



MnDOT Concrete Office Updates

Maria Masten, P.E. MnDOT Concrete Engineer
65th Annual CPAM Concrete Workshop
March 12, 2026

Concrete Office Personnel

- **Maria Masten – Concrete Engineer**
651-334-4015
- **Rob Golish – Assistant Concrete Engineer**
651-216-0516
- **Jake Gave – Assistant Concrete Engineer**
612-554-9289
- **Gordy Bruhn – Concrete Field Engineering Specialist**
651-398-9597
- **Matt Herbst – Ready-Mix Engineering Specialist**
651-283-7127
- **Brad Swenson – Greater MN Plant Coordinator**
(North – Districts 1, 2, 3A, 4) **218-232-1012**
- **Mike Daniels – Greater MN Plant Coordinator**
(South – Districts 3B, 6, 7, 8) **320-293-9421**



Left to Right: Mike, Brad, Gordy, Maria, Matt, Jake, Rob

Concrete Paving Class – For Inspectors

- March 23-24, 2026 from 8 AM to 4:30 PM on Teams
- Register with Lisa Bilotta

[Materials and Road Research](#) | [Concrete engineering](#) | [Concrete pavement](#)

Concrete paving class

The concrete paving training class is presented every year. This class is not required as part of the technical certification program. It's a two-day class co-sponsored by the MnDOT Concrete Engineering Unit and the Concrete Paving Association of Minnesota (CPAM).

Audience

This course is intended for consultant, county, city, and state personnel that perform or will be performing concrete paving inspection.

Objective

This class will introduce concepts of concrete pavement construction, provide an understanding of specification requirements, identify inspector duties and provide inspection resources to aid in daily inspection and give guidance to handle typical problems and issues.

Dates

- March 23-24, 2026 (via Microsoft Teams)
8 a.m. to 4:30 p.m. each day

Registration

- [Registration Link](#)

Contacts

- [Find concrete engineering contacts](#)
- [View all Materials and Road Research contacts](#)

Contacts

- **Registration information**
[Lisa Bilotta](#)
651-366-5500
- **Course content**
[Rob Golish](#)
651-216-0516

[Website feedback](#)



<https://www.dot.state.mn.us/materials/concretepavingclass.html>



Spec and Standards Updates

2461.3G – Concrete Placement - Spec Changes

Add the following after the third paragraph:

Do not start concrete placement when it is raining or snowing.

Applies to all concrete paving, CPR,
flatwork, bridge construction

Spec Change for 2024 – Washing coarse aggregate for paving concrete

CPAM (Concrete Pavers) has requested MnDOT require washing Class A aggregate for last 2 years

- Aggregate Quality Issues in 2022 and 2023
- Multiple failures (typically from major concrete paving projects)

MnDOT 3137.2C requires the following:

- Wash Class B, Class C, Class D, and Class R coarse Aggregate to comply with the requirements of Table 3137.2-1(i). Wash Class A aggregate as needed to comply with the requirements of Table 3137.2-1(i), except always wash Class A aggregate for use in Concrete Pavement.

2461.3G.5.b - Standard Strength Cylinders – Current Spec

Directed to Contractor – MnDOT needs to enforce

- At least 24 hours before concrete placement, provide moist curing environments of adequate size and number, including ancillary Equipment and Materials, necessary to maintain moist curing environment(s) in accordance with *ASTM C31, Standard Practice for Making and Curing Concrete Test Specimens in the Field*, and [2031](#), “Field Office and Laboratory.”
- For each separate moist curing environment, provide temperature monitoring devices that record the daily minimum and maximum temperatures for the previous 7 Calendar days. Provide temperature monitoring devices with an accuracy of plus or minus 2°F.



2461.3G.5.b - Standard Strength Cylinders – Future Spec

- The Engineer will *fully immerse the cylinders with lids in water* during the initial and intermediate curing periods in the provided moist curing environments. The Engineer will monitor and *document* the daily minimum and maximum temperatures of the curing environments. The Engineer will retain documentation until such time it is verified that there are no low or failing strength cylinder results.

**Start Now as a
Best Practice!**

2461.3G.5.b - Standard Strength Cylinders – Current and Future Spec

Directed to Contractor – MnDOT needs to enforce

- Ensure the water temperature is maintained from 60°F to 80°F during the **initial and** intermediate curing periods. Department monitoring does not relieve the Contractor of the responsibility to maintain the curing temperatures as specified. If the Contractor fails to comply with the requirements shown here-in, the Engineer may delay concrete placement and will consider any concrete incorporated into the Work as unauthorized in accordance with [1512.2](#), “Unauthorized Work.” The Engineer will consider any delays to the Contract resulting from unauthorized Work as non-excusable in accordance with [1806.2C](#), “Non-Excusable Delays.”

Pre-con/Pre-pour Meetings Discussion Topics

- Discuss supplier of concrete and which plants
- Get copy of approved mix designs from Contractor/Producer
 - Verify batching in OD or SSD
- Curing and Monitoring requirements for cylinders
- Certified Personnel
 - Field Testing
 - Flatwork Finishers
- Concrete curing and cold weather protection requirements
- Any Test Pour or QC Plans Required
- Is MDMS (E-ticketing) required?
- Are EPDs (Environmental Product Declarations) required?

Test pours and pre-pour meeting required for HPC Bridge Decks, SCC, UHPC and Colored Concrete



Opening to Traffic

Evaluation of Long-Term Impacts of Early Opening of Concrete Pavements

NRRA RIGID TEAM

Authors: Lev Khazanovich, Katelyn Kosar, Haoran Li

*A pooled fund project administered by the
Minnesota Department of Transportation*

Report No. NRRA202111



2023 Spec Change – Opening to Traffic (2301) Concrete Pavement

- Do not open a new pavement slab to general public traffic or operate paving or other heavy Equipment on it for 7 Calendar Days, or until the concrete has reached a minimum flexural strength of 300 pounds per square inch, or minimum compressive strength of 2,000 pounds per square inch; whichever occurs first.
- Inserted in nearly all 2023 projects with a change order
- Most new 2024 projects should have this language in the contract
- *Result: only taking 1-day vs. 2-3 days to get strength, seemed to save a day or more for construction this summer on most projects*

MnDOT Spec by Request – Local Traffic Access

O.2 Local Passenger Traffic Pavement Access

The Contractor may at their own risk allow local passenger traffic (total gross vehicle weight not to exceed 10,000 lbs or equivalent to a $\frac{3}{4}$ ton pickup truck) to drive across the new pavement slab to access their residence or business after satisfactory completion of all initial joint sawing, excluding early entry sawing, in accordance with 2301.3N.2, “Joint Establishment.”

Prior to placement of any concrete pavement, provide a Quality Control Plan to the Engineer for acceptance which provides the Contractor’s plan for management of local traffic during concrete pavement placement including a procedure for identification of vehicles allowed to drive across the new pavement.

