



**EPDS – WHERE WERE WE?
WHERE ARE WE?
AND WHERE ARE WE GOING?**



What is an EPD?

- Environmental Product Declaration
 - **Quantified** environmental information on the **life cycle** of a product to enable **comparisons** between products fulfilling the **same function***
- “Nutrition label” for environmental impacts
- Independently verified



EPD “Nutrition” Label

Your Building Product

Amount per Unit

LCA IMPACT MEASURES	TOTAL
Primary Energy (MJ)	12.4
Global Warming Potential (kg CO ₂ eq)	0.96
Ozone Depletion (kg CFC- 11 eq)	1.80E-08
Acidification Potential (mol H ⁺ eq)	0.93
Eutrophication Potential (kg N ⁻ eq)	6.43E-04
Photo-Oxidant Creation Potential (kg O ₃ eq)	0.121

Your Product’s Ingredients: Listed Here

<https://westcoastclimateforum.com/cfpt/concrete/strategy1>

*Source: ISO 14025:2006. EPDs from different Product Categories should NOT be compared to each other.

Types of EPDs

Industry-Wide

ENVIRONMENTAL PRODUCT DECLARATION NORTH AMERICAN SOFTWOOD PLYWOOD

AMERICAN WOOD COUNCIL
CANADIAN WOOD COUNCIL



The American Wood Council (AWC) and the Canadian Wood Council (CWC) are pleased to present this Environmental Product Declaration (EPD) for North American softwood plywood. The EPD includes Life Cycle Assessment (LCA) results for all processes up to the point that plywood is packaged and ready for shipment at the manufacturing gate. The underlying LCA and the EPD were developed in compliance with ISO 14025:2006 and ISO 3190:2017 and have been verified under the UL Environment EPD program.

The AWC and CWC represent wood product manufacturers across North America. The North American forest product industry is a global leader of sustainably sourced wood products. This EPD reflects years of research and numerous sustainability initiatives on behalf of our members to continually improve the environmental footprint of North American wood products. We are pleased to present this document to show our progress.

Please follow our sustainability initiatives at www.awc.org and www.cwc.ca.



Product-Specific



Third party verified EPD – According to the International EPD® system

Interpon D1000

Interpon D2000

Interpon D3000



First date of publication:	06 April 2015
Valid until:	02 May 2023
PCR reference:	CPC division 3511 Paint and varnishes PCR 2012:01 CONSTRUCTION PRODUCTS AND CONSTRUCTION SERVICES; ver.2.2 of 2017-05-30
Registration number:	S-P-00692
Revision date:	03 May 2018
Verified by:	NEVEN Miljokonsult
Programme operator:	The International EPD® System
Declaration owner:	AkzoNobel Powder Coatings B.V.

