



# Senate

General Assembly

**File No. 297**

February Session, 2018

Substitute Senate Bill No. 425

*Senate, April 5, 2018*

The Committee on Environment reported through SEN. KENNEDY of the 12th Dist. and SEN. MINER of the 30th Dist., Chairpersons of the Committee on the part of the Senate, that the substitute bill ought to pass.

## ***AN ACT CONCERNING LED LIGHT POLLUTION IN THE STATE.***

Be it enacted by the Senate and House of Representatives in General Assembly convened:

1 Section 1. Section 4b-16 of the general statutes is repealed and the  
2 following is substituted in lieu thereof (*Effective October 1, 2018*):

3 (a) As used in this section:

4 (1) "Fixture" means the assembly that holds a lamp and may include  
5 an assembly housing, a mounting bracket or pole socket, a lamp  
6 holder, a ballast, a reflector or mirror and a refractor or lens;

7 (2) "Restricted upright luminaire" means a luminaire that allows no  
8 direct light emissions above a horizontal plane through the luminaire's  
9 lowest light-emitting part other than a 0.5 per cent maximum  
10 incidental upright from reflection off mounting hardware;

11 (3) "Glare" means direct light emitting from a luminaire that causes  
12 reduced vision or momentary blindness;

- 13 (4) "Illuminance" means the level of light measured at a surface;
- 14 (5) "Lamp" means the component of a luminaire that produces the  
15 light;
- 16 (6) "Light trespass" means light emitted by a luminaire that shines  
17 beyond the boundaries of the property on which the luminaire is  
18 located;
- 19 (7) "Lumen" means a unit of measurement of luminous flux;
- 20 (8) "Luminaire" means the complete lighting unit, including the  
21 lamp and the fixture;
- 22 (9) "Permanent outdoor luminaire" means any luminaire or system  
23 of luminaires that is outdoors and intended to be used for seven days  
24 or longer; and
- 25 (10) "State funds" means any bond revenues or any money  
26 appropriated or allocated by the General Assembly.
- 27 (b) Except as provided in subsection (c) of this section, no state  
28 funds shall be used to install or replace a permanent outdoor luminaire  
29 for lighting on the grounds of any state building or facility unless (1)  
30 the luminaire is designed to maximize energy conservation and to  
31 minimize light pollution, glare and light trespass, (2) the luminaire's  
32 illuminance is equal to the minimum illuminance adequate for the  
33 intended purpose of the lighting, and (3) for a luminaire with a rated  
34 output of more than one thousand eight hundred lumens, such  
35 luminaire is a restricted uplight luminaire.
- 36 (c) The provisions of subdivision (3) of subsection (b) of this section  
37 shall not apply to luminaires located on the grounds of any  
38 correctional institution or facility administered by the Commissioner of  
39 Correction, required by federal regulations, required for storm  
40 operation activities performed by the Department of Transportation,  
41 required to illuminate either the state flag or the flag of the United  
42 States or in a lighting plan for a Department of Transportation facility

43 where less than twenty-five per cent of the luminaires are to be  
44 replaced. The Commissioner of Administrative Services, or the  
45 commissioner's designee, may waive the provisions of subdivision (3)  
46 of subsection (b) of this section with respect to luminaires on the  
47 grounds of any other state building or facility when, after a request for  
48 such a waiver has been made and reviewed, the commissioner or the  
49 commissioner's designee determines that such a waiver is necessary  
50 for the lighting application. Requests for such a waiver shall be made  
51 to the commissioner or the commissioner's designee in such form as  
52 the commissioner shall prescribe and shall include, without limitation,  
53 a description of the lighting plan, a description of the efforts that have  
54 been made to comply with the provisions of subdivision (3) of  
55 subsection (b) of this section and the reasons such a waiver is  
56 necessary. In reviewing a request for such a waiver, the commissioner  
57 or the commissioner's designee shall consider design safety, costs and  
58 other factors deemed appropriate by the commissioner or the  
59 commissioner's designee.

60 (d) The provisions of this section shall not apply to the installation  
61 or replacement of luminaires for which the Secretary of the Office of  
62 Policy and Management (1) conducts a life-cycle cost analysis of one or  
63 more luminaires that meet the requirements set forth in subsection (b)  
64 of this section and one or more luminaires that do not meet such  
65 requirements, and (2) certifies that a luminaire which meets such  
66 requirements is not cost effective and is not the most appropriate  
67 alternative based on the life-cycle cost analysis.

68 (e) Whenever state funds are utilized for the purchase of light-  
69 emitting diode (LED) lamps, all other factors being equal, preference  
70 shall be given to warmer, yellow-tinted LED lamps.

