



City of Lebanon
New Hampshire

ADMINISTRATIVE POLICIES & PROCEDURES

Lighting-Public Ways/Places/Parking Facilities

<i>Policy Number</i>	<i>Effective Date</i>	<i>Last Revision</i>	<i>Page No.</i>
ADM-109	10/18/2018		Page 1 of 9
<i>Approved by:</i>		DocuSigned by: <i>Shawn Mulholland</i>	

AE8C225904D9436...

Section 1.0: Purpose

This policy provides guidelines and procedures for the placement, modification, and removal of City owned or contracted lighting along City owned public ways, public places and municipal parking facilities. The objective is to enhance the safety of the public while at the same time reducing energy consumption and the resultant cost to the City. The City intends to comply with the provisions of RSA 9-E:3 *New Hampshire Dark Sky Policy* to minimize light pollution and glare as well as preserving dark skies as a feature of rural character wherever practicable.

Section 2.0: Scope

This policy applies to the installation of new lighting and the removal or modification of existing City owned or contracted lighting along City owned public ways, public places and municipal parking facilities.

Section 3.0: Definitions

Streetlight- A luminaire owned or contracted by the City used for the purpose of providing illumination along a City owned public way, public place or municipal parking facility. Privately owned streetlights are not covered by this document.

Dimmability- The ability to vary the lumen output of a particular luminaire through lighting controls.

Trimming- The practice of setting the initial normal maximum lumen output of a dimmable luminaire at level that less than 100% of the lumen output that it is capable of so as to extend the life of the luminaire, particularly LEDs, by reducing the amount of trim later in the life of the luminaire as the lumen output begins to degrade to compensate for such and extend the life the luminaire. Trimming can also apply to setting a normal dimming minimum above what the luminaire is capable of.

LED- Light emitting diode.

Lumen- A unit of measure of luminous flux (light).

Luminaire- The complete lighting system, including the lamp and fixture.

Municipal Parking Facilities- Property owned by the City which has been improved for the purposes of parking vehicles by the general public. This definition does not include parking designated for municipal institutional facilities.



City of Lebanon
New Hampshire

ADMINISTRATIVE POLICIES & PROCEDURES

Lighting-Public Ways/Places/Parking Facilities

Policy Number	Effective Date	Last Revision	Page No.
ADM-109	10/18/2018		Page 2 of 9
Approved by:		DocuSigned by: <i>Shawn Mulholland</i>	

AE8C225904D9436...

Public Place- For the purposes of this policy, public places refers to locations such as the downtown mall and Colburn Park. It does not intend to refer to recreation facilities, municipal facilities such as the police station, fire stations, the airport, or DPW maintenance facilities.

Section 4.0: Policy Detail

4.1 Administration and Operation

The Department of Public Works is responsible for the administration and operation of lighting within the scope of this policy. The DPW Director is the official directly responsible for carrying out the provisions of this policy under the general direction of the City Manager. The Lebanon Energy Advisory Committee (LEAC) may assist the DPW Director in the implementation of this policy. The City Manager shall consult with LEAC in the development and amendment of this policy as needed.

4.2 Characteristics of Outdoor Lighting

In general, the City will seek to convert existing outdoor lighting and limit new installations to luminaires that are consistent with the AMA guidelines on avoidance of harm from outdoor community lighting and the International Dark Sky Association list of approved dark sky friendly fixtures, including, in particular use of lamps with:

- full horizontal cut-off consistent with the City’s Site Plan Regulations for outdoor lighting;
- sharp cut off behind the fixture where light trespass onto private property may occur and not be desired;
- a Correlated Color Temperature (CCT) of 3000°K or less;
- a color rendering index of 70 or greater.

The DPW Director may allow exceptions to this policy where needed.

4.3 Lighting Zones

The City will use the following lighting zones as guidelines to determine where street lights are warranted.

Placemaker Streets - are lower-speed streets that cluster most of the destinations for an area. They have ample sidewalks and facilities for all travel modes (bikes, transit, cars, pedestrians). They accommodate the highest



City of Lebanon
New Hampshire

ADMINISTRATIVE POLICIES & PROCEDURES

Lighting-Public Ways/Places/Parking Facilities

<i>Policy Number</i>	<i>Effective Date</i>	<i>Last Revision</i>	<i>Page No.</i>
ADM-109	10/18/2018		Page 3 of 9
<i>Approved by:</i>		DocuSigned by: <i>Shawn Mulholland</i>	

AE8C225904D9436...

volume of traffic for the space allocated. Main Street in West Lebanon and Hanover Street in Lebanon are examples of Placemaker Streets. Moderately high levels of lighting are appropriate in these areas and may be appropriate for dimming to some extent late at night. Streetlight pole spacing will typically range between 100-215 feet, with streetlight spacing averaging approximately 160 feet between poles.