Plant-Specific & Product-Specific



**Durum Wheat
semolina pasta**
in paperboard box

Environmental
Product
Declaration



The first EPD process certified in the Food industries



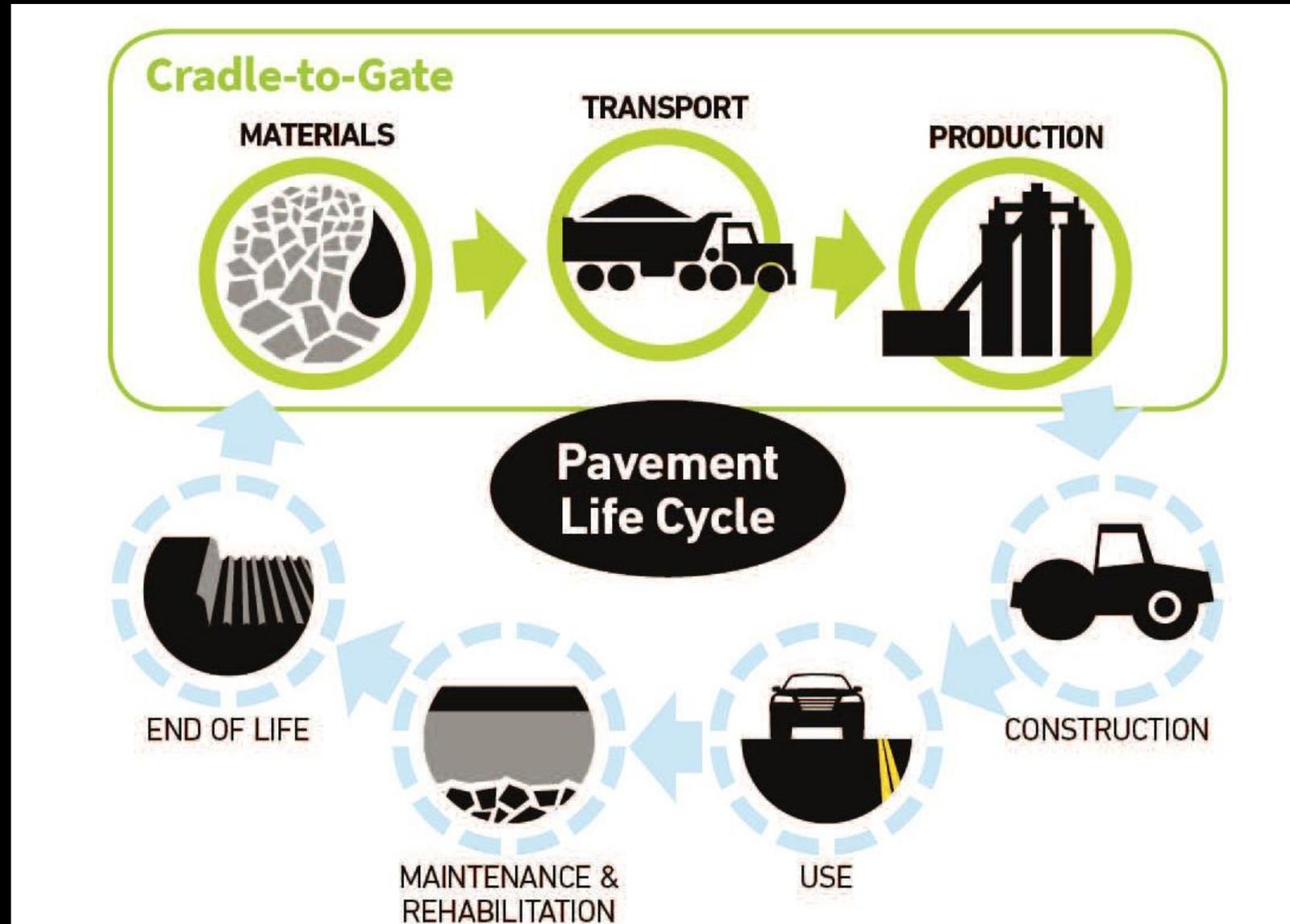
REGISTRATION NUMBER	CPC CODE	PUBLICATION DATE	REVISION	VALID UNTIL	PROGRAMME	PROGRAMME OPERATOR
S-P-00217	2731 Uncooked pasta, not stuffed or otherwise prepared PCR 2010:01 v. 3.11 06.09.2019	2011/03/10	9 of 2020/09/24	2024/11/06	The International EPD® System www.environdec.com	EPD International AB

This EPD has been developed in conformity to ISO 14025. An EPD should provide current information and may be updated if conditions change. The stated validity is, therefore, subject to the continued registration and publication at www.environdec.com.