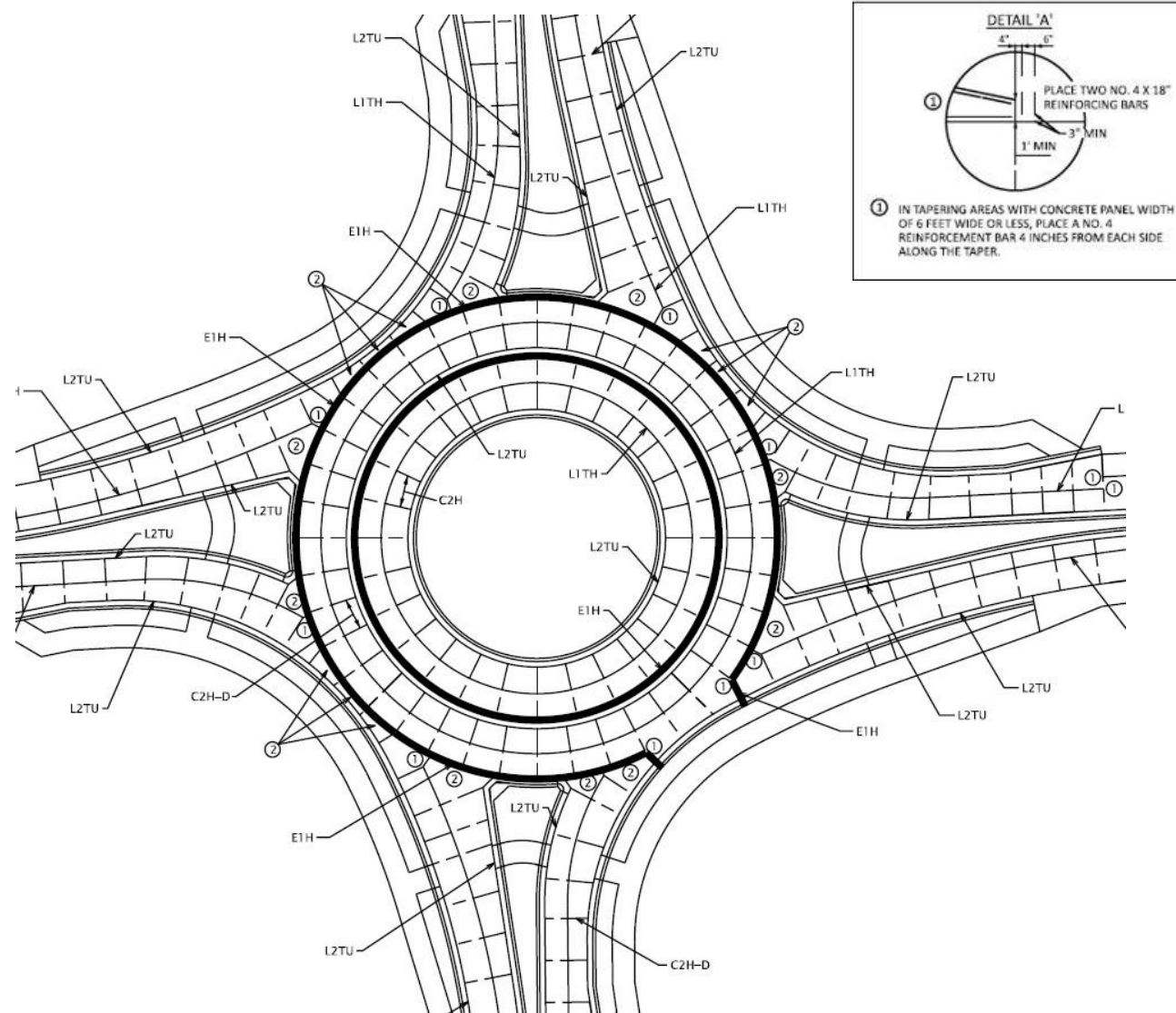
If any damage occurs, the Engineer will evaluate the concrete pavement in accordance with 2301.3.Q, “*Workmanship and Quality.*”



Concrete Roundabouts

Concrete Roundabout Jointing Guidance

- E1H joint across each leg separating them from the inner roundabout
- E1H joint between the truck apron and back of curb
- Joints on either side of the E1H don't have to match
- In tapering areas with concrete panel width of 6 feet wide or less, place a No.4 reinforcement bar 4 inches from each side along the taper.
- Contact Rob Golish in the Concrete Unit with questions or joint layout plan reviews (preferably 60% design)



Are Current Rigid Pavement Roundabout Designs Working in Minnesota?

