1		INTERIM STUDY PROPOSAL 2015-0	018
2	State of Arkansas	As Engrossed: H2/18/15 H3/6/	15
3	90th General Assembly	A Bill	
4	Regular Session, 2015		HOUSE BILL 1003
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
9		For An Act To Be Entitled	
10	AN ACT TO C	CREATE THE ARKANSAS NIGHTTIME I	ENVIRONMENT
11	PROTECTION	ACT; AND FOR OTHER PURPOSES.	
12			
13			
14		Subtitle	
15	THE AF	RKANSAS NIGHTTIME ENVIRONMENT	
16	PROTEC	CTION ACT.	
17			
18			
19	BE IT ENACTED BY THE GE	ENERAL ASSEMBLY OF THE STATE OF	F ARKANSAS:
20			
21	SECTION 1. DO NO	OT CODIFY. <u>Findings.</u>	
22	The General Assem	ably finds that:	
23	<u>(1)(A) Ene</u>	ergy is wasted when methods of	illumination are used
24	excessively and ineffic	ciently.	
25	<u>(B)</u>	This wasteful use of energy is	s not a cost-effective
26	use of taxpayer money a	and adds unnecessary pollutants	s to our environment from
27	the energy generation;		
28	(2)(A) In	addition, light pollution has	been implicated in
29	disruption of the human	n and animal circadian rhythm a	and strongly suspected as
30	an etiology of suppress	sed melatonin production, depre	essed immune systems, and
31	<u>increases in certain ca</u>	incer rates.	
32	<u>(B)</u>	The findings set out in subdiv	vision $(2)(A)$ of this
33		merican Medical Association in	-
34	resolution advocating t	the reduction of light pollution	on and glare through the
3 5	use of energy efficient	and chiolded 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	$\underline{\text{Arkansans to enjoy recreational or educational astronomical observations of}}$
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	$\underline{\text{environment through the regulation of outdoor lighting fixtures}} \ \underline{\text{The purpose}}$
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 lamp, off
4	a reflector, or through a refractor 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	incandescent lamps, light-emitting diodes, liquid crystal displays, or a
10	flipper matrix and any sign that creates an image using an array of picture
11	elements or pixels;
12	(3) "Excessive cost" means the cost to meet the requirement
13	under this subchapter that is at least one hundred twenty-five percent (125%)
14	more expensive than a nonconforming fixture;
15	(4) "Footcandle" means a unit of illuminance equivalent to the
16	illumination produced by a source of one (1) candle at a distance of one foot
17	(1') and equal to one (1) lumen incident per square foot;
18	(5) "Fixture" means a complete lighting unit, including without
19	limitation a lamp or lamps together with the parts designed to distribute the
20	light, to position and protect the lamps, and to connect the lamps to the
21	<pre>power supply;</pre>
22	(6) "Fully shielded" means a fixture that does not allow direct
23	light emissions, either directly from the lamp or indirectly by reflection or
24	refraction from any part of the lighting unit, above a horizontal plane
25	running through the lowest point on the fixture where light is emitted;
26	(7) "Glare" means the sensation produced by illuminance within
27	the visual field that is sufficiently greater than the luminance to which the
28	eyes are adapted to cause annoyance, discomfort, or loss of visual
29	performance and visibility;
30	(8) "Illuminance" means the level of light measured on an
31	intercepting surface;
32	(9) "Lamp" means the component of a fixture that produces light;
33	(10) "Light pollution" means general sky glow caused by the
34	scattering of artificial light in the atmosphere;

1	(11) "Light trespass" means excessive or unreasonable light
2	emitted by a fixture that shines beyond the boundaries of the property on
3	which the fixture is located;
4	(12) "Lumen" means a unit of luminous flux emitted within a unit
5	solid angle by a point source with a uniform luminous intensity of one (1)
6	candela;
7	(13) "Partially shielded" means a fixture that is constructed so
8	that the bottom edge of the shield is below the plane of the center line of
9	the lamp, reducing light above the horizontal to less than twenty percent
10	(20%) of the light emitted from any part of the lighting unit;
11	(14) "Permanent outdoor fixture" means a fixture or system of
12	fixtures that is outdoors and intended to be used or is used for thirty (30)
13	days or longer; and
14	(15) "Public funds" means bond revenues or money appropriated or
15	allocated by the General Assembly or money raised through taxes or fees and
16	county and municipal funds.
17	
18	8-14-104. Shielding - Prohibitions - Exemptions Regulations for
19	outdoor illumination.
20	(a) After January 1, 2006:
21	(1)(A) No public funds shall be used to install an outdoor
22	lighting fixture unless it is shielded.
23	(B) Subdivision (a)(1)(A) of this section shall not apply
24	to any municipality or county if the governing body of the municipality or
25	county determines by ordinance or to a municipally owned utility if the
26	municipal employee responsible for procurement determines that the cost of
27	acquiring a shielded outdoor lighting fixture will be prohibitive after
28	eomparing:
29	(i) The cost of the fixtures; and
30	(ii) The projected energy cost of the operation of
31	the fixtures;
32	(2) The Arkansas Department of Environmental Quality shall
33	promulgate regulations prohibiting any person or entity from knowingly
34	placing or disposing of the bulb or tube portion of an electric lighting
35	device containing hazardous levels of mercury in a landfill after January 1,
36	2008. if:

