Amend HB21-1303 | Global Warming Potential for Public Project Materials

Dear Colorado Senate Transportation and Energy committee members. My name is Ron Bennett. I'm an architect working to improve energy efficiency in buildings and promoting renewable energy. I'm also a volunteer at 350 Colorado and am testifying on behalf of 350's 20,000 statewide members in an amend position for house bill 1303.

350 members and I appreciate this bill's potential for reducing greenhouse gas emissions from the construction of the state's buildings, roads and bridges. We welcome policy to determine, track, and record greenhouse gas emissions for the most carbon-intensive building materials, while encouraging procurement from local, low-carbon suppliers.

In my industry we've made great strides in building energy efficiency and electrification, but I know that as buildings become more efficient to operate, the relative importance of embodied carbon becomes more significant. Emissions from the manufacture and transportation of building materials can represent a quarter to almost half of all emissions over a new building's lifetime. Reducing these embodied emissions is feasible today using available materials and current technologies.

Buy clean policies have the potential for large greenhouse gas emissions reductions. Even though the scope of house bill 1303 is limited to public projects, the state's purchasing power can blaze a trail of innovation for the private sector to follow.

Innovators in low-carbon solutions need market assurances that promote investment in new technologies for low-carbon production and supply chains. Investing in domestic, low-carbon manufacturers and the jobs they offer while reducing greenhouse gas emissions from construction projects is a win-win.

That said, the inclusion of wood structural elements for buildings could have unintended consequences. With its relatively low GWP, wood can be an attractive alternative to steel in buildings. The problem is that increased demand for wood products can lead to unsustainable harvesting of old, larger trees that are best left standing. Large trees sequester vast amounts of carbon annually and will continue to do so as long as they live. According to a 2018 peer-reviewed U. of Washington study, the Forest Stewardship Council's (FSC) global certification program ensures sustainable forest management practices that can result in an average of 30% more carbon sequestered than conventionally managed forests.

https://ecotrust.org/tipping-the-balance-to-more-carbon-storage/

In summary, 350 Colorado members and I support house bill 1303 but respectfully urge the sponsors to please consider an FSC certification requirement for wood structural elements. Thank you.

Ron Bennett, AIA
Decarbonization Advocate
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Written Testimony on HB 21-1303 Global Warming Potential of Construction Materials used for Public Projects

Tom Peterson, Colorado Asphalt Pavement Association

Good afternoon Madame Chair, and members of the committee;

My name is Tom Peterson and I am the Executive Director of the Colorado Asphalt Pavement Association representing the 10 million ton asphalt industry of Colorado.

Our industry understands the importance of environmental sustainability and the reasoning behind the bill. If enacted into law, we will be a willing participant to ensure its success and impact.

We do support 3 amendments.

Proposed Amendment #1: Remove Asphalt and Asphalt Mixtures from the list of eligible materials in subsection 24-92-116(2)(a)

- Asphalt is a very minor product element of a building project – just the parking lot. Including asphalt in this section of the bill creates unnecessary regulatory burden and that will have minimal impact on GHG emissions due to the relatively low quantities of material that would be affected.
- Applying a different set of requirements for the same material depending on whether it's used for a building project or a road/highway project creates unnecessary regulatory confusion and will be challenging for industry to comply.
- There are numerous minority, small and disadvantaged paving contractors that this would impact to a higher degree and there hasn't been any evaluation of the impact on them and the unintended consequences. For example, paving contractors who install asphalt pavements for building projects (e.g., parking lots and driveways) are often smaller companies who may not have their own asphalt plants and have little control over the GWP of the asphalt mixtures they purchase. They may be unable to economically procure asphalt pavement materials that meet the established maximum GWP threshold, effectively disqualifying them from securing contracts with the State of Colorado.
- We not aware of another state or agency in the country that has required EPD's for asphalt in vertical construction.
    - The requirement will add cost, limit competition, and have minimal impact, if any, on GHG.

#1 - Remove Asphalt and Asphalt Mixtures from the list of eligible materials for vertical construction.

Proposed Amendment #2: Remove the GWP "ceiling" from Section 24-92-117(3)(c). *(from the Joseph Shacat, the Director of Sustainable Pavements with the National Asphalt Pavement Association in Washington D.C.).*

- Section 24-92-117(3)(c) includes the statement "The Department shall not adjust the policy for any eligible material to be less stringent." While this provision is well-intentioned, it assumes a level of data availability and quality that simply does not exist for EPDs. This requirement should be removed because of the potential unintended consequences.
- There are notable data gaps regarding the upstream emissions associated with manufacturing many asphalt mixture and asphalt binder additives. As specified in the PCR for Asphalt Mixtures, these data gaps are not included in the calculation of GWP because the impacts are unquantifiable due to a lack of available data.
- We anticipate that GWP values reported in EPDs will go up in the future as the data gaps are filled, even when no changes are made to the mix design or plant operations. Until that time, however, preventing CDOT from being able to increase GWP limits would be a short-sighted policy that does not reflect the current state of the practice for developing EPDs for asphalt mixtures.

