

GOVERNOR'S VETO
AB 2382 (Lee)
As Enrolled September 1, 2022
2/3 vote

SUMMARY

Requires state agencies to ensure that an outdoor lighting fixture that is installed or replaced on or after January 2, 2023, on a structure or land that is owned, leased, or managed by the state agency is shielded and adheres to additional lighting requirements.

Senate Amendments

- 1) Add findings and declarations.
- 2) Define "correlated color temperature" to mean the temperature, measured in Kelvin, of a radiating black body that presents the same apparent color to the human eye as the light source.
- 3) Define "light trespass" means light emitted by an outdoor lighting fixture that shines beyond the boundary of the property on which the fixture is located.
- 4) Define "outdoor lighting fixture" means an outdoor artificial illuminating device or luminaire, whether permanent or portable, including, but not limited to, artificial illuminating devices installed on a building or structure and used for illumination or advertisement, including, but not limited to, searchlights, spotlights, and floodlights, used for architectural lighting, parking lot lighting, landscape lighting, billboards, or street lighting. Specify that "outdoor lighting fixture" does not include artificial illuminating devices that are worn or held in the hand, including flashlights, lanterns, and headlamps.
- 5) Define "shielded" to mean that all of the light rays emitted by an outdoor lighting fixture in its installed position, either directly from the lamp or indirectly from the fixture, are projected below a horizontal plan running through the lowest point on the fixture where the light is emitted and effectively obscures visibility of the lamp.
- 6) Require state agencies to ensure that an outdoor lighting fixture that is installed or replaced on or after January 2, 2023, on a structure or land that is owned, leased, or managed by the state agency is shielded and meets all of the following criteria:
 - a) Uses a lamp with a correlated color temperature that does not exceed 2700 Kelvin.
 - b) Uses the minimal illuminance required for the intended purpose of the outdoor lighting fixture, with consideration to recognized building and safety standards, including, but not limited to, recommended practices adopted by the Illuminating Engineering Society.
 - c) Is one or more of the following:
 - i) Dimmable to no more than 50% of its maximum possible brightness and dimmed between the hours of 11 p.m. and sunrise, unless a compelling safety or other state interest requires the fixture to be at full illumination.

- ii) Extinguishable by an automatic or manual shutoff device.
 - iii) Motion-activated with an activated duration of fewer than 15 minutes and equipped with an automatic shutoff device.
 - d) In complying with this section, a state agency shall consider cost efficiency, energy conservation, minimization of light trespass and glare, and preservation of the natural night environment preservation.
- 7) Specify that the requirements above to not apply in any of the following circumstances:
- a) A federal law or regulation that preempts state law.
 - b) A local municipal or county ordinance that establishes requirements that more stringently control light trespass or glare or conserve the natural night sky.
 - c) The outdoor lighting fixtures are advertisement signs or other fixtures on interstate highways or federal primary highways.
 - d) A compelling safety interest or existing legal requirement requires such lighting, including any of the following:
 - i) Navigational lighting for aircraft safety.
 - ii) Outdoor lighting needed for the safe navigation of watercraft, including, but not limited to, lighthouses and outdoor lighting in marinas.
 - iii) Outdoor lighting fixtures necessary for worker health and safety or public health and safety, pursuant to Title 8 of the California Code of Regulations.
 - iv) Lighting that is used by law enforcement officers, firefighters, medical personnel, or correctional personnel, including, but not limited to, lighting used at Department of Corrections and Rehabilitation facilities and State Department of State Hospitals facilities.
 - v) Outdoor lighting used for programs, projects, or improvements of a state agency related to construction, reconstruction, improvement, or maintenance of a street, highway, or state building, structure, or facility.
 - vi) Outdoor lighting on historic sites or structures, to the extent necessary to preserve the historic appearance.
 - vii) Lighting sources of less than 1,000 lumens, including but not limited to, seasonal and decorative lighting.
 - viii) Other circumstances where a significant interest exists to protect safety or state property that cannot be feasibly addressed by another method, including, but not limited to, lighting needed to discourage vandalism of state agency buildings, structures, and facilities.

- 8) Specify that if an exemption applies, a state agency shall make reasonable efforts to install fixtures and employ light management practices that conserve energy, minimize light trespass, and preserve the dark sky while still fully meeting the purposes and requirements of the light fixtures.
- 9) Add a coauthor.

Governor's Veto Message

[This bill] would establish new light reduction requirements for outdoor lighting fixtures installed or replaced on structures or lands that are owned, leased, or managed by a state agency. While I appreciate the stated goals of this bill to conserve energy and decrease ambient light in the night sky, the provisions create an overly broad mandate that raises concerns for health and safety, security, and crime prevention. Further, the California Green Building Standards Code includes light pollution reduction standards for nonresidential buildings. These standards are developed during a public, deliberative process.

Furthermore, the costs associated with this bill are unfunded and potentially significant. There are 24,000 state-owned buildings, in addition to the state's leased and managed properties. Requiring all outdoor lighting at these locations to be shielded, include shutoff devices, or have a motion sensor may cost millions of dollars not accounted for in the budget.