EPDs for **Asphalt Mixtures** are Plant-Specific & Product-Specific

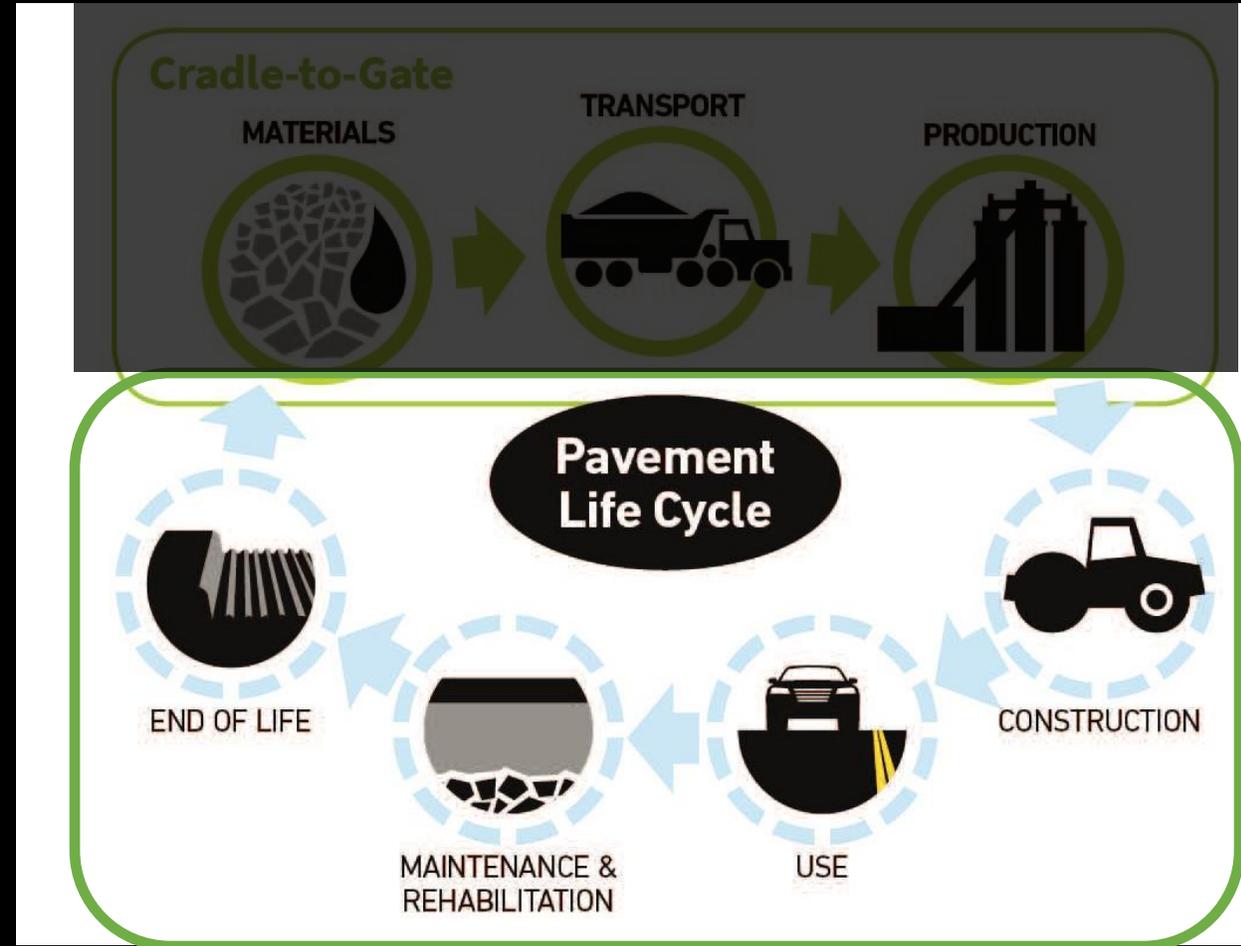
Most EPDs for construction materials have a **Cradle-to-Gate** scope

- Materials
 - Aggregates
 - Asphalt Binder
 - Additives
- Transport
 - Truck
 - Barge
 - Rail
- Production
 - Burner Fuel
 - Electricity
 - Equipment
 - Water



