Quick EPD Update

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Minnesota Task Force Timeline

2023 October 1 - Task Force established

2024

- February 22 - EC Context: Concrete and Asphalt
- March 14 - EC Context: Steel, Rebar and Other Materials
- April 25 and May 23 - Bidding and Procurement
- July 1 - Pilot Program begins
- Summer/Fall - Material-specific and Pilot Program Working Groups
- Oct 23 - ESPTF Mtg#6: Concrete and Asphalt WG Report Outs
- Nov 20 - ESPTF Mtg#7: Steel and Rebar WG Report Out
- Dec 18 - ESPTF Mtg#8: Pilot Program and Other Materials WG

2025

- March 19, 2025 - Mtg#9: Task Force Recommendations
- May 8, 2025 - Draft Report sent to Task Force for comment
- Spring - Draft Report, Select Grant Awardees & Distribute Funds
- Summer/Fall - Draft Report Staff Reviews and Revisions
- Oct 8 - Mtg#10: TF Recommendations & Legislative Report
- **December 1 - Report to the Legislature**

2026

- January 15 (no later than) - Establish a maximum Global Warming Potential (GWP) for concrete used in buildings.
- Spring - Task Force Meeting (TBD)
- July 15 - Recommended implementation date of GWP limits/EPD disclosure requirements (projects letting on or after this date)
- December 1 - Report to the Legislature

2027

- December 1 - Report to the Legislature

2028

- January 15 (no later than) - Establish a maximum GWP for steel rebar and structural steel and, after conferring with the commissioner of transportation, for asphalt paving mixtures and concrete pavement
- December 1 - Report to the Legislature

2029

- January 1 - Task Force ends

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STATEMENT OF ESTIMATED QUANTITIES

							SP 0416-55 TH 197	
							ROADWAY	CITY UTILITIES
NOTE	SHEET NO.	TAB	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY (A)	ESTIMATED QUANTITY (B)
			2011.601	AS BUILT	LUMP SUM	**1**	1	
			2016.601	CONTRACT MANAGEMENT	LUMP SUM	**1**	1	
			2016.601	PUBLIC INFORMATION MANAGEMENT	LUMP SUM	**1**	1	
			2021.501	MOBILIZATION	LUMP SUM	**1**	0.98	0.02
			2051.501	MAINT & RESTORATION OF HAUL ROADS	LUMP SUM	**1**	1	
			2062.602	ENVIRONMENTAL PRODUCT DECLARATION	EACH	**4**	4	

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Special Provision

Table SP2062.3-1
Materials Requiring EPDs

Spec No.	Description	Minimum Project Quantity	EPDs Required Frequency	Estimated EPDs per Material
2301	Concrete Pavement	3,500 cubic yards	1 per mix design	0
2301	Dowel Bar	No minimum	1 per diameter	0
2301	Supplemental Pavement Reinforcement	No minimum	1 per source	0
2301	Drill & Grout Reinf Bar (Epoxy Coated)	No minimum	1 per source	0
2301	Reinforcement Bars (Incidental)	No minimum	1 per source	0
2360	Plant Mixed Asphalt Pavement	1000 tons	1 per mix design	1
2363	PASSRC and PASB	1000 tons	1 per mix design	0
2401	Concrete Bridge Construction	500 cubic yards	1 per mix design	0
2401	Reinforcement Bars	No minimum	1 per source	0
2401	Reinforcement Bars (Epoxy Coated)	No minimum	1 per source	0
2402	Steel Bridge Construction	No minimum	1 per source	0
2521, 2531	Walks and Concrete Curbing	500 cubic yards	1 per mix design	2
2521	Drill & Grout Reinf Bar (Epoxy Coated)	No minimum	1 per source	1
2533	Concrete Median Barriers	500 cubic yards	1 per mix design	0

Bid Results to Date

SP	0416-55	2680-44
QUANTITY	4	11
BIDDERS	3	5
Unit Prices	$500 $2500 $3500	$2200 $2200 $1000 $280 $2080

DEPARTMENT OF ADMINISTRATION

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Table 1: GWP Limits for Concrete Materials

