

**STATE OF HAWAII  
OFFICE OF PLANNING  
& SUSTAINABLE DEVELOPMENT**

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GOVERNOR

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Statement of  
**MARY ALICE EVANS**  
Director, Office of Planning and Sustainable Development  
before the  
**HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION**  
Tuesday, February 8, 2022  
8:50 AM  
State Capitol, Conference Room 325  
in consideration of  
**HB 2423**  
**RELATING TO CLIMATE CHANGE MITIGATION.**

Chair Lowen, Vice Chair Marten, and Members of the House Committee on Energy and Environmental Protection:

The Office of Planning and Sustainable Development (OPSD) **supports the intent and offers the following comments and a proposed amendment** on HB 2423, which requires all public works construction projects to conform to certain carbon concrete standards

The Office of Planning and Sustainable Development supports and appreciates the carbon concrete standards developed by Hawai'i's Department of Transportation, and agrees with the intent of this bill that there should be an institutionalized use of carbon sequestering concrete statewide for public works projects. The Department of Transportation is a member of the State's Greenhouse Gas Sequestration Task Force and has previously presented on the importance of carbon sequestering concrete in relation to the State of Hawai'i's climate mitigation efforts.

However, the Office of Planning and Sustainable Development notes that Hawai'i's changing climate includes scientific data that generally, rainfall throughout the state has decreased by 18% over a 30-year period from 1978-2007,<sup>1</sup> and that temperatures across the state increased by 2.6 degrees Fahrenheit between 1950-2020.<sup>2</sup> Groundwater capture and recharge and the reduction of urban heat island effects are also goals for the sustainable development and climate resiliency of the State.

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<sup>1</sup> Thomas W. Giambelluca et al., "2013: Online Rainfall Atlas of Hawai'i." Bull. Amer. Meteor. Soc. 94, 313-316, doi: 10.1175/BAMS-D-11-00228.1. <http://rainfall.geography.hawaii.edu/rainfall.html>.

<sup>2</sup> NOAA. State Climate Summaries 2022: Hawai'i. <https://statesummaries.ncics.org/chapter/hi/>.

The Office of Planning and Sustainable Development would like to highlight that concrete can also play an important role in sustainable development practices and climate change mitigation and adaptation through new concrete and pavement technologies, including:

- **Solar Heat-Blocking Pavements:** A technology to reflect incoming sunlight, making it difficult to heat the pavement and can reduce the rise in road temperatures and urban heat temperatures by up to 14.4 degrees Fahrenheit (8 degrees Celsius).<sup>3,4</sup>
- **Solar Roads:** An innovative road pavement that converts incident sunlight into electricity.<sup>5</sup>
- **Permeable Pavement:** A porous urban surface composed of open pore pavers, concrete, or asphalt with an underlying stone reservoir. Permeable pavement catches precipitation and surface runoff, storing it in the reservoir while slowly allowing it to infiltrate into the soil below or discharge via a drain tile. The most common uses of permeable pavement are parking lots, low-traffic roads, sidewalks, and driveways.<sup>6</sup>

The Office of Planning and Sustainable Development supports the intent to transition concrete procurement practices to become more climate resilient for the sustainable development of the State of Hawai'i; but recommends that the Committee consider adding other sustainable concrete technologies in the bill's preamble and in section 2 of the bill to diversify and encourage other equally important sustainable development and climate resilience goals to recharge groundwater aquifers and reduce urban heat island effects.

Thank you for the opportunity to testify on this measure.

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<sup>3</sup> Phys.org. (2018). "Feeling the Heat: Tokyo Preps for Sweltering Olympics." <https://phys.org/news/2018-07-tokyo-preps-sweltering-summer-olympics.html>.

<sup>4</sup> BBC. (2020). "How to Cool a City Struggling with Heatwaves," BBC. <https://www.bbc.com/future/article/20210728-how-tokyo-is-cooling-down-for-the-olympics>.