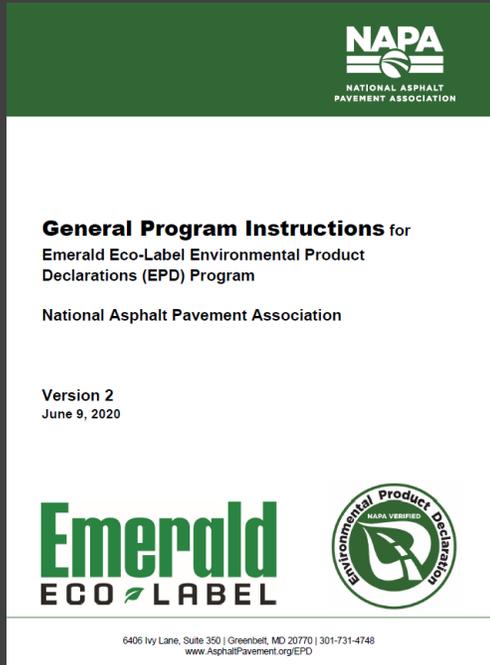
What about the other life cycle stages?

- Outside the scope of the Asphalt EPD
 - As defined in the Product Category Rules (PCR)
- Mix producers have little control beyond the gate of the plant
 - Owners can evaluate these stages through their own Life Cycle Assessment (LCA)



Key Components of NAPA's EPD Program

General Program Instructions



NAPA
NATIONAL ASPHALT
PAVEMENT ASSOCIATION

General Program Instructions for
Emerald Eco-Label Environmental Product
Declarations (EPD) Program

National Asphalt Pavement Association

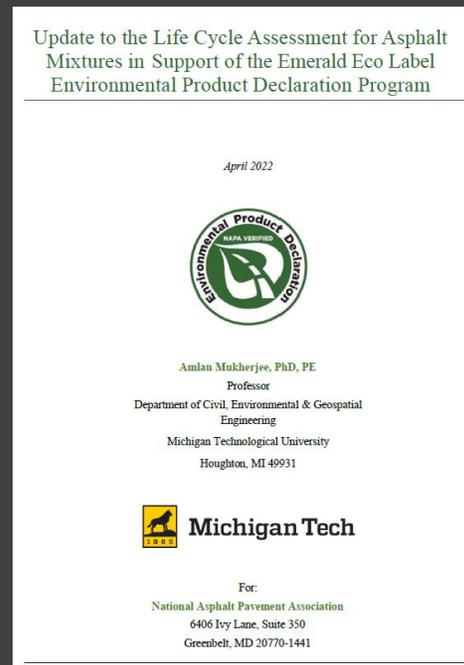
Version 2
June 9, 2020

Emerald
ECO LABEL



6406 Ivy Lane, Suite 350 | Greenbelt, MD 20770 | 301-731-4748
www.AsphaltPavement.org/EPD

Underlying Life Cycle Assessment



Update to the Life Cycle Assessment for Asphalt
Mixtures in Support of the Emerald Eco Label
Environmental Product Declaration Program

April 2022



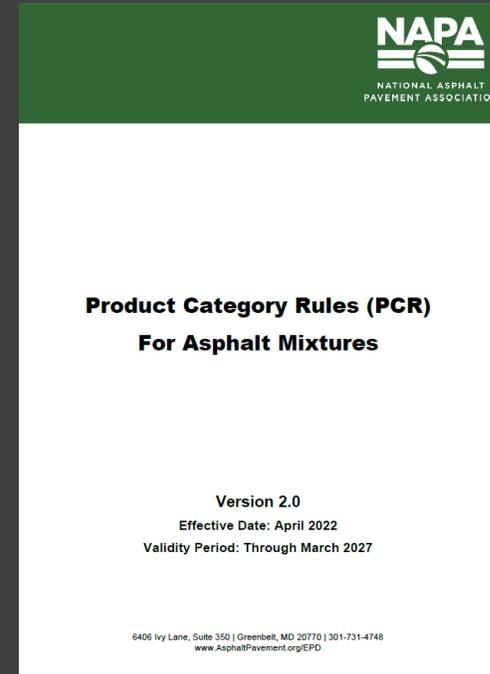
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Michigan Tech

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Greenbelt, MD 20770-1441

Product Category Rules (PCR)



