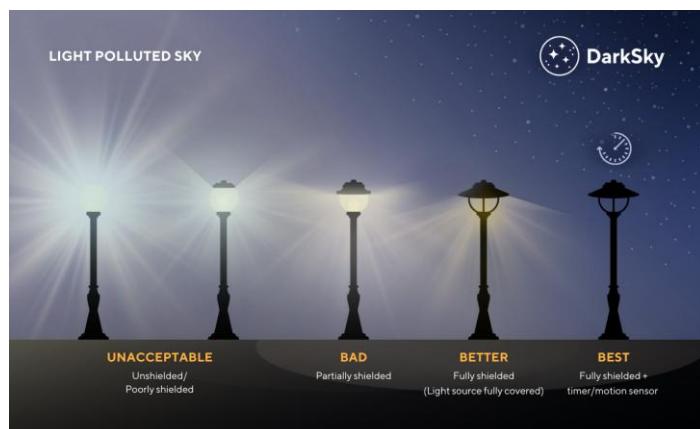
(See next page for Examples of Complaint and Non-Compliant Luminaires)

Examples of Compliant and Non-Compliant Luminaires

These figures are guidelines for the public and the Municipality for use in meeting the intent of this municipal ordinance. These figures serve only as an example. The Municipality does not endorse or discriminate against any manufacturer or company that may be shown, portrayed, or mentioned by the examples.



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(See next page for Definitions and Disclaimer)

Definitions

ANSI shall mean the American National Standards Institute.

ANSI/IES Lighting Standards shall mean applicable outdoor lighting standards and metrics, including but not limited to 1. RP-2: outdoor retail spaces 2. RP-6: outdoor sports and recreational areas 3. RP-7: outdoor industrial areas 4. RP-8: roadway and parking facilities 5. RP-40: port terminals 6. RP-43: outdoor pedestrian areas.

Candela (cd) shall mean the unit of measure for luminous intensity.

CCT (correlated color temperature) shall mean the measured color appearance of light emitted by a light source described using a nominal value stated in kelvins (K). Lower CCTs (1600 K to 2200 K) appear very warm or amber. Medium CCTs (2700 K to 3500 K) appear "warm white," similar to standard incandescent bulbs. High CCTs (4000 K and higher) appear "cool white" or "blue."

Distribution shall mean the way light is spread across a given area.

Fully Shielded shall mean a Luminaire designed or shielded in such a manner that no light is emitted, either directly or indirectly, at or above a horizontal plane running through the lowest light-emitting part of the luminaire (has a U0 Uplight Rating).

IES (Illuminating Engineering Society) shall mean an ANSI-recognized Standards Development Organization. ANSI/IES Recommended Practices are universally recognized as authoritative references for lighting applications.

Illuminance shall mean measured in Lux or footcandles, the total luminous flux incident at a point on a surface (light level on a surface).

Glare shall mean lighting entering the eye directly from luminaires or indirectly from reflective surfaces that causes visual discomfort or reduced visibility.

Light Level shall mean the maintained Luminance or Illuminance value.

Light Pollution shall mean artificial light traveling into areas where it is not needed or wanted. This can be in the form of Light Trespass, glare, or atmospheric sky glow.

Light Trespass shall mean illumination past property lines without permission. Unless specified otherwise, light trespass limits are measured at any location along a property line both horizontally at the ground plane facing upward and vertically at 1.5 meters (5ft) above grade with the meter aimed toward the light source in question.

Lighting Equipment shall mean equipment specifically intended to provide gas or electric illumination, including but not limited to, lamp(s), luminaire(s), ballast(s), poles, posts, lens(s), and related structures, electrical wiring, and other necessary or auxiliary components.

Lumen shall mean the unit of measure used to quantify the amount of light produced by a lamp or emitted from a luminaire (as distinct from "watt," a measure of power consumption). 1 Lumen per square foot is equivalent to 1 Footcandle. In terms of SI units, 1 Lumen per square foot is approximately equivalent to 10.76 Lux.

Luminaire shall mean a complete lighting unit, including the light source, housing, optics, electronics, and other necessary components for the purpose of providing outdoor illumination.

Luminance shall mean the intensity of light emitted from a light source per unit area in a given direction.

Lux shall mean the SI unit of illuminance. One lux is one lumen per square meter. 1 Lux is a unit of incident illuminance approximately equal to 1/10 footcandle.

Mounting Height shall mean the height of the photometric center of a luminaire above grade level. The horizontal spacing of poles is often measured in units of "mounting height." Example: "The luminaires can be spaced up to 4 mounting heights apart."

Nadir shall mean the downward vertical vector directly beneath a luminaire (SEE EXHIBIT A)

Ornamental Lighting shall mean lighting that does not impact the function and safety of an area but is purely decorative, or used to illuminate architecture and/or landscaping, and installed for aesthetic effect.

Repair(s) shall mean the reconstruction or renewal of any part of an existing luminaire for the purpose of its ongoing operation, other than relamping or replacement of components, including capacitor, ballast, or photocell. Note that retrofitting a luminaire with new lamp and/or ballast technology is not considered a repair, and for the purposes of this ordinance, the luminaire shall be treated as if new. "Repair" does not include normal relamping or replacement of components, including the capacitor, ballast, or photocell.

Replacement Lighting shall mean lighting installed specifically to replace existing lighting that is sufficiently broken to be beyond repair.

Sky Glow shall mean the brightening of the nighttime sky that results from scattering and reflection of artificial light by moisture and dust particles in the atmosphere. Skyglow is caused by light directed or reflected upwards or sideways and reduces one's ability to view the night sky.

Temporary lighting shall mean lighting installed and operated for periods not to exceed 60 days, completely removed and not operated again for at least 30 days.

Temporary Seasonal Lighting shall mean lighting installed and operated in connection with holidays or traditions.

Municipal Agency shall mean the entity having jurisdiction over outdoor lighting, including the Land Use Board, Zoning Officer, Municipal Engineer, Construction Official, Public Works, or Code Enforcement Officer, as applicable.

Uplight shall mean for an exterior luminaire, light emitted at or above the horizontal plane.

Disclaimer: The recommendations of this ordinance template are tailored to New Jersey municipalities based on DarkSky International's recommended practices. DarkSky New Jersey and DarkSky International are not liable for the implementation of this guidance. The use of this template is at the discretion of the municipality.