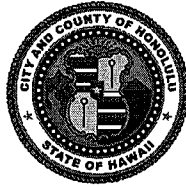
<sup>5</sup> Solaroad. (2018). "Results of Solaroad Cycle Path Pilot in Krommenie." Krommenie, Netherlands. <https://en.solaroad.nl/wp-content/uploads/sites/2/prfl-ENG-SolaRoadKit-RESULTAAT-A4liggend.pdf>

<sup>6</sup> USGS. (2019). "Evaluating the Potential Benefits of Permeable Pavement on the Quantity and Quality of Stormwater Runoff." <https://www.usgs.gov/centers/upper-midwest-water-science-center/science/evaluating-potential-benefits-permeable-pavement>.

DEPARTMENT OF DESIGN AND CONSTRUCTION  
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RICK BLANGIARDI  
MAYOR



ALEX KOZLOV, P.E.  
DIRECTOR

HAKU MILLES, P.E.  
DEPUTY DIRECTOR

February 4, 2022

The Honorable Nicole E. Lowen, Chair  
The Honorable Lisa Marten, Vice-Chair  
and Members of the Committee on Energy & Environmental Protection  
The House  
State Capitol, Conference Room 325  
415 South Beretania Street  
Honolulu, Hawaii 96813

Dear Chair Lowen, Vice-Chair Marten, and Members:

SUBJECT: House Bill No. 2423  
Relating to Climate Change Mitigation

The Department of Design and Construction (DDC) respectfully **opposes** House Bill No. 2423, which requires all public works construction projects to conform to certain carbon concrete standards.

DDC strongly supports climate change mitigation and adaption; however, House Bill No. 2423 proposes that, "Each public works project shall conform to the applicable carbon concrete standards contained in division 600 of the highways division of the department of transportation's special provisions for standard specifications dated July 10, 2020." This broad requirement that applies a single specification to all public works projects would be detrimental to some City capital improvement projects that require project-specific concrete design specifications. For example, the referenced Department of Transportation's special provisions only address concrete strength up to 3,750 psi. DDC commonly specifies a minimum strength of 4,000 psi or higher for cast in place concrete and precast concrete structural components.

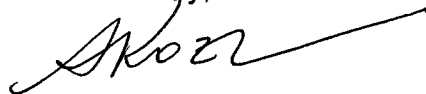
DDC is currently developing design guidelines to address climate change mitigation and adaption. It is anticipated that these guidelines will address methods to reduce the significant carbon footprint of concrete in City construction projects. House Bill No. 2423 would severely restrict DDC's ability to consider options and select the most appropriate method for reducing concrete's carbon footprint on a project-specific basis.

The Honorable Nicole E. Lowen, Chair  
The Honorable Lisa Marten, Vice-Chair  
and Members of the Committee on Energy & Environmental Protection  
February 4, 2022  
Page 2

Based on the above considerations, DDC respectfully **opposes** House Bill  
No. 2423.

Thank you for the opportunity to express our **opposition** to this bill.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Kozlov', with a long horizontal flourish extending to the right.

Alex Kozlov, P.E.  
Director



## Cement and Concrete Products Industry of Hawaii

2153 N. King St. # 327 Honolulu, HI 96819 Telephone (808) 848-7100

Website: [www.ccpihawaii.org](http://www.ccpihawaii.org)

February 4, 2022

Position Statement of the Cement and Concrete Products Industry of Hawaii

Re: HB 2423

Honorable Representatives of the 2022 Hawaii State Legislature:

The Cement and Concrete Products Industry of Hawaii (CCPI Hawaii) supports greener building initiatives and our industry continues to seek ways to implement materials, manufacturing methods and design improvements which reduce environmental impacts. We oppose HB2423 as it names types of methodology without allowing equal or better methods.

Our goal is to balance the advancement of these new technologies with costs and other risks to remain at the forefront of implementing the improvements into the mainstreams. Hawaii has been pioneering in many aspects of concrete construction over the years and the reduction of its environmental impact continues that tradition.

Our concern with HB 2423 lies within the narrow scope of methodology directed for use to achieve carbon reduction and issues of logistics and efficacy. It uses one type of technology specific to one company at this time. The technology has not reached the level where production costs balance with carbon reduction savings resulting in higher priced concrete. The batching process of adding the carbon dioxide releases carbon dioxide into the atmosphere without inclusion in the carbon reduction analysis. No data has been provided on the efficiency of the complete process and the overall reduction in carbon footprint. Carbon dioxide has been limited in supply and unable to meet the needs of all industries, some of which supply of carbon dioxide is critical to their processes.

