

SENATE No. 1481

The Commonwealth of Massachusetts

PRESENTED BY:

Cynthia Stone Creem

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled:

The undersigned legislators and/or citizens respectfully petition for the passage of the accompanying bill:

An Act to promote energy efficient lighting, conserve energy, regulate outdoor night lighting, and reduce light pollution.

PETITION OF:

NAME:	DISTRICT/ADDRESS:
Cynthia Stone Creem	First Middlesex and Norfolk
Allen J. McCarthy	7th Plymouth
Bruce E. Tarr	First Essex and Middlesex
Patricia D. Jehlen	Second Middlesex
Scott P. Brown	Norfolk, Bristol and Middlesex
Robert A. O'Leary	Cape and Islands
Susan C. Tucker	Second Essex and Middlesex
Jennifer L. Flanagan	Worcester and Middlesex
Kenneth J. Donnelly	Fourth Middlesex
Thomas M. McGee	Third Essex and Middlesex
Susan C. Fargo	Third Middlesex
Karen E. Spilka	Second Middlesex and Norfolk
James B. Eldridge	Middlesex and Worcester
Anthony W. Petruccelli	First Suffolk and Middlesex
Richard J. Ross	9th Norfolk

Charles A. Murphy	21st Middlesex
Katherine Clark	32nd Middlesex
Ellen Story	3rd Hampshire
Kay Khan	11th Middlesex

The Commonwealth of Massachusetts

In the Year Two Thousand and Nine

AN ACT TO PROMOTE ENERGY EFFICIENT LIGHTING, CONSERVE ENERGY, REGULATE
OUTDOOR NIGHT LIGHTING, AND REDUCE LIGHT POLLUTION.

*Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority
of the same, as follows:*

1 **SECTION 1.** Chapter 85 of the General Laws, as appearing in the 2002 Official Edition, is
2 hereby amended by adding at the end thereof the following new sections:

3 Section 37. As used in Section 37A, the following words shall, unless the context clearly requires
4 otherwise, have the following meaning:

5 "Direct light", light emitting generally in a downward direction by a lamp, off a reflector, or through a
6 refractor of a luminaire.

7 "Fully shielded luminaire", a luminaire that allows no direct light from the luminaire above a horizontal
8 plane through the luminaire's lowest light-emitting part, in its mounted form.

9 "Glare", direct light emitted by a luminaire that causes reduced visibility of objects or momentary
10 blindness.

11 "Illuminance", the luminous power incident per unit area of a surface, as measured in lux (lumens per
12 square meter) or foot-candles (lumens per square foot).

13 "Lamp", the component of a luminaire that produces light.

14 "Light pollution", artificial light directed, reflected, or scattered upward into the atmosphere.

15 "Light trespass", light emitted by a luminaire that shines beyond the boundaries of the property on which
16 the luminaire is located.

17 "Lumen", a specific standard unit of measurement of luminous flux.

18 "Luminaire", a complete lighting unit, including a lamp or lamps together with the parts designed to
19 distribute the light, to position and protect the lamps, and to connect the lamps to the power supply.

20 "Municipal funds", any bond revenues or any money appropriated or allocated by the governing body of a
21 town or city within the Commonwealth.

22 "Outdoor light fixtures", outdoor artificial illuminating devices, permanently installed or portable, used
23 for flood-lighting, roadway and area lighting, general illumination, or advertisement.

24 "Permanent outdoor luminaire", any fixed luminaire or system of luminaires that is outdoors and that is
25 intended to be used for seven days or longer.

26 "Roadway lighting", permanent outdoor luminaires that are specifically intended to illuminate roadways
27 for automotive vehicles.

28 "State funds", any bond revenues or any money appropriated or allocated by the General Court.