Through Streets - are higher speed thoroughfares. Whereas they often carry a large amount of traffic, they usually accomplish this by having a lot of travel lanes and very large rights-of-way. To safely accommodate the higher speed, travelers require lots of separation and separation between travel modes (e.g. multi-use paths with ample buffer zones from car lanes). They facilitate getting between places, but due to the speed, space and safety constraints, they should be located outside or on the edge of residential neighborhoods and not run through them. Highways and Route 120 toward DHMC are examples of Through Streets. In more dense and developed areas, as well as at key intersections and road hazard areas, moderately high lighting levels are appropriate, while undeveloped areas with little pedestrian activity may not need any street lighting.

Connector Streets - are streets that transition travelers from high-speed thru streets to a low speed necessary to safely deliver travelers to their destinations and, in particular, Placemaking Streets. Traffic calming gateways, sidewalks, bike facilities all in proximity typify Connector streets. Seminary Hill and Bank Street are examples of the Connector class. Moderate lighting levels are generally appropriate areas along these streets. Some dimming in these areas late at night when pedestrian and vehicular traffic is at a minimum may be appropriate. Streetlight pole spacing will typically range between 160-240 feet, with streetlight spacing averaging approximately 200 feet between poles.

Local Roadways (Local Link, Local Collector, & Quiet Street road classes) - are streets with very low speeds and low traffic volumes. They are within



City of Lebanon
New Hampshire

ADMINISTRATIVE POLICIES & PROCEDURES

Lighting-Public Ways/Places/Parking Facilities

<i>Policy Number</i>	<i>Effective Date</i>	<i>Last Revision</i>	<i>Page No.</i>
ADM-109	10/18/2018		Page 4 of 9
<i>Approved by:</i>	DocuSigned by: <i>Shawn Mullolland</i>		

AE8C225904D9436...

the lower density (single family & two family) residential neighborhoods. They mostly support residential area traffic and with their slow speeds they can safely accommodate bicycles and pedestrians often without separated facilities, including the relatively low pedestrian activity occurring at night. Streetlight placement should prioritize the safety of vehicular and pedestrian traffic at established pedestrian crossings, intersections, and potential hazard locations. Water Street, Wheatley, and Green Street in Lebanon, and Crafts Avenue are examples of Local Roadways. Low ambient lighting levels are generally appropriate in these areas and some dimming late at night might be appropriate. Streetlight pole spacing will typically range between 175-315 feet, with streetlight spacing averaging approximately 245 feet between poles.

Rural Local Roadway (Rural Link) - are streets that serve the rural, agricultural, undeveloped or sparsely developed areas within the City that have low traffic volumes with little or no pedestrian activity at night and typically no sidewalks. They are smaller residential streets within rural "pocket" neighborhoods such as Blueberry Hill and Foliage View, as well as other rural streets with very low residential densities, such as Cross Road, Poverty Lane, and Stevens Road. Streetlights are typically not provided on these streets. Exceptions include hazardous or challenging roadway conditions, such as dangerous intersections, steep hills, or curves, where a street light would be warranted only when reflective signage cannot effectively provide for public safety.

Municipal Parking Facilities and Public Places - should generally have moderate to moderately high levels of streetlighting that may be dimmed when there is little to no pedestrian activity. If and when safety is a concern brightening based on motion may be appropriate.



City of Lebanon
New Hampshire

ADMINISTRATIVE POLICIES & PROCEDURES

Lighting-Public Ways/Places/Parking Facilities

<i>Policy Number</i>	<i>Effective Date</i>	<i>Last Revision</i>	<i>Page No.</i>
ADM-109	10/18/2018		Page 5 of 9
<i>Approved by:</i>		DocuSigned by: <i>Shawn Mulholland</i>	

AE8C225904D9436...

4.4 Criteria for determining the installation, removal or modification of lighting

After determining the applicable zone where lighting is being considered, the following criteria shall be used to further determine whether outdoor municipal lighting is warranted.

