

1 State of Arkansas
2 91st General Assembly
3 Regular Session, 2017

A Bill

HOUSE BILL 1771

4
5 By: Representative S. Meeks

For An Act To Be Entitled

8 AN ACT TO CREATE THE ARKANSAS NIGHTTIME ENVIRONMENT
9 PROTECTION ACT; AND FOR OTHER PURPOSES.

Subtitle

12 TO CREATE THE ARKANSAS NIGHTTIME
14 ENVIRONMENT PROTECTION ACT.

16
17 BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF ARKANSAS:

18
19 SECTION 1. DO NOT CODIFY. Findings.

20 The General Assembly finds that:

21 (1)(A) Energy is wasted when methods of illumination are used
22 excessively and inefficiently.

23 (B) This wasteful use of energy is not a cost-effective
24 use of taxpayer money and adds unnecessary pollutants to our environment from
25 the energy generation;

26 (2)(A) In addition, light pollution has been implicated in
27 disruption of the human and animal circadian rhythm and strongly suspected as
28 an etiology of suppressed melatonin production, depressed immune systems, and
29 increases in certain cancer rates.

30 (B) The findings set out in subdivision (2)(A) of this
31 section prompted the American Medical Association in June 2009 to adopt a
32 resolution advocating the reduction of light pollution and glare through the
33 use of energy efficient and shielded lighting;

34 (3) In addition, light pollution disrupts nocturnal animal
35 activity, which results in diminished health and survival of various animal
36 and plant populations;



1 (4) In addition, light pollution reduces the ability for
 2 Arkansans to enjoy recreational or educational astronomical observations of
 3 the starry night sky;

4 (5) In addition, light pollution reduces the ability for
 5 Arkansas scientists to conduct scientific research of the cosmos;

6 (6) In addition, inefficient luminaries may cast unwanted light
 7 outside the intended target area, creating light trespass; and

8 (7) Therefore, it is in the public interest to reduce light
 9 pollution to protect the nighttime environment and create awareness.

10
 11 SECTION 2. Arkansas Code Title 8, Chapter 14, is amended to read as
 12 follows:

13 8-14-101. Title.

14 This chapter shall be known and may be cited as the ~~"Shielded Outdoor~~
 15 ~~Lighting Act"~~ "Arkansas Nighttime Environment Protection Act".

16
 17 8-14-102. Purpose.

18 ~~The purpose of this chapter is to conserve energy and preserve the~~
 19 ~~environment through the regulation of outdoor lighting fixtures~~ The purpose
 20 of this chapter is to regulate outdoor night lighting fixtures to promote
 21 safety, conserve energy, save tax dollars, and preserve the state's natural
 22 nighttime environment for astronomy and the health and welfare of our
 23 citizens and our wildlife.

24
 25 8-14-103. Definitions.

26 As used in this chapter:

27 ~~(1) "Outdoor lighting fixture" means an automatically~~
 28 ~~controlled, outdoor artificial illuminating device, whether permanent or~~
 29 ~~portable, used for illumination or advertisement, including searchlights,~~
 30 ~~spotlights, and floodlights, whether for architectural lighting, parking lot~~
 31 ~~lighting, landscape lighting, billboards, or street lighting; and~~

32 ~~(2) "Shielded" means a fixture that is covered in a manner that~~
 33 ~~light rays emitted by the fixture, either directly from the lamp or~~
 34 ~~indirectly from the fixture, are projected below a horizontal plane running~~
 35 ~~through the lowest point on the fixture where light is emitted.~~

36 (1) "Direct light" means light emitted directly from a lamp, off

1 a reflector, or through a refractor of a fixture;

2 (2)(A) "Electronic message center" means a self-luminous sign
3 that emits or projects any kind of light, color, or message that is computer-
4 or electronically generated.

