

TOWN OF KENNEBUNK LONG-TERM STREET LIGHT POLICIES

DEFINITIONS:

Built-Up Area – Vehicle Commercial Strip: Arterial road segments - Route One highway commercial segment and Route 9 from Brown Street to Boothby Road with vehicle traffic plus pedestrian and bicycle circulation concerning economic activities.

Built-Up Area – Mixed-use pedestrian oriented areas: Downtown and Lower Village with significant residential and tourist pedestrian traffic; Areas of historic significance; village residential areas including residential collector roads such as Summer Street and Port Road, Alfred Road, Cat Mousam Road and High Street plus associated local roads including quiet residential neighborhoods with only local neighborhood traffic. Quiet residential areas include residential cluster subdivisions in the rural area and other residential agglomerations in which three or more houses are generally 100 feet or less apart.

Downtown Area(s) – *Main Street* Kennebunk Village from Town Hall square to the Mousam River bridge. ***Western Avenue*** in Lower Village from the Kennebunk River bridge to Cooper's Corner and up ***Port Road*** from Cooper's Corner to Christensen Lane.

Full Cut-off Fixture – Lighting fixtures with overhead and side shielding that prevents light from spilling out from the shielding above a horizontal line parallel to the ground. Full cut-off fixtures prevent seeing the lamp (light source) unless the observer is located directly below the fixture.

Light Pollution – The inappropriate or excessive use of artificial light – known as light pollution – can have serious environmental consequences for humans, wildlife and our climate. Components of light pollution include: Glare – excessive brightness that causes visual discomfort; Skyglow – brightening of the night sky over inhabited areas; Clutter – bright, confusing and excessive groupings of light sources. (International Dark-sky Association [IDA] definitions)

Light Trespass – light falling where it is not intended or needed (IDA definition). Control of light trespass in these Policies is achieved by positioning utility pole-mounted fixtures no higher than 25 feet above the ground and post-mounted fixtures (topmost portion) no higher than 16 feet above the ground. This helps control light spillage into second story windows of abutting residences.

Lower Village Area – encompasses the Western Avenue/Port Road downtown and tourist area surrounded by the residential neighborhoods from the Kennebunk River southward around Western Avenue to Brown Street and from the Port Road from the Gooch's Creek bridge westward to Christensen Lane.

Night Sky (preservation of) – control of sky glow by shielding above and sideways to street light fixtures helps preserve the night sky darkness. A preserved night sky is when, on a cloudless and less than a moonless or quarter-moon nightsky, the North Star and Big Dipper can be seen by the unaided human eye. A very well preserved night sky is when the Milky Way may also be seen.

Quiet Residential Neighborhoods – on streets in and around Lower Village, Kennebunk Main Street and West Kennebunk Village and in residential subdivisions in the rural parts of town in which there are clustered three or more houses less than 100 feet apart.

Residential Cluster Subdivisions – see definition of 'Quiet Residential Neighborhoods', which are found in both built-up areas and rural areas. Rural areas with houses more than 100 feet apart are not residential cluster subdivisions for the purpose of street lights.

Security Lighting – outdoor lighting fixtures, for the purpose of making visible during nighttime, buildings, other facilities and property deemed valuable. Security lighting on private property is the responsibility of the private property owner.

Urban Strips – (see definition of 'Built-Up Area – Vehicle Commercial strip')

PURPOSE:

The purpose of Town street lighting is to provide adequate and aesthetic lighting on public rights of way, other Town property and private subdivision roads appropriate to securing public safety for pedestrians, bicyclists and motorists.

The Town should not provide street lights financed by the taxpayers on private property that serves primarily as security lighting for only one or a few private landholders. Lighting of private property is the responsibility of the private landholder. Security lighting on Town property is subject to the Outdoor Lighting Policy for Public Buildings and Parking Lots (included in this document).

OBJECTIVE:

The Town's street lighting shall be designed, installed and maintained to minimize as much as possible light trespass onto any private property, prevention of light pollution and strive to preserve the night sky. The Street Light Subcommittee shall be responsive to any Townsperson's concerns about light trespass.