71 Sec. 2. Section 13a-110a of the general statutes is repealed and the  
72 following is substituted in lieu thereof (*Effective October 1, 2018*):

73 (a) As used in this section:

74 (1) "Fixture" means the assembly that holds a lamp and may include

75 an assembly housing, a mounting bracket or pole socket, a lamp  
76 holder, a ballast, a reflector or mirror, and a refractor or lens;

77 (2) "Full cutoff luminaire" means a luminaire that allows no direct  
78 light emissions above a horizontal plane through the luminaire's  
79 lowest light-emitting part;

80 (3) "Glare" means direct light emitting from a luminaire that causes  
81 reduced vision or momentary blindness;

82 (4) "Illuminance" means the level of light measured at a surface;

83 (5) "Lamp" means the component of a luminaire that produces the  
84 light;

85 (6) "Light trespass" means light emitted by a luminaire that shines  
86 beyond the boundaries of the property on which the luminaire is  
87 located;

88 (7) "Lumen" means a unit of measurement of luminous flux;

89 (8) "Luminaire" means the complete lighting system, including the  
90 lamp and the fixture;

91 (9) "Municipality" has the same meaning as provided in subsection  
92 (a) of section 7-148;

93 (10) "Municipal funds" means any bond revenue or any money  
94 appropriated or allocated by a municipality;

95 (11) "Municipal road" means any public highway, road, street,  
96 avenue, alley, driveway, parkway or place, under the control of a  
97 municipality of the state, dedicated, appropriated or opened to public  
98 travel;

99 (12) "Permanent outdoor luminaire" means any luminaire or system  
100 of luminaires that is outdoors and intended to be used for seven days  
101 or longer;

102 (13) "State funds" means any bond revenues or any money  
103 appropriated or allocated by the General Assembly; and

104 (14) "State highway" has the same meaning as provided in  
105 subsection (a) of section 13a-1.

106 (b) Except as provided in subsection (c) of this section, no state or  
107 municipal funds shall be used to install or replace a permanent  
108 outdoor luminaire for roadway lighting unless (1) the luminaire is  
109 designed to maximize energy conservation and to minimize light  
110 pollution, glare and light trespass, (2) the luminaire's illuminance is  
111 equal to the minimum illuminance adequate for the intended purpose  
112 of the lighting, (3) for a luminaire with a rated output of more than  
113 1800 lumens used on state secondary highways, as defined in section  
114 13a-14, and state special service highways, as defined in said section  
115 13a-14, such luminaire is a full cutoff luminaire, (4) for a luminaire  
116 with a rated output of more than 1800 lumens used on municipal  
117 roads, such luminaire is a full cutoff luminaire, (5) for a luminaire with  
118 a rated output of more than 1800 lumens used on state primary  
119 highways, as defined in said section 13a-14, for which, in the opinion  
120 of the Commissioner of Transportation, use of a full cutoff luminaire  
121 shall not compromise the safety of the highway, increase the cost of the  
122 lighting plan or lighting replacement for the highway or violate any  
123 provision of federal law, such luminaire is a full cutoff luminaire, (6)  
124 the Commissioner of Transportation determines that the purpose of  
125 the lighting installation or replacement of lights on state highways  
126 cannot be achieved by reducing the speed limit in the area to be  
127 lighted or by installing reflectorized roadway markers, lines, warnings,  
128 informational signs or other means of passive or reflective lighting,  
129 and (7) the chief elected official of a municipality or such official's  
130 designee, determines that for a municipal road the purpose of the  
131 lighting installation or replacement cannot be achieved by reducing the  
132 speed limit in the area to be lighted or by installing reflectorized  
133 roadway markers, lines, warnings, informational signs or other means  
134 of passive or reflective lighting.

135 (c) The Commissioner of Transportation or the commissioner's  
136 designee may waive the provisions of subdivision (3) of subsection (b)  
137 of this section when, after a request for such a waiver has been made  
138 and reviewed, the commissioner or the commissioner's designee  
139 determines that such a waiver is necessary for the lighting application.  
140 Requests for such a waiver shall be made to the commissioner or the  
141 commissioner's designee in such form as the commissioner shall  
142 prescribe and shall include, without limitation, a description of the  
143 lighting plan, a description of the efforts that have been made to  
144 comply with the provisions of subdivision (3) of subsection (b) of this  
145 section and the reasons such a waiver is necessary. In reviewing a  
146 request for such a waiver, the commissioner shall consider design  
147 safety, costs and other factors deemed appropriate by the  
148 commissioner.