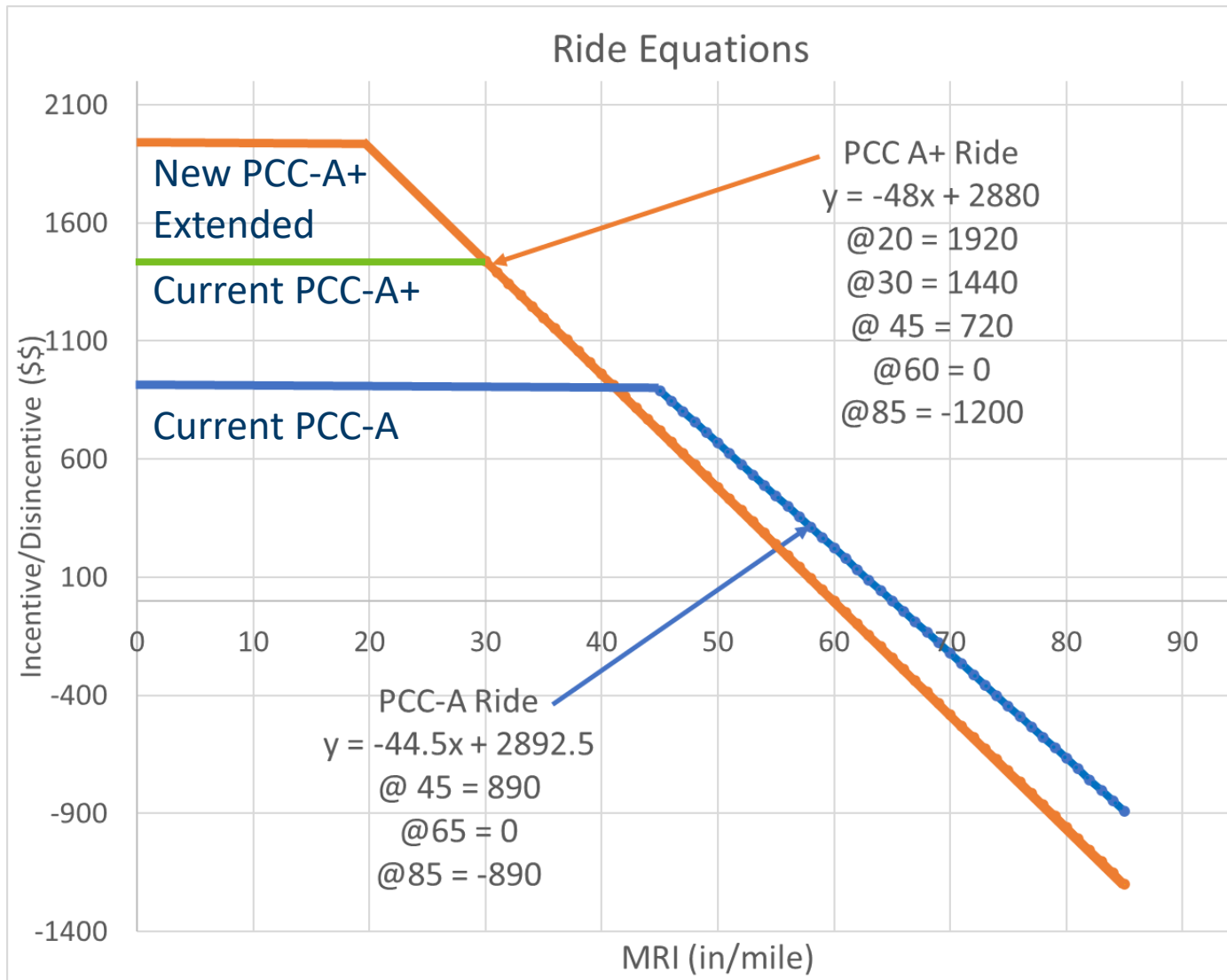
Research Project Details

- PI – Michigan Technology University
- TL – Tom Burnham, MnDOT
- Task 1 & 2 (Completed) – Literature review of existing roundabout applications to summarize typical design practices locally and worldwide and identify common challenges. Roundabout Database (<https://roundabout.kittelson.com>)
- Task 3 & 4 (Completed) – Field survey of 10-20 sites in 2025. Investigation of physical characteristics, distress assessment and classification, crack inspection and analysis, distress severity and location mapping.
- Tasks 5 & 6 - Distress diagnosis and performance evaluation
- Completion Date – June 30, 2027 (Summary and recommendations to Minnesota's roundabout design)



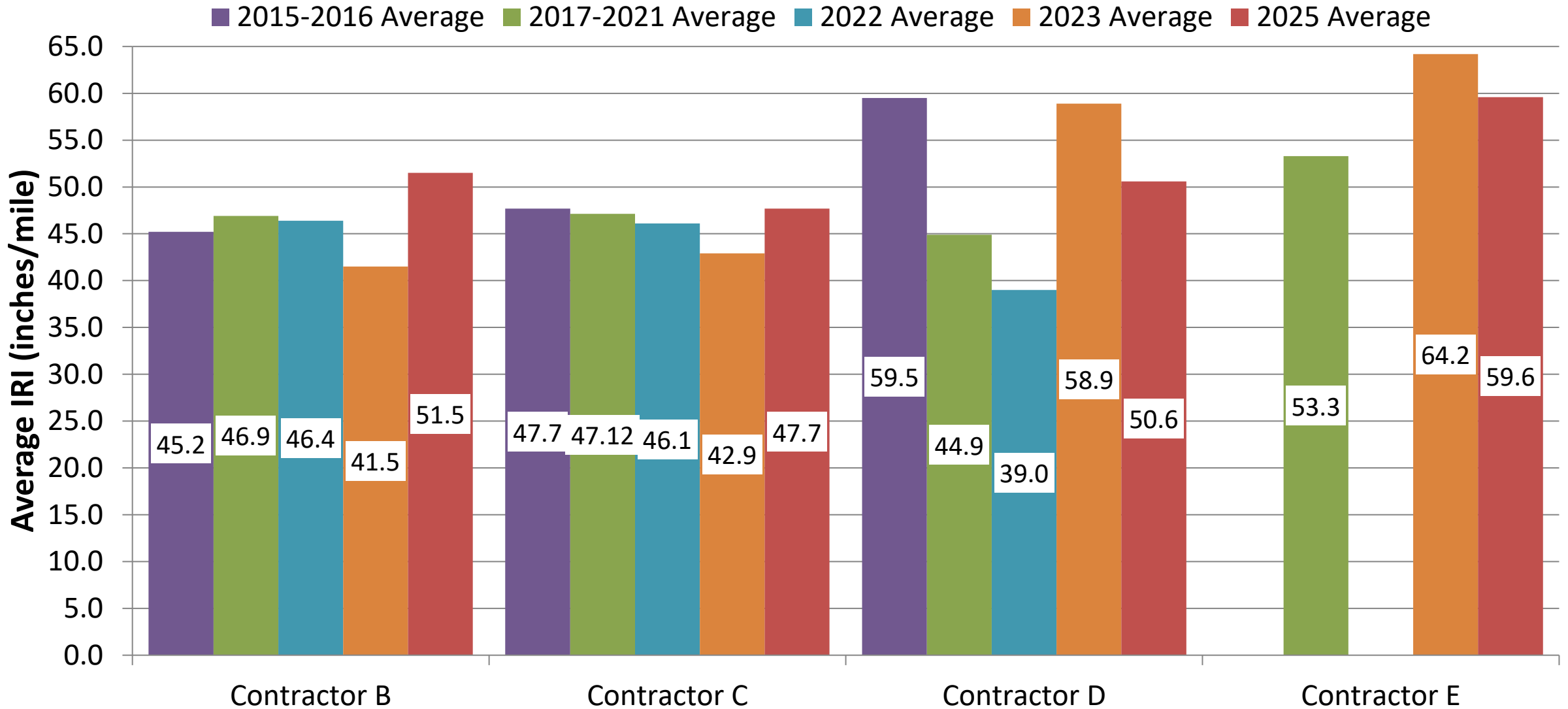
Pavement Smoothness

Evaluation of Ride Equations



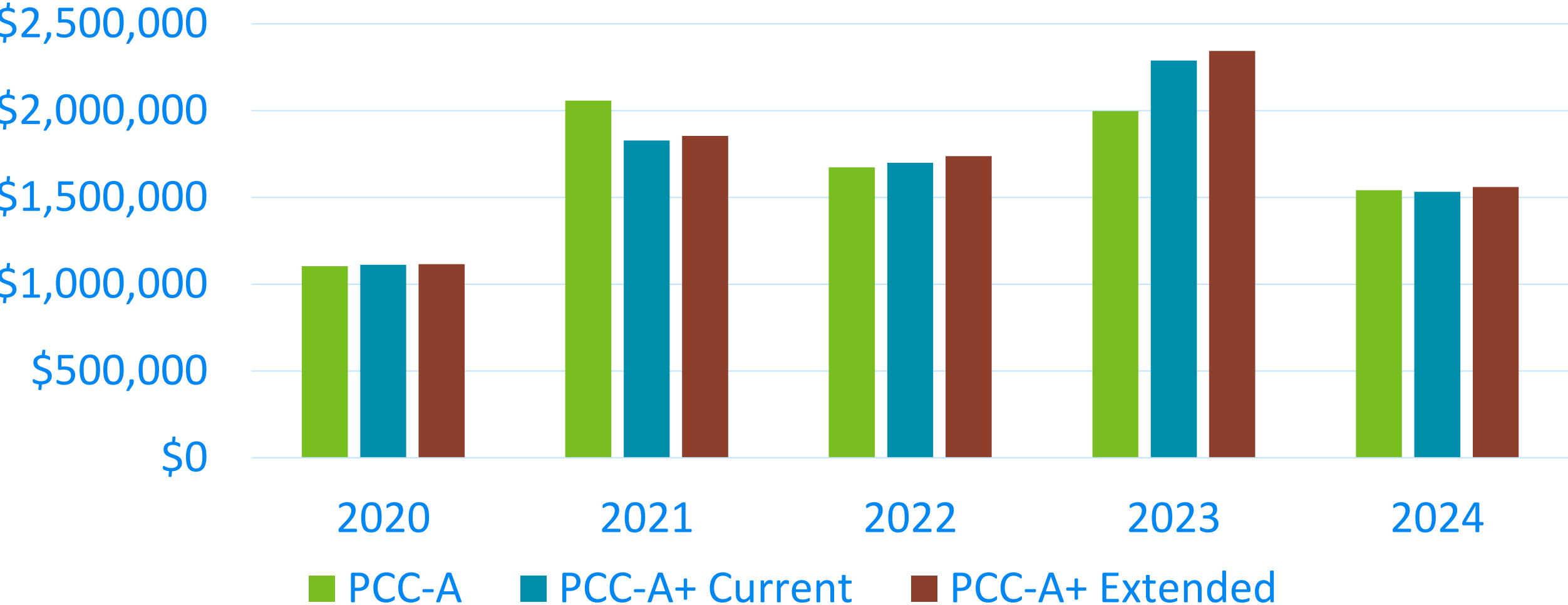
- We have been piloting PCC-A+ since 2020
- Revise and implement PCC-A+ ride specification
 - For projects 3500 cy or greater?
 - Currently stops at 30 IRI
 - Extend it to 20 IRI?
- Current PCC-A ride spec for project less than 3500 cy?
- At this point, the better contractors have been averaging around 38 to 48 in/mi IRI depending on project