Choice for replacement or new fixtures may be LED (light emitting diode) full cut-off design (aka recessed down lights), installed to meet regulatory and manufacturers' standards with regard to elevation. Within the manufacturer's standards, all luminaires on utility poles shall be placed no higher than 25 feet above the ground or as low as possible on the pole consistent with applicable safety and other regulations in order to help minimize light trespass. Use lighting that creates uniformity as much as possible that minimizes contrast between light and dark spots.

Luminaire pitch and design shall be adjusted to minimize light incursion onto private property on both sides of the street while providing maximum illumination for walks and roadways. Use fixtures that control the illumination on the ground by Type II shielding that spreads light parallel to the street along the shoulder or sidewalk.

All fixtures may be installed on a maximum center density in highly built-up areas on every other utility pole unless an alternative is specifically approved, for safety reasons, by the Street Light Subcommittee. In low density or rural areas location of street lights are subject to the Committee's considered application of these policies (see 'Rural Areas'). (Note: the Street Light Subcommittee and the Energy Efficiency Advisory Committee are one and the same.)

Whenever possible, intersections of Town streets in designated and mapped built-up areas, even though the "every other pole" rule may be broken, shall be provided with a fixture unless there is no pole available or conditions do not permit installation of a fixture.

A map of the Town based upon the Comprehensive Plan shall be a part of these policies and shall be maintained and updated as appropriate by the Street Light Subcommittee to identify different areas as to type and intensity of luminaires that can be installed as new or replacement fixtures. The map shall delineate various areas for various lighting arrangements including for downtown, urban strips and rural cluster subdivisions. The map contains the following delineated lighting areas: Rural areas, six categories of Built-up Areas and Historic Areas.

Rural Areas:

Generally no street lights except possibly at intersections where there is significant pedestrian-vehicle interaction on a daily basis. Rural lighting requests will be considered on a case-by-case basis for both installation and removal. Replacement of rural street lights is subject to Subcommittee approval.

Built-up Areas:

1. Arterial road segments - Route One highway commercial segment and Route 9 from Brown Street to Boothby Road.
2. Areas of historic significance
3. Downtown and Lower Village
4. Village residential areas
5. Collector roads - general residential
6. Local roads - quiet residential neighborhoods with only local neighborhood traffic as special lighting areas. Quiet Residential areas include residential cluster subdivisions in the rural area and other residential agglomerations in which three or more houses are generally less than 100 feet apart.

<u>Approved Fixture Type</u>	<u>HPS Fixtures</u>	<u>LED Fixtures</u> (for selection)
General Residential (collector roads)	50 watt full cut-off HPS	20 watt +/- LED (Appendix A)
Arterial Road Segments Rt. One Highway Commercial Segment; Rt. 9 from Brown St. to Boothby Road	100 watt full cut-off HPS	42 watt +/- LED (Appendix A)
Areas of Historic Significance*	50 watt full cut-off platters in historic areas	20 watt historic LED (recessed down light)
Downtown** and Lower Village	70 watt pedestrian (pole) with frosted glass	30 watt +/- LED (Appendix A)
Village Residential Areas	50 watt full cut-off platters, full cut-off cobras	20 watt +/- LED (Appendix A)
Quiet Residential Neighborhoods	- 50 watt full cut-off platters with frosted shades (lens) - 50 watt full cut-off cobras - 50 watt post fixture	20 watt +/- LED (frosted lens) 20 watt +/- LED (recessed down light)
Rural Lighting	Where an installation is approved, fixture will be a 50 watt HPS full cut-off.	20 watt +/- LED (Appendix A)
New subdivisions where lighting is required by Planning Board	Pedestrian (post-mounted) fixtures or utility pole mounted; type and intensity of fixture as appropriate to the area of Town. (residential: 50 watt HPS)	LED full cut-off recessed down lighting; post-mounted fixtures shall be no higher than 16 feet. (residential: 20 watt LED +/-) (See Appendix B)

* Designated historic areas - historic platter fixtures should be maintained as long as possible. If change-out were to become necessary, the Town should find similar LED recessed platter fixtures.