With our state facing lower-than-expected revenues over the first few months of this fiscal year, it is important to remain disciplined when it comes to spending, particularly spending that is ongoing. We must prioritize existing obligations and priorities, including education, health care, public safety and safety-net programs.

The Legislature sent measures with potential costs of well over \$20 billion in one-time spending commitments and more than \$10 billion in ongoing commitments not accounted for in the state budget. Bills with significant fiscal impact, such as this measure, should be considered and accounted for as part of the annual budget process.

COMMENTS

Light pollution. Light pollution, which has been found to have adverse effects on human health and wildlife, is caused by increasingly large urban areas and the excessive and inefficient use of lights. Light pollution is characterized by sky glow (brighter sky in urban areas), light trespass (shining of lights in unneeded or unwanted areas), and glare (brightness resulting in visual discomfort).

Light pollution was first recognized as a problem by astronomers in the 1970s upon discovery that thousands of stars and other objects in space could not be seen as clearly despite the use of powerful equipment. In suburbs and cities where a few thousand stars should be visible at night, only a few hundred or a few dozen, respectively, can be seen.

In addition to obscuring stars, light pollution can directly impact human health by interfering with natural circadian rhythms caused by a decrease in the amount of melatonin produced in the body. Sleep disorders, depression, cancer, and other adverse health conditions have been linked to circadian disruption.

Similarly, wildlife are also subject to adverse impacts of light pollution. Studies have demonstrated that light pollution can alter the behavior of wildlife, often resulting in the death or decline of species such as turtles, birds, fish, reptiles, and other wildlife.

Light pollution has also been known to impact the ability for the military to conduct nighttime trainings, which is done to simulate combat situations. In 2007, Texas, at the request of the military, began to regulate the use of outdoor lighting in counties with several military bases and more than one million residents.

California Green Building Standards Code (CALGreen). In 2007, the CBSC developed green building standards to help the state achieve its greenhouse gas reduction goals. CALGreen is the first-in-the-nation mandated green building standards code and includes regulations for energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. CBSC is authorized to propose CALGreen standards for non-residential structures and any others that are not under the jurisdiction of another state agency. CALGreen Section 5.106.8 currently imposes specific light pollution reduction standards for non-residential buildings. Outdoor lighting systems must be designed and installed to prevent light escaping in unwanted or unnecessary directions from an outdoor light fixture. Specifically the light produced may not exceed the allowable backlight (light directed behind the fixture), uplight (light directed above the horizontal plane of the fixture), and glare (light emitted at high angles that cause a glare) (BUG) ratings per lighting zone. Lighting zones range from natural environments with extremely limited outdoor lighting to urban areas with extensive use of outdoor lighting. CALGreen specifies that if a local ordinance is more stringent than the CALGreen requirements, the building owner must comply with the local ordinance. CalGreen currently exempts a variety of light fixtures, including but limited to those used for aviation; landscaping; temporary use outdoors; sports and athletic fields, and children's playgrounds; tunnels, bridges, stairs, and ramps; and lighting for industrial sites. CALGreen also exempts emergency lighting; building façade that meet specified requirements; and some custom lighting features.

Other states. Nineteen states, the District of Columbia, and Puerto Rico have enacted laws to reduce light pollution. "Dark skies" laws typically require outdoor lighting fixtures to be shielded so that light is emitted downwards only, to use low-glare or low-wattage lightbulbs, or to be restricted during certain hours.

According to the Author

"Increased light pollution throughout California and globally is disrupting the circadian rhythms and migratory patterns of animals, which is harming our ecosystems. According to the National Audubon Society, 80% of birds that migrate do so at night using the dark skies to help them navigate to and from their breeding grounds. In addition to disrupting circadian rhythms, excessive artificial light at night (ALAN) can also disorient birds, which can result in fatal collisions. To address this issue, [this bill] will require outdoor lighting fixtures on state buildings and structures to have an external shield to direct light to where it is needed or be equipped with a shutoff device. This sensible reform promotes safety for migratory birds, ecosystems, and people."

Arguments in Support

The American Bird Conservancy, Audubon California, Defenders of Wildlife, National Parks and Conservation Association, Santa Clara Valley Audubon Society, Green Foothills, Citizens Committee to Complete the Refuge, Hills For Everyone, California Institute for Biodiversity,

Environmental Justice Coalition for Water, International Dark-Sky Association, Dark Sky Consulting, LLC, Santa Clara Valley Open Space Authority, Mono Lake Committee, Midpeninsula Regional Open Space District, Friends of Harbors, Beaches and Parks, Sierra Club California, Los Angeles Audubon Society, and the Urban Wildlands Group collectively write in support:

"The International Dark Sky Association estimates that at least 30% of all outdoor lighting in the United States alone is wasted – primarily by lights that are not covered. That wasted light totals \$3.3 billion in lost electricity costs and the release of 21 million tons of carbon dioxide per year. In recent years, new lighting fixtures have become widely available that reduce unnecessary light pollution, save electricity, and are less harmful to people and wildlife. [...] [This bill] is a modest and sensible step in the effort to address the significant impacts of artificial night light pollution."