5 (B) "Electronic message center" includes displays using
6 incandescent lamps, light-emitting diodes, liquid crystal displays, or a
7 flipper matrix and any sign that creates an image using an array of picture
8 elements or pixels;

9 (3) "Excessive cost" means:

10 (A) The cost to meet a requirement under this chapter that
11 is at least one hundred twenty-five percent (125%) more expensive than a
12 nonconforming fixture; or

13 (B) In the case of a tariff on a streetlight, the tariff
14 for the streetlight for a conforming fixture is more expensive than the
15 tariff for a nonconforming fixture;

16 (4) "Fixture" means a complete lighting unit, including without
17 limitation a lamp or lamps together with the parts designed to distribute the
18 light, to position and protect the lamps, and to connect the lamps to the
19 power supply;

20 (5) "Fully shielded" means a fixture that does not allow direct
21 light emissions, either directly from the lamp or indirectly by reflection or
22 refraction from any part of the lighting unit, above a horizontal plane
23 running through the lowest point on the fixture where light is emitted;

24 (6) "Glare" means the sensation produced by illuminance within
25 the visual field that is sufficiently greater than the luminance to which the
26 eyes are adapted to cause annoyance, discomfort, or loss of visual
27 performance and visibility;

28 (7) "Illuminance" means the level of light measured on an
29 intercepting surface;

30 (8) "Lamp" means the component of a fixture that produces light;

31 (9) "Light pollution" means general sky glow caused by the
32 scattering of artificial light in the atmosphere;

33 (10) "Light trespass" means excessive or unreasonable light
34 emitted by a fixture that shines beyond the boundaries of the property on
35 which the fixture is located;

36 (11) "Lumen" means a unit of luminous flux emitted within a unit

1 solid angle by a point source with a uniform luminous intensity of one (1)
 2 candela;

3 (12) "Lux" means the International System of Units unit of
 4 illuminance and luminous emittance and is equal to one (1) lumen per meter;

5 (13) "Partially shielded" means a fixture that is constructed so
 6 that the bottom edge of the shield is below the plane of the center line of
 7 the lamp, reducing light above the horizontal to less than twenty percent
 8 (20%) of the light emitted from any part of the lighting unit;

9 (14) "Permanent outdoor fixture" means a fixture or system of
 10 fixtures that is outdoors and intended to be used or is used for thirty (30)
 11 days or longer; and

12 (15) "Public funds" means bond revenues or money appropriated or
 13 allocated by the General Assembly or money raised through taxes or fees and
 14 county and municipal funds.

15
 16 8-14-104. Shielding—Prohibitions—Exemptions Regulations for
 17 outdoor illumination.

18 ~~(a) After January 1, 2006:~~

19 ~~(1)(A) No public funds shall be used to install an outdoor~~
 20 ~~lighting fixture unless it is shielded.~~

21 ~~(B) Subdivision (a)(1)(A) of this section shall not apply~~
 22 ~~to any municipality or county if the governing body of the municipality or~~
 23 ~~county determines by ordinance or to a municipally owned utility if the~~
 24 ~~municipal employee responsible for procurement determines that the cost of~~
 25 ~~acquiring a shielded outdoor lighting fixture will be prohibitive after~~
 26 ~~comparing:~~

27 ~~(i) The cost of the fixtures; and~~

28 ~~(ii) The projected energy cost of the operation of~~
 29 ~~the fixtures;~~

30 ~~(2) The Arkansas Department of Environmental Quality shall~~
 31 ~~promulgate regulations prohibiting any person or entity from knowingly~~
 32 ~~placing or disposing of the bulb or tube portion of an electric lighting~~
 33 ~~device containing hazardous levels of mercury in a landfill after January 1,~~
 34 ~~2008, if:~~

35 ~~(A) The device contains more than two tenths milligram per~~
 36 ~~liter (0.2 mg/l) of leachable mercury as measured by the Toxicity~~

1 ~~Characteristic Leaching Procedure as set out in EPA test Method 1311; and~~

2 ~~(B) Adequate facilities exist for the public to properly~~
3 ~~dispose of the device described in subdivision (a)(2)(A) of this section; and~~

4 ~~(3)(A) Each electric public utility shall offer a shielded~~
5 ~~lighting service option.~~

6 ~~(B) Not later than January 1, 2006, each electric public~~
7 ~~utility shall file an application with the Arkansas Public Service Commission~~
8 ~~to establish a schedule of rates and charges for the provision of a shielded~~
9 ~~lighting service option to the utility's customers.~~

