

1 INTERIM STUDY PROPOSAL 2017-027

2 State of Arkansas

*As Engrossed: H3/20/17*

3 91st General Assembly

# A Bill

4 Regular Session, 2017

HOUSE BILL 1771

5  
6 By: Representative S. Meeks

7 Filed with: House Committee on Public Health, Welfare, and Labor  
8 pursuant to A.C.A. §10-3-217.

## For An Act To Be Entitled

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

### Subtitle

12  
13  
14 TO CREATE THE ARKANSAS NIGHTTIME  
15 ENVIRONMENT PROTECTION ACT.

16  
17  
18  
19 BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF ARKANSAS:

20  
21 SECTION 1. DO NOT CODIFY. Findings.

22 The General Assembly finds that:

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

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

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

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

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

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

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

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

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

13  
14           SECTION 2. Arkansas Code Title 8, Chapter 14, is amended to read as  
15 follows:

16           8-14-101. Title.

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

19  
20           8-14-102. Purpose.

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

27  
28           8-14-103. Definitions.

29           As used in this chapter:

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

35           ~~(2) "Shielded" means a fixture that is covered in a manner that~~  
36 ~~light rays emitted by the fixture, either directly from the lamp or~~

1 ~~indirectly from the fixture, are projected below a horizontal plane running~~  
2 ~~through the lowest point on the fixture where light is emitted.~~

3 (1) "Direct light" means light emitted directly from a light  
4 source, off a reflector, or through a refractor or lens of a fixture;

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

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

12 (3) "Excessive cost" means:

13 (A) The cost to meet a requirement under this chapter or  
14 the cost of additional wiring, controls, power requirements, poles,  
15 materials, and commissioning, designing, and maintenance needed to meet a  
16 requirement under this chapter that is at least one hundred twenty-five  
17 percent (125%) more expensive than a nonconforming fixture; or

18 (B) In the case of a tariff on a streetlight, the tariff  
19 for the streetlight for a conforming fixture is more expensive than the  
20 tariff for a nonconforming fixture;

21 (4) "Fixture" means a complete lighting unit, including without  
22 limitation a light source together with the parts designed to distribute the  
23 light, to position and protect the light source, and to connect the light  
24 source to the power supply;

25 (5) "Fully shielded" means a fixture that does not allow light  
26 emissions, either directly from a light source or indirectly by reflection or  
27 refraction from any part of the lighting unit, above a horizontal plane  
28 running through the lowest point on the fixture where light is emitted;

29 (6) "Glare" means the sensation produced by luminances within  
30 the visual field that is sufficiently greater than the luminance to which the  
31 eyes are adapted to cause annoyance, discomfort, or loss of visual  
32 performance and visibility;

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

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

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

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

6           (11) "Lumen" means a unit of luminous flux emitted within a unit  
7 solid angle by a point source with a uniform luminous intensity of one (1)  
8 candela;

9           (12) "Lux" means the International System of Units unit of  
10 illuminance and is equal to one (1) lumen per square meter;

11           (13) "Partially shielded" means a fixture that is constructed so  
12 that the bottom edge of the shield is below the plane of the center line of  
13 the lamp, reducing light above the horizontal to less than twenty percent  
14 (20%) of the light emitted from any part of the lighting unit;

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

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

21  
22           8-14-104. ~~Shielding~~ ~~Prohibitions~~ ~~Exemptions~~ Regulations for  
23 outdoor illumination.

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

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

27           ~~(B) Subdivision (a)(1)(A) of this section shall not apply~~  
28 ~~to any municipality or county if the governing body of the municipality or~~  
29 ~~county determines by ordinance or to a municipally owned utility if the~~  
30 ~~municipal employee responsible for procurement determines that the cost of~~  
31 ~~acquiring a shielded outdoor lighting fixture will be prohibitive after~~  
32 ~~comparing:~~

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

34                           ~~(ii) The projected energy cost of the operation of~~  
35 ~~the fixtures;~~

1           ~~(2) The Arkansas Department of Environmental Quality shall~~  
2 ~~promulgate regulations prohibiting any person or entity from knowingly~~  
3 ~~placing or disposing of the bulb or tube portion of an electric lighting~~  
4 ~~device containing hazardous levels of mercury in a landfill after January 1,~~  
5 ~~2008, if:~~

