



Development of CDOT EPD Protocols

CDOT EPD Workshop
June 8, 2022



Introduction

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- Analysis Process Overview
 - Initial Focus bid items
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Key Team Members

- CDOT Members

- Keith Stefanik
- Andy Karsian
- Craig Wieden
- Hailey Goodale



- Consultant / SME

- Bill Schiebel - Rocksol
- Joep Meijer - The Right Environment Ltd.



- FHWA

- Brian Dabling

- Academia / Research (CU Boulder)

- Christopher Senseney
- Michael Seamon





HB 21-1303 Recap

- CO HB 21-1303 was passed in July 2021 and incorporated into CRS Statutes 24-91-117/118. <https://leg.colorado.gov/bills/hb21-1303>
- Section 118 requires CDOT to begin collecting Environmental Product Declarations (EPDs) on eligible materials including:
 - Asphalt and Asphalt Mixtures; Cement and Concrete Mixtures; Steel.
- EPD Data collection to begin for eligible materials on eligible projects advertised on or after July 1, 2022
 - Projects requiring EPD collection will contain the Standard Special Provision - Revision of Sections 101 and 106 - Environmental Product Declarations.
- CDOT will then use these EPDs to develop a policy by January 1, 2025, that will establish a maximum Global Warming Potential (GWP) for each eligible material, with an overall intent of reducing GWP in the future.



Key Terms

The Guidelines

Product Category Rule (PCR)

“Set of specific rules, requirements, and guidelines for developing Type III environmental product declarations for one or more categories” (ISO 14025)



The Analysis

Life Cycle Assessment (LCA)

“A compilation and evaluation of the inputs, outputs, and potential environmental impacts of a product system throughout its life cycle.” (ISO 14040)



The Communication

Environmental Product Declaration (EPD)

“Providing quantified environmental data using predetermined parameters and, where relevant, additional environmental information” (ISO 14025)



Analyses Process Overview/Results

- Eligible CDOT Bid Items
- 95th Percentile Item Expenditure Analysis
- Project Level Expenditure Analysis
- Five Major Items Analysis
- Focus EPD Bid Item Collection Items
- Project Cost Limit Evaluation
- Item Quantity / Cost Limits Evaluation



- **13 Focus Bid Items**
- **Projects > \$3M**
- **Quantity Exceptions**



What are the 13 Focus Bid Items?

- 13 Focus Bid Items include:
 - Item 206 - Structure Backfill
 - Item 403 - Hot Mix / Stone Matrix Asphalt
 - Item 411 - Asphalt Binder/Emulsion
 - Item 412 - Portland Cement Concrete Pavement
 - Item 503 - Drilled Shafts
 - Item 504 - Retaining Walls
 - Item 601 - Structural Concrete
 - Item 602 - Reinforcing Steel
 - Item 604 - Inlets / Manholes
 - Item 606 - Guardrail
 - Item 608 - Sidewalk & Bikeway
 - Item 609 - Curb & Gutter/Sidewalk
 - Item 610 - Median Cover Material



Industry Readiness / Iterative Growth

- Most North American EPD processes to date have centered around Buildings / LEED
- Current Industry PCR / EPD Readiness
 - Focus initial collection with July 1 Specification on those ready to go now
 - Hot Mix Asphalt Producers/Suppliers
 - Concrete - Ready Mix Suppliers and Concrete Paving Companies
 - Steel - Reinforcing Steel
- Iterative Growth - Year 2 and Year 3 EPDs
 - Outreach and Education to Industry Stakeholders
 - Local and National Level



Current Progress / Next Steps

- Industry Stakeholder Coordination
 - Complete - meetings held with asphalt, concrete, steel and CCA
- Specification Development
 - Complete - approved June 2, 2022, by the Specifications Committee
- Protocol Document (Appendix O in the Field Materials Manual)
 - Complete - approved at the May MAC meeting
- Create Templates / Data Structure for submittal/entry to be used in the cataloging and reporting of EPD data
 - EPD submittal form is complete. We will use a Google Form initially but are working to set up a long-term solution through OnBase for a form and data storage/reporting tool.



Current Progress / Next Steps (cont.)

- Update to PDAC on the new EPD requirement June 8th.
- Construction Bulletin to be issued with links to relevant items.
- CDOT EPD Website Development



Specification / Protocol Document

- **Specification - Revision of Section 101 and 106**
[Specification](#)
- **Protocol Document - Appendix O - Field Materials Manual**
[Protocol Document](#)



Summary/Questions

- Initial EPD Collection starting on projects advertised on or after July 1, 2022, will include:
 - Projects over \$3 Million Total Cost (engineers estimate of bid items only)
 - Asphalt
 - Concrete
 - Reinforcing Steel
 - Small quantity limits
- Future Iterative program growth with industry development and maturity
- Questions on Initial EPD Data Collection Plan?