1. Basic criteria for consideration when determining the need for lighting:
 - a. Traffic volumes
 - b. Spacing of intersecting streets
 - c. Lighting in adjacent areas
 - d. Night-to-day crash ratios
 - e. Geometric Factors
 - i. Number of travel lanes
 - ii. Lane widths
 - iii. Driveways and entrances per mile
 - iv. Horizontal curve radius
 - v. Vertical grades
 - vi. Sight distance
 - vii. Parking
 - f. Operational Factors
 - i. Left turn lanes
 - ii. Median width
 - iii. Operating or posted speed limits
 - iv. Pedestrian activity levels
2. Pavement markings and signs:
 - a. Pavement markings should be considered as either an enhancement or a substitute for lighting
 - b. Roadway signage should also be considered as either an enhancement or a substitute for the lighting
 - c. Retro-reflective signs and pavement markings adequately maintained can enhance safety
3. Locations where streetlighting is generally needed:
 - a. At signalized intersections
 - b. At roundabouts
 - c. At mid-block crosswalks (non-intersection crossings)
 - d. Municipal Parking Facilities
4. Locations where streetlighting should be considered:
 - a. Where the potential for wrong-way movements is indicated through crash experience or engineering judgement
 - b. Where twilights or nighttime pedestrian volumes are high



City of Lebanon
New Hampshire

ADMINISTRATIVE POLICIES & PROCEDURES

Lighting-Public Ways/Places/Parking Facilities

<i>Policy Number</i>	<i>Effective Date</i>	<i>Last Revision</i>	<i>Page No.</i>
ADM-109	10/18/2018		Page 6 of 9
<i>Approved by:</i>		DocuSigned by: <i>Shawn Mulholland</i>	

AE8C225904D9436...

- c. Where shifting lane alignment, turn-only lane assignment, or pavement-width transition forces a path-following adjustment at or near an intersection
- d. Roadway intersections and major bicycle/pedestrian way intersections crossing a roadway
5. Railroad Crossing Points
 - a. Nighttime train operations
 - b. Low train speeds
 - c. Blockage of crossings for long periods at night
 - d. Crash history indicating that motorists often fail to detect trains or traffic control devices at night
6. Light Trespass
 - a. Spill light-light that falls outside that area intended to be lit.
 - b. Glare-light that is viewed at the source (luminaire) which is distracting to drivers or otherwise negatively impacts safety in some manner
 - c. Sky glow-the amount of light reflected from the luminaire, road or other surfaces up into the sky
7. Animal and Plant Impacts
 - a. Negative impacts on animals
 - b. Negative impacts on plants
8. Financial Impacts
 - a. A cost benefit analysis should be conducted where necessary to determine the feasibility of lighting
 - b. Potential energy savings are part of the equation
 - c. Availability of infrastructure. Some locations may not have a utility pole readily available at a particular location where a light may be needed. It may not be cost effective to invest in the necessary infrastructure to install a luminaire
 - d. Pavement markings and/or roadway signage may provide adequate safety
9. Prevention of criminal activity and disorderly activities
 - a. Consideration should be given to areas where defined criminal or disorderly activity has been identified to have occurred or has a high likelihood to occur. Will lighting deter, prevent or help solve criminal or disorderly incidents
10. Aesthetics (daytime and nighttime) and economic impacts
 - a. Historic, architectural, cultural and artistic impacts should also be considered when determining lighting needs
 - b. Symmetry may be appropriate for specific areas such as malls, downtown areas, etc.



City of Lebanon
New Hampshire

ADMINISTRATIVE POLICIES & PROCEDURES

Lighting-Public Ways/Places/Parking Facilities

<i>Policy Number</i>	<i>Effective Date</i>	<i>Last Revision</i>	<i>Page No.</i>
ADM-109	10/18/2018		Page 7 of 9
<i>Approved by:</i>		DocuSigned by: <i>Shawn Mulholland</i>	

AE8C225904D9436...

- c. The impact of lighting that enhances or detracts from nighttime activities or events

Section 5.0: Procedures

5.1 Procedures for installation of lighting

The installation of new lighting may occur in one of three ways:

1. The DPW Director may make an independent determination of the need to install new lighting.
2. A property owner or citizen of the City of Lebanon may make a written request to the DPW Director for the installation of new lighting.
3. The process of the City accepting new public ways or parking areas from a private property owner will include the acceptance of the lighting, which is a component of that newly accepted infrastructure.

The DPW Director shall use the guidelines and criteria as detailed in this policy when making a determination regarding the installation of new lighting. The DPW Director must make a written determination regarding a property owner or citizen request within 30 calendar days. Once a determination is made the DPW Director shall provide a copy of the determination either by email, postal mail or in person as soon as practicable to the party making the request.

5.2 Procedures for removal of lighting

The removal of existing lighting may occur in one of two ways:

1. The DPW Director may make an independent determination of the need to remove existing lighting
2. A property owner or citizen of the City of Lebanon may make a written request to the DPW Director for the removal of lighting

The DPW Director shall use the guidelines and criteria as detailed in this policy when making a determination regarding the removal of existing lighting. The DPW Director must make a written determination regarding a property owner or citizen request within 30 calendar days. Once a determination is made the DPW Director shall provide a copy of the determination either by email, postal mail or in person as soon as practicable to the party making the request.