1	(Λ) The device contains more than two-tenths milligram per
2	liter (0.2 mg/l) of leachable mercury as measured by the Toxicity
3	Characteristic Leaching Procedure as set out in EPA test Method 1311; and
4	(B) Adequate facilities exist for the public to properly
5	dispose of the device described in subdivision (a)(2)(A) of this section; and
6	(3)(A) Each electric public utility shall offer a shielded
7	lighting service option.
8	(B) Not later than January 1, 2006, each electric public
9	utility shall file an application with the Arkansas Public Service Commission
10	to establish a schedule of rates and charges for the provision of a shielded
11	lighting service option to the utility's customers.
12	(C) The commission shall require each electric public
13	utility to inform its customers of the availability of the shielded lighting
14	service.
15	(b) This chapter does not apply to acquisitions of:
16	(1) Incandescent outdoor lighting fixtures of one hundred fifty
17	watts (150W) or less or other light sources of seventy watts (70W) or less;
18	(2) Outdoor lighting fixtures on advertisement signs on
19	interstate or federal primary highways;
20	(3)(A) Outdoor lighting fixtures existing and legally installed
21	before August 12, 2005.
22	(B) However, if an existing outdoor lighting fixture
23	exempted from this chapter under subdivision (b)(3)(A) of this section needs
24	to be replaced, the acquisition of the replacement outdoor lighting fixture
25	shall be subject to the provisions of this chapter;
26	(4) Navigational lighting systems at airports or other lighting
27	necessary for aircraft safety; and
28	(5) Outdoor lighting fixtures that are necessary for worker
29	safety at farms, ranches, dairies, or feedlots or industrial, mining, or oil
30	and gas facilities.
31	(c) This chapter does not apply to outdoor lighting fixtures
32	maintained or installed by:
33	(1) A public school district;
34	(2) A correctional facility;
35	(3) A juvenile detention facility;
36	(4) An adult detention facility;

1	(5) A mental health facility; or
2	(6) A state-supported institution of higher education.
3	(a) An agency, public corporation, county, or municipal subdivision of
4	this state shall not use public funds to operate, maintain, install, or cause
5	to be installed a new or replacement permanent outdoor fixture unless the
6	following conditions are met:
7	(1) The permanent outdoor fixture is a fully shielded fixture
8	when the initial rated lumens of the lamp of the permanent outdoor fixture is
9	greater than one thousand eight hundred lumens (1,800 lm);
10	(2) The permanent outdoor fixture's maximum illuminance does not
11	exceed what is adequate for that purpose under guidelines recommended for
12	that purpose by the Illuminating Engineering Society of North America, as the
13	guidelines existed on January 1, 2013, or the minimum illuminance
14	recommendation for that purpose by the United States Department of
15	Transportation, as the recommendation existed on January 1, 2013;
16	(3) For roadway lighting unassociated with intersections of two
17	(2) or more streets or highways, a determination is made by the Director of
18	the Arkansas State Highway and Transportation Department or his or her
19	designee or a body having jurisdiction or its designee that the purpose of
20	the lighting installation or replacement cannot be achieved by reduction of
21	the speed limit, installation of reflectorized roadway markers, lines,
22	warnings, or informational signs, or other passive means; and
23	(4) Full consideration has been given to the use of public funds
24	for the goals of eliminating glare, light pollution, and light trespass,
25	reducing energy use, and preserving the natural night environment.
26	(b)(1) Illuminated roadway signage installed or replaced after the
27	effective date of this subchapter shall be illuminated from within or from
28	above the roadway signage, except when illumination of the roadway signage
29	from within or above is not possible, or would create excessive cost or
30	maintenance issues.
31	(2) If roadway signage is illuminated with external fixtures:
32	(A) The external fixtures shall be directed and designed
33	so that a majority of the light falls upon the roadway sign's surface; and
34	(B) The external fixtures do not create glare, light
35	trespass, or excessive amounts of light pollution.