29 Section 37A. 1. No state or municipal funds shall be used to install any new permanent outdoor luminaire
30 or to replace an existing permanent outdoor luminaire unless the following conditions are met:

31 (a) The new or replacement luminaire is a fully shielded luminaire when the rated output of the lamp is
32 greater than one thousand eight hundred (1800) lumens;

33 (b) If a lighting recommendation or regulation applies, the minimum illuminance specified by the
34 recommendation or regulation is used;

35 (c) If no lighting recommendation or regulation applies, the minimum illuminance adequate for the
36 intended purpose is used with consideration given to recognized standards, including, but not limited to,
37 recommended practices adopted by the illuminating engineering society of North America (IESNA);

38 (d) For roadway lighting unassociated with intersections of two or more streets or highways, a
39 determination is made by the department of highways that the purpose of the lighting installation or
40 replacement cannot be achieved by installation of reflectorized roadway markers, lines, warnings or
41 informational signs, or other passive means; and

42 (e) Adequate consideration has been given to the conservation of energy and to the minimization of glare,
43 light pollution, and light trespass. The requirements of this section shall not apply in any of the following
44 circumstances, settings or location:

45 (1) a federal law, rule or regulation preempts state law;

46 (2) the outdoor lighting fixture is used on a temporary basis by emergency personnel requiring additional
47 illumination for emergency procedures or used by repair personnel on a temporary basis for road repair;

48 (3) navigational lighting systems at airports and other lighting necessary for aircraft safety;

49 (4) special events or situations that may require additional illumination, including, but not limited to,
50 sporting events and the illumination of historic structures, monuments, or flags; provided however, that
51 all such illumination shall be selected and installed to shield the lamp used from direct view to the
52 greatest extent possible, and to minimize light pollution and light trespass;

53 (5) any urban area where there is high night-time pedestrian traffic which has been examined by an
54 engineer employed by the Commonwealth and experienced in outdoor lighting and deemed to be an area
55 where the installation of luminaires other than those that are fully shielded is necessary for safety;

56 (6) a state prison, county house of correction or county jail; or

57 (7) when a compelling safety interest exists that cannot be addressed by any other method.

58 2. No public utility company may install or replace a permanent outdoor luminaire for roadway lighting,
59 if the cost of operating such luminaire is paid for by municipal funds, unless:

60 (a) the luminaire is designed to maximize energy conservation and to minimize light pollution, glare and
61 light trespass;

62 (b) the luminaire's illuminance is equal to the minimum illuminance adequate for the intended purpose of
63 the lighting; and

64 (c) for a luminaire with a rated output of more than 1800 lumens used on municipal roads, such luminaire
65 is a full cutoff luminaire.

66 3. Off-street business and residential lighting may not direct spotlights of greater than 1800 lumens onto
67 roadways in such a manner that would visually impede drivers.

68 Section 37B. The division of energy resources, in consultation with the department of highways, shall
69 promulgate regulations to implement and enforce this section, including a system to ensure that the use of
70 state funds for roadway lighting complies with the requirements set forth herein. Said regulations shall
71 include the establishment of a waiver process, to be administered by the secretary of administration and
72 finance or his designee, whereby a state agency, division or department may apply for and may be granted
73 an exemption by said secretary from the requirements of this section on the grounds that a bona fide
74 operational, temporary, safety or specific aesthetic need exists to an extent that warrants such an
75 exemption or upon the establishment by said agency, division or department that the installation and use
76 of the permanent outdoor luminaries required by this section will not be cost effective over the expected
77 use life of said luminaries.

78 Section 37C. The department of highways shall:

79 (1) review and update its warranting and other criteria for roadway lighting, to demonstrate that its current
80 standards and procedures conform to commonly accepted best practices;

81 (2) explore how costs can be reduced by replacing existing fixtures luminaires with lower-wattage, fully
82 shielded luminaires or by eliminating roadway lighting altogether where appropriate;

83 (3) report its findings to the department of energy resources annually beginning on August 31, 2010.

84 **SECTION 2.** The provisions of this act shall take effect as of November 1, 2010.