5.3 Procedures for modification of lighting

The modification of existing lighting may occur in one of two ways:



City of Lebanon
New Hampshire

ADMINISTRATIVE POLICIES & PROCEDURES

Lighting-Public Ways/Places/Parking Facilities

<i>Policy Number</i>	<i>Effective Date</i>	<i>Last Revision</i>	<i>Page No.</i>
ADM-109	10/18/2018		Page 8 of 9
<i>Approved by:</i>	DocuSigned by: <i>Shawn Mulholland</i>		

AE8C225904D9436...

1. The DPW Director may make an independent determination of the need to modify existing lighting. This includes the following:
 - a. The type of lighting such as the replacement of a luminaire with one of a different type
 - b. The dimming of a luminaire
 - c. The trimming of a luminaire
 - d. Temporarily taking a light out of service for a period of no more than 90 days. Periods beyond 90 days are considered a removal of lighting
 - e. The directional output of a luminaire
 - f. Temporary change in the function of lighting, such as flashing or brightening
2. A property owner or citizen of the City of Lebanon may make a written request to the DPW Director for the modification of existing lighting.

The DPW Director shall use the guidelines and criteria as detailed in this policy to determine the modification of existing lighting. The DPW Director must make a written determination regarding a property owner or citizen request within 30 calendar days. Once a determination is made the DPW Director shall provide a copy of the determination either by email, postal mail or in person as soon as practicable to the party making the request.

5.4 Appeals regarding installation, removal or modification of lighting

Any property owner or citizen of the City of Lebanon aggrieved by the decision of the DPW Director regarding a request to install, remove or modify lighting may appeal that decision to the City Manager. The process is as follows:

1. The aggrieved party shall file a written request with the City Manager for appeal no later than 30 calendar days after the decision of the Director.
2. The written appeal must provide all the reasons why the decision of the DPW Director should be overturned.
3. The City Manager shall review the appeal and make a written determination to sustain or overturn the decision of the DPW Director or direct other appropriate action to occur within 30 calendar days of receipt of the appeal. Once a determination is made the City Manager shall provide a copy of the determination either by email, postal mail or in person as soon as practicable to the party requesting the appeal.



City of Lebanon
New Hampshire

ADMINISTRATIVE POLICIES & PROCEDURES

Lighting-Public Ways/Places/Parking Facilities

<i>Policy Number</i>	<i>Effective Date</i>	<i>Last Revision</i>	<i>Page No.</i>
ADM-109	10/18/2018		Page 9 of 9
<i>Approved by:</i>	DocuSigned by:  AE8C225904D9436...		

5.5 Private Outdoor Lighting

The objective of a City owned streetlight is to enhance the safety of the public, not to light private property or to provide home security. Those are the private homeowner’s responsibility. Existing streetlights that are not necessary for public safety shall be removed. Requests for streetlights to light private property should be made directly to the appropriate utility company; the applicant is responsible for installation, operation and maintenance costs. Residents have the option to install their own outdoor lighting systems for security consistent with Building Code and Site Plan Regulations.

This policy does not regulate lighting owned or operated by someone other than the City of Lebanon that is intended to primarily illuminate private property. Lighting owned by persons or entities other than the City that has the primary function of illuminating a City public way does fall within this policy.

The illumination of City public ways by private persons or entities must not be contrary to the provisions of RSA 236:55.

Section 6.0: References (Charter/Code/State Statues)

1. [MUTCD- Manual of Uniform Traffic Control Devices](#)
2. [New Hampshire Statewide Climate Action Plan](#)
3. [New Hampshire RSA 9-E:3 New Hampshire Dark Sky Policy](#)
4. [FHWA Lighting Handbook, August 2012](#)
5. [City of Lebanon Master Plan](#) (See pp 68, 74, 163, and 172, including 5.1.S.10-11 and 5.1.A.15 on p. 74, and Chap. 13 Outcome #5 on p. 172)
6. [City of Lebanon Site Plan and Subdivision Regulations](#) (See § 6.7, pp. 46-51)
7. [AMA Guidance to Reduce Harm from High Intensity Street Lights](#)
8. International Dark Sky Association (<http://darksky.org/fsa/>)
9. [New Hampshire RSA 236:55 Lights Along Highways](#)

Section 7.0: Policy & Procedure Revision History

	Section	Revisions	Date
Original Adoption			10/18/2018
Amendment			
Amendment			
Amendment			