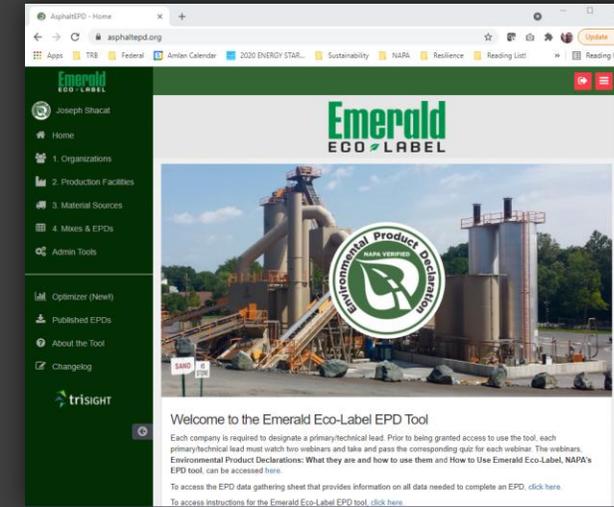
NAPA
NATIONAL ASPHALT
PAVEMENT ASSOCIATION

Product Category Rules (PCR)
For Asphalt Mixtures

Version 2.0
Effective Date: April 2022
Validity Period: Through March 2027

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www.AsphaltPavement.org/EPD

EPD Software



AsphaltEPD - Home

aspahlepd.org

Emerald
ECO LABEL

Environmental Product Declaration

Welcome to the Emerald Eco-Label EPD Tool

Each company is required to designate a primary/technical lead. Prior to being granted access to use the tool, each primary/technical lead must watch two webinars and take and pass the corresponding quiz for each webinar. The webinars, Environmental Product Declarations: What they are and how to use them and How to Use Emerald Eco-Label, NAPA's EPD tool, can be accessed here.

To access the EPD data gathering sheet that provides information on all data needed to complete an EPD, click here.

To access instructions for the Emerald Eco-Label EPD tool, click here.

Learn more at www.asphaltpavement.org/epd

EPD Optimizer Tool

- Easily **compare** two of your own mixes to each other
- More **granular analysis** of data
- Create **plant variants** to see how changes to plant operations affect EPDs
- Evaluate **economic** and **environmental** impacts of certain changes
 - Switching fuel types
 - Aggregate moisture reduction



How and Why are Customers Using EPDs?