1	(c)(1) Commercial and advertising roadway signage and devices,
2	including billboards and electronic message centers, installed or replaced
3	after the effective date of this subchapter that are within one-half (1/2)
4	mile of and visible from a highway system shall not prevent the driver of a
5	vehicle from having a clear and unobstructed view of official signs and
6	approaching or merging traffic.
7	(2) If a commercial and advertising roadway sign or device is
8	illuminated with an external fixture:
9	(A) The external fixture shall be directed and designed so
10	that a majority of the light falls upon the advertisement surface; and
11	(B) The external fixture does not create glare, light
12	trespass, or excessive amounts of light pollution.
13	(3) If a commercial and advertising roadway sign or device is an
14	electronic message center:
15	(A) The commercial and advertising roadway sign or device
16	<u>shall:</u>
17	(i) Be equipped with a sensor or other device that
18	automatically determines the ambient light conditions and is programmed to
19	automatically dim appropriately;
20	(ii) Not be of an intensity or brilliance that may
21	cause glare or impair the vision of a driver of a motor vehicle, or
22	otherwise interfere with a driver's operation of a motor vehicle;
23	(iii) Not change intensity or expose its message for
24	less than four (4) seconds; and
25	(iv) Not exceed three-tenths (0.3) footcandle over
26	the ambient light as measured with a footcandle or illuminance meter that can
27	measure to one one-hundredth of a footcandle.
28	(4) A measurement required under this subsection shall:
29	(A) Not be made within thirty (30) minutes after sunset or
30	thirty (30) minutes before sunrise;
31	(B) Be taken from or as close as is practically possible
32	to directly in front of or perpendicular from the center point of the face of
33	the sign from a height of five feet (5') or approximately the same height as
34	a driver's eye level;
35	(C) Be taken from or as close as is practically possible
36	to a distance from the sign in feet according to the formula: square root of

1	the area of the commercial and advertising roadway sign or device in square
2	feet times one hundred (100);
3	(D) Be taken with the sign displaying a solid white image
4	or if monochrome a solid image of the sign's color; and
5	(E) Be taken with the sign on and compared to the ambient
6	light with the sign off.
7	(5) Under this subsection, a sign is considered visible from the
8	highway system if it or light emitting from it is plainly visible to a driver
9	of a vehicle who is proceeding in a legally designated direction and
10	traveling at the posted speed limit.
11	
12	"(6) Billboards and electronic message centers installed before
13	the effective date of this subchapter that are within one-half (1/2) mile of
14	and visible from a highway system shall be brought into compliance within
15	five (5) years after the effective date of this subchapter.
16	(d)(1) An electric utility shall not operate, maintain, install, or
17	cause to be installed a fixture for new or replacement residential or
18	commercial security lighting unless the following conditions are met:
19	(A) The fixture is a fully shielded or partially shielded
20	fixture when the initial rated lumens of the lamp of the fixture is greater
21	than one thousand eight hundred lumens (1,800 lm); and
22	(B) The fixture is designed to maximize energy
23	conservation and to minimize light pollution, glare, and light trespass.
24	(2) If a property owner purchases a fixture that does not
25	conform to the requirements of subdivision (c)(1) of this section from a
26	third party, the electric utility, at the electric utility's discretion, may
27	install, operate, and service the fixture.
28	(e)(1) After taking into account all costs, including long-term costs,
29	associated with the operation and maintenance of a given fixture, the
30	Arkansas Public Service Commission shall ensure that the rate schedule for
31	public, residential, and commercial security and street lighting published by
32	an electric utility for fixtures that are better shielded, use lower wattage,
33	and require less maintenance, are properly reflective of the long-term cost
34	savings of using the fixtures.
35	(f)(1) It is unlawful for a person or entity to commit light trespass.

