

Climate Action, Resilience, and Environment Committee on 2022-08-31 9:00 AM

Meeting Time: 08-31-22 09:00

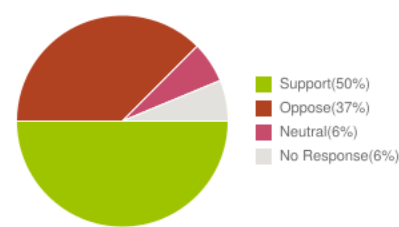
eComments Report

Meetings	Meeting Time	Agenda Items	Comments	Support	Oppose	Neutral
Climate Action, Resilience, and Environment Committee on 2022-08-31 9:00 AM	08-31-22 09:00	2	16	8	6	1

Sentiments for All Meetings

The following graphs display sentiments for comments that have location data. Only locations of users who have commented will be shown.

Overall Sentiment



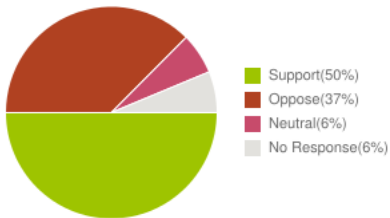
Climate Action, Resilience, and Environment Committee on 2022-08-31 9:00 AM
08-31-22 09:00

Agenda Name	Comments	Support	Oppose	Neutral
A G E N D A	7	3	3	1
CARE-74 BILL 21,CD1, FD1(2022) BILL 21, CD1, FD1 (2022), SEABIRD AND BIODIVERSITY PROTECTION (CARE-74)	9	5	3	0

Sentiments for All Agenda Items

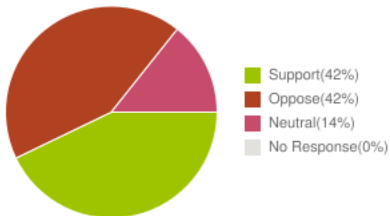
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Overall Sentiment



Agenda Item: eComments for A G E N D A

Overall Sentiment



Guest User

Location:

Submitted At: 9:30pm 08-30-22

Ladies and Gentlemen of the CARE Committee.

RE: Bill 21

I do not support this Bill in its current form. I would support adding the following exemptions:

- (1) Water features and swimming pool lighting
- (2) String lights as used by many restaurants in their outdoor sitting areas
- (3) Security flood lights in residential and commercial areas
- (4) Lighting for all recreational facilities both private and public.
- (5) Concert and theatrical performance venues i.e., MACC, Maui Film Festival
- (6) Wine festivals, charitable events, rodeos, luaus, county faire
- (7) Maui Raceway event lighting

As a taxpayer, I vigorously protest the waste of thousands and thousands of dollars to junk street light fixtures,

owned by the taxpayers, because of yet unproven and conflicting claims that current lights damage seabirds. What is the fiscal impact for junking these lights and replacing with lights from a sole source vendor?

I also object to misleading statements made by Councilmember King to the concerned youth sports coaches that testified at the second reading of this Bill. She ridiculed their concerns that they may not have lighting for their fields telling them the lighting is not affected by this Bill. These coaches deserved to be respected, indeed cherished, for their efforts to enrich our youngsters lives with sports activities. The more factual answer? In three years, if there is suitable lighting available, this Bill mandates that the current lighting be replaced. What will the cost be? And who will pay for it?

In the matter of the blue light content, those requirements will halt all projects while awaiting approval for lighting plans. In reading this Bill, the language is intended to be understood by lighting engineers only. This language needs to be more defined so a non-engineer can discern what it actually says. What impact does this have on much needed affordable housing? What holding costs are involved that add to the final price of a property? Yet another law to burden the approval process, which clearly drives up housing costs.

I support holding this Bill until the U.S. Fish and Game Study of Hawaii seabirds and turtles is completed. I understand that the results of that study are forthcoming. It will offer credible information on lighting types and colors that are best for the birds. So will the academic study by Hawaii Pacific University, which was dismissed by the Chair as a source in the original consideration of this Bill.

Why are Hawaiian homelands exempt from these bird and turtle saving provisions?

This is a bad Bill for a worthy cause. The Council has received many concerned and definitive comments from experts in this arena. Wait for full information which is months away. Make informed decisions. Keep this Bill in committee until then.

Thank you.

Madge Schaefer

Guest User

Location:

Submitted At: 4:15pm 08-30-22

Dear Honorable Chair and Committee Members,

I strongly support Bill 21, CD 1 FD1.

I am a Board member at Ma'alaea Triangle Association (MTA) which represents all the commercial business in the Ma'alaea Triangle commercial area. We have a parking lot that contains 756 parking stalls and 27 light poles most being 30' high. These light poles were installed about 25 years ago when the commercial area was developed and are end of life with outdated lighting technology that is not energy efficient and not very seabird friendly. We have now signed a contract with a lighting manufacturer that is able to deliver to our specifications; < 2% blue light content, < 3,000K, and shielded light fixtures. This technology meeting the above specifications is readily available. They are completely PV + battery operated. Our new lights will be 18' tall. We expect to be able to execute this project by the end of 2022.

I wanted to share this project with Maui County Council considering this issue as here we have a private organization that recognizes the importance of this issue and is making the decision on its own to lead with a solution that is not only seabird and sea turtle friendly but also most energy efficient and it is happening now. And the UH astronomy will also appreciate more clarity in the night skies. I urge the Maui County Council to continue to be forward looking and be the agents for positive change in and for our Community. Thank you for your time and consideration.

Aloha,

Tapani Vuori

c.808.561.2022

tvuori@mocmarineinstitute.org

Guest User

Location:

Submitted At: 4:13pm 08-30-22

Testimony – Bill 21 CD1, FD1 (2022)

Dear Councilmember King and members of the Committee,

I am the CEO and President of Events International, one of Hawaii's largest and most diverse event businesses. We work on all of the Hawaiian Islands and provide production services and support for many of the largest and most prestigious events that take place in our State.

Events International has made a huge commitment to environmental awareness and sustainability in the event arena. We are currently working to eliminate the use of one-time use plastic containers at events. We have made a huge effort to reduce waste and manage the negative environmental impacts of events.

That being said, we believe that there should be an exception for outdoor events in this important bill. We support the protection of sea birds and reducing the negative harmful effects of outdoor lighting. However, the nature of outdoor events makes it impossible to adhere to many of the restrictions put forth in this bill. We believe that outdoor events should still be allowed to take place and that the infrequent nature and non-permanence of the lighting installations in these events would not greatly impair the intent of the bill.

If the Bill passes in its current form, it will deny the public the great joy and entertainment of outdoor events and bring great hardship to our event businesses. Please consider an exemption for outdoor events so that temporary lighting for these events may take place.

Respectfully

Eric (Rick) Schneider
CEO, President
rick@eventsint.com
808 294-7954

Jay Penniman

Location:

Submitted At: 1:33pm 08-30-22

www.mauinuseabirds.org

30 August, 2022

Testimony of Jay F. Penniman, Manager, Maui Nui Seabird Recovery Project

CLIMATE ACTION, RESILIENCE, AND ENVIRONMENT COMMITTEE

Wednesday, August 31, 2022 9:00 a.m.

BILL 21, CD1, FD1 (2022), SEABIRD AND BIODIVERSITY PROTECTION (CARE-74)

Aloha Chair King, Chair Lee, & Members of the CARE Committee, I am Jay Penniman and I manage the Maui Nui Seabird Recovery Project.

Thank you all for the care and effort you have taken in developing this bill for an ordinance. Committee chair King and her staff have taken a deep dive into the issues of light pollution and its impacts on our island home. They have provided the committee and the council with a well crafted outdoor lighting ordinance proposal that will significantly improve the night environment when it is fully implemented. Concerns and issues have been raised by the administration and members of the public and the amended ordinance effectively addresses these while maintaining the integrity of the light pollution reducing improvements to Maui County's Outdoor lighting Ordinance.

The public works department recently commissioned an after the fact environmental assessment for the streetlights that were purchased to replace the high pressure sodium streetlights that are at the end of their life

span and require much more energy to run than modern LED street lights. Unfortunately this environmental assessment has many inaccuracies and fails to truly consider alternatives that would comply with the proposed bill 21 for an ordinance. I have submitted response to the draft EA and encourage all of you to read these as I presume you will also receive testimony citing the draft EA as rationale to eliminate the core of bill 21; the requirement for short wavelength spectra to be severely limited in nighttime lighting as it has been for the past ten years on Hawai'i Island. Additionally, the LED streetlights that would comply with bill 21 also comply with the department's streetlight conversion goal of reducing the amount of electricity consumed and thus saving the county money. The issue of being unwilling to add filters to the streetlights because that would void the warrentee is mute because the warrentee on the power supply is either expired or will shortly expire.

I have included additional references in my submitted testimony that show the amount of research documenting the detrimental effects of short wavelength light on wildlife, coral reefs, human health and dark nighttime skies for astronomical observations.

Thank you for your time and consideration of this bill and I encourage you all to vote it on to full council consideration.