** Main Street, Kennebunk Village should be studied for installation of shielding for down-lighting by fixtures.

In order to help minimize light trespass as appropriate (in new rural subdivisions or other quiet neighborhoods), the Street Light Subcommittee shall require the installation of full cut-off neighborhood pole-mounted street lights that have high quality control of the distribution of illumination such as, but not limited to, Type II luminaires or alternative fixture design that may better accomplish the objectives.

The following circumstances will be considered in evaluating each rural application, without the use of a numeric rating system:

- Intersections
- Bridges
- Sharp curves and critical grade variations
- Business, commercial, schools, recreation facilities, churches and high pedestrian/vehicle interactions
- Dead ends
- Accepted Town ways
- High crime and multiple accident locations
- Residential location of three or more houses less than 100 feet apart served by one street light
- High traffic counts

Upon receipt of a street light application, the Energy Efficiency Advisory Committee (the Committee) shall schedule a field inspection and a subsequent meeting at which it will discuss the application and its field findings. The applicant or Town shall inform by mail all the abutters that share a lot line with the applicant concerning the date and location of the meeting. A copy of the full application shall be included with the mailing to each of the abutters.

The installation of any Town-financed street light must be on Town property and be able to benefit the public at large. Town street lights should serve rights of way on which the entire public has a reasonable expectation to pass from time to time. Private cul-de-sac roads and driveways that intersect a public road and that serve only one or several households would generally not meet the criteria for being a road that benefits the public at large and, therefore, would not generally meet the criteria for a Town-financed street light, unless there are compelling Town-wide public safety benefits that could be satisfied no other way than by a street light. (In rural areas, reflective striping or small roadway signs may serve public safety as well as or better than a light.)

However, nothing herein prevents a private landowner from purchasing or renting a private area light from the Kennebunk Light & Power District (KLPD) or Central Maine Power (CMP) on a public utility pole and paying the monthly electricity bill so long as all the Town's regulations on glare control are met.

When street lighting questions or issues are perceived by KLPD, the Committee shall meet with KLPD which might include consideration of a work schedule for the replacement and/or upgrading of street lights by section of Town. At the discretion of the Town Manager's office, notice may be sent, via first class mail at least 10 days prior to the meeting, to all affected property owners. Following discussion by the Committee and comments that may have been received from the public, a recommendation on the proposed work program will be sent to the Board of Selectmen for their confirmation. In the event that any citizen has an issue with any relamping in his/her neighborhood, he/she may come before the Street Light Subcommittee for an airing of his/her concerns. In areas not designated as Quiet Residential or Historically Significant, individual (incandescent bulb) platter fixtures requiring replacement for reasons of serviceability or uniformity shall be replaced with an approved fixture. Within Quiet Residential Neighborhoods and Historically Significant Areas any existing pole-mounted or historic-style platter

fixtures that are no longer serviceable will be replaced with a similar type fixture until such time as all street lights in the area are scheduled for replacement.

Designated Historically Sensitive Areas:

1. Summer Street from Route One to Durrell's Bridge Road
2. Beach Avenue from Cooper's Comer (Route 9) to Gooch's Creek Bridge (tidewater creek bridge behind Gooch's Beach); also, retain 92 watt incandescent platter lights until they become unserviceable
3. Route 35, Lower Village from Cooper's Corner (Route 9) to the Route 35 entrance to Christensen Lane
4. West Kennebunk Village (Alfred Road) from Maple Avenue to the Holland Road

This policy, like all policies, should be subject to periodic review and modification if it proves unworkable or circumstances change. It is recommended that the Subcommittee meet only when necessary to consider policy questions, new applications for lighting or when any Subcommittee member, with the concurrence of the Energy Efficiency Advisory Committee Chairperson, wishes to bring matters before the Subcommittee related to a changing lighting situation in Town. As a matter of policy, no citizen request should go unanswered for more than 60 days.