Mean Smoothness – 2015 to 2025



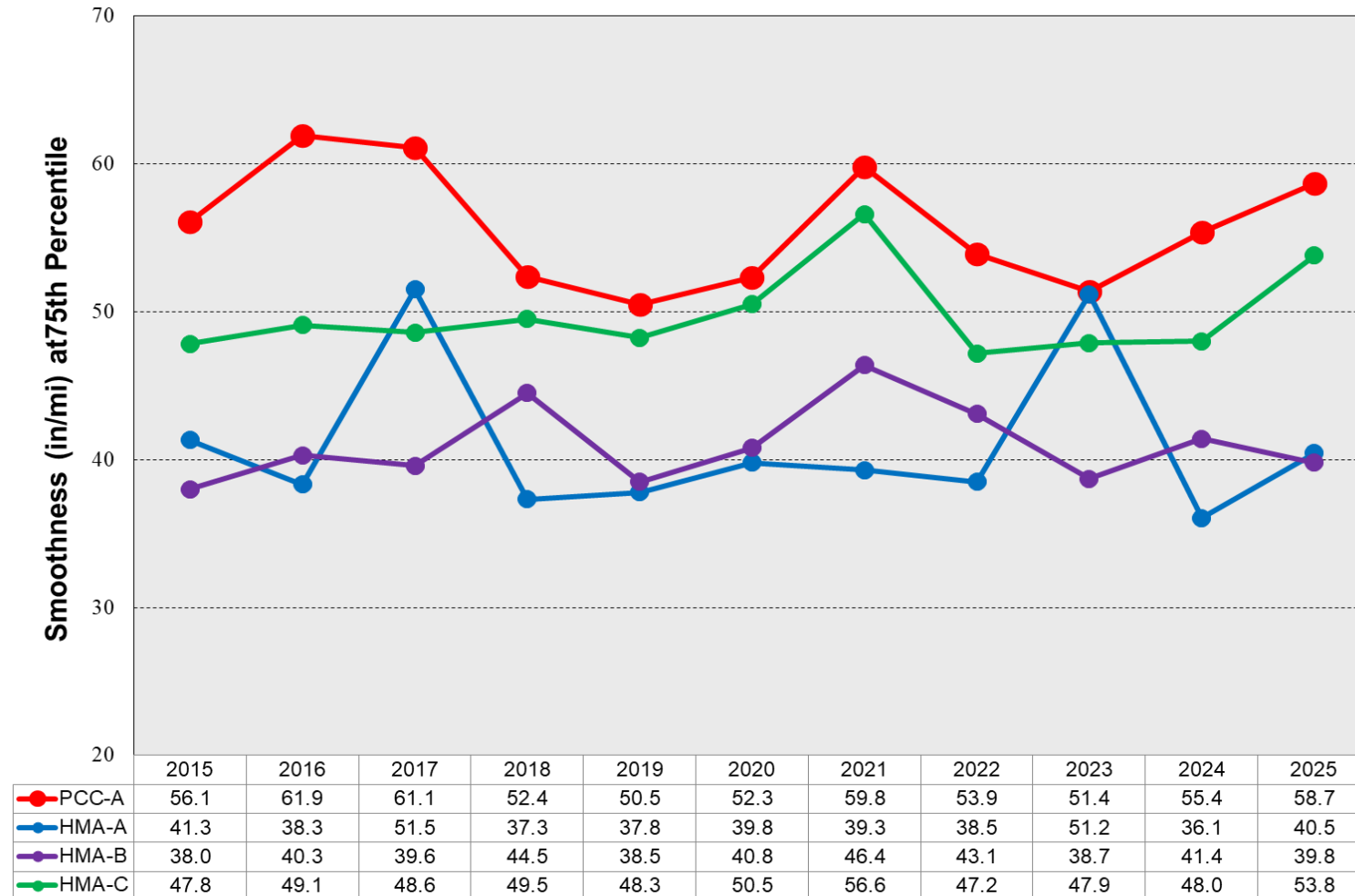
2020-2024 Overall Ride Data – Comparison Between Equations

2020-2024 Ride Data



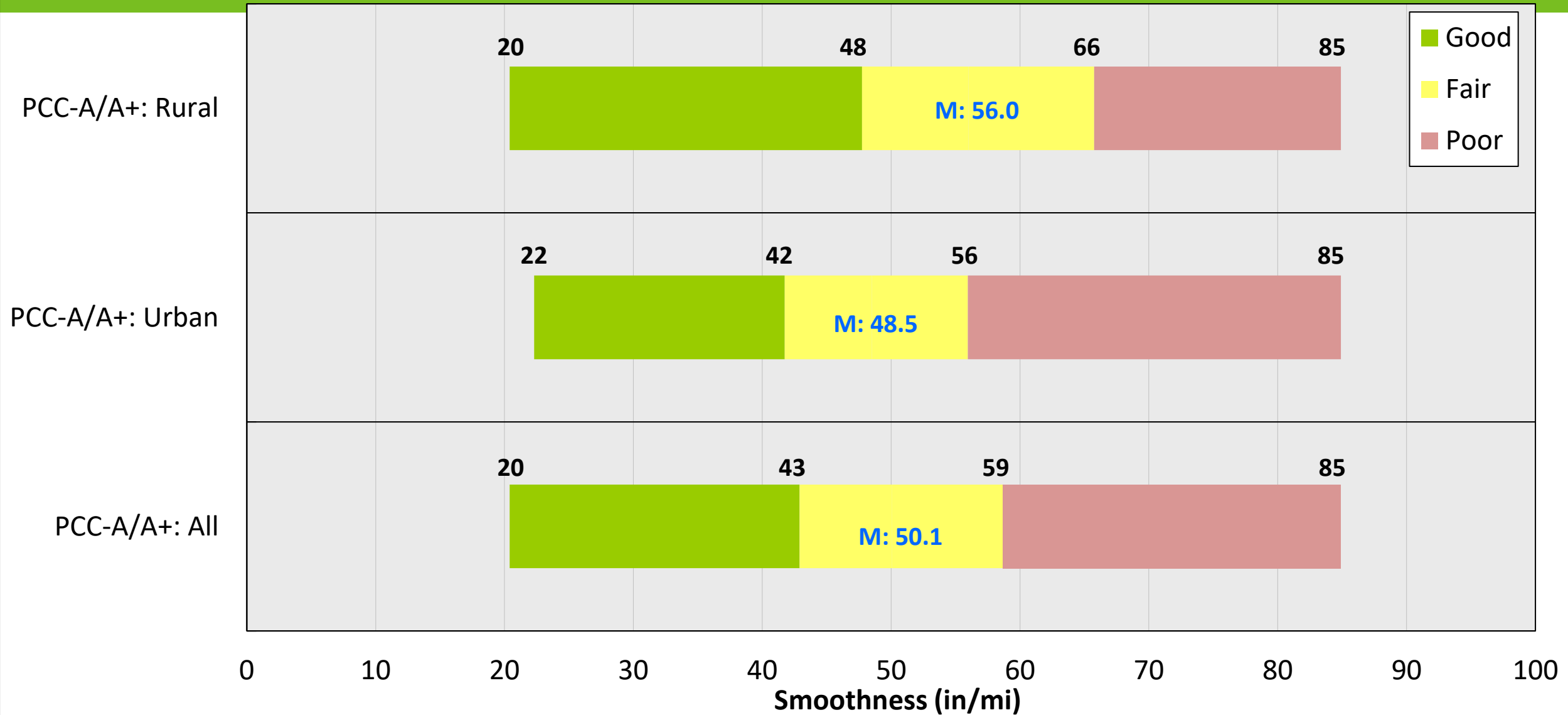
Pavement Smoothness – Contractor Report Card