Guest User

Location:

Submitted At: 8:02am 08-30-22

Attn: To all members of Maui County Council. While I guess this is an important issue to the person who got this bill on the agenda, and I respect their concern over the "sea birds" and while I am a real animal/bird lover as well, this problem doesn't come close (IMHO) to the real issues facing this county that our council should be solving now and don't. 1) Low cost Housing. 2) Traffic 3) Jobs 4) Water, 5) Rising property taxes just to name a few. Yet, you are spending your valuable time on outdoor lighting. A issue that no other island is doing that I'm aware of. This bill as written, among many negative things the bill would do will force many Maui business's to close and it will put many hard working men & women out of work. I wonder if this bill will effect street lighting, Shopping center lighting, outdoor sports lighting? Will it allow any event outside that needs lighting? Does the island go dark at sunset? How about home lighting? Will I have to close my curtains at night? MOST IMPORTANT !!!!!!! Has anyone thought of the crimes that might now be committed in newly un lit areas at night? This bill is a thieves dream come true. Does Maui now hire "light officers" to somehow check all outdoor lighting? Will they be coming to my house at night if my porch light is too bright? Will I no longer be able to have outdoor flood lights on my pasture so can see walking around at night? Please understand I support all living creatures, and I am sensitive to all environmental groups but In my 55 years on Maui I have yet to see, hear about how native seabirds being effected by outdoor lighting by anyone until now. Have I missed past articles in the Maui News in the last 55 years? Are these birds an endangered species? Are they dying because of the outdoor lighting at the MACC? or football games at King K.? If they are being hurt by outdoor lighting I haven't seen signs of it. Has anyone? Has anyone seen dead birds laying on the ground at the Grand Wailea that can be proven without a doubt, that outdoor lighting did in fact cause these birds to get hurt? Do birds get disoriented in light? Possibly. I could make the same claim about dogs, cats, deers horses. probably most animals and some humans as well. Unfortunately & sadly, animals that run in front of cars/headlights sometimes get run over. Do you pass a bill that no longer allows people to drive at night to protect these animals? I am wondering if this is such an important issue then why haven't the other islands haven't past any bills similar to this one? In closing, Please think this thru and the complete ramifications of such a bill. Please shelve or reject this bill and allow the people that live and work here to keep their jobs and their business's. At least do more research on this issue before you pass such a far reaching bill and its negative impact on the people that live here that you represent. As I see it and weather or not it saves birds, this bill as written will effect every person on Maui in some way and will have a negative effect on them in many ways including yourselves. Sincerely, Jim McLemore

Deleted User

Location:

Submitted At: 3:48pm 08-26-22

Testimony in support of Bill 21

I strongly support Bill 21 as amended. This is a much-needed bill to protect our dark skies

Aloha

Gary Elster

CARE Committee

Location:

Submitted At: 3:45pm 08-26-22

County Clerk,

Please use the below and attached as my written testimony.

CARE Committee,

Please consider revising the ordinance with engineers & architects & wildlife experts, to collaborate in a charette to come up with a workable plan for the Island of Maui. The current revision (attached), is a patchwork of the original ordinance, but will have similar issues as the previous ordinance.

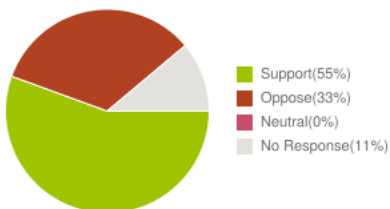
Also, note, attached is an example of the spectral curve for 2 types of lights that would comply with the less than 2% blue content. For turtles, the preferred lighting in specific nesting areas is Amber or Red lighting which has a narrow bandwidth. The Filtered type used on the Big Island which reduces the blue content in the 400-500nm range has colors in the upper spectrum which may or may not affect the turtles. Florida Fish & Wildlife has specifics on the type of light to use in nesting areas and in certain times of the year. Again, this type of lighting is specific to an area and not used statewide in Florida, as Disneyworld does not have this light in the main promenade of the property. Mainly coastal areas.

Aloha,

Eric Miyasato, P.E
808-226-5973

Agenda Item: eComments for CARE-74 BILL 21,CD1, FD1(2022) BILL 21, CD1, FD1 (2022), SEABIRD AND BIODIVERSITY PROTECTION (CARE-74)

Overall Sentiment



CARE Committee

Location:

Submitted At: 8:56am 08-31-22

Testimonies received by CARE Committee.

Guest User

Location:

Submitted At: 7:58am 08-31-22

Aloha Climate Action, Resilience and Environment Committee:

My name is Jeff Bagshaw and I am in strong support of Bill 21, CD2.

Kudos to this committee and the Council for working on this difficult and detailed bill. You've worked through many details and iterations because this is about creating "smart-lighting" instead of over-lighting. Creating good governance isn't always easy. One concern opponents have raised are the costs of conversion.

It's easy to calculate those dollars, but what is more difficult to quantify are environmental services we expect to be free, even to make us money. When the issue of conversion costs are raised, please compare those to the following.

Freshwater is the first: I've previously testified how seabirds are a vital link in nutrient cycling for native forests and shrublands. We get our freshwater from our forests. It may flow in streams, be stored in ponds or come from aquifers and wells, but it is first captured in our native forests. To replace the work of seabirds evenly distributing nutrients in the form of their guano, to keep forests healthy and functioning would require hundreds of thousands of dollars in helicopter time to foliar-spray our native forests. Or it would take thousands of people-hours annually, hiking through the forests with heavy packs, hand-spreading fertilizers. And there are many studies showing how those nutrients even feed our reefs in the right amounts and chemical compositions, to keep corals producing fish for food.

We talk about food-security often, but water-security is even more basic unless we're willing to have a future of tankers delivering fresh water to our docks, we have to take care of all the links in the chain that keeps our waters flowing, now.

Which leads to another environmental service we capitalize on for free: reef fish and sea turtles. The Hawaii Visitor Bureau's 2020 Annual Visitor Satisfaction and Activity Survey once again states that roughly 60% of visitors to Maui report they snorkeled or came to Maui specifically to snorkel. The survey doesn't report one thing I can share anecdotally. First time visitors to `Ahihi- Kina`u Natural Area Reserve will ask me about 30-40% of the time: "Can we see turtles here?" right after "Can we see fish here?" Look at souvenirs sold through any retail outlet large or small. What is one of the top five iconic creatures on tee shirts, stickers, stuffed toys, keychains... sea turtles. How many dollars in profits can be attributed to the presence of these animals and visitors wanting to remember or hope for an experience? As others have testified, over- and badly designed lighting affects all reef animals including fish and turtles.

Modern astronomers can give estimates of the values of dark skies for professional sky-watching, and there are at least a dozen private tour-companies that include star watching in their list of activities/services they provide, which can again, equate to environmental aspects we capitalize on for free. In fact, a photo exhibit celebrating the beauty of Hawaiian night skies opens at the Schafer Gallery on Sept 1st. But an incalculable benefit is the ability for residents to be able to look at up and experience seeing stars used in traditional navigation as was done generations ago, and Nainoa Thompson of course used stars, but also relied on seabirds in the last hours of his first voyage as a navigator to Tahiti. The modern definition of a cultural landscape goes beyond archeological features – it includes being able to experience a landscape as our ancestors did to hear seabirds call in the night. "Honolulu City Lights" is a lovely song, but rewriting those lyrics to become "Kahului City Lights" would be a sad cultural replacement for the loss of seabirds and the other pieces of the environmental chorus we are losing with in-action.

The latest estimates for sea level rise say we will lose 26-40% of the nesting habitats for seabirds in Papah_ naumoku_ kea Marine National Monument, where 96% of the world's Laysan Albatross currently nest, a species that led early navigators here, which is unique to our islands. We have to start now in preparing for those climate refugees to move back to the lower eight Hawaiian islands. We can make room for them, we can invest in and pay for the free resources we have capitalized on for many years. Its time to pay that price, to take back the night.

Jeff Bagshaw

Communications and Outreach Specialist

State of Hawaii, Division of Forestry and Wildlife, Maui Nui Branch

Jeff.w.bagshaw@hawaii.gov

(808)264-7891

Guest User

Location:

Submitted At: 6:26am 08-31-22

Tuesday, August 30, 2022

Kelly Takaya King
Committee Chair, Climate Action, Resilience and Environment Committee
Council of the County of Maui
Via email: CARE.committee@mauicounty.us
Testimony Bill 21 CD1, FD1 (2022)

Dear Councilmember King and members of the Committee,

I am the President of Pacific Rim Concepts LLC, and the meeting planner of the Pacific Islands Environment Conference for the Environmental Protection Agency Region 9, Hawaii Conservation Conference, World Conservation Conference for the International Union of Conservation for Nature 2016, Hawaii Energy, and other similar organizations and events, we are amongst those who study and protect the creatures and habitat, and the species.

Sure a cry from a select few, is not the majority. And a total ban is extreme.
Lighting for homes provides safety and security.
Lighting for special events also provide safety and are not designed to harm the nature species. These event lights are temporary installations.

Recognizing the harm that certain lights and installations have on our wildlife; there can be solutions for future equipment design for safe installation and protection for both animal and human enjoyment. Allow for those collaborations and products to be created before instituting a total ban on lights.

I urge you to table this bill as it is harmful for the protection and safety of our community, and people.

Thank you for your service.

Lee-Ann Choy

Pacific Rim Concepts LLC
45-520 Kamooalii Street
Kaneohe, HI 96744
Tel. 808-864-9812
Fax. 1-866-211-3427
Email: lee-ann@pacificrimconcepts.com

Cheryl King

Location:
Submitted At: 10:56pm 08-30-22

Aloha!
Please see my attached testimony in support of Bill 21.
Mahalo!

Barbara Barry

Location:
Submitted At: 8:53pm 08-30-22

Aloha Chair King and Committee members,
I strongly support CARE 74, Bill 21.
I appreciate the time and consideration that has been given to everyone's concerns and it appears that those concerns have been addressed. It's time to move this legislation forward to secure the future for our precious seabirds and honu. I want to know that these wild and special residents of Maui County are protected for my grandchildren and their grandchildren.
Please support this Bill.
Mahalo,

Ms. Barbara Barry

Guest User

Location:

Submitted At: 4:19pm 08-30-22

Dear Committee Members;

Our Company does lighting for Concerts, Television, Conventions & Special Events throughout the Hawaiian Islands.

I am duly concerned that the bill before you, if passed in it's present state, will impact all kinds of events in a vast number of venues.

There should be exemptions made available for temporary events.

Modern equipment utilized by the entertainment industry has strikingly reduced the electrical power consumption required for such events.

Stage fixtures have powerful and dramatic use for illuminating, soloing and silhouetting actors and musicians.

Hawaii foliage and tree lighting create an ambience that differentiates events held here in Hawai'i.