Nationally, our industry continues to seek other proven methodologies such as Portland Limestone Cement, Secondary Cementitious Materials, Nanotechnology, Chemistry, and Mix Efficiency as a few of the ways to reduce the carbon contribution of concrete construction. Here, we continue to evaluate and adjust industry practices to reduce carbon emissions while considering our market size, geographic conditions, availability of materials, cost to the end user, and many other factors.

We continue to support progress in this effort. We have participated in the pilot projects for the use of this technology and strive to reach cost balance in carbon mineralization technology. We encourage language that enables the use of this technology as it develops into a more viable alternative while including current methodologies of carbon reduction to most effectively benefit all.

Please contact us with any questions or comments.

Mahalo,

Kirk S. Hashimoto  
Executive Director

Member Firms: BOMAT, Ltd dba Bonded Materials Co. / Glover-Honsador (Kauai) / GPRM Prestress, LLC / Hawaii Precast Inc. / Hawaiian Cement (Cement) / Hawaiian Cement (Halawa) / Hawaiian Cement (Maui) / HC&D LLC (Oahu) / HC&D LLC (Maui) / Hawaii Precast, Inc. (Hawaii Island) / Island Ready Mix Concrete, Ltd. / Jas. W. Glover, Ltd. / Jensen Precast / Kauai Concrete and Aggregates / Tileco. Inc. / Walker Industries, Ltd. / West Hawaii Concrete / Yamada & Sons, Inc. dba Con-Agg of Hawaii (Big Island)

Associate Members: Aggritek International, Inc. / Consolidated Engineering Laboratories An Atlas Company / Construction Engineering Labs / Downstream, Inc. / Geotech Solutions, Inc. / Grace Pacific LLC. / Haggith's Structural Scan & Inspection / Hawaiian Dredging Construction Co. / White Cap / ISE Logik Industries, Inc. / KSF Inc. / Largo Concrete, Inc. / MasterBuilders Solutions – Admixture Systems / OK Hardware & Construction Supply / Penhall Company dba Concrete Coring Co. of Hawaii / Puna Rock Co. (Hawaii Island) / Simpson Strong Tie Co.

**HB-2423**

Submitted on: 2/4/2022 3:43:40 PM

Testimony for EEP on 2/8/2022 8:50:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Dave Mulinix	Our Revolution Hawaii	Support	Yes

Comments:

Aloha Chair Lowen, Vice Chair Marten & Committee Members [Hashem](#), [Matayoshi](#), [Matsumoto](#), [Todd](#), [Tokioka](#), [Perruso](#),

On behalf of Our Revolution Hawaii's 5,000 members and supporters statewide, we stand in support of HB2423 that requires all public works construction projects to conform to certain carbon concrete standards.

Climate scientists have acknowledged that Climate Change is already happening and that we need to do all we can as soon as possible to cut carbon emissions to prevent perpetual Climate Chaos. Not only do we have to cut carbon emissions from power plants and transportation; we also need to significantly cut our carbon emissions from construction.

According to Scientific American: “Concrete, the most widely used human-made material, shapes much of our built world. The manufacture of one of its key components, cement, creates a substantial yet underappreciated amount of human-produced carbon dioxide: up to 8% of the global total, according to London-based think tank Chatham House. It has been said that if cement production were a country, it would be the third-largest emitter after China and the U.S. Currently four billion tons of cement are produced every year, but because of increasing urbanization, that figure is expected to rise to five billion tons in the next 30 years, Chatham House reports.”

HB2423 is a good step forward in cutting our carbon emissions from construction. Please vote in support of HB2423.

Mahalo Nui Loa for your efforts to battle Climate Change to prevent perpetual Climate Chaos.