10 ~~(C) The commission shall require each electric public~~
11 ~~utility to inform its customers of the availability of the shielded lighting~~
12 ~~service.~~

13 ~~(b) This chapter does not apply to acquisitions of:~~

14 ~~(1) Incandescent outdoor lighting fixtures of one hundred fifty~~
15 ~~watts (150W) or less or other light sources of seventy watts (70W) or less;~~

16 ~~(2) Outdoor lighting fixtures on advertisement signs on~~
17 ~~interstate or federal primary highways;~~

18 ~~(3)(A) Outdoor lighting fixtures existing and legally installed~~
19 ~~before August 12, 2005.~~

20 ~~(B) However, if an existing outdoor lighting fixture~~
21 ~~exempted from this chapter under subdivision (b)(3)(A) of this section needs~~
22 ~~to be replaced, the acquisition of the replacement outdoor lighting fixture~~
23 ~~shall be subject to the provisions of this chapter;~~

24 ~~(4) Navigational lighting systems at airports or other lighting~~
25 ~~necessary for aircraft safety; and~~

26 ~~(5) Outdoor lighting fixtures that are necessary for worker~~
27 ~~safety at farms, ranches, dairies, or feedlots or industrial, mining, or oil~~
28 ~~and gas facilities.~~

29 ~~(c) This chapter does not apply to outdoor lighting fixtures~~
30 ~~maintained or installed by:~~

31 ~~(1) A public school district;~~

32 ~~(2) A correctional facility;~~

33 ~~(3) A juvenile detention facility;~~

34 ~~(4) An adult detention facility;~~

35 ~~(5) A mental health facility; or~~

36 ~~(6) A state supported institution of higher education.~~

1 (a) A state agency, public corporation, county, or municipality shall
2 not use public funds to operate, maintain, install, or cause to be installed
3 a new or replacement permanent outdoor fixture unless the following
4 conditions are met:

5 (1) The permanent outdoor fixture is a fully shielded fixture
6 when the initial rated lumens of the lamp of the permanent outdoor fixture is
7 greater than one thousand eight hundred lumens (1,800 lm);

8 (2) The permanent outdoor fixture's maximum illuminance does not
9 exceed what is adequate for that purpose under guidelines recommended for
10 that purpose by the Illuminating Engineering Society of North America, as the
11 guidelines existed on January 1, 2017, or the minimum illuminance
12 recommendation for that purpose by the United States Department of
13 Transportation, as the recommendation existed on January 1, 2017; and

14 (3) Consideration has been given to the use of public funds for
15 the goals of eliminating glare, light pollution, and light trespass, reducing
16 energy use, and preserving the natural night environment.

17 (b) Illuminated roadway signage installed or replaced after the
18 effective date of this chapter shall be illuminated from within or from above
19 the roadway signage, except when illumination of the roadway signage from
20 within or above is not possible, or would create excessive cost or
21 maintenance issues.

22 (c)(1) An electric utility shall not operate, maintain, install, or
23 cause to be installed a fixture for new or replacement residential or
24 commercial security lighting unless the following conditions are met:

25 (A) The fixture is a fully shielded or partially shielded
26 fixture when the initial rated lumens of the lamp of the fixture is greater
27 than one thousand eight hundred lumens (1,800 lm); and

28 (B) The fixture is designed to maximize energy
29 conservation and to minimize light pollution, glare, and light trespass.

30 (2) If a property owner purchases a fixture that does not
31 conform to the requirements of subdivision (c)(1) of this section from a
32 third party, the electric utility, at the electric utility's discretion, may
33 install, operate, and service the fixture.

34 (d)(1) After taking into account all costs, including long-term costs,
35 associated with the operation and maintenance of a given fixture, the
36 Arkansas Public Service Commission shall ensure that the rate schedule for

1 public, residential, and commercial security and street lighting published by
 2 an electric utility for fixtures that are better shielded, use lower wattage,
 3 and require less maintenance, are properly reflective of the long-term cost
 4 savings of using the fixtures.