#2 - Remove the GWP "ceiling"

Proposed Amendment #3: Exempt maintenance projects from horizontal construction.

1. There is a Maintenance Project exemption in the vertical construction portion of the bill and for good reasons. The same applies here.
2. When this bill was introduced a year ago, it was restricted to NEW construction. This year the bill has been expanded to all publicly funded projects. All. It has gone too far.
3. Minor road repairs contracted through the CDOT Asset Management program includes roadway maintenance - chip seals, crack seals, thin overlays and are pavement preservation in nature and we are not aware of any EPD development work for asphalt emulsions, foamed asphalt, asphalt rejuvenators and other maintenance products.
4. This time of work often involves minority contractors, small or disadvantaged contractors type projects and NOT new construction. 4. There are other asphalt projects funded outside of Asset Management that are rehabilitation and reconstruction in scope and would be considered as eligible and subject to the requirements of the bill.

#3 - Exempt maintenance projects from horizontal construction.

Thank You.

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Written Testimony on HB21-1303
Global Warming Potential For Public Project Materials

My name is Angela Folkestad, and I am the Executive Director of the CO/WY Chapter of the American Concrete Pavement Association.

We appreciate Representative Bernett's willingness to discuss the construction industry's concerns and work through amendments on this bill that have provided additional clarity and reduce the risk of double counting materials. There are a few more items the concrete industry would like to work with Senator Hansen to amend, and these include an additional clarification regarding how EPDs are intended to be used and a request for financial incentives for EPD development.

While EPDs do report the environmental information about a product, they cannot be used for comparison unless they are comparing items with the same functionality, such as two different mixes of 4,000 psi concrete. The functional requirements for a 4,000 psi sidewalk concrete are much different than the functional requirements for a 10,000 psi concrete used for a high strength structural column, and therefore the EPDs cannot be compared. The only time product EPDs can be compared is when they provide the same functional equivalence. This also means that EPDs of different materials such as cement, concrete, steel, wood, or asphalt cannot be compared. Much like the example above, the functional utility of these materials is different – a ton of cement does not have the same functionality as a ton of steel. Complicating this further is the fact that the EPDs report environmental results in different units. Cement is reported in metric tonnes, concrete is reported in cubic yards, asphalt in short tons, steel in metric tonnes and wood in cubic meters. Because the units are different, there is no functional equivalence at the EPD level as to what these products can do (a ton of steel and a yard of concrete do not provide the same utility). The eligible materials should not be compared against each other (i.e. concrete & wood for buildings or concrete & asphalt for pavements) since they do not have the same functionality, and this clarification needs to be added.

While the bill's goals include not imposing additional costs, there will be a cost impact to developing EPDs, and both stationary and portable concrete plants will have this expense. Concrete paving contractors build projects all over the state, and many times this happens in fairly remote areas. For projects to be built, a portable concrete batch plant is set up near the project to deliver concrete to the paver, and in many cases the aggregate is mined onsite. That approach makes construction more efficient and reduces global warming impacts related to material hauling but requires additional documentation. Including an incentive, as several states have done, would be a positive step in reducing the financial burden that the contractors will incur as they get up to speed on requirements, track fuel use of their plants and energy impacts of their equipment, and hire consultants to develop their EPDs, and potentially develop a new EPD for every project as they move around the state.

As you consider this legislation, I would like to share a few examples of how the concrete pavement industry in Colorado has moved the needle on reducing global warming potential on public projects over the last 15 years without being required to, but because it's the right thing to do. The concrete industry regularly partners with CDOT and other agencies to improve specifications, and in 2008 worked to include portland limestone cement (PLC), a product with a 10% reduction in global warming impact compared to ordinary portland cement, into the construction specifications. We have also worked with CDOT to reduce the amount of cement in concrete pavement mixes while at the same time increasing durability and longevity. Castle Rock Construction Company, a Colorado-based concrete paving contractor, was one of the early users of PLC, and they have chosen to use it to pave more than 600 hundred lane-miles of concrete roads across the state. The concrete pavement industry is committed to reducing our impacts on global warming, and we continue to look for additional opportunities to do that through building long lasting pavements and then recycling them when they reach the end of their useful life, typically after 50 or more years of carrying traffic without replacing the surface.

The concrete industry recognizes the importance of documenting our impacts on the environment as we continue to reduce them, and we will continue working with you and ultimately with CDOT to address some of the practicalities of how to do this effectively. Thank you.