To move all such events indoors will create a scenario of administrators wondering why a client's event needs to be held here in Hawaii, as opposed to a less expensive location on the mainland.

Hawaii is a landmark destination and we have our story to tell.

Aside from the business itself, I am individually concerned because as a Lighting Designer, I use lighting effects for not only mainland presentation, but for our world caliber local entertainers to enhance their narrative as well.

Jay Robert Harmon

President

Eggshell Lighting Company, Inc.

Guest User

Location:

Submitted At: 3:14pm 08-30-22

My name is Jim Hayes, President of Planning Solutions, Inc. (PSI). PSI recently prepared the Draft Environmental Assessment (DEA) for the Maui County Streetlight Conversion Project (https://files.hawaii.gov/dbedt/erp/Doc_Library/2022-07-23-MA-DEA-Maui-County-Streetlight-Conversion-Project.pdf). During the preparation of the DEA and in the course of assessing the impacts of other projects throughout Hawai'i for many years, I have become knowledgeable in the threats to seabirds and other wildlife in Hawai'i. Light attraction is one of the many threats.

The County of Maui is appropriately concerned about the treats posed by artificial lighting. However, some of the measures included in Bill 21 are not reasonable or proven methods to reduce and minimize those threats.

The reasonable and proven methods to reduce threats to wildlife, that should be retained in Bill 21, are:

1. Require full shielding of lighting.
2. Do not allow light to shine over the ocean.

These measures are consistent with U.S. Fish and Wildlife Service (USFWS) and Department of Land and Natural Resources (DLNR) guidelines. In their letter dated July 14, 2022, to the County of Maui Corporation Counsel, USFWS recommends three general measures to avoid and minimize adverse effects to Hawaiian seabirds. The list below provides those recommendations and how the Maui County Streetlight Conversion Project addresses them:

- Fully shield all outdoor lights so the bulb can only be seen from below. This is the same as "full shielding" and is a requirement of Maui's current streetlighting code and should be made to apply to nearly all lighting.
- Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area. This is not achievable using current streetlight technology.
- Avoid nighttime lighting, including nighttime construction, during the seabird fledging season, September 15 through December 15. Streetlights are meant to operate throughout the year, but as detailed in the DEA, the County of Maui will dim all streetlights during the identified seabird fledging season.

It is important to note that the USFWS' recommendations do not include mandating lights with a low blue light content. The agency indicates that the jury is still out concerning the "best" light spectrums for avoiding and minimizing seabird adverse effects. There are other important points that I believe should lead the County to

reconsider, and ideally eliminate, the island-wide low blue light content requirement from Bill 21, including:

- Limiting blue light does not reduce the amount of light in the environment, in fact, it may do the opposite. When lights do not produce a broad spectrum of light (including some blue light), they typically need to produce more lumens to overcome the disadvantage of have a low scotopic/photopic ratio (S/P ratio) and low color rendering index (CRI).
- Limiting blue light to reduce impacts to wildlife is only proven to be appropriate near the coast where lights are directly visible from beaches where sea turtles are or may be present. This is why the DEA for the Maui County Streetlight Conversion Project provides several minimization measures in the coastal area, including the potential use of low blue light streetlights (see Section 2.1.5.3 of DEA).
- Having an ordinance that requires products conform to a parameter that manufacturers do not disclose will inhibit review and enforcement. It is exceedingly rare that manufacturers disclose a blue light content for their products. If they do, it is unlikely that the formula they use will be identical to the formula in the bill. New products are frequently brought to market. They would need to be independently tested to establish if they comply. It will not be easy to maintain a list of products that comply.

Although I am a supporter of reducing the quantity and impacts of artificial light in our environment, I cannot support legislation that does not stand up in the face of available scientific evidence and resource agency recommendations. Instead of proceeding with Bill 21 as written, I recommend that the Council re-examine the issues before they turn Maui orange.

Thank you for the opportunity to provide testimony. I can be reached via email at jim@psi-hi.com or via telephone at 808-550-4559.

Richard Wainscoat

Location:

Submitted At: 1:08pm 08-30-22

Please see the attachment for my comments.

DAVID HENKIN

Location:

Submitted At: 3:51am 08-30-22

Please find attached Earthjustice's testimony in support of Bill 21 (CARE-74).

30 August, 2022

Testimony of Jay F. Penniman, Manager, Maui Nui Seabird Recovery Project

CLIMATE ACTION, RESILIENCE, AND ENVIRONMENT COMMITTEE

Wednesday, August 31, 2022 9:00 a.m.

BILL 21, CD1, FD1 (2022), SEABIRD AND BIODIVERSITY PROTECTION (CARE-74)

Aloha Chair King, Chair Lee, & Members of the CARE Committee, I am Jay Penniman and I manage the Maui Nui Seabird Recovery Project.

Thank you all for the care and effort you have taken in developing this bill for an ordinance. Committee chair King and her staff have taken a deep dive into the issues of light pollution and its impacts on our island home. They have provided the committee and the council with a well crafted outdoor lighting ordinance proposal that will significantly improve the night environment when it is fully implemented. Concerns and issues have been raised by the administration and members of the public and the ammended ordinance effectively addresses these while maintaining the integrity of the light polution reducing improvements to Maui County's Outdoor lighting Ordinance.

The public works department recently commissioned an after the fact environmental assessment for the streetlights that were purchased to replace the high pressure sodium streetlights that are at the end of their life span and require much more energy to run than modern LED street lights. Unfortunately this environmental assessment has many inaccuracies and fails to truly consider alternatives that would comply with the proposed bill 21 for an ordinance. I have submitted response to the draft EA and encourage all of you to read these as I presume you will also receive testimony citing the draft EA as rationale to eliminate the core of bill 21; the requirement for short wavelength spectra to be severely limited in nighttime lighting as it has been for the past ten years on Hawai'i Island. Additionally, the LED streetlights that would comply with bill 21 also comply with the department's streetlight conversion goal of reducing the amount of electricity consumed and thus saving the county money. The issue of being unwilling to add filters to the streetlights because that would void the warrentee is mute because the warrentee on the power supply is either expired or will shortly expire.

I have included additional references in my submitted testimony that show the amount of reasearch documenting the detrimental effects of short wavelength light on wildlife, coral reefs, human health and dark nighttime skies for astronomical observations.

Thank you for your time and consideration of this bill and I encourage you all to vote it on to full council consideration.

CARE Committee

From: County Clerk
Sent: Friday, August 26, 2022 10:13 AM
To: CARE Committee
Subject: FW: Maui County - CARE committee - 8-31-2022 meeting - written testimony
Attachments: Filter LED sample.pdf; Amber.pdf; Highlighted - Amendment Summary Form from Committee Chair 08-25-2022.pdf

From: Eric Miyasato <eric@hawaiianlights.com>
Sent: Friday, August 26, 2022 10:04 AM
To: County Clerk <County.Clerk@mauicounty.us>
Subject: Maui County - CARE committee - 8-31-2022 meeting - written testimony

You don't often get email from eric@hawaiianlights.com. [Learn why this is important](#)

County Clerk,

Please use the below and attached as my written testimony.

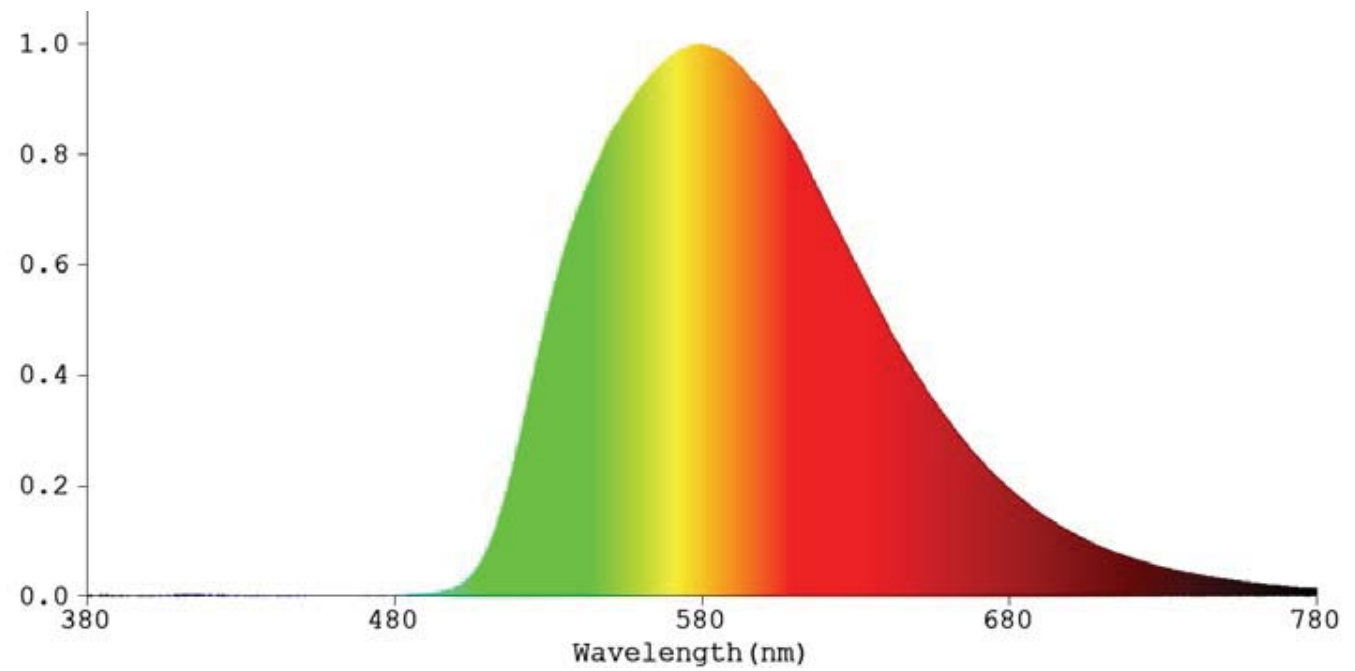
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Also, note, attached is an example of the spectral curve for 2 types of lights that would comply with the less than 2% blue content. For turtles, the preferred lighting in specific nesting areas is Amber or Red lighting which has a narrow bandwidth. The Filtered type used on the Big Island which reduces the blue content in the 400-500nm range has colors in the upper spectrum which may or may not affect the turtles. Florida Fish & Wildlife has specifics on the type of light to use in nesting areas and in certain times of the year. Again, this type of lighting is specific to an area and not used statewide in Florida, as Disneyworld does not have this light in the main promenade of the property. Mainly coastal areas.