5 (e) A new mercury vapor lamp shall not be installed in the state by a
 6 state agency, public corporation, county, municipality, public entity, or
 7 utility.

8 (f) The Arkansas Department of Environmental Quality shall promulgate
 9 regulations prohibiting any person or entity from knowingly placing or
 10 disposing of the bulb or tube portion of an electric lighting device
 11 containing hazardous levels of mercury in a landfill after January 1, 2008,
 12 if:

13 (1) The electric lighting device contains more than two-tenths
 14 milligram per liter (0.2 mg/l) of leachable mercury as measured by the
 15 toxicity characteristic leaching procedure set out in Method 1311 of the
 16 United States Environmental Protection Agency; and

17 (2) Adequate facilities exist for the public to properly dispose
 18 of the electric lighting device described in subdivision (f)(1) of this
 19 section.

20 (g) Any entity that installs new or replacement street or outdoor
 21 lighting on behalf of a state agency, public corporation, county, or
 22 municipality or that will become the responsibility of a state agency, public
 23 corporation, county, or municipality shall comply with subsection (a) of this
 24 section.

25 (h) Navigation lights on towers built after the effective date of this
 26 act shall use only red lights after dark.

27
 28 8-14-105. Penalties Exemptions.

29 ~~Violations of this chapter are punishable by:~~

30 ~~(1) A warning for a first offense; and~~

31 ~~(2) A fine of twenty five dollars (\$25.00) minus the replacement~~
 32 ~~cost for each offending outdoor lighting fixture for a second or subsequent~~
 33 ~~offense or for an offense that continues for thirty (30) calendar days from~~
 34 ~~the date of the warning.~~

35 (a) Section 8-14-104 does not apply if:

36 (1) A federal law, rule, or regulation preempts § 8-14-104;

1 (2) Fire, police, rescue, correctional, or medical personnel
2 need outdoor lighting for temporary emergencies not to exceed thirty (30)
3 days in duration unless a waiver is granted by the Director of the Arkansas
4 Department of Emergency Management;

5 (3) The outdoor lighting fixture is necessary for worker safety
6 and is used on a temporary basis for nighttime work, including without
7 limitation work performed on:

8 (A) Projects or improvements relating to the construction,
9 reconstruction, improvement, or maintenance of a street, highway, building,
10 structure, or facility; and

11 (B) Farms, ranches, dairies, and feedlots and in
12 industrial, drilling, mining, or oil and gas facilities;

13 (4) The lighting is part of a navigational lighting system for
14 an airport or on a navigable waterway or provides other lighting necessary
15 for aircraft or watercraft safety;

16 (5)(A) In a situation in which there are special lighting
17 requirements, such as sports facilities, or historic decorative
18 considerations, monuments, decorative lighting on bridges over navigable
19 waterways, or the lighting of the United States flag under the Federal Flag
20 Code, 4 U.S.C. §§ 4-10.

21 (B) However, lighting exempted under subdivision (a)(5)(A)
22 of this section shall be selected and installed to shield the lamp or lamps
23 from direct view to the greatest extent possible and to minimize upward
24 lighting and light trespass;

25 (6)(A) The lighting is for a public or private state correction
26 facility, a detention facility, or a mental health facility.

27 (B) For lighting exempted under subdivision (a)(6)(A) of
28 this section, § 8-14-104 shall serve only as a guideline;

29 (7)(A) The outdoor fixture existed and was legally installed
30 before the effective date of this act.

31 (B)(i)(a) If a outdoor fixture exempted under subdivision
32 (a)(7)(A) of this section is to be replaced, the outdoor fixture shall be
33 brought into compliance with § 8-14-104, unless the governing body determines
34 that excessive cost, excessive structural modifications, or safety concerns
35 prevent compliance.

36 (b) As used in subdivision (a)(7)(A)(ii)(a) of

1 this section, "governing body" means an agency director, an elected official,
2 or a body responsible for the fixture.

3 (ii)(a) If a governing body makes a determination
4 under subdivision (7)(B)(i) or subdivision (7)(B)(ii) of this section, the
5 governing body shall submit an annual report to the Arkansas Pollution
6 Control and Ecology Commission, outlining the current status of exempted
7 fixtures and the efforts or plans that have been made to bring the exempted
8 fixtures into compliance.