Mahalo for your kind attention,

David Mulinix, Organizer

Our Revolution Hawaii



**HB-2423**

Submitted on: 2/6/2022 1:49:27 PM

Testimony for EEP on 2/8/2022 8:50:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Ted Bohlen	Climate Protectors Hawai'i	Support	No

Comments:

To: The Honorable Nicole Lowen, Chair, the Honorable Lisa Marten, Vice Chair, and Members of the House Committee on Energy and Environmental Protection

From: Climate Protectors Hawai'i (by Ted Bohlen)

Re: Hearing HB2423 RELATING TO CLIMATE CHANGE MITIGATION.

Tuesday February 8, 2022, 8:50 a.m., by videoconference

Aloha Chair Lowen, Vice Chair Marten, and Members of the House Committee on Energy and Environmental Protection!

Position: Climate Protectors Hawai'i **Strongly Supports HB2423!**

**Concrete is a huge contributor to greenhouse gas emissions, 7% worldwide!** There are ways to make concrete that is stronger and uses less material and so emits less greenhouse gases. The Department of Transportation standards for such low carbon concrete should be mandated for all public works construction projects and encouraged for private ones in Hawaii.

Please help Hawai'i reach its carbon negative targets as required in law as soon as possible by passing this bill. Mahalo!

Climate Protectors Hawai'i (by Ted Bohlen)



**HB-2423**

Submitted on: 2/6/2022 4:23:07 PM

Testimony for EEP on 2/8/2022 8:50:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Remote Testimony Requested</b>
laurel brier	Kauai women's caucus	Support	No

Comments:

As discussed in Drawdown, the highly acclaimed reference book on lowering our GHG emissions, cement is a significant contributor to climate change. There are readily available and superior substitutes. This is a reasonable regulation to ask the construction industry to comply with and a benefit to all.



To: The House Committee on Energy and Environmental Protection  
From: Sherry Pollack, 350Hawaii.org  
Date: Tuesday, February 8, 2022, 8:50am

**In support of HB2423**

Aloha Chair Lowen, Vice Chair Marten, and Energy and Environmental Protection Committee members,

I am Co-Founder of the Hawaii chapter of 350.org, the largest international organization dedicated to fighting climate change. 350Hawaii.org **supports HB2423** that requires all public works construction projects to conform to certain carbon concrete standards.

Cement is a significant contributor to climate change. It is responsible for up to 8% of the world's carbon dioxide emissions. Requiring all public works construction projects to conform to these carbon concrete standards would reduce the carbon footprint of each project and still be cost-effective.

The simple act of switching to low-carbon concrete can make a huge difference in our efforts to lower carbon emissions. We need to target all emission sources, especially cost-effective low hanging fruit like this.

The UN IPCC report makes clear we have less than 10 years to drastically reduce greenhouse gas emissions to avoid Climate Hell. To be clear, climate change is happening now, we are causing it, and the longer we wait to act, the more we lose. **Children living today will live to see a 1.5°C warmer world because of the failure of adults to take real action when there still was time to do so.** We must take action to reduce our greenhouse gas emissions across all sectors in our efforts to confront the climate crisis. HB2423 is a good step forward in these efforts.

Mahalo for the opportunity to testify on this very important legislation.

Sherry Pollack  
Co-Founder, 350Hawaii.org

**HB-2423**

Submitted on: 2/7/2022 5:46:05 AM

Testimony for EEP on 2/8/2022 8:50:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Remote Testimony Requested</b>
Travis Idol	Hawaii Interfaith Power and Light	Support	No

Comments:

**I am the President of Hawaii Interfaith Power and Light (HIPL), a local nonprofit dedicated to helping religious people and communities in Hawaii respond to the climate crisis according to their religious beliefs, values, and vision for the future.**

**HIPL is in support of HB2423, a bill to require low-carbon concrete for all public works construction projects. Concrete is a major component of buildings and infrastructure, and its production requires a lot of energy and thus contributes significantly to greenhouse gas (GHG) emissions and climate change.**

**There are new concrete production methods that result in much lower GHG emissions; some even capture carbon dioxide emissions from the manufacturing process and use it as part of the concrete mixture. Hawaii, as part of its bold but morally necessary and laudable commitment to carbon-neutrality, should adopt HB2423 as part of a comprehensive set of rules and practices to achieve this goal. Low-carbon concrete should not add significantly to the cost of public works projects. It will raise awareness and acceptance of these innovative production methods and support companies supplying these more climate-friendly products..**

**We urge you to support HB2423.**

**HB-2423**

Submitted on: 2/3/2022 5:11:39 PM

Testimony for EEP on 2/8/2022 8:50:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Remote Testimony Requested</b>
Barbara Barry	Individual	Support	No

Comments:

Aloha,

I support HB 2423.