OUTDOOR LIGHTING POLICY FOR PUBLIC BUILDINGS AND PARKING LOTS:

All Lights – All lights shall be positioned to not spill illumination onto adjacent private property. Frosted glass lens shall be used to reduce glare. All lamps shall be equivalent or less than a 100 watt incandescent bulb (LED 40 – 60 watt) and/or from 1300 to 1600 lumens.

Flood Lights – Not permitted (except at selected public recreation areas such as the high school football field or tennis courts. All floodlights shall be turned off by 11 PM or within one-half hour after an event or activity has ended for the night).

Post-Mounted Lights – The top of the fixture shall be no higher than 16 feet above the ground. All fixtures shall be full cut-off shielded to direct illumination onto the ground.

Utility Pole Mounted Lights – Similar to Town-owned street lights mounted on utility poles, fixtures should not be higher than 25 feet or the minimum height the manufacturer recommends, whichever is lower. Fixtures shall be full cut-off shielded with frosted glass lens.

Security Lights – Unless reviewed and approved by the Subcommittee, all security lights shall be affixed to a building wall no higher than 16 feet above the ground. Fixtures shall be full cut-off, fully shielded wall pack style to direct illumination onto the ground.

APPENDIX A

LED STREET LIGHT POLICY

In order to maintain the 2018 nighttime ambiance of the existing street lighting of Kennebunk, but also to save money if the Town were to replace the existing HPS (High Pressure Sodium) street lights with LED (Light Emitting Diode) street lights, the LED lights shall conform to the following:

I. Design of all LED Street Light Fixtures:

- Full cut-off (aka recessed down lights) – completely shielded on top and the sides to prevent sky glow above and sideways glare into windows of adjacent second stories of residences and businesses.
- Maximum height – 25 feet high or the manufacturer's maximum specification, whichever is lower. Heights between 16 feet and 25 feet reduce side glare into windows of adjacent residences and businesses.
- Type II Luminaires – All street lights be Type I that direct illumination downward in a band along the sidewalk parallel to the road where it is intended and to control for light trespass onto adjacent private residences or businesses.

II. Design of all LED Street Light Luminaires:

To maintain the characteristics of the existing nighttime atmosphere of Kennebunk, replacement lower wattage LED street lights shall replicate as closely as possible the following illumination performance standards. Street lights with these characteristics meet street lighting standards (Rye NH installation).

Existing HPS Street Lights

Equivalent LED Street Lights (approx.)

(1) All Residential & Rural Areas
50 watt HPS lamp
@ 4,000 initial lumens
CCT*: 2000 Kelvins
CRI**: 25

(1) All Residential & Rural Areas
12-32 watt +/- LED lamp (approx.)
@ 1,633 - 3,300 initial lumens
CCT: 2000 – 2700 Kelvins
CRI: 70 (60 +/-)

(2) Lower Village Post Lights
70 watt HPS lamp
@ 6,400 initial lumens
CCT*: 2000 Kelvins
CRI**: 25

(2) Lower Village & Residential Neighborhood Post Lights
30 watt +/- LED lamp (approx.)
@ 4,000 initial lumens
CCT: 2000 - 2700 +/- Kelvins
CRI: 60 +/-

(3) Rt. One, Rt. 9, Arterials
100 watt HPS lamp
@ 9,500 initial lumens
CCT*: 2000 Kelvins
CRI**: 25

(3) Rt. One, Rt. 9, Arterials
26-53 watt +/- LED lamp (approx.)
@ 4,500 initial lumens
CCT: 2700 +/- Kelvins
CRI: 60 +/-

* CCT – Correlated Color Temperature: 2000 – 3200 Kelvins is the warmer or amber part of the visible spectrum. Above 3200 Kelvin the light goes from white to blue (5000+ Kelvins) being experienced as more and more harsh blinding glare to the human eye.

** CRI – Color Rendering Index: One definition is the closeness to what colors look like in sunlight when illuminated by an unnatural source such as a light bulb. The higher the index number between zero and 100, the more similar to colors in daytime sunshine. HPS lamps are about 25 CRI and LED lamps 60 to 95 CRI. CRI values no higher than 80, such as 70 or 60 or lower would maintain the existing quality of lighting in Kennebunk.