Aloha,

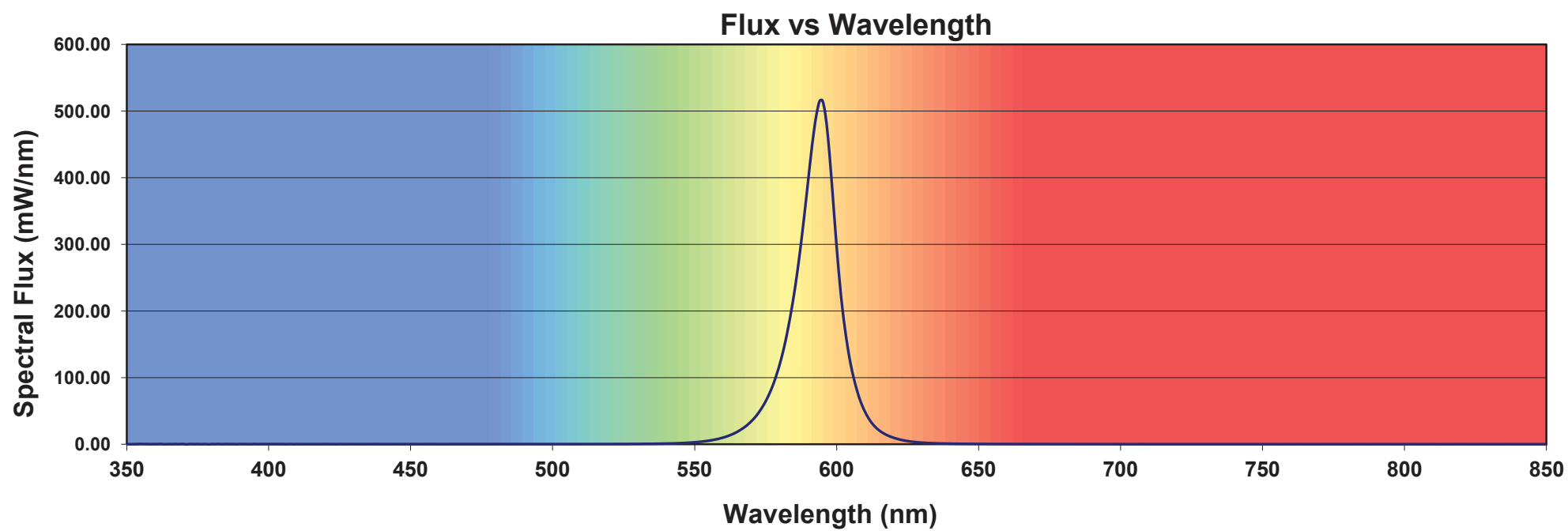
Eric Miyasato, P.E
808-226-5973



Spectrum Parameters

Blue content (400nm-700nm): 0.14%

Peak wavelength: 579nm



August 31, 2022, Committee meeting

CLIMATE ACTION, RESILIENCE, AND ENVIRONMENT COMMITTEE
Amendment Summary Form

Legislation: Bill 21, CD1, FD1 (2022) entitled "A BILL FOR AN ORDINANCE AMENDING CHAPTER 20.35, MAUI COUNTY CODE, RELATING TO PROTECTING SEABIRDS FROM OUTDOOR LIGHTING."

Proposer: Kelly Takaya King, Chair *Kelly T. King*
Climate Action, Resilience, and Environment Committee

Description: Amend the bill to:

- Exempt most residential uses.
- Expand the exemption for sporting events to include special events.
- Broaden the exemption for police, fire, and other emergency services.
- Include information about the benefits of dark skies.
- Articulate how artificial lights harm sea turtles.

Motion: Move to substitute Bill 21, CD1, FD1 (2022) with the attached proposed CD2 version.

Attachment: Proposed CD2 version of Bill 21, CD1, FD1 (2022), incorporating proposed amendments referenced above.

care:ltr:074aasf08:kmatt

RECEIVED
2022 AUG 25 PM 2:42
OFFICE OF THE
COUNTY COUNCIL

ORDINANCE NO. _____

BILL NO. _____ (2022)

A BILL FOR AN ORDINANCE AMENDING CHAPTER 20.35, MAUI COUNTY
CODE, RELATING TO PROTECTING WILDLIFE FROM OUTDOOR LIGHTING
AND PRESERVING DARK SKIES

BE IT ORDAINED BY THE PEOPLE OF THE COUNTY OF MAUI:

SECTION 1. Dark night skies hold important cultural, astronomical, biodiversity, and tourism-related value, which is negatively impacted as a result of artificial lighting. Excess artificial lighting also increases energy consumption, which contributes to wasted fossil fuel resources and exacerbates global climate change. This Ordinance is intended to aid in the conservation of energy, restrict the permitted use of outdoor light fixtures emitting undesirable light rays into the night sky which have a detrimental effect on Hawaiian cultural practices and astronomical research, and protect native Hawaiian wildlife from the destructive impacts of lighting pollution. In doing so, the County will enjoy the many other benefits of dark night skies.

Lighting pollution is a serious threat to many types of wildlife. Each year, artificial light causes the disruption of survival-related behavior leading to the injury or death of thousands of migrating birds, sea turtles, and other reptiles, amphibians, mammals, and invertebrates. Seabirds become disoriented by artificial lights during their maiden flights from their burrows out to sea. This disorientation is often referred to as “fallout” and leaves the birds at

risk of predation by cats, mongoose, and other predators and vulnerable to vehicle collisions and starvation. Native Hawaiian seabirds are an important part of Hawaiian history and were traditionally used by navigators to find their way back home to their islands. They also help our fishermen locate schools of ahi and are critical to our watersheds by helping to fertilize the soils and nearshore coral reef habitats with marine nutrients found in their droppings.

Endangered sea turtles are also disoriented by artificial lights near the ocean. Lights visible from the beach alter the critical nocturnal behavior of sea turtles, including how female sea turtles choose their nesting sites, how they return to the sea after nesting, and how the newly emerged hatchlings find their way to the ocean. Hatchlings typically emerge from their nest at night and find the ocean by crawling towards the brighter, open horizon. Artificial lights confuse the hatchlings causing them to wander inland. Due to disorientation, their survival is put at risk from dehydration, heat exhaustion, and human activities such as motor-vehicle traffic. Artificial light also causes sea turtle hatchlings to spend more time in nearshore waters, where they are easy prey for reef fish and sharks.

The Council's intent is to protect native Hawaiian wildlife as much as possible from interference of onshore sources of artificial light.

SECTION 2. Section 20.35.060, Maui County Code, is amended to read as follows:

"20.35.060 General Requirements. A. All new outdoor lighting fixtures **(shall)** **must** comply with the requirements of section 20.35.090.

B. All outdoor lighting fixtures that were legally installed before January 25, 2007, ~~(shall)~~ **must** comply with section 20.35.090 ~~[by January 1, 2020; except class III lighting fixtures that were legally installed before January 25, 2007 shall be exempt from section 20.35.090].~~

C. Mercury vapor ~~(shall)~~ **must** not be used for new outdoor lighting fixtures or for the replacement of existing outdoor lighting fixtures. All existing mercury vapor outdoor lighting fixtures ~~(shall)~~ **must** be removed ~~(within ten years of the enactment of this ordinance.)~~ by January 25, 2017.

D. All outdoor lighting fixtures, except for neon, must limit short wavelength content to no more than 2 percent of blue light content. "Blue light content" means the ratio of the amount of energy emitted by the outdoor light fixture between four hundred and five hundred nanometers divided by the amount of energy between four hundred and seven hundred nanometers.

E. All outdoor lighting fixtures, except for neon, must be:

1. Down directed with no light shining above the horizontal. Wall-mounted fixtures must have opaque shields to direct all light down, and, if the light hits a wall surface, the surface must be non-reflective (e.g., not a polished or glass surface; painted surfaces must have matte paint).

2. Fully shielded, including shielding that ensures no light shines over the ocean.

3. The director of public works must adopt administrative rules that set height restrictions for outdoor lighting within one year of the effective date of the ordinance establishing this section.

4. Traffic color compliant. "Traffic color compliant" means the 1931 CIE x y color coordinates of the outdoor light fixture is outside of any of the traffic signal color boxes as defined by ITE ST-052 500/AGS-PM/1105.

F. The director of public works must establish and maintain a list of light fixtures that comply with this chapter."

SECTION 3. Section 20.35.070, Maui County Code, is amended to read as follows:

"20.35.070 Exemptions. A. The following ~~(shall be)~~ **are** exempt from the provisions of this chapter:

A. 1. All outdoor lighting fixtures producing light directly by the combustion of fossil fuels, such as kerosene and gasoline~~(s)~~.

B. 2. Low wattage fixtures under 2.8 watts and string lights using bulbs less than fifty lumens used for holiday

decorations and cultural festivals, including Obon festivals only⁽¹⁾.

3. Non-oceanfront private residential incandescent light fixtures that are fully shielded or have a lumen output of less than eight thousand one hundred lumens for each acre of property that is intended to be illuminated.

4. Lighting for night sporting events and permitted special events on State department of education properties, private school properties, nonprofit organization properties, and County parks and facilities.