Smoothness at 75th Percentile, 2015-2025



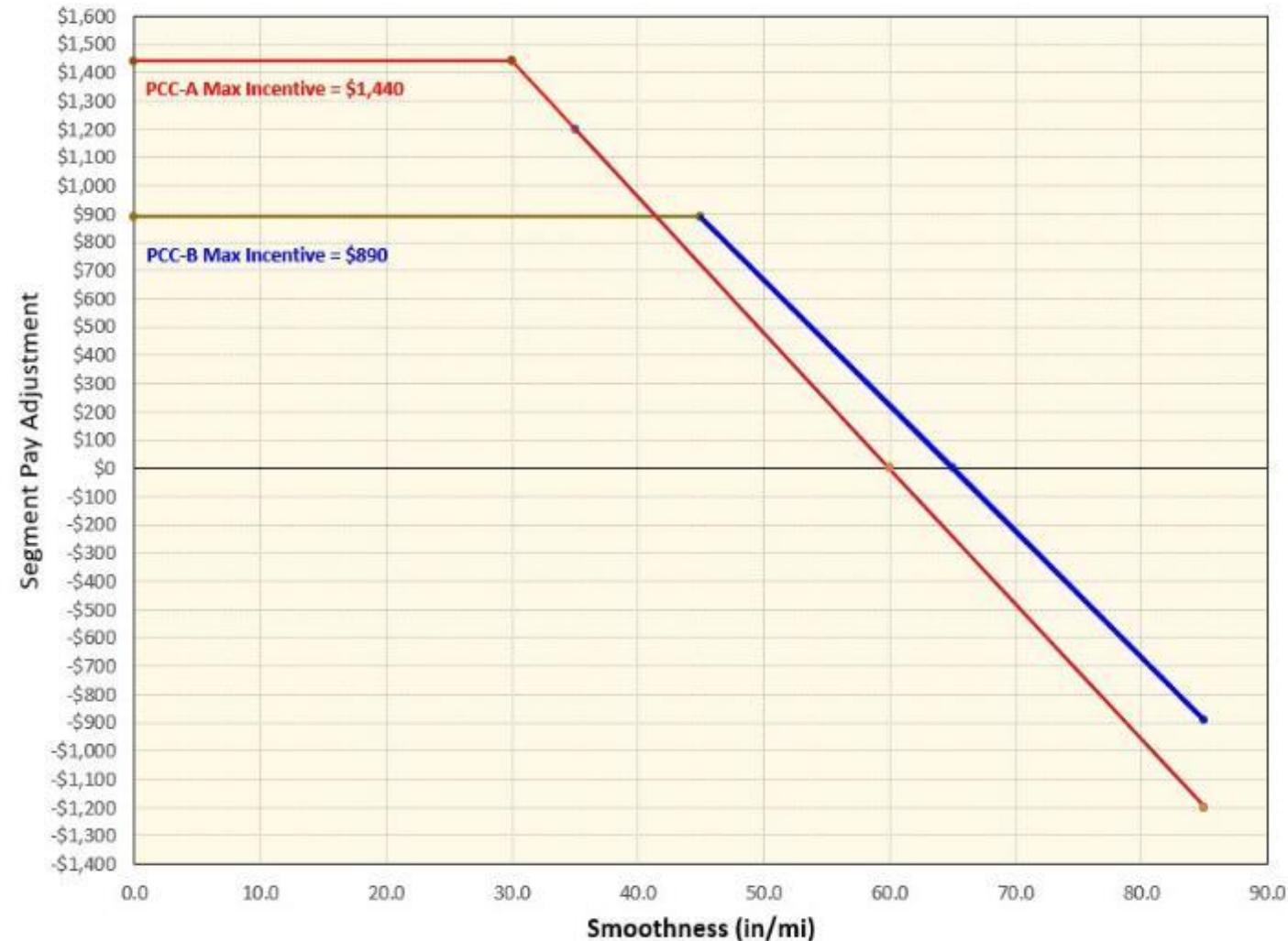
2025 Smoothness Incentive	
Bituminous	\$578,107
Concrete	\$743,079
2025 Smoothness Incentive	
Equation	\$/mile
PCC-A/A+	\$5,018
HMA-A	\$2,536
HMA-B	\$2,034
HMA-C	\$1,146

2025 Smoothness Box Plots: PCC-A/A+



2399 - New Concrete Pavement Smoothness Spec

Concrete Smoothness Equations: PCC-A and PCC-B



- Pilot PCC-A+ since 2020 (now PCC-A)
- PCC-A ride spec for projects 3,500 cy or greater
- PCC-B ride spec for projects less than 3500 cy
- This language is in the current Special Provisions 2301.51.8 (S-123.4)
- The ride equations are in the current Special Provisions Table 2399.5-2 (S-146.2)



Concrete Paving Specifications 2.0

Can MnDOT make concrete more sustainable?