APPENDIX B

SUBDIVISION PRIVATE ROAD POST-MOUNTED LIGHTS

I. Design of all LED Post-Mounted Light Fixtures:

- Full cut-off (aka recessed down lights) – completely shielded on top and the sides to prevent sky glow above and sideways glare into windows of adjacent residences.
- Maximum height –16 feet high for the top of the fixture from the ground.
- Type II Luminaires - All post-mounted lights be Type II that direct illumination downward in a band along the sidewalk parallel to the road where it is intended and to control for light trespass into adjacent private residences and properties.

II. Operating Characteristics of Post-Mounted Light Fixtures:

Existing HPS Post Lights

Equivalent LED Post Lights (approx.)

- (1) All Residential Areas
50 watt HPS lamp
@ 4,000 initial lumens
CCT*: 2000 Kelvins
CRI** : 25

- Private Subdivision Roads
20 watt +/- LED lamp (approx.)
@ 3,300 initial lumens +/-
CCT: 2000 – 2700 Kelvins
CRI: 60 +/-

- (2) All Residential Areas
70 watt HPS lamp
@ 6,400 initial lumens
CCT* : 2000 Kelvins
CRI** : 25

- Private Subdivision Roads
30 watt +/- LED lamp (approx.)
@ 4,000 initial lumens +/-
CCT: 2000 - 2700 +/- Kelvins
CRI: 60 +/-

III. Recommended Post-Mounted Light Fixtures:

All approved LED post-mounted fixtures by the Energy Efficiency Advisory Committee/Street Light Subcommittee shall have the following features:

- (1) Watts: 12 to 30 watts
- (2) Lumens: 2000 to 4000 lumens
- (3) CCT: 2000 – 3000 K (correlated color temperature in Kelvins)
- (4) CRI: 50 to 80 CRI (color rendering index)
- (5) Type 2 narrow or long – directional control of light distribution on the ground
- (6) Maximum height of top of fixture – 16 feet
- (7) Top and side shielded – lamp recessed above side shielding
- (8) Frosted lens
- (9) Dimmer control – 7 pin
- (10) Options – house-side shield

The following fixtures are *examples* that would substantially meet these policies. The Committee would also review other proposed fixtures for meeting the Policies. To research energy efficiency of outdoor lights, see the Design Lights Consortium webpage (www.designlights.org) and Energy Star certified post mounted fixtures.

PHILIPS – HADCO

- Baltimore post light (VX651)
- Grande Manor post light (6134)

PHILIPS – LUMEC

- Lumec LED Post Top (L4OU)
- Ancestra Post Light (AT10–20–30–40–50)

STERNBERG

- Seville Series post lights (S540LEDH) (Model: 1L27T MDL04)
- State Series (9403 – XRLED)
- Historic Post Top (6130ALED)
- Gallery Series (1970LED)

GE

- Evolve LED post top (EPTT)

SEA GULL LIGHTING

- Yorktown post top (8204EN)

WARBURTON

- High Black LED Outdoor Post Light

AQ Lighting

- 2-Tier Pagoda Area Light

PROGRESS LIGHTING

- Post Top Light (P6424 – 3130K9 Wish 1)

**TOWN OF KENNEBUNK
APPLICATION FOR NEW STREET LIGHTING
OR CHANGE IN EXISTING LIGHTING**

(Please Print)

Applicant's Name: _____

Date: _____

Applicant's Mailing Address: _____

Street Light Location (existing or proposed):

Applicant's Phone Number: _____

Pole #: _____

Please describe the lighting request (if a new light is requested, the location you suggest). If there is a utility pole at the location, copy down all the numbers on it.

Draw a sketch map of the location, showing the general area including streets, houses, utility poles and existing lights. If possible, show a street intersection or other prominent feature to assist in locating the requested lighting.

Explain as fully as possible why you feel the requested street lighting should be installed or changed.

Signed: _____

Please return to the Town Manager's Office, Town of Kennebunk, 1 Summer Street, Kennebunk, ME 04043