6                     ~~(A) The device contains more than two tenths milligram per~~  
7 ~~liter (0.2 mg/l) of leachable mercury as measured by the Toxicity~~  
8 ~~Characteristic Leaching Procedure as set out in EPA test Method 1311; and~~

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

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

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

17                     ~~(C) The commission shall require each electric public~~  
18 ~~utility to inform its customers of the availability of the shielded lighting~~  
19 ~~service.~~

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

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

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

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

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

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

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

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

- 3           ~~(1) A public school district;~~
- 4           ~~(2) A correctional facility;~~
- 5           ~~(3) A juvenile detention facility;~~
- 6           ~~(4) An adult detention facility;~~
- 7           ~~(5) A mental health facility; or~~
- 8           ~~(6) A state supported institution of higher education.~~

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

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

16           (2) The illuminance of a surface does not exceed what is  
17 adequate for that purpose under guidelines recommended for that purpose by  
18 the Illuminating Engineering Society of North America, as the guidelines  
19 existed on January 1, 2017, or the minimum illuminance recommendation for  
20 that purpose by the United States Department of Transportation, as the  
21 recommendation existed on January 1, 2017; and

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

25           (b) Illuminated roadway signage installed or replaced after the  
26 effective date of this chapter shall be illuminated from within or from above  
27 the roadway signage, except when illumination of the roadway signage from  
28 within or above is not possible, or would create excessive cost or  
29 maintenance issues.

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

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

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

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

7           (d)(1) After taking into account all costs, including long-term costs,  
8 associated with the operation and maintenance of a given fixture, the  
9 Arkansas Public Service Commission shall ensure that the rate schedule for  
10 public, residential, and *commercial outdoor*, security and street lighting  
11 published by an electric utility for fixtures that are better shielded, use  
12 lower wattage, and require less maintenance, are properly reflective of the  
13 long-term cost of the fixtures and the energy consumption of the fixtures  
14 over the life of the fixtures.

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

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

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

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

30           (g) Any entity that installs new or replacement street or outdoor  
31 lighting on behalf of a state agency, public corporation, county, or  
32 municipality or that will become the responsibility of a state agency, public  
33 corporation, county, or municipality shall comply with subsection (a) of this  
34 section.

35  
36           8-14-105. Penalties Exemptions.

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

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

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

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

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

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

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

16 (A) Projects or improvements relating to the construction,  
17 reconstruction, improvement, or maintenance of a street, highway, building,  
18 structure, or facility; and

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

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

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

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

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

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



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

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

8           (b) As used in subdivision (a)(7)(A)(ii)(a) of  
9 this section, "governing body" means an agency director, an elected official,  
10 or a body responsible for the fixture.

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

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

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

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

30           (ii) The commission shall:

31           (a) File the comprehensive report required  
32 under subdivision (7)(C)(i) of this section with the cochairs of the  
33 Legislative Council; and

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

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

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

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

11  
12           8-14-106. Enforcement.

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

15           This chapter shall be enforced by:

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

18           (2) A local or state code enforcement agency within the  
19 jurisdiction of the governing body of a political subdivision of the state;  
20 and

21           (3)(A) The Arkansas Department of Environmental Quality within  
22 its jurisdiction.

23           (B) If appropriate, the Arkansas Department of  
24 Environmental Quality may refer any cases to a local or state code  
25 enforcement agency or to a governing body of a political subdivision of the  
26 state.

27  
28           8-14-107. ~~Provisions supplemental~~ Violations.

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

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

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

1           (2) For a subsequent offense or an offense that continues for  
2 thirty (30) days after the date of the warning, a fine of twenty-five dollars  
3 (\$25.00); and

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

7           (b) Money raised by fines assessed under subsection (a) of this  
8 section shall be deposited into the general fund of the agency, public  
9 corporation, county, municipality assessing the fine.

10  
11           8-14-108. Illuminated roadway signage – Electronic messaging centers.

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

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

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

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

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

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

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

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

31                   (A) The commercial and advertising roadway sign or device  
32 shall:

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

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

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

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

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

9                   (A) Not be made within thirty (30) minutes after sunset or  
10 thirty (30) minutes before sunrise;

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

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

19                   (D) Be taken with the roadway signage displaying a solid  
20 white image or if monochrome a solid image of the roadway signage's color;  
21 and

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

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

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

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

35  
36                   8-14-109. Chapter cumulative and supplemental.