- Reduce Cement Content in the Mix
- Reuse Materials
 - Allow non-traditional SCMs
 - Recycled Aggregate
 - Clarified Water (Plant Specific APL list)
- Evaluate Global Warming Potential
 - Collect Environmental Product Declarations (EPDs)
 - Gathering fuel consumption quantities for different types of construction equipment
 - Check out the “MnDOT EPD Spec Update” – Friday morning at 11 AM

Nutrition label for raw material or produced material measuring global warming potential

ENVIRONMENTAL IMPACTS	
Declared Product: Example Product Description: Exterior 4000 PSI Compressive strength: 4000 PSI at 28 days	
Declared Unit: 1 m ³ of concrete	
Global Warming Potential (kg CO ₂ -eq)	317
Ozone Depletion Potential (kg CFC-11-eq)	8.15E-6
Acidification Potential (kg SO ₂ -eq)	0.89
Eutrophication Potential (kg N-eq)	0.36
Photochemical Ozone Creation Potential (kg O ₃ -eq)	18.7
Abiotic Depletion, non-fossil (kg Sb-eq)	6.92E-5
Abiotic Depletion, fossil (MJ)	657
Total Waste Disposed (kg)	94.2
Consumption of Freshwater (m ³)	2.40
Product Components: natural aggregate (ASTM C33), Portland cement (ASTM C150), fly ash (ASTM C618), batch water (ASTM C1602), admixture (ASTM C494), admixture (ASTM C260)	

Additional detail and impacts are reported on page three of this EPD

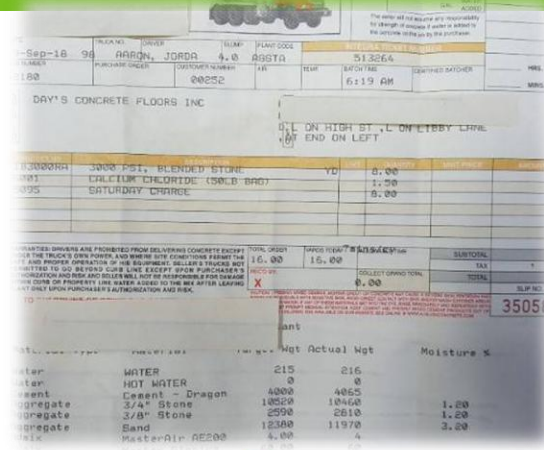
Reduced Cement Content on Paving Projects in 2025

Project	Location	Specification Minimum Cement (Total Cementitious)	Typical Cement/SCM (Total Cem)	Pilot Reduction Cement/SCM (Total Cem)	Cement Reduction (estimated GWP Reduction)
1981-140	I-35W Burnsville	385 (530) 350 (530)	385/175 (560) 430/185 (615)	350/150 (500) 370/165 (535)	15 – 80 pounds (10-20%)
5680-147	I-94 Fergus Falls	385 (530) 350 (530)	385/165 (550) 400/200 (600)	370/160 (530)	15 - 30 pounds (5-10%)
6918-103	TH 53 Eveleth	385 (530) 350 (530)	385/175 (560) 430/185 (615)	350/150 (500) 370/165 (535)	15 – 80 pounds (10-20%)

- PCI – placed late in year, hesitant to pull out too much cement due to potential strength reduction
- Shafer – poured in heat of summer – slight reduction in set time and initial strength gain, expects more strength reduction in cooler temps
 - No noticeable differences in batching and finishing

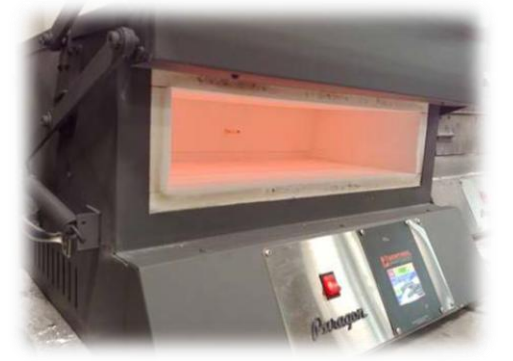
Transition from Microwave to Phoenix Testing

- Determining the w/c ratio
 - The Phoenix and Microwave consistently measure a 0.02 higher w/cm than just measuring the aggregate moisture and water gauge.
 - The Phoenix is faster, is more automated, and has a lower variability than the microwave test.



ITEM	DESCRIPTION	QTY	UNIT PRICE	AMOUNT
10000000	3000 PSI, BLENDED STONE	1.00	0.00	0.00
10000001	CELESTOR CHLORIDE (50LB BAG)	1.00	1.00	1.00
10000002	SATURDAY CHARGE	1.00	0.00	0.00

ITEM	DESCRIPTION	QTY	UNIT PRICE	AMOUNT
10000003	WATER	215	0.00	0.00
10000004	HOT WATER	0	0.00	0.00
10000005	Cement - Dragon	4000	4000	4000
10000006	Aggregate - 3/4" Stone	12000	18000	18000
10000007	Aggregate - 3/8" Stone	2500	2610	1.00
10000008	Aggregate - Sand	12300	11970	1.00
10000009	Mix - MasterGrip 2000	4.00	4.00	3.00



Phoenix – MnDOT Paving Implementation Plan

2022 - 2024

- Replace the microwave testing with the Phoenix to collect more data
- Created MnDOT test standard

2025-2026

- Pilot projects
- Agency will test using the Phoenix
- Contractor to do the moisture testing
- Acceptance based on actual w/c ratio measured using the Phoenix

2028

- Full implementation
- Contractor will purchase and have a Phoenix in the testing trailer

Phoenix “Pilot” Specifications

- 2025-2026 Pilot Project
 - 35W in Burnsville
 - I-94 Fergus Falls
- Did not change the way the mixes are currently designed
- Increased the w/c incentive by 0.02 to reflect the findings of the data with regards to the Phoenix testing



Table 2301.5-2
W/C Ratio Incentive/Disincentive

When using fly ash		When using cement only, slag or ternary	
Phoenix W/C Ratio Lot Result	Incentive/Disincentive per cubic yard*	Phoenix W/C Ratio Lot Result	Incentive/Disincentive per cubic yard*
≤ 0.39	+\$3.00	≤ 0.41	+\$3.00
0.40	+\$1.75	0.42	+\$1.75
0.41	+\$0.50	0.43	+\$0.50
0.42	\$0.00	0.44	\$0.00
0.43	-\$0.50	0.45	-\$0.50
0.44	-\$1.75	0.46	-\$1.75
≥ 0.45	The Engineer, in conjunction with the Concrete Engineer, will determine the concrete suitability for the intended use in accordance with 1503, “Conformity with Contract Documents,” and 1512, “Unacceptable and Unauthorized Work.” This may include testing on the hardened concrete as required by the Engineer, in conjunction with the Concrete Engineer.	≥ 0.47	The Engineer, in conjunction with the Concrete Engineer, will determine the concrete suitability for the intended use in accordance with 1503, “Conformity with Contract Documents,” and 1512, “Unacceptable and Unauthorized Work.” This may include testing on the hardened concrete as required by the Engineer, in conjunction with the Concrete Engineer.

*Apply Incentive/Disincentive for Concrete Pavement based on the theoretical volume of concrete used by multiplying the measured square yard of concrete by the thickness shown on the Plans. Apply Incentive/Disincentive for Structural Concrete based on the daily cubic yards batched of Structural Concrete as verified by the computerized batch ticket printouts from the plant, with consideration of any waste.



Preventive Maintenance on Concrete

Preventive Maintenance of Low W/C Pavements

- Diamond grinding pavements < 25 years old that have curl and warp
- Minor concrete pavement rehab (fix the misaligned baskets)
 - Less than 0.1 percent of joints typically constructed have misaligned baskets
- Joint Sealing possible?
 - In 2022, MnDOT elected to reseal a CPR project because the performance of the low w/c pavement showed the joint sealant was effective and some still intact.