Arguments in Opposition

The California Sign Association, wrote on June 21, 2022 that it had an oppose unless amended position on the bill and stated, "While we generally support energy conservation measures and have worked closely with the Energy Commission on developing cutting edge, feasible illumination regulations, this bill raises more questions than answers." On August 22, 2022, they wrote in a letter of concern, "The California Sign Association much appreciates the 8/22 amendments to this legislation. We have just a few additional thoughts that we ask be considered regarding the revision." The letter requests additional amendments related to terminology and definitions included in the bill.

FISCAL COMMENTS

According to the Senate Appropriations Committee:

- 1) Unknown General Fund costs, likely in the millions of dollars, to replace light fixtures for over 24,000 state-owned buildings and structures according to the criteria specified in the bill. These costs will likely be spread out over an unknown amount of time based on a replacement schedule to be determined by the Department of General Services (DGS). Actual costs will be job specific and depend on the type and number of fixtures being replaced and installed for each building.
- 2) Unknown, potentially significant General Fund costs to replace light fixtures on leased buildings. State costs will vary from minor to significant, to the extent that a lessor requires the state to cover costs associated with replacing light fixtures.
- 3) Unknown, potentially significant costs to include light fixtures meeting the specified criteria on newly constructed buildings. Generally, DGS notes that new construction is covered by the California Green Building Standards Code's (CALGreen) backlight, uplight, and glare regulations. Any costs for compliant light fixtures in regard to new construction would be absorbed by existing project resources and included in the overall costs of construction.

VOTES

ASM BUSINESS AND PROFESSIONS: 19-0-0

YES: Berman, Flora, Bloom, Mia Bonta, Chen, Cunningham, Megan Dahle, Fong, Gipson, Grayson, Irwin, Lee, McCarty, Medina, Mullin, Ward, Ting, Akilah Weber, Arambula

ASM APPROPRIATIONS: 16-0-0

YES: Holden, Bigelow, Bryan, Calderon, Carrillo, Megan Dahle, Davies, Mike Fong, Fong, Gabriel, Eduardo Garcia, Levine, Quirk, Robert Rivas, Akilah Weber, Wilson

ASSEMBLY FLOOR: 72-0-6

YES: Arambula, Bauer-Kahan, Bennett, Bigelow, Bloom, Boerner Horvath, Bryan, Calderon, Carrillo, Cervantes, Chen, Choi, Cooley, Cooper, Cunningham, Megan Dahle, Daly, Davies, Flora, Mike Fong, Fong, Friedman, Gabriel, Gallagher, Cristina Garcia, Eduardo Garcia, Gipson, Gray, Grayson, Haney, Holden, Irwin, Jones-Sawyer, Kalra, Kiley, Lackey, Lee, Levine, Low, Maienschein, Mathis, Mayes, McCarty, Medina, Mullin, Muratsuchi, Nazarian, Nguyen, Patterson, Petrie-Norris, Quirk, Quirk-Silva, Ramos, Reyes, Luz Rivas, Robert Rivas, Rodriguez, Salas, Santiago, Seyarto, Smith, Stone, Ting, Valladares, Villapudua, Waldron, Ward, Akilah Weber, Wicks, Wilson, Wood, Rendon

ABS, ABST OR NV: Aguiar-Curry, Berman, Mia Bonta, O'Donnell, Blanca Rubio, Voepel

SENATE FLOOR: 37-0-3

YES: Allen, Archuleta, Atkins, Bates, Becker, Borgeas, Caballero, Cortese, Dahle, Dodd, Durazo, Eggman, Glazer, Gonzalez, Grove, Hertzberg, Hueso, Hurtado, Jones, Kamlager, Laird, Leyva, Limón, McGuire, Min, Newman, Ochoa Bogh, Pan, Portantino, Roth, Rubio, Skinner, Stern, Umberg, Wieckowski, Wiener, Wilk

ABS, ABST OR NV: Bradford, Melendez, Nielsen

ASSEMBLY FLOOR: 76-1-3

YES: Alvarez, Arambula, Bauer-Kahan, Bennett, Berman, Bigelow, Bloom, Boerner Horvath, Mia Bonta, Bryan, Calderon, Carrillo, Cervantes, Chen, Choi, Cooley, Cooper, Cunningham, Megan Dahle, Daly, Davies, Flora, Mike Fong, Fong, Friedman, Gabriel, Cristina Garcia, Eduardo Garcia, Gipson, Gray, Grayson, Haney, Holden, Jones-Sawyer, Kalra, Kiley, Lackey, Lee, Levine, Low, Maienschein, Mathis, Mayes, McCarty, McKinnor, Medina, Mullin, Muratsuchi, Nazarian, Nguyen, O'Donnell, Patterson, Petrie-Norris, Quirk, Quirk-Silva, Ramos, Reyes, Luz Rivas, Robert Rivas, Rodriguez, Blanca Rubio, Salas, Santiago, Seyarto, Stone, Ting, Valladares, Villapudua, Voepel, Waldron, Ward, Akilah Weber, Wicks, Wilson, Wood, Rendon

NO: Aguiar-Curry

ABS, ABST OR NV: Gallagher, Irwin, Smith

UPDATED

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