1	(2) A complaint of light trespass against a person or entity
2	shall be accepted only from the owner of the property or an agent of the
3	property owner upon whose property the light trespass is occurring.
4	(3) As used in this section, "light trespass" means that:
5	(A) The initial rated lumens of a lamp is greater than one
6	thousand eight hundred lumens (1,800 lm); and
7	(B) Either:
8	(i) The lamp is directly visible from and is within
9	twenty-five feet (25') horizontally of the property owned by the complainant;
10	<u>or</u>
11	(ii) The light from the lamp falling onto the
12	property owned by the complainant is greater than fifty footcandles (50 fc)
13	over the ambient light as measured with a footcandle or illuminance meter
14	that can measure to one one-hundredth footcandle (0.01 fc).
15	(4) Before making a finding of light trespass an authority:
16	(A) May take into account:
17	(i) The lawful purpose and history of the lamp; and
18	(ii) The general character and use of the
19	properties; and
20	(B) Shall work with the parties, if possible, to find
21	mutually agreeable voluntary mitigation.
22	(g) A new mercury vapor lamp shall not be installed in the state by a
23	government agency, public entity, or utility.
24	(h) The Arkansas Department of Environmental Quality shall promulgate
25	regulations prohibiting any person or entity from knowingly placing or
26	disposing of the bulb or tube portion of an electric lighting device
27	containing hazardous levels of mercury in a landfill after January 1, 2008,
28	<u>if:</u>
29	(1) The electric lighting device contains more than two-tenths
30	milligram per liter (0.2 $mg/1$) of leachable mercury as measured by the
31	toxicity characteristic leaching procedure set out in Method 1311 of the
32	United States Environmental Protection Agency; and
33	(2) Adequate facilities exist for the public to properly dispose
34	of the electric lighting device described in subdivision (h)(1) of this
35	section.

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           (i) Any entity that installs new or replacement street or outdoor
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     lighting on behalf of an agency, public corporation, county, or municipal
     subdivision of this state or that will become the responsibility of an
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     agency, public corporation, county, or municipal subdivision of this state
 4
     shall comply with subsection (a) of this section.
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 6
           (j) Navigation lights on towers built after the effective date of this
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     act shall use only red lights after dark.
8
           8-14-105. Penalties Exemptions.
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10
           Violations of this chapter are punishable by:
11
                 (1) A warning for a first offense; and
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                (2) A fine of twenty-five dollars ($25.00) minus the replacement
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     cost for each offending outdoor lighting fixture for a second or subsequent
     offense or for an offense that continues for thirty (30) calendar days from
14
15
     the date of the warning.
16
           (a) Section 8-14-104 does not apply if:
17
                 (1) A federal law, rule, or regulation preempts § 8-14-104;
18
                 (2) Fire, police, rescue, correctional, or medical personnel
     need outdoor lighting for temporary emergencies not to exceed thirty (30)
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20
     days in duration unless a waiver is granted by the Director of the Arkansas
21
     Department of Emergency Management;
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                 (3) The outdoor lighting fixture is necessary for worker safety
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     and is used on a temporary basis for nighttime work, including without
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     limitation work performed on:
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                       (A) Projects or improvements relating to the construction,
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     reconstruction, improvement, or maintenance of a street, highway, building,
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     structure, or facility; and
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                       (B) Farms, ranches, dairies, and feedlots and in
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     industrial, drilling, mining, or oil and gas facilities;
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                 (4) The lighting is part of a navigational lighting system for
     an airport or on a navigable waterway or provides other lighting necessary
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     for aircraft or watercraft safety;
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                 (5)(A) In a situation in which there are special lighting
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     requirements, such as sports facilities, or historic decorative
     considerations, monuments, or the lighting of the United States flag under
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     the Federal Flag Code, 4 U.S.C. §§ 4-10.
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1	(B) However, lighting exempted under subdivision (a)(5)(A)
2	of this section shall be selected and installed to shield the lamp or lamps
3	from direct view to the greatest extent possible and to minimize upward
4	lighting and light trespass;
5	(6)(A) The lighting is for a public or private state correction
6	facility, a detention facility, or a mental health facility.
7	(B) For lighting exempted under subdivision (a)(6)(A) of
8	this section, § 8-14-104 shall serve only as a guideline and shall not be
9	binding;
10	(7)(A) The lighting is for an agency, a public corporation,
11	county, municipality, public or charter school, or college or university
12	installed before the effective date of this subchapter.
13	(B)(i) However, if a governing body determines that
14	resources are available, lighting exempted under subdivision (a)(7)(A) of
15	this section may be brought into compliance with § 8-14-104.
16	(ii)(a) If a fixture exempted under subdivision
17	(a)(7)(A) of this section is to be replaced, the fixture shall be brought
18	into compliance with § 8-14-104, unless the governing body determines that
19	excessive cost, excessive structural modifications, or safety concerns
20	prevent compliance.
21	(b) As used in subdivision (a)(7)(A)(ii)(a) of
22	this section, "governing body" means the agency director, an elected
23	official, or a body responsible for the fixture.
24	(iii)(a) The governing body becoming compliant with
25	this chapter.
26	(B)(i) However, if a governing body determines that
27	resources are available, lighting exempted under subdivision (7)(A) of this
28	section shall be brought into compliance with § 8-14-104.
29	(ii) If a fixture exempted under subdivision (7)(A)
30	of this section is to be replaced, the fixture shall be brought into
31	compliance with § 8-14-104, unless the governing body determines that
32	excessive cost or safety concerns prevent compliance.
33	(iii)(a) If a governing body makes a determination
34	under subdivision (7)(B)(i) or (7)(B)(ii) of this section, the governing body
35	shall submit an annual report to the Arkansas Pollution Control and Ecology