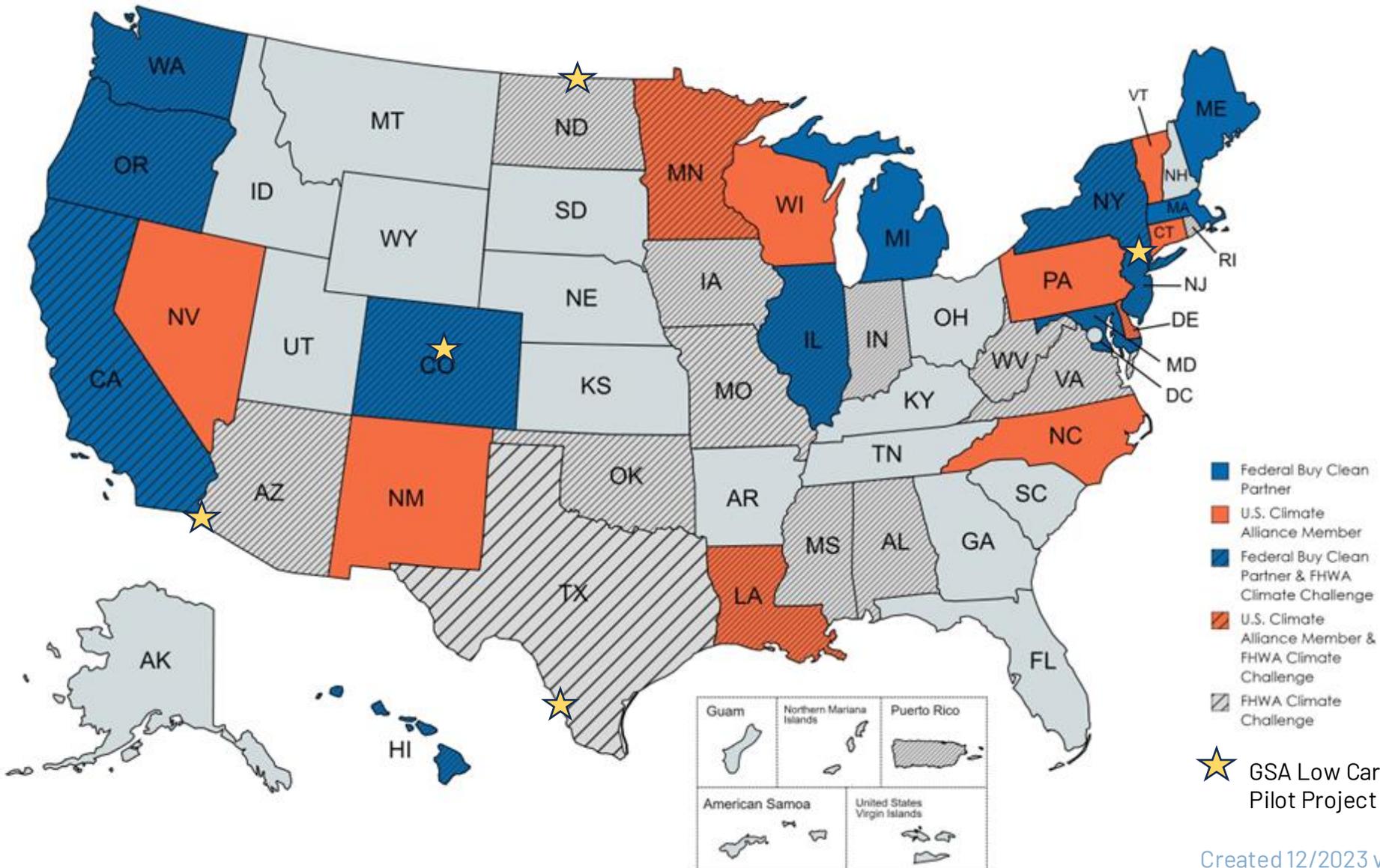
Understanding Carbon



- Often measured using the Global Warming Potential (GWP) indicator in **EPDs**

<https://www.architects.org/news/building-a-low-carbon-future-reducing-embodied-carbon-in-the-built-environment>

Buy Clean & Low Carbon Initiatives





Inflation Reduction Act

EPA

- \$250 million to standardize EPDs and help industry develop EPDs
- \$100 million to develop “low-embodied carbon construction material labeling program”

DOT/FHWA

- \$2 billion to procure construction products and materials with “substantially lower” embodied carbon
 - Federal-aid Highways, Federal Lands, etc.
 - Differential Cost or Incentive