9 (b) The commission shall determine the time
10 and manner for submission of the annual report required under subdivision
11 (a)(7)(B)(iii)(a) of this section.

12 (c) If the commission determines that a state
13 agency, public corporation, county, municipality, public or charter school,
14 or college or university has brought into compliance with § 8-14-104 all
15 fixtures that can be brought into compliance, the commission shall no longer
16 require the agency, public corporation, county, municipality, public or
17 charter school, or college or university to submit the annual report.

18 (C)(i) From time to time, at the discretion and in the manner
19 determined by the commission, the commission shall compile the reports
20 required under subdivision (7)(B) of this section into one (1) comprehensive
21 report.

22 (ii) The commission shall:

23 (a) File the comprehensive report required
24 under subdivision (7)(C)(i) of this section with the cochairs of the
25 Legislative Council; and

26 (b) Make each comprehensive report required
27 under subdivision (7)(C)(i) of this section available to the general public
28 in a manner determined by the commission.

29 (b) Upon petition to the commission, in the manner and method
30 established by the commission, the commission may waive any provision of this
31 chapter on a case-by-case basis if consideration has been given to reduce
32 light pollution, save taxpayer dollars, and to protect the nighttime
33 environment.

34 (c)(1) A waiver under subsection (b) of this section may be appealed
35 to the commission by a citizen of the city or county where the waiver was
36 applied.

1 (2) The commission shall then hold a public hearing to hear all
 2 sides, before making a final determination.

3
 4 8-14-106. Enforcement.

5 ~~This chapter may be enforced by a town, city, or county of this state~~
 6 ~~by seeking injunctive relief in a court of competent jurisdiction.~~

7 This chapter shall be enforced by:

8 (1) The governing body of a political subdivision of the state
 9 within its jurisdiction;

10 (2) A local or state code enforcement agency within the
 11 jurisdiction of the governing body of a political subdivision of the state;

12 (3) The Arkansas State Highway and Transportation Department
 13 over highways, streets, and right-of-way lighting and all signage for and
 14 along streets and highways; and

15 (4)(A) The Arkansas Department of Environmental Quality within
 16 its jurisdiction.

17 (B) If appropriate, the Arkansas Department of
 18 Environmental Quality may refer any cases to a local or state code
 19 enforcement agency or to a governing body of a political subdivision of the
 20 state.

21
 22 8-14-107. ~~Provisions supplemental~~ Violations.

23 ~~The provisions of this chapter are cumulative and supplemental and~~
 24 ~~shall not apply within a town, city, or county of this state that by~~
 25 ~~ordinance has adopted provisions restricting light pollution that are equal~~
 26 ~~to or more stringent than the provisions of this chapter.~~

27 (a) A person that violates this chapter is subject to:

28 (1) For a first offense, a warning;

29 (2) For a subsequent offense or an offense that continues for
 30 thirty (30) days after the date of the warning, a fine of twenty-five dollars
 31 (\$25.00) minus the replacement cost for each offending fixture assessed; and

32 (3) For an offense continuing for more than sixty (60) days
 33 after the date of the warning, a fine of twenty-five dollars (\$25.00) for
 34 each offending fixture for each calendar month the violation continues.

35 (b) Money raised by fines assessed under subsection (a) of this
 36 section shall be deposited into the general fund of the agency, public

1 corporation, county, municipality assessing the fine.

2
3 8-14-108. Illuminated roadway signage.

4 (a) If roadway signage is illuminated with external fixtures:

5 (1) The external fixtures shall be directed and designed
6 so that a majority of the light falls upon the roadway sign's surface; and

7 (2) The external fixtures do not create glare, light
8 trespass, or excessive amounts of light pollution.

9 (b)(1) Commercial and advertising roadway signage and devices,
10 including billboards and electronic message centers, installed or replaced
11 after the effective date of this chapter that are within one-half (1/2) mile
12 of and visible from a highway system shall not prevent the driver of a
13 vehicle from having a clear and unobstructed view of official signs and
14 approaching or merging traffic.