1	Commission, outlining the current status of exempted fixtures and the efforts
2	or plans that have been made to bring the exempted fixtures into compliance.
3	(b) The commission shall determine the time
4	and manner for submission of the annual report required under subdivision
5	(a)(7)(B)(iii)(a) of this section.
6	(c) If the commission determines that an
7	agency, a public corporation, county, municipality, public or charter school,
8	or college or university has brought into compliance with § 8-14-104 all
9	fixtures that can be brought into compliance, the commission shall no longer
10	require the an agency, a public corporation, county, municipality, public or
11	charter school, or college or university to submit the annual report.
12	(C)(i) From time to time, at the discretion and in the manner
13	determined by the commission, the Commission shall compile the reports
14	required under subdivision (7)(B) of this section into one (1) comprehensive
15	report.
16	(ii) The Commission shall:
17	(a) File the comprehensive report required
18	under subdivision (7)(D)(i) of this section with the cochairs of the
19	Legislative Council; and
20	(b) Make each comprehensive report required
21	under subdivision (7)(D)(i) of this section available to the general public
22	in a manner determined by the commission; and
23	(8)(A) The outdoor lighting fixture existed and was legally
24	installed before the effective date of this act.
25	(B) However, when an existing lighting fixture becomes
26	unrepairable, a replacement is subject to § 8-14-104.
27	(b) Upon petition to the Arkansas Pollution Control and Ecology
28	Commission, in the manner and method established by the commission, the
29	$\underline{\text{commission may waive any provision of this chapter on a case-by-case basis } \underline{\text{if}}$
30	consideration has been given to reduce light pollution, save taxpayer
31	dollars, and to protect the nighttime environment.
32	(c)(1) A waiver under subdivision $(a)(7)(D)$ of this section may be
33	appealed by a citizen of the state to the commission.
34	(2) The commission shall then hold a public hearing to hear all
35	sides, before making a final determination.

1	8-14-106. Enforcement.
2	This chapter may be enforced by a town, city, or county of this state
3	by seeking injunctive relief in a court of competent jurisdiction.
4	This chapter shall be enforced by:
5	(1) The governing body of a political subdivision of the state
6	within its jurisdiction;
7	(2) A local or state code enforcement agency within the
8	<pre>governing body's jurisdiction;</pre>
9	(3) The Arkansas State Highway and Transportation Department
10	over highways, streets, and right-of-way lighting and all signage for and
11	along streets and highways; and
12	(4)(A) The Arkansas Department of Environmental Quality within
13	its jurisdiction.
14	(B) If appropriate, the Arkansas Department of
15	Environmental Quality may refer any cases to a local or state code
16	enforcement agency or to a local governing body.
17	
18	8-14-107. Provisions supplemental Violations.
19	The provisions of this chapter are cumulative and supplemental and
20	shall not apply within a town, city, or county of this state that by
21	ordinance has adopted provisions restricting light pollution that are equal
22	to or more stringent than the provisions of this chapter.
23	(a) A person or entity that violates this chapter is subject to:
24	(1) For a first offense, a warning;
25	(2) For a second offense or an offense that continues for thirty
26	(30) days after the date of the warning, a fine of twenty-five dollars
27	(\$25.00) minus the replacement cost for each offending fixture assessed; and
28	(3) For an offense continuing for more than sixty (60) days
29	after the date of the warning, a fine of twenty-five dollars (\$25.00) for
30	each offending fixture for each calendar month the violation continues.
31	(b) Money raised by fines assessed under subsection (a) of this
32	section shall be deposited into the general fund of the agency assessing the
33	<u>fine.</u>
34	
35	8-14-108. Chapter cumulative and supplemental.

1	This chapter is cumulative and supplemental and shall not apply within
2	a county or municipality that, by ordinance or resolution, has adopted
3	provisions restricting light pollution that are equal to or more stringent
4	than the provisions of this chapter.
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6	SECTION 3. EFFECTIVE DATE. This act becomes effective on October 1,
7	<u>2015.</u>
8	
9	/s/S. Meeks
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11	
12	Referred by the Arkansas House of Representatives
13	Prepared by: VJF
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