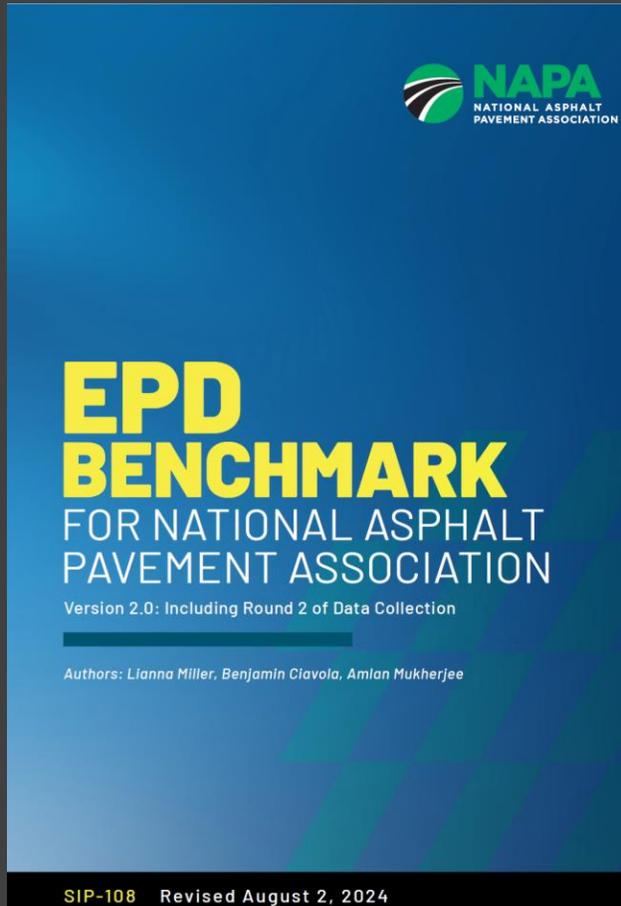
Inflation Reduction Act

EPA Interim Determination of Substantially Lower Embodied Carbon

- **Best performing 20%** of similar materials/products
 - If not available locally, then best performing 40%
 - If not available locally, then better than estimated industry average
 - **GSA and FHWA will define these thresholds** based on published EPDs
- Also, report **ENERGY STAR** Energy Performance Score (currently under development for asphalt plants)

<https://www.epa.gov/inflation-reduction-act/inflation-reduction-act-programs-fight-climate-change-reducing-embodied>

New Benchmark



A1 – Materials

- Not enough MN data, use national data

A2 – Transportation

- 0.99 (20%), 2.66 (40%), 4.76 (average)

A3 – Production

- 22.2 (20%), 22.92 (40%), 24.42 (average)

Basic Information

- Reducing Embodied Greenhouse Gas Emissions for Construction Materials and Products
- 38 organizations selected
- Around \$160 million

- NAPA led one \$10 million grant and is a sub on another
- 5 Years in length

Enabling Widely Available, Robust EPDs for Asphalt Mixtures

- Task 1.1 – Conduct Benchmarking for Asphalt Mixtures
- Task 1.2 – Conformity Assessment and Mid-cycle Update of General Program Instructions, PCR for Asphalt Mixtures, and Emerald Eco-Label Software
 - Conforms to EPA PCR Guidance
 - 508 Compliant EPDs
 - American Center for Life Cycle Assessment Data Source Requirements
 - And more...

Enabling Widely Available, Robust EPDs for Asphalt Mixtures

- Task 1.3 – Five-Year Update of PCR for Asphalt Mixtures, Underlying LCA and Emerald Eco-Label Software
 - LCA for RAP and RAS
 - Updated model of asphalt plant and use of WMA
- Task 1.4 – Develop and Execute Rebate Program for Asphalt Mixture EPDs and Additive EPDs
 - \$3.4 million for asphalt contractors
 - \$600k for additive suppliers

Enabling Widely Available, Robust EPDs for Asphalt Mixtures

- Task 1.5 – Align Agency Mix Design Processes and EPD Development Process
 - Develop nomenclature for mix naming consistency in EEL
- Task 1.6 – Develop PCR for Dry Mixture Additives
 - NAPA to serve as program operator
 - Develop underlying LCA for this

Enable Analysis of Whole Life Cycle for Flexible Pavements

- Task 2.1 – Stakeholder Engagement to Determine Path Forward
 - PCR v LCA Standard
- Task 2.2 – Develop LCA Standard or PCR for Flexible Pavements
 - 2.2a – Refine Construction Data
 - 2.2b – Define Scenarios for Maintenance and Rehabilitation
 - 2.2c – Develop End of Life Accounting Methodology
 - 2.2d – Conduct Feasibility Assessment for Use Phase Inclusion
 - 2.2e – Evaluate Upstream Datasets for Harmonization