5. Aviation obstruction lighting used to enhance the visibility of structures of fixed obstacles that may conflict with the safe navigation of aircraft.

6. Temporary, portable lighting used for emergency services including public safety, road construction or emergency repair, and road crossing.

[C. Temporary lighting used for public safety, road construction or emergency repair, field harvesting, and road crossing;

D. Temporary hotel and condominium beach security lighting;

E. Safety and security lighting for water features, except that water feature lighting such as for waterfalls, jet sprays, and bubblers shall be subject to the usage restrictions of section 20.35.090;

F. Replacement of outdoor lighting fixtures legally installed before the enactment of this ordinance with the same or like fixtures; provided, that such lighting fixtures shall be subject to sections 20.35.060.B and 20.35.060.C;

G. Outdoor lighting fixtures on a motion sensor timed to turn off within a five-minute time limit;

H. Lighting on federal and State properties and on areas under the jurisdiction of the federal and State government, including, but not limited to, Hawaiian home lands, State conservation districts, airports, and harbors.]

B. All outdoor lighting fixtures installed or used as portable lighting prior to the enactment of the ordinance establishing subsections 20.30.060(D) and (E) are exempt from the provisions of those subsections for three years from the date of enactment of the ordinance; except that temporary, portable lighting used for County or state construction projects remain exempt from this chapter beyond the three-year period if, and for only as long as, there are no compliant lighting fixtures available that meet industry standards for construction projects."

SECTION 4. Section 20.35.090, Maui County Code, is amended to read as follows:

“20.35.090 Shielding requirements and usage restrictions. Outdoor lighting fixtures ~~(shall)~~ **must** conform to the following shielding requirements and usage restrictions:

Lamp Type	Shielding Requirement	Usage Restrictions
Class I		
[Augmented monochromatic]	[Fully shielded]	[None]
[Low pressure sodium]	[Fully shielded]	[None]
Metal halide	[Partially] Fully shielded	Off from 11:00 p.m. to sunrise*
All others	Fully shielded	None
Class II		
[Augmented monochromatic] All lights	Fully shielded	None
[Low pressure sodium]	[Fully shielded]	[None]
[All others (existing)]	[Fully shielded]	[None]
[All others (new)]	[Fully shielded]	[None]
Class III		
[Low pressure sodium]	[Fully shielded]	[None]
[High pressure sodium]	[Fully shielded]	[None]

Neon	None	Off from 11:00 p.m. to sunrise*
[Others] <u>All others</u>	Fully shielded	None
Others	[Partially] <u>Fully</u> shielded	Off from 11:00 p.m. to sunrise*
Class IV		
[Existing] <u>All lights</u>	Fully shielded	None
[Low pressure sodium]	[Fully shielded]	[None]
[High pressure sodium]	[Fully shielded]	[None]
[Others]	[Fully shielded]	[None]

*These lights may be used between 11:00 p.m. and sunrise if business or recreational activities are taking place, but ~~(shall)~~ must be turned off no later than one hour after conclusion of activities.”

SECTION 5. ~~Material to be repealed is bracketed.~~ New material is underscored. In printing this bill, the County Clerk need not include the brackets, the bracketed material, or the underscoring.

SECTION 6. This Ordinance takes effect on January 1, 2023.

care:misc:074abill09:kmatt

INTRODUCED BY:

Kelly T. King

KELLY TAKAYA KING

CARE Committee

From: County Clerk
Sent: Tuesday, August 30, 2022 7:46 AM
To: CARE Committee
Subject: FW: testimony in favor of Bill 21
Attachments: 22.08.30MNSRPtestimony_CherylKing.pdf

-----Original Message-----

From: Cheryl King <cking4@hawaii.edu>
Sent: Monday, August 29, 2022 9:20 PM
To: County Clerk <County.Clerk@mauicounty.us>
Subject: testimony in favor of Bill 21

Aloha!

Please find my testimony in favor of Bill 21 attached (for August 31's CARE meeting).

Mahalo,

~Cheryl King



August 30, 2022

To: Maui County Council

From: Cheryl King, MSc.
Maui Nui Seabird Recovery Project

Aloha Members of the CARE Committee. My name is Cheryl King, a Seabird Biology Technician with the Maui Nui Seabird Recovery Project. I support Bill 21!

For the past five seasons, I've been fortunate to be able to undertake the daily monitoring of the shearwater colony at Kama'ole III. Most people haven't recognized this place as an important habitat: one of the few remaining undeveloped areas along the South Maui coast. The spots where the 'ua'u kani dig their burrows are nestled in small roped-off areas adjacent to the busy beach accesses and Kihei Boat Ramp. If you're there just after sunset in the summer/fall, you'll see the adults soar in. Watch your head, as they're not always the most graceful landers!

As a marine biologist, I've been lucky to live amongst remote, flourishing seabird colonies in the Papahānaumokuākea Marine National Monument, Palmyra Atoll National Wildlife Refuge and Cocos Island National Park. Their rhythmic patterns, entertaining calls, swooping presence, quirky interactions, and even the ripe smell of their guano calm and invigorate my soul. I wish everyone could experience the wonder of truly wild places like these.

There's actually a real possibility for that wish to come true! Like Kama'ole III, a few pocket colonies of seabirds around Maui County are quite accessible; so create the potential to provide these types of natural connections for our community (plus all of the ecological benefits that come along with a healthy seabird population, of course). Just like my first love, sea turtles, seabirds also must navigate back to our human-impacted islands to lay their eggs, often near where they were born.

Unfortunately, like far too many other species, seabirds are struggling too. Between all of the dangers they face at sea to the lurking land predators (cats, mongooses, dogs, and rats), plus lighting disorientation risks and then road and power line collision hazards, it's a scary gauntlet they're flying. My main point is: they need our protection!

As you can imagine, the heart-breaking part of monitoring seabird colonies is finding a dead bird, especially knowing that this will likely lead to the death or agonizing life struggle for either its mate or its chick. It takes both parents to be able to hatch their egg and then be able to keep that chick alive since they cooperatively must fly far out to sea to find food. Single parenting doesn't work, and it's thought that they mate for life.

Here are some photos of smashed shearwaters along South Kihei roads, where harmful bright lights that disorient the seabirds (adults and fledglings) are prevalent:









The easiest thing we can all do to help our native wildlife is to simply ponder our outdoor lighting to see how to make it safer for nature. **Please support Bill 21!**

It's been well documented that "wildlife friendly" (especially seabirds and sea turtles) lighting have low wattage and long wavelengths (>560 nanometers), are to be fully shielded, pointed away from the coast and mounted as low as possible, ideally on motion sensors so they're only activated when needed, and blocked even more by vegetation or fencing. These characteristics that save sea turtles and seabirds are also visually appealing to humans as well since bright white lights are stress-inducing and unhealthy. Other bonuses for updating your lighting includes saving energy (therefore money) and preserving our night sky.

I personally extend the invitation to each and every one of you to join us sometime (now through December) at one of our seabird colonies, as I would love to show you these amazing animals. They are keys to healthy ecosystems. Seabirds represent both the fragility and resilience of wildlife, and are a symbol of what needs to be restored and protected: more native nature!

Mahalo Nui Loa,

~Cheryl King, MSc.



CARE Committee

From: J. Robert Harmon <eggshell@aloha.net>
Sent: Tuesday, August 30, 2022 2:56 PM
To: CARE Committee
Subject: Written Testimony For BILL 21, CD1, FD1 (2022), SEABIRD AND BIODIVERSITY, PROTECTION (CARE-74)
Attachments: CV PDF File.pdf

Jay Robert (Bob) Harmon
Eggshell Light Company, Inc.
243 Puuhale Road
Honolulu, Hawaii 96819
OFF: 808-843-0383
CELL: 808-479-7127
[email: eggshell@aloha.net](mailto:eggshell@aloha.net)
website: eggshellhi.com



EGGSHELL LIGHTING COMPANY, INC.

243 Pu'uhale Road, Honolulu, Hawaii 96819 USA

PH: 001.808.843.0383 FX: 001.808.842.7889

email: eggshell@aloha.net website: eggshellhi.com

8/30/22

Dear Committee Members;

Our Company does lighting for Concerts, Television, Conventions & Special Events throughout the Hawaiian Islands.

I am duly concerned that the bill before you, if passed in it's present state, will impact all kinds of events in a vast number of venues.

There should be exemptions made available for temporary events.

Modern equipment utilized by the entertainment industry has strikingly reduced the electrical power consumption required for such events.

Stage fixtures have powerful and dramatic use for illuminating, soloing and silhouetting actors and musicians.

Hawaii foilage and tree lighting create an ambience that differentiates events held here in Hawai'i.

To move all such events indoors will create a scenario of administrators wondering why a client's event needs to be held here in Hawaii, as opposed to a less expensive location on the mainland.

Hawaii is a landmark destination and we have our story to tell.

Aside from the business itself, I am individually concerned because as a Lighting Designer, I use lighting effects for not only mainland presentation, but for our world caliber local entertainers to enhance their narrative as well.

Jay Robert Harmon
President
Eggshell Lighting Company, Inc.

CARE Committee

From: Rick Schneider <rick@eventsint.com>
Sent: Tuesday, August 30, 2022 4:00 PM
To: CARE Committee
Subject: Testimony - Bill 21 CD1, FD1 - Maui Council - 8-30-2022 - Events International
Attachments: Testimony - Bill 21 - Maui County Council - 8-30-2022 Events International.pdf

You don't often get email from rick@eventsint.com. [Learn why this is important](#)

Tuesday, August 30, 2022

Kelly Takaya King
Committee Chair, Climate Action, Resilience and Environment Committee
Council of the County of Maui
Via email: CARE.committee@mauicounty.us

Testimony Bill 21 CD1, FD1 (2022)

Dear Councilmember King and members of the Committee,

I am the CEO and President of Events International, one of Hawaii's largest and most diverse event businesses. We work on all of the Hawaiian Islands and provide production services and support for many of the largest and most prestigious events that take place in our State.