Material Category[1]			Maximum Allowable GWP Limit
Ready-Mix Concrete[2] Used in Buildings ($kgCO_2e/m^3$) based on concrete compressive strength	Normal-Weight concrete (NW)	≤2500 psi	241 $kgCO_2e/m^3$
		3000 psi	264 $kgCO_2e/m^3$
		4000 psi	312 $kgCO_2e/m^3$
		5000 psi	372 $kgCO_2e/m^3$
		6000 psi	394 $kgCO_2e/m^3$
		8000 psi	460 $kgCO_2e/m^3$
	Lightweight concrete (LW)	3000 psi	487 $kgCO_2e/m^3$
		4000 psi	537 $kgCO_2e/m^3$
		5000 psi	591 $kgCO_2e/m^3$
	Add 30% to these GWP limits where high early strength[3] concrete mixes are required for technical reasons.		
Concrete Masonry Units (CMU)			TBD[4]
Precast/Prestressed Concrete			TBD[4]

1. Only permanently installed materials must be considered

1. Only permanently installed materials must be considered.
2. (a) GWP values shown are categorized by 28-day concrete compressive strengths (psi) and are based on NRMCA's North Central Regional Baseline values published in NRMCA's National and Regional LCA Benchmark Report v3.2 (2022).

Colorado DOT Limits

Part A: Current GWP Limits

Material	Category	GWP Limit
Concrete Mixtures (kg CO_2-eq/m^3) $, %	Class P	346.2
Concrete Mixtures (kg CO_2-eq/m^3) $, %	Class D	365.1
Concrete Mixtures (kg CO_2-eq/m^3) $, %	Class B	360
Asphalt Mixtures (kg CO_2-eq/metric ton) $, +	S (neat binder)	77
Asphalt Mixtures (kg CO_2-eq/metric ton) $, +	SX (neat binder)	83.4
Asphalt Mixtures (kg CO_2-eq/metric ton) $, +	SX (modified binder)	89
Asphalt Mixtures (kg CO_2-eq/metric ton) $, +	ST (neat binder)	90.4
Steel (kg CO_2-eq/metric ton) ^	Reinforcing steel or rebar	915.9

$ Portable plants are currently exempt from GWP requirements until more data and data consistency is obtained. EPDs are still required as applicable per the project specifications.

% Limits shall apply to all listed concrete classes incorporated into the bid items in Table 106-4.

+ Neat binder includes the following PG grades: PG 58-28 and PG 64-22. Modified binder includes the following PG grades: PG 58-34, PG 64-28, PG 70-28, and PG 76-28.

^Limits shall apply to all reinforcing steel or rebar incorporated into the bid items in Table 106-4. This is inclusive of coated and non-coated bar.

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Colorado Status

Part A: Program Status and Progress

Current Status

- # EPDs Collected on Projects: 235
- # Projects with EPD Requirements: 198

Program Progress

- Ongoing EPD collection and benchmarking
- Updated limits to reflect market conditions

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Part B: Findings & Key Insights

1. Specificity Matters

Industry-average data is insufficient for policy. Carbon intensity varies wildly between facilities based on energy sources and efficiency. Facility-specific EPDs are critical. CDOT requires supply-chain specific EPDs for concrete and facility-specific for steel, precast, and asphalt.

2. Carbon Drivers Identified

Concrete: The primary driver is Portland cement content. Emission reductions can be made by utilizing optimized mix designs and reducing cement content while still meeting strength requirements.

Asphalt: High virgin binder content and production energy/emissions are the primary GWP drivers. Mixes with no Recycled Asphalt Pavement (RAP) generally were among the worst performers.

3. Life Cycle Cost Analysis (LCCA)

Current data does not show a linear relationship between lower carbon and higher cost. Many low-carbon strategies, such as reducing cement content, can be cost-neutral or even cost-saving.

Part C: Implementation Hurdles

- **Communication Gaps**
  - CDOT and consultant personnel and Contractors
- **Burden on Small Suppliers**
- **Timing**
  - EPD development takes time
  - Changes to mix designs, batch plant locations, sources, etc.
- **Limited Personnel**
  - CDOT & project staff
  - Need to establish project roles and responsibilities
- **Database**
  - Simplification
- **Verification & Accuracy**
  - Current reporting
  - Industry averages
  - Necessary data - As-built quantities
- **Lack of Knowledge / Unknowns**
  - Material costs
  - Improvements to data, tools, etc.
  - Policy alignment
  - Lack of data collected before policy must be established

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New Term

DOUBLE SECRET VERIFICATION

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DEPARTMENT OF TRANSPORTATION

Thank You!