149 (d) The chief elected official of a municipality or said official's  
150 designee may waive the provisions of subdivision (4) of subsection (b)  
151 of this section when, after a request for such a waiver has been made  
152 and reviewed, said official or said official's designee determines that  
153 such a waiver is necessary for the lighting application. Requests for  
154 such a waiver shall be made to said official or said official's designee in  
155 such form as said official shall prescribe and shall include, without  
156 limitation, a description of the lighting plan, a description of the efforts  
157 that have been made to comply with the provisions of subdivision (4)  
158 of subsection (b) of this section and the reasons such a waiver is  
159 necessary. In reviewing a request for such a waiver, said official shall  
160 consider design safety, costs and other factors deemed appropriate by  
161 said official.

162 (e) No public utility company may install or replace a permanent  
163 outdoor luminaire for roadway lighting, if the cost of operating such  
164 luminaire is paid for by municipal funds, unless (1) the luminaire is  
165 designed to maximize energy conservation and to minimize light  
166 pollution, glare and light trespass, (2) the luminaire's illuminance is  
167 equal to the minimum illuminance adequate for the intended purpose  
168 of the lighting, and (3) for a luminaire with a rated output of more than

169 1800 lumens used on municipal roads, such luminaire is a full cutoff  
 170 luminaire. The chief elected official of a municipality or said official's  
 171 designee may waive the provisions of subdivision (3) of this subsection  
 172 when, after written notice from the public utility company thirty days  
 173 prior to the installation or replacement of said luminaire, said official  
 174 or said official's designee determines that a waiver is necessary for the  
 175 lighting application. Such notice shall be in such form as said official  
 176 shall prescribe and may include a description of the lighting plan and a  
 177 description of the efforts that have been made to comply with the  
 178 provisions of subdivision (3) of this subsection. Said official may  
 179 consider design safety, costs and other factors deemed appropriate by  
 180 said official.

181 (f) The provisions of this section shall not apply to the installation or  
 182 replacement of luminaires for which the Secretary of the Office of  
 183 Policy and Management (1) conducts a life-cycle cost analysis of one or  
 184 more luminaires which meet the requirements set forth in subsection  
 185 (b) of this section and one or more luminaires which do not meet such  
 186 requirements, and (2) certifies that a luminaire which meets such  
 187 requirements is not cost effective and is not the most appropriate  
 188 alternative based on the life-cycle cost analysis.

189 (g) Whenever state funds are utilized for the purchase of a light-  
 190 emitting diode (LED) lamp that is a part of a permanent outdoor  
 191 luminaire for roadway lighting, all other factors being equal,  
 192 preference shall be given to warmer, yellow-tinted LED lamps.

This act shall take effect as follows and shall amend the following sections:		
Section 1	October 1, 2018	4b-16
Sec. 2	October 1, 2018	13a-110a

**ENV** Joint Favorable Subst.

The following Fiscal Impact Statement and Bill Analysis are prepared for the benefit of the members of the General Assembly, solely for purposes of information, summarization and explanation and do not represent the intent of the General Assembly or either chamber thereof for any purpose. In general, fiscal impacts are based upon a variety of informational sources, including the analyst's professional knowledge. Whenever applicable, agency data is consulted as part of the analysis, however final products do not necessarily reflect an assessment from any specific department.

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***OFA Fiscal Note******State Impact:*** None***Municipal Impact:*** None***Explanation***

The bill establishes a preference for the purchase of yellow-tinted LED lights whenever state funds are used for the procurement of LED lighting systems located on roadways or the grounds of state buildings. This is not expected to result in a fiscal impact as this preference can only be exercised if all other factors outlined in the bill are equal.

***The Out Years******State Impact:*** None***Municipal Impact:*** None

**OLR Bill Analysis****sSB 425*****AN ACT CONCERNING LED LIGHT POLLUTION IN THE STATE.*****SUMMARY**

This bill requires, whenever state funds are used to purchase light-emitting diode (LED) lamps for use in lighting systems located outdoors on roadways or the grounds of state buildings or facilities, preference be given to warmer, yellow-tinted LED lamps. By law, “state funds” are bond revenues or money appropriated or allocated by the legislature.

Under existing law, unchanged by the bill, such lighting systems must be designed to maximize energy conservation and minimize light pollution and glare. However, the law exempts a new or replacement lighting system from its requirements if the Office of Policy and Management secretary finds that a noncomplying system is more cost-effective than one that meets the law’s requirements. The secretary must determine this by comparing the systems’ life-cycle cost analyses and certifying that a system that meets the law’s requirements is not cost-effective or the most appropriate alternative.

EFFECTIVE DATE: October 1, 2018

**COMMITTEE ACTION**

Environment Committee

Joint Favorable Substitute

Yea 28 Nay 2 (03/22/2018)