Events International has made a huge commitment to environmental awareness and sustainability in the event arena. We are currently working to eliminate the use of one-time use plastic containers at events. We have made a huge effort to reduce waste and manage the negative environmental impacts of events. We are currently partnered with a number of environmental organizations to move the events business to a place of sustainability and environmentally responsible operation.

That being said, we believe that there should be an exception for outdoor events in this important bill. We support the protection of sea birds and reducing the negative harmful effects of outdoor lighting. However, the nature of outdoor events makes it impossible to adhere to many of the restrictions put forth in this bill. We believe that outdoor events should still be allowed to take place and that the infrequent nature and non-permanence of the lighting installations in these events would not greatly impair the intent of the bill.

If the Bill passes in its current form, it will deny the public the great joy and entertainment of outdoor events and bring great hardship to our event businesses. Please insert an exemption for outdoor events so that temporary lighting for these events may take place.

Respectfully

Eric (Rick) Schneider
C.E.O., **Events International Inc.**
306 Kamani Street
Honolulu, HI 96813
Mobile: 808 294-7954

Events International: <http://eventsint.com>

Visionary event, catering, and marketing solutions backed by over 30 years of experience

Honolulu Box Office: <http://honoluluboxoffice.com>

Professional ticketing and business meeting registration, done locally

Hawai'i Events Coalition: <http://hawaiieventscoalition.com>

Supporting the Hawaii Events Industry

Arch Hawaii: <http://archhawaii.com> **Arch NYC:** <http://arch-nyc.com>

World class cutting edge design and fabrication of displays, theme, and decor



306 Kamani Street, Honolulu HI 96813, Phone (808) 545-5900, Fax 545-5901, office@eventsint.com

Tuesday, August 30, 2022

Kelly Takaya King
Committee Chair, Climate Action, Resilience and Environment Committee
Council of the County of Maui
Via email: CARE.committee@mauicounty.us

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Respectfully

A handwritten signature in blue ink, appearing to read "Eric", followed by a long horizontal line extending to the right.

Eric (Rick) Schneider
CEO, President
rick@eventsint.com
808 294-7954

CARE Committee

From: Lee-Ann Choy <lee-ann@pacificrimconcepts.com>
Sent: Wednesday, August 31, 2022 5:27 AM
To: CARE Committee
Subject: Testimony - Bill 21 CD1, FD1 - Maui Council - 8-30-2022 - Pacific Rim Concepts LLC
Attachments: Testimony - Bill 21 - Maui County Council - 8-30-2022 Events International.pdf

You don't often get email from lee-ann@pacificrimconcepts.com. [Learn why this is important](#)

Tuesday, August 30, 2022

Kelly Takaya King
Committee Chair, Climate Action, Resilience and Environment Committee
Council of the County of Maui
Via email: CARE.committee@mauicounty.us
Testimony Bill 21 CD1, FD1 (2022)

Dear Councilmember King and members of the Committee,

I am the President of Pacific Rim Concepts LLC, and the meeting planner of the Pacific Islands Environment Conference for the Environmental Protection Agency Region 9, Hawaii Conservation Conference, World Conservation Conference for the International Union of Conservation for Nature 2016, Hawaii Energy, and other similar organizations and events, we are amongst those who study and protect the creatures and habitat, and the species.

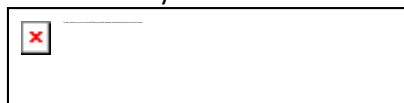
Sure a cry from a select few, is not the majority. And a total ban is extreme.
Lighting for homes provides safety and security.
Lighting for special events also provide safety and are not designed to harm the nature species. These event lights are temporary installations.

Recognizing the harm that certain lights and installations have on our wildlife; there can be solutions for future equipment design for safe installation and protection for both animal and human enjoyment. Allow for those collaborations and products to be created before instituting a total ban on lights.

I urge you to table this bill as it is harmful for the protection and safety of our community, and people.

Thank you for your service.

Lee-Ann Choy



Pacific Rim Concepts LLC
45-520 Kamooalii Street
Kaneohe, HI 96744
Tel. 808-864-9812
Fax. 1-866-211-3427
Email: lee-ann@pacificrimconcepts.com





306 Kamani Street, Honolulu HI 96813, Phone (808) 545-5900, Fax 545-5901, office@eventsint.com

Tuesday, August 30, 2022

Kelly Takaya King
Committee Chair, Climate Action, Resilience and Environment Committee
Council of the County of Maui
Via email: CARE.committee@mauicounty.us

Testimony – Bill 21 CD1, FD1 (2022)

Dear Councilmember King and members of the Committee,

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That being said, we believe that there should be an exception for outdoor events in this important bill. We support the protection of sea birds and reducing the negative harmful effects of outdoor lighting. However, the nature of outdoor events makes it impossible to adhere to many of the restrictions put forth in this bill. We believe that outdoor events should still be allowed to take place and that the infrequent nature and non-permanence of the lighting installations in these events would not greatly impair the intent of the bill.

If the Bill passes in its current form, it will deny the public the great joy and entertainment of outdoor events and bring great hardship to our event businesses. Please consider an exemption for outdoor events so that temporary lighting for these events may take place.

Respectfully

A handwritten signature in blue ink, appearing to read "Eric Schneider", followed by a long horizontal line extending to the right.

Eric (Rick) Schneider
CEO, President
rick@eventsint.com
808 294-7954

CARE Committee

From: County Clerk
Sent: Tuesday, August 30, 2022 3:34 PM
To: CARE Committee
Subject: FW: written testimony for Bill 21 CD2

From: Bagshaw, Jeff W <jeff.w.bagshaw@hawaii.gov>
Sent: Tuesday, August 30, 2022 3:33 PM
To: County Clerk <County.Clerk@mauicounty.us>
Subject: written testimony for Bill 21 CD2

Aloha Climate Action, Resilience and Environment Committee:

My name is Jeff Bagshaw and I am in strong support of Bill 21, CD2.

Kudos to this committee and the Council for working on this difficult and detailed bill. You've worked through many details and iterations because this is about creating "smart-lighting" instead of over-lighting. Creating good governance isn't always easy. One concern opponents have raised are the costs of conversion.

It's easy to calculate those dollars, but what is more difficult to quantify are environmental services we expect to be free, even to make us money. When the issue of conversion costs are raised, please compare those to the following.

Freshwater is the first: I've previously testified how seabirds are a vital link in nutrient cycling for native forests and shrublands. We get our freshwater from our forests. It may flow in streams, be stored in ponds or come from aquifers and wells, but it is first captured in our native forests. To replace the work of seabirds evenly distributing nutrients in the form of their guano, to keep forests healthy and functioning would require hundreds of thousands of dollars in helicopter time to foliar-spray our native forests. Or it would take thousands of people-hours annually, hiking through the forests with heavy packs, hand-spreading fertilizers. And there are many studies showing how those nutrients even feed our reefs in the right amounts and chemical compositions, to keep corals producing fish for food.

We talk about food-security often, but *water-security* is even more basic unless we're willing to have a future of tankers delivering fresh water to our docks, we have to take care of all the links in the chain that keeps our waters flowing, *now*.

Which leads to another environmental service we capitalize on for free: reef fish and sea turtles. The Hawaii Visitor Bureau's 2020 Annual Visitor Satisfaction and Activity Survey once again states that roughly 60% of visitors to Maui report they snorkeled or came to Maui specifically to snorkel. The survey doesn't report one thing I can share anecdotally. First time visitors to 'Ahihi- Kina'u Natural Area Reserve will ask me about 30-40% of the time: "Can we see turtles here?" right after "Can we see fish here?" Look at souvenirs sold through any retail outlet large or small. What is one of the top five iconic creatures on tee shirts, stickers, stuffed toys, keychains... sea turtles. How many dollars in profits can be attributed to the presence of these animals and visitors wanting to remember or hope for an experience? As others have testified, over- and badly designed lighting affects all reef animals including fish and turtles.

Modern astronomers can give estimates of the values of dark skies for professional sky-watching, and there are at least a dozen private tour-companies that include star watching in their list of activities/services they provide, which can again, equate to environmental aspects we capitalize on for free. In fact, a photo exhibit celebrating the beauty of Hawaiian night skies opens at the Schafer Gallery on Sept 1st. But an incalculable benefit is the ability for residents to be able to look at up and experience seeing stars used in traditional navigation as was done generations ago, and Nainoa Thompson of course used stars, but also relied on seabirds in the last hours of his first voyage as a navigator to Tahiti. The modern definition of a cultural landscape goes beyond archeological features – it includes being able to experience a landscape as our ancestors did to hear seabirds call in the night. "Honolulu City Lights" is a lovely song, but rewriting those lyrics to become "Kahului City Lights" would be a sad cultural replacement for the loss of seabirds and the other pieces of the environmental chorus we are losing with in-action.

The latest estimates for sea level rise say we will lose 26-40% of the nesting habitats for seabirds in Papahānaumokuākea Marine National Monument, where 96% of the world's Laysan Albatross currently nest, a species that led early navigators here, which is unique to our islands. We have to start now in preparing for those climate refugees to move back to the lower eight Hawaiian islands. We can make room for them, we can invest in and pay for the free resources we have capitalized on for many years. Its time to pay that price, to take back the night.

Jeff Bagshaw

Communications and Outreach Specialist

State of Hawaii, Division of Forestry and Wildlife, Maui Nui Branch

Jeff.w.bagshaw@hawaii.gov

(808)264-7891

Jeff Bagshaw
Communications and Outreach Specialist
State of Hawaii
DLNR/DOFAW Maui Nui Branch
Jeff.w.bagshaw@hawaii.gov
(808)264-7891c
(808)873-3986o

Testimony in support of Bill 21 CD1 FD1

Richard J Wainscoat

rjw@hawaii.edu

I am an astronomer at the University of Hawaii, and have worked for many years on lighting issues related to preserving the dark night sky for astronomy.