Enable Analysis of Whole Life Cycle for Flexible Pavements

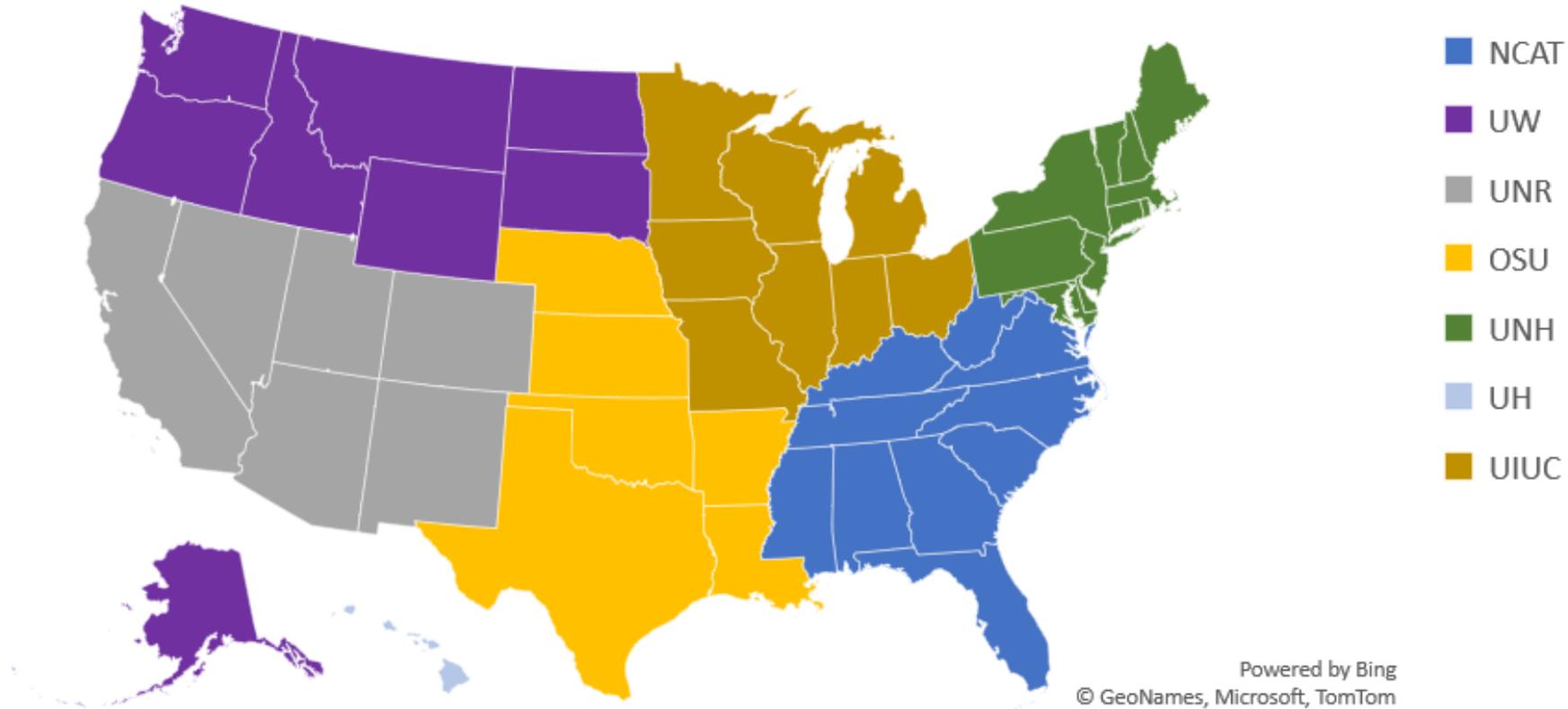
- Task 2.2 – Develop LCA Standard or PCR for Flexible Pavements
 - 2.2f - Conduct Underlying LCA
 - 2.2g – Third-Party Review Criteria (audit program)
 - 2.2h – Expert Panel Review
- Task 2.3 – Develop Software Tool for Flexible Pavements

Workforce Development and Education

- Task 3.1 – Create and Execute a Free Credentialing Program for Emerald Eco-Label Users
- Task 3.2 – Create an Educational Version of Flexible Pavement Tool
- Task 3.3 – Create a Free Credentialing Program for Users of Flexible Pavement Software
- Task 3.4 – Develop a Video Education Series on Asphalt Mixture & Flexible Pavement Carbon Accounting

Oklahoma State University Grant

Asphalt EPD Centers of Excellence



THANK YOU