PCC Pavement Performance Measures

- MnDOT currently evaluating post w/c projects that have had some sort of CPR performed
 - 1997-2015 – 1638.62 miles concrete, 164 projects
 - 8 CPR projects
 - 2 – District 6 IDIQ CPR Projects - (~8-10 projects)
 - 3 – Metro District Wide (~8-12 projects)
 - Evaluating actual pay items quantities from traditional projects and IDIQ
 - Maintenance activities
- Evaluating projects that are 5-10 years old that have not had any CPR
 - Estimating quantities
- Identify triggers for CPR work
 - Fix workmanship issues, not seeing materials issues



Batching In Saturated Surface Dry (SSD)

MnDOT Concrete Batching OD State vs. SSD State

- Oven Dry (OD) Aggregate = Assume aggregate pores empty, surface is dry (bone dry)
- Saturated, Surface Dry (SSD) Aggregate = Assume the aggregate pores filled, surface is dry

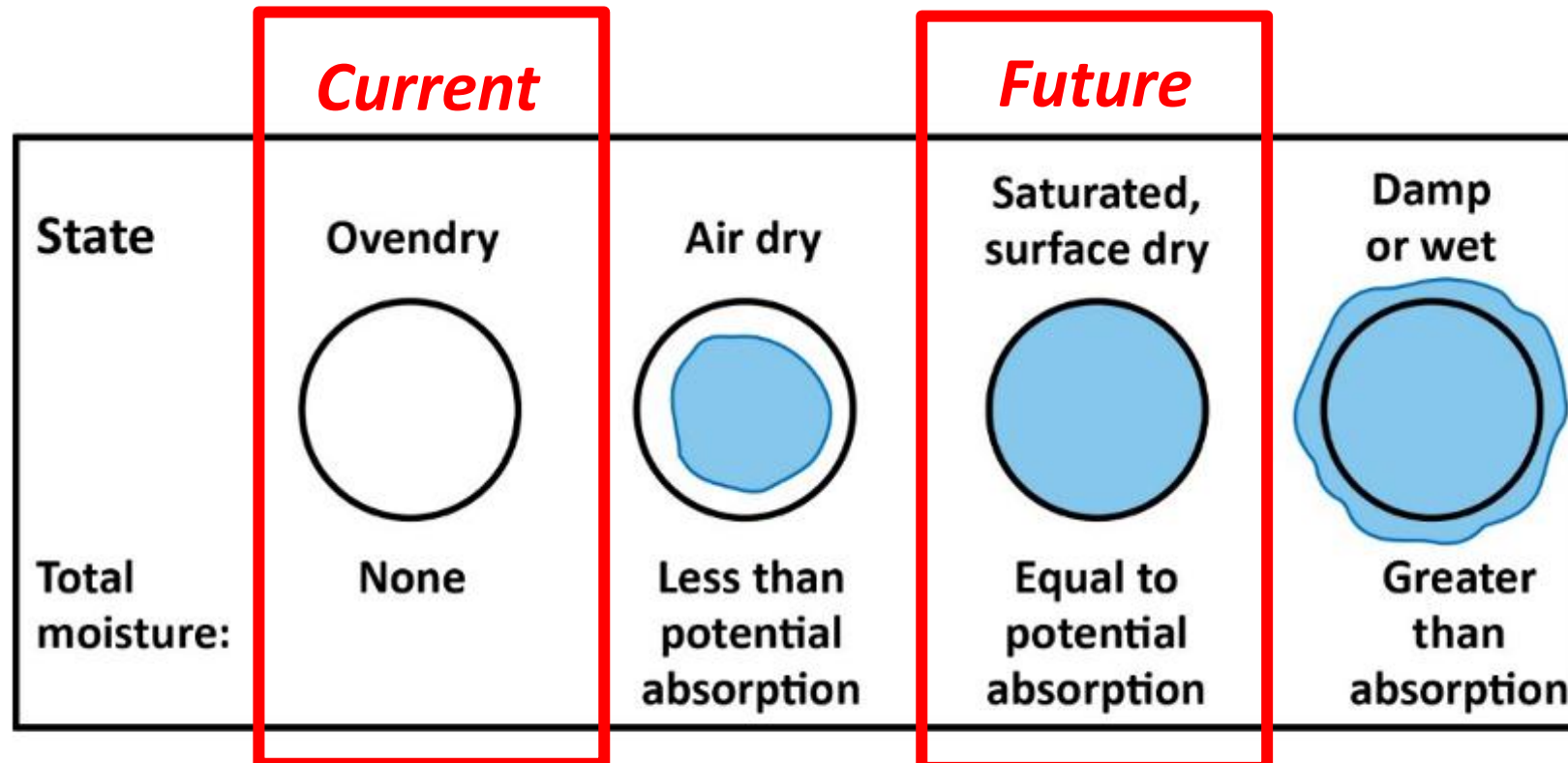


Figure 59: Images showing four primary moisture states observed in aggregate particles.

Batching in Oven Dry (OD) vs. Saturated Surface Dry (SSD)

TIMELINE

Batch in OD or SSD

Current to January 1, 2031:
Batch in OD per Spec 2461

January 1, 2031:
Batch in SSD using MDMS (e-ticketing)

Beginning January 1, 2026 or later:
Batch in SSD with updated mix designs

Option 1:
Batch in SSD with modified Certificate of Compliance

Option 2:
Batch in SSD with using MDMS (e-ticketing)

Special Provisions getting updated – will be discussing with OCIC whether we need a change order for each contract

General Concrete Mix Design Sheets

- RMX – Ready-Mix OD sheet and RMS - new Ready-Mix SSD sheet

m DOT Minnesota Department of Transportation
Contractor Mix Design - 3137

PIT #	SOURCE	SIZE	CLASS	SP.G.	ABS.
75999	PRUNE PIT	SAND		2.65	0.006
		3/4+			
77999	PEACH PIT	3/4-	C	2.68	0.012
		5/8-			
		1/2-			
		3/8-			

Use for:
Level 1 and Level 2 general concrete not using a JMF

3137 Gradation
67

RMX 777 -001

Location: Garden, MN
 Contact: Fern E. Leaf
 Telephone #: 999-234-5678

MnDOT Approval: Wendy Garr
 Digitally signed by Wendy Garr
 Date: 2018.11.07 15:07:01 -0600

% AGGREGATE PROPORTIONS
 Combos must pass 3137 gradation

Cementitious specific now!

m DOT Minnesota Department of Transportation
2461 - General Concrete Mix Design
 Use for Level 1 and Level 2 General Concrete not using a Project Specific Mix Design

CONC-201 (2/4/26)

RMS 999-001

	Name/Mill/Plant	MnDOT Abbreviation	Type/ Class	SP.G / Dosage	Pit #	Size	Class	SP.G.	ABS.	CIA/ CA %	Company
Cement	Amrize St. Genevieve	STGBMOIL	IL	3.10	75999	Sand		2.66	0.006		Green Plant - Garden City
Fly Ash	Amrize Columbia	CGSPOWI	C	2.72							Garden City
Slag					77999	#67	C	2.70	0.012	55	Plant RM# 999
Other CM					78999	5/8 in	C	2.68	0.011	45	Contact: Fern E. Leaf
Fibers											Phone: 612-345-6789
											Email: leafmealone@alltimes.com

Check website for F.M <https://www.dot.state.mn.us/materials/concrete.html>

All weights are in lb/cy. Aggregates are considered to be Saturated Surface Dry (SSD). *CA combos must pass 3137 gradation

Certified Ready-Mix Plants and Mix Designs – Website Updated

Certified Ready-Mix Plants and Reviewed Contractor Mix Designs

Materials Home Concrete Home Contacts

To determine compliance with MnDOT specifications, MnDOT certifies concrete ready-mix plants each year and reviews the plant's concrete mix designs.