Mahalo,

Barbara Barry

**HB-2423**

Submitted on: 2/6/2022 8:20:06 PM

Testimony for EEP on 2/8/2022 8:50:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Remote Testimony Requested</b>
Noreen Dougherty	Individual	Support	No

Comments:

Hawaii State House Representatives:

HB2423 seems to be a very good way to make a difference in our environment. Requiring all public works construction projects to conform to lower carbon concrete standards would reduce the carbon footprint of each project and still be cost-effective. Let's do it!

Please vote to support HB2423

Mahalo,

Noreen Dougherty

Kapaa, Hawaii

**HB-2423**

Submitted on: 2/6/2022 11:54:24 PM

Testimony for EEP on 2/8/2022 8:50:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Remote Testimony Requested</b>
Andrea Nandoskar	Individual	Support	No

Comments:

Strongly support.

Mahalo for your consideration!

**HB-2423**

Submitted on: 2/7/2022 5:45:51 AM

Testimony for EEP on 2/8/2022 8:50:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Remote Testimony Requested</b>
Caroline Kunitake	Individual	Support	No

Comments:

Dear Chair Lowen, Vice Chair Marten and the Committee on Energy and Environmental Protection,

I strongly support HB2423 to require all public works construction projects to conform to certain carbon concrete standards.

Cement is the primary component of conventional concrete products and accounts for approximately 8% of all annual global carbon emissions. We need to target all emission sources, especially cost-effective low hanging fruit like this.

Using low-carbon concrete is cost-neutral and an important way to reduce emissions, helping us achieve our decarbonization goals.

Please support HB2423.

Thank you for your time and attention to this matter. I appreciate the opportunity to provide testimony for this bill.

Mahalo,

Caroline Kunitake

**HB-2423**

Submitted on: 2/7/2022 7:28:15 AM

Testimony for EEP on 2/8/2022 8:50:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Remote Testimony Requested</b>
Lana Brodziak	Individual	Support	No

Comments:

Please support this simple and easy way to reduce carbon emissions.

This is an easy way to meet our State Climate and Sustainability goals.



**HB-2423**

Submitted on: 2/7/2022 7:45:19 AM

Testimony for EEP on 2/8/2022 8:50:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Remote Testimony Requested</b>
Paul Bernstein	Individual	Support	No

Comments:

Aloha Chair Lowen and Vice Chair Marten:

I'm writing in support of HB2423. As the bill states, cement accounts for a significant amount of global greenhouse gas emissions. With the existence of new lower carbon technologies for manufacturing cement that make concrete stronger and reduce materials needed at the same cost or less than existing higher emitting technologies, it makes economic and environmental sense to transition to concrete that makes use of newer, lower carbon technologies to produce cement. That is, switching from the old technology to the new technology represents a very cost-effective way for Hawaii and the world to reduce emissions related to cement and ultimately concrete. Therefore, I encourage you to pass this bill to help Hawaii meet its greenhouse gas reduction goals.

Respectfully,

Paul Bernstein

**HB-2423**

Submitted on: 2/7/2022 8:20:49 AM

Testimony for EEP on 2/8/2022 8:50:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Remote Testimony Requested</b>
Matthew Geyer	Individual	Support	Yes

Comments: I support the stated intent of HB2423 to reduce the carbon emissions from using cement which accounts for around 8% the world CO2 emissions. I wish I could find "division 600 of the highways division of the department of transportation's special provisions for standard specifications dated July 10, 2020" so I could understand exactly what this legislation will accomplish. Perhaps a link could be included in the bill to facilitate public understanding of this measure. Thank you for hearing and supporting this legislation.