I strongly support Bill 21 CD1 FD1. This bill closely parallels the lighting ordinance that is presently in place in the County of Hawaii. That lighting ordinance has successfully protected the dark night sky over Maunakea, and has also helped to protect endangered species on the Island of Hawaii.

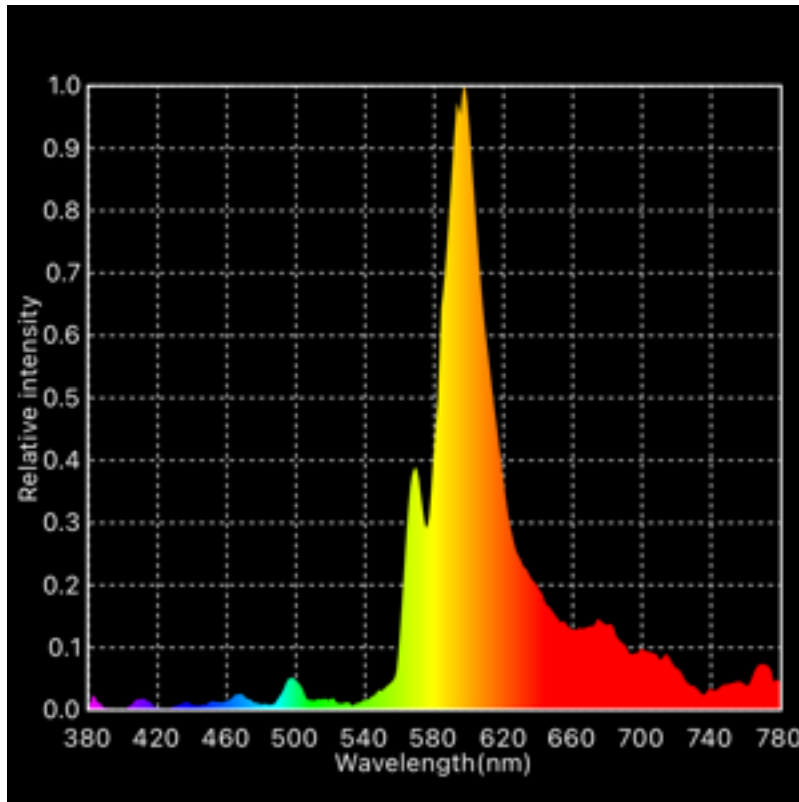
I am concerned, however, by section E.4 that requires outdoor light to be "Traffic color compliant." This requirement arose on the Island of Hawaii as a result of unshielded low-pressure sodium street lights being visible from long distances. Now that fully shielded lights are required, the motivation for excluding amber street lights is less well justified. Amber-colored lights are the normal choice for lighting along coastlines in Florida to protect endangered sea turtles, and amber lighting has been adopted throughout the National Park Service as having the least impact on wildlife.

If confusion between street lights and the "yellow light" in a traffic signal is a major concern, a compromise might be to require that street lights are "traffic color compliant" within a set distance - for example 200 yards - of a traffic signal.

The "traffic color compliant" requirement eliminates usage of phosphor-converted amber LED lights. Moving to the blue of amber is prevented by the <2% blue requirement. Moving to the red of amber will increase energy usage. Moving to the yellow of amber is possible, but may involve more green light, which may not be desirable for the birds that this legislation intends to protect.

I also note that filtered LED lamps, such as are in use on the Island of Hawaii, are likely more energy efficient than phosphor -converted amber LEDs. So although I endorse the use of the filtered LEDs, I caution that use of phosphor converted amber LEDs should not be prohibited in the most environmentally sensitive areas such as along coastlines.

Maui's lighting for many years has been mostly high-pressure sodium (HPS) lighting. A spectrum of an HPS lamp is shown below:

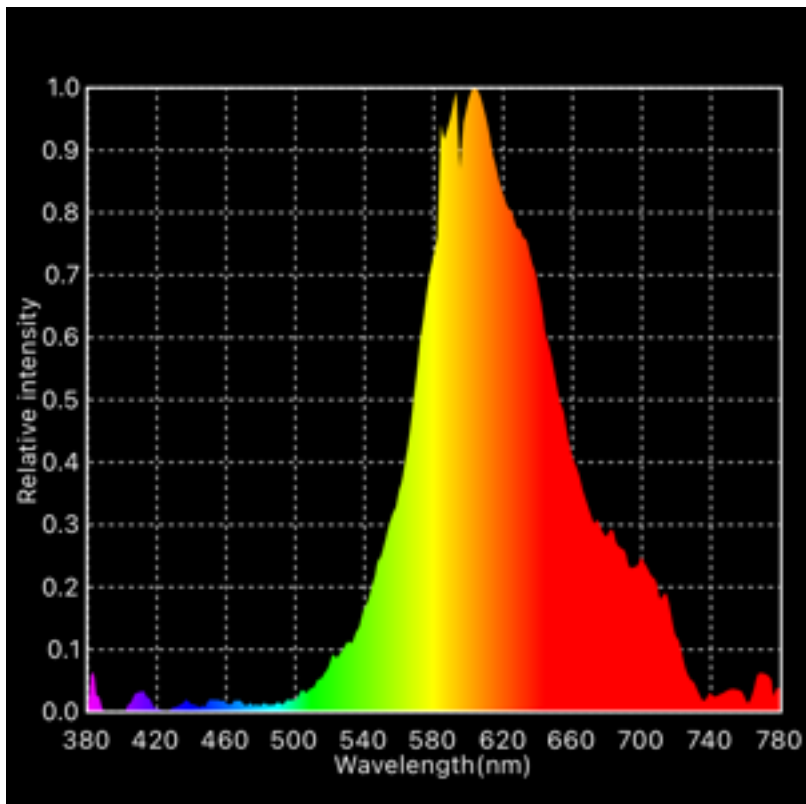


This spectrum shows that HPS lamps are deficient in blue and green light. Blue light, and to a lesser degree, green light (because of Rayleigh scattering) are very damaging to astronomy. Furthermore, the natural dark night sky is very dark in the blue and green wavelengths shorter than 555 nm (yellow-green color). This makes the blue-green part of the spectrum particularly valuable for astronomy.

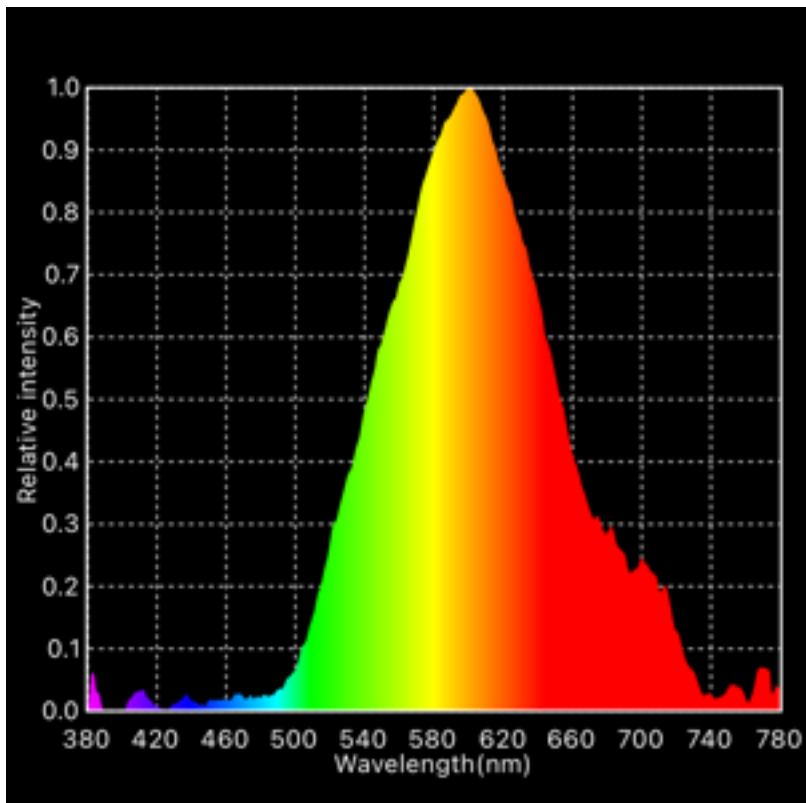
Astronomers recognize the need for light at night, but strongly favor use of yellow, amber, orange and red light. In addition proper shielding — full shielding — is critically important. Endangered species such as birds and turtles are also affected by light at night. The wavelengths of light that have the strongest affect on most species are blue light, and to a lesser degree, green light. Therefore, the preferred lighting to protect endangered species is also fully shielded yellow, amber, orange and red light. The spectral requirements for protecting these species are similar to what is needed to protect the dark night sky over Haleakala observatory for astronomy.

Light emitting diodes (LEDs) have come into widespread use. Nearly every LED light is based upon an InGaN blue LED, and a phosphor that converts some (or all) of the blue light to longer (redder) wavelengths. Many LED lights have much more blue light than HPS, so a switchover in Maui County from HPS to LED must be done very carefully, with great care not to increase the amount of blue light.