Concrete Ready-Mix Plant Certification and Reviewed Mix Designs

Select District:

Select Nearest City:

Select RM Plant:



RM190 is MnDOT Certified for 2026
RM190 is MnDOT Certified for Paving in 2026

Since December 2025 AASHTOWare upgrade there is sometimes a 1-2 day lag in information posting to the website.

Active mixes still available in AASHTOWare

- [Certified Ready-Mix Plants and Reviewed Contractor Mix Designs - https://rmx.dot.state.mn.us/rm_mix/](https://rmx.dot.state.mn.us/rm_mix/)

Certified Ready-Mix Plants and Mix Designs – Website Updated

- All mixes at a plant will either be in OD or SSD, Producer will not use both.

RM195 is MnDOT Certified for 2025

RM195 is MnDOT Certified for Paving in 2025

Mix Number	OD/SSD	Date Reviewed
RMX195-054	OD	12/17/2021
RMX195-055	OD	12/17/2021
RMX195-056	OD	12/17/2021
RMX195-057	OD	12/17/2021

RM205 is MnDOT Certified for 2025

RM205 is MnDOT Certified for Paving in 2025

Mix Number	OD/SSD	Date Reviewed
RMS205-038	SSD	11/13/2025
RMS205-039	SSD	11/13/2025
RMS205-040	SSD	11/13/2025
RMS205-041	SSD	11/13/2025

[Certified Ready-Mix Plants and Reviewed Contractor Mix Designs - https://rmx.dot.state.mn.us/rm_mix/](https://rmx.dot.state.mn.us/rm_mix/)

Batching in SSD - Concrete Paving Portable Batch Plants

- Contact Concrete Engineering Unit
- When completing the Paving Plant Contact Report – indicate desire to batch SSD
- Supply a batch ticket showing weights in SSD
- Mix Designs
 - Use SSD specific gravities from the Concrete Aggregate Properties Website
 - Submit using SSD weights on the Concrete Paving Mix Design Submittal to the Concrete Engineering Unit

Concrete Aggregate Properties - Website Updated

- [Concrete Aggregate Properties](https://cap.dot.state.mn.us/cap/) - <https://cap.dot.state.mn.us/cap/>

Concrete Aggregate Properties Include:

- OD SPG - Oven Dry Specific Gravity
- SSD SPG - Saturated Surface Dry Specific Gravity
- ABS - Absorption
- FM - Sand Fineness Modulus
- ASR - Alkali Silica Reactivity: 14-Day Unmitigated Results
- CLASS - Aggregate Class: A, B, C, D or R

MnDOT mathematically converted OD Specific Gravity to SSD Specific Gravity

Since December 2025 AASHTOWare upgrade there is sometimes a 1-2 day lag in information posting to the website.

View concrete aggregate properties:

Name:

 Project:

Aggregate Fractions and Properties

SIZE	OD SPG	SSD SPG	ABS	FM	ASR	2D1	2D2	2D2H	2D3	CLASS
Sand	2.64	2.66	0.008	2.70	0.180	-	-	-	-	-
3/4" +	2.68	2.71	0.011	-	-	Y	Y	Y	Y	C
#67	2.69	2.73	0.014	-	-	Y	Y	Y	Y	C
CIA	2.64	2.68	0.016	-	-	Y	Y	Y	Y	C

Requirements of MnDOT Specification 3137

- 1 - General Use
- 2 - Bridge Superstructure

Project Specific-Structural JMF Mix Design Submittal Changes

1 Minnesota Department of Transportation CONC-205 (3/9/26) Minnesota Depa

2 **Project Specific Structural Concrete Mix Design (JMF)** **Contractor I**

3 Use for High Performance Bridge, Mass Concrete, Self Consolidating Concrete (SCC), and Specialty Concrete **JMF**

4 FA CIA

5 Moisture Condition (OD/SSD) Agg. Size

6 Prop. %

7 Name/Mill/Plant MnDOT Abbreviation Type / Class SP.G. / Dose Pit # Size Class SP.G. SP Number Contract ID

8 Cement FA Requested By 2"

9 Fly Ash CIA Company 1"

10 Slag CA#1 Phone 3/4"

11 Other CM CA#2 Email 1/2"

12 Admix#1 CA#3 Agency Contact 3/8"

13 Admix#2 Agency Phone #4

14 Admix#3 Agency Email #8

15 Admix#4 Plant Name #16

16 Admix#5 Plant RM# #30

17 Admix#6 Contractor #50

18 Fiber #100

19 #200

20 % Aggregate Proportion by Volume

21 Mix # % Air Water Cement Fly Ash Slag Other CM % Fly Ash % Slag % Other CM % Ternary Total CM W/C Ratio FA CIA CA#1 CA#2 CA#3 Volume Unit Wt. % Paste Volume

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1 Minnesota Department of Transportation CONC-205 (3/9/26) Minnesota Department of Transportation

2 **Project Specific Structural Concrete Mix Design (JMF)** **Contractor Information**

3 Use for High Performance Bridge, Mass Concrete, Self Consolidating Concrete (SCC), and Specialty Concrete

JMF

4 FA CIA

5 Moisture Condition (OD/SSD) **OD** Agg. Size

6 Prop. %

7 SP Number

8 Contract ID 2"

9 Requested By 1 1/2"

10 Company 1"

11 Phone 3/4"

12 Email 1/2"

13 Agency Contact 3/8"

14 Agency Phone #4

15 Agency Email #8

16 Plant Name #16

17 Plant RM# #30

18 Contractor #50

19 #100

20 #200

21 % Aggregate Proportion by Volume

22 Volume Unit Wt. % Paste Volume

23 FA CIA CA#1 CA#2 CA#3

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Material Delivery Management System (MDMS)

Material Delivery Management System (MDMS) definition

Data captured by Contractor

System that manages data associated with delivery of material to a contract.



Source

(E-Ticket)

(Contractor's MDMS)

Table SP2061-1



Hauler

(Contractor's MDMS)

Table SP2061-11

(Not required for 2461)



Loading and Delivery Event

(Contractor's MDMS)

Table SP2061-12

(Only Start/End Dump Time and Duration in Truck required for 2461)

MDMS data captured by Department



Testing and Contract Administration

(Agency Platform Veta)

AASHTO MDM-1-UL Table X3.1



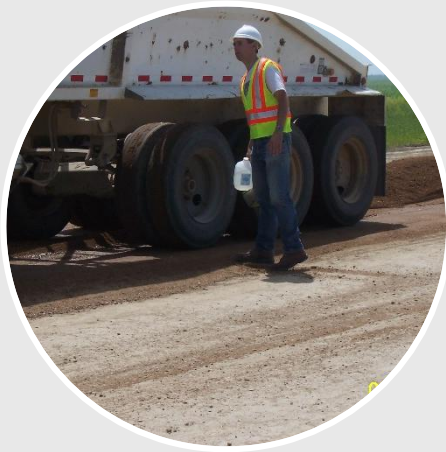
Agency Verification

(Agency Platform Veta)

AASHTO MDM-1-UL Table X3.13

Current materials included in special provision

Aggregate