15 (2) If a commercial and advertising roadway sign or device is
16 illuminated with an external fixture:

17 (A) The external fixture shall be directed and designed so
18 that a majority of the light falls upon the advertisement surface; and

19 (B) The external fixture does not create glare, light
20 trespass, or excessive amounts of light pollution.

21 (3) If a commercial and advertising roadway sign or device is an
22 electronic message center:

23 (A) The commercial and advertising roadway sign or device
24 shall:

25 (i) Be equipped with a sensor or other device that
26 automatically determines the ambient light conditions and is programmed to
27 automatically dim appropriately;

28 (ii) Not be of an intensity or brilliance that may
29 cause glare or impair the vision of a driver of a motor vehicle, or
30 otherwise interfere with a driver's operation of a motor vehicle;

31 (iii) Not change intensity or expose its message for
32 less than four (4) seconds; and

33 (iv) Not exceed three lux (3 lx) over the ambient
34 light as measured with an illuminance meter.

35 (4) A measurement required under this subsection shall:

36 (A) Not be made within thirty (30) minutes after sunset or

1 thirty (30) minutes before sunrise;

2 (B) Be taken from or as close as is practically possible
3 to directly in front of or perpendicular from the center point of the face of
4 the roadway signage from a height of five feet (5') or approximately the same
5 height as a driver's eye level;

6 (C) Be taken from or as close as is practically possible
7 to a distance from the roadway signage in feet according to the formula:
8 square root of the area of the commercial and advertising roadway sign or
9 device in square feet times one hundred (100);

10 (D) Be taken with the roadway signage displaying a solid
11 white image or if monochrome a solid image of the roadway signage's color;
12 and

13 (E) Be taken with the roadway signage on and compared to
14 the ambient light with the sign off.

15 (5) Under this subsection, roadway signage is considered visible
16 from the highway system if it or light emitting from it is plainly visible to
17 a driver of a vehicle who is proceeding in a legally designated direction and
18 traveling at the posted speed limit.

19 (6) Billboards and electronic message centers installed before
20 the effective date of this chapter that are within one-half (1/2) mile of and
21 visible from a highway system shall be brought into compliance within five
22 (5) years after the effective date of this chapter.

23 (7) Remote sensing equipment shall not be installed on a sign
24 for the purpose of personalizing advertisements displayed on an electronic
25 message center.

26
27 8-14-109. Light trespass unlawful.

28 (a) It is unlawful for a person to commit light trespass.

29 (b) A complaint of light trespass against a person shall be accepted
30 only from the owner of the property or an agent of the property owner upon
31 whose property the light trespass is occurring.

32 (c) As used in this section, "light trespass" means that:

33 (1) The initial rated lumens of a lamp is greater than two
34 thousand five hundred lumens (2,500 lm); and

35 (2) Either:

36 (A) The lamp is directly visible from and is within

1 twenty-five feet (25') horizontally of the property owned by the complainant;
 2 or

3 (B) The light from the lamp falling onto the
 4 property owned by the complainant is greater than fifty lux (50 lx) over the
 5 ambient light as measured with an illuminance meter.

6 (3) Before making a finding of light trespass an authority:

7 (A) May take into account:

8 (i) The lawful purpose and history of the lamp; and

9 (ii) The general character and use of the
 10 properties; and

11 (B) Shall work with the parties, if possible, to find
 12 mutually agreeable voluntary mitigation.

13 (d) A political subdivision of the state may exempt itself from this
 14 section by enacting an ordinance, either more stringent or less stringent
 15 than the standards under this section, that defines light trespass within the
 16 jurisdiction of the political subdivision.

17
 18 8-14-110. Chapter cumulative and supplemental.

19 This chapter is cumulative and supplemental and shall not apply within
 20 a county or municipality that, by ordinance or resolution, has adopted
 21 provisions restricting light pollution that are equal to or more stringent
 22 than the provisions of this chapter.

23
 24 SECTION 3. EFFECTIVE DATE. This act becomes effective on October 1,
 25 2017.