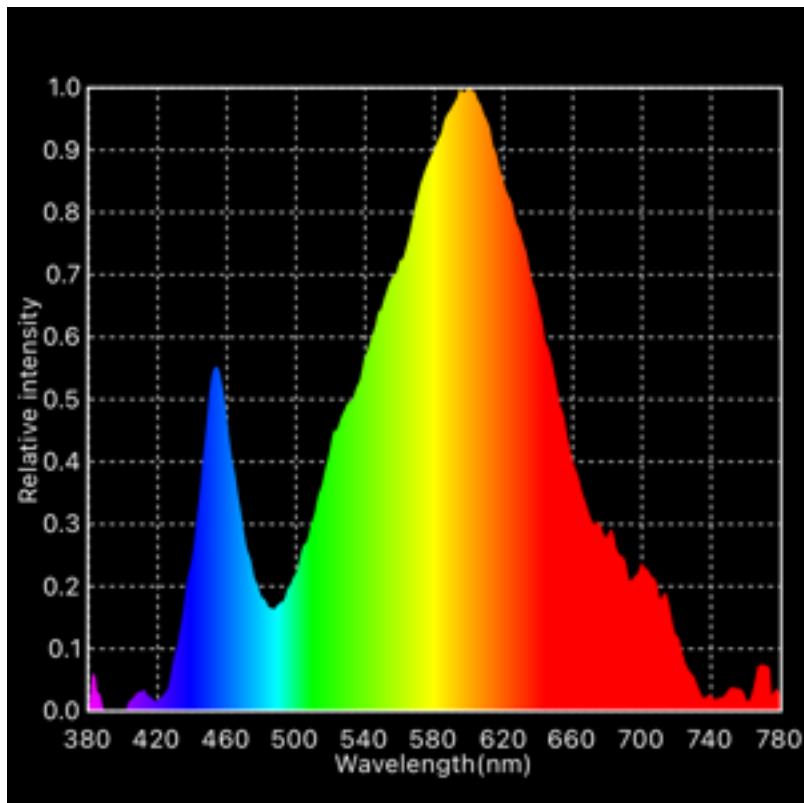
Some sample LED spectra are shown below:



Phosphor Converted amber – this is widely available, and consistent with the Bill 21 CD1 FD1 blue light limitations. This light is acceptable to astronomy and is likely acceptable for protection of birds and turtles. It has an amber appearance. In Florida, amber light with an even narrower spectrum is preferred for protection of turtles, but narrow amber LEDs are less energy efficient than phosphor converted amber LEDs. Amber is also the preferred light in the National Park System.

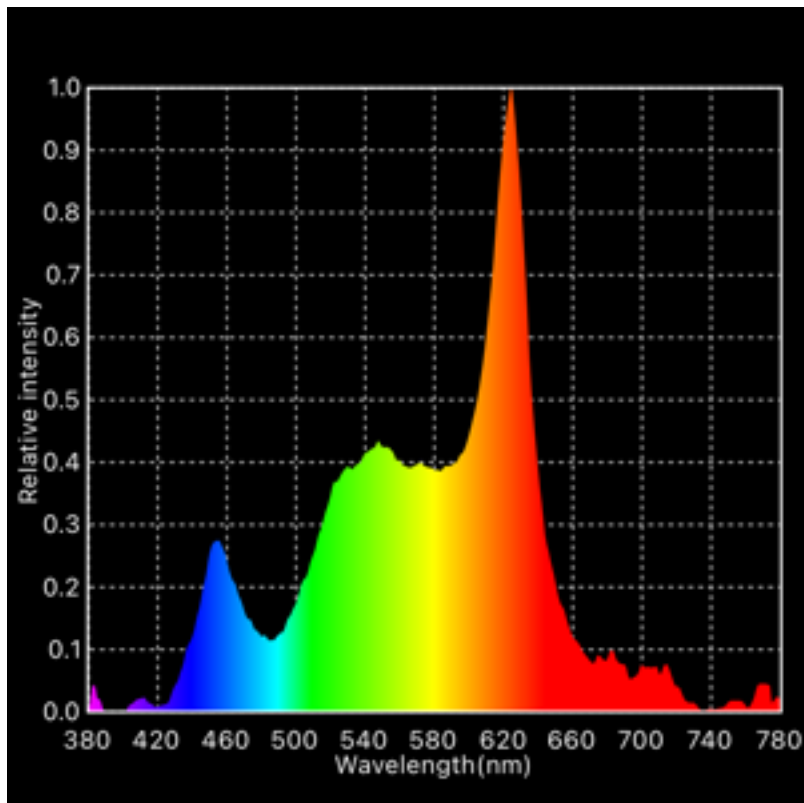


Filtered warm (3000 K) LED — this is in wide usage on the Island of Hawaii. It has very little blue light, but better color rendition than HPS. This is acceptable to astronomy, but could be improved for bird and night sky protection by adjusting the base LED and the filter to reduce the amount of green light. This light is slightly more energy efficient than PC amber. It has a yellow appearance. The energy efficiency of the filtered warm LED might make this an attractive light source for Maui. Astronomy and wildlife would benefit from use of a warmer base LED (e.g., 2500 K) behind a blue cut filter, which would reduce the amount of green light. Such a light would have a color similar to a candle.



3000 K LED - this has a much larger amount of blue light, and also more green light. Use of 3000 K LEDs will cause degradation of the night sky for astronomy, and harm birds and turtles. Use of even higher color temperature LEDs is even worse due to higher blue content.

I am a coauthor of a publication entitled "Modelling the effects of phosphor converted LED lighting to the night sky of the Haleakala Observatory, Hawaii" published in 2018 in the journal Monthly Notices of the Royal Astronomical Society. That publication concludes that use of 3000 K LEDs would result in the scotopic sky brightness (sky brightness in the blue and green) being 3 times higher than if phosphor converted amber is used. This publication is included with this testimony.



Cree 3000 K LED - this is a very poor choice for outdoor lighting. It is effectively a ~4000 K white LED to which a large amount of red light has been added to pull down the color temperature. The spectrum of this light shows why use of Correlated Color Temperature is an inadequate way to limit the spectrum of a light source. The human eye is insensitive to the blue and red light, but the light from this lamp would be very damaging to astronomy and harmful to species affected by blue and red light.

Full shielding of lighting is critically important. Unshielded light travels great distances, and interferes with astronomy and wildlife. Spectral control is also critically important. Bill 21 CD1 FD1 takes good steps to control the spectral content of light by limiting blue light. Extensive use of 2700 K, 3000 K (or higher) LED light, such as is presently occurring on Maui is very harmful to astronomy (and wildlife).



TESTIMONY IN SUPPORT OF BILL 21 (CARE-74)

Climate Action, Resilience, and Environment Committee Meeting
August 31, 2022
9:00 a.m.

Good morning, Chair King, Vice-Chair Sinenci, and members of the Committee:

My name is David Lane Henkin, and I am an attorney with Earthjustice.¹ Earthjustice submits this testimony on behalf of the Center for Biological Diversity and Conservation Council for Hawai'i *in strong support of Bill 21*, which would amend Maui County's lighting ordinance to increase protections for Hawai'i's threatened and endangered seabirds and sea turtles. Bill 21 is consistent with the best available science on how to minimize harm to imperiled wildlife from artificial lights. Bill 21 also provides clear guidance on how to implement these new lighting requirements with minimal burden on the community. Finally, the current version of Bill 21 (proposed CD2) addresses all reasonable concerns raised by members of the public and the administration, allowing ample time for compliance and ensuring that emergency services will not be interrupted. For these reasons, we urge the Committee to adopt this measure as a win-win for the community and Hawai'i's native wildlife.

Artificial lights in Maui County regularly attract and disorient Hawaiian petrels, band-rumped storm petrels, and Newell's shearwaters as they navigate between the ocean and nesting colonies, resulting in fallout, injury, and death. State and federal wildlife agencies charged with helping to prevent these species from going extinct recognize that artificial light attraction poses an ongoing threat to the species' survival and recovery. Best practices to minimize light attraction, and help prevent extinction, include reducing short wavelength "blue light" in outdoor lighting fixtures, preventing outdoor lighting from shining upward or over the ocean, and eliminating reflective surfaces that bounce light into the sky. Bill 21 would require compliance with these best practices to give our native seabirds the best chance of survival.

To address concerns about increased regulatory burdens for businesses and residents, Bill 21, CD2 provides a reasonable phase-in period—over three years—for the replacement of existing outdoor lighting. *See* Section 6 of Bill 21 (ordinance does not take effect until January 1, 2023); Proposed Section 20.35.070.B (exempting existing lighting for three years after effective date). It also exempts nearly all residential lighting (with the narrow exception of oceanfront properties, which pose the greatest threats to imperiled seabirds and sea turtles). *See* Proposed Section 20.35.070.A.3. The bill further facilitates compliance with the new lighting requirements by

¹ I am registered as a lobbyist.

adopting the definition of “blue light content” found in Hawai‘i County’s lighting ordinance.² Using the same definition of “blue light content” provides consistency for businesses operating in both locations, and also provides a template for implementation given that Hawai‘i County’s blue-light content requirement has been on the books for more than a decade. To further assist the public, the bill provides that the director of public works will maintain a list of light fixtures that comply with lighting requirements. *See* Proposed Section 20.35.060.F. These provisions will ensure a smooth transition to seabird friendly lighting in Maui County and reduce any regulatory burdens on the community.

Our one concern about the latest version of Bill 21 is that it goes too far in responding to concerns regarding the availability of compliant lighting for sporting events, aviation obstruction lighting, and temporary portable lighting used for emergency services. Rather than exempt such lighting for only so long as there are no compliant lighting fixtures available that meet industry standards, as the prior version of the bill (CD1, FD 1) provided, Bill 21, CD2 would permanently exempt such lights. *See* Proposed Section 20.35.070.A.4-6. Because the bright lights used for these purposes pose significant threats to imperiled lights, we respectfully urge the CARE Committee to revert to the prior language, which would exempt these lights for only so long as compliant lighting fixtures are unavailable.

Bill 21 is a crucial step forward for seabird conservation in Maui County and provides a clear path forward for County agencies and businesses, and residences to install seabird and sea turtle friendly lighting. For these reasons, we respectfully urge the County Council to pass this bill.

Thank you for the opportunity to provide this testimony in strong support of Bill 21, CD 2. I will be available at the Council meeting to answer any questions you may have. I can also be reached via email at dhenkin@earthjustice.org or via telephone at 808-599-2436.

² Compare Proposed Section 20.35.060.D with Hawai‘i County Code § 14-51(a)(9); *see also* Hawai‘i County Code § 14-55, Table 14-A (specifying that LED fixtures must have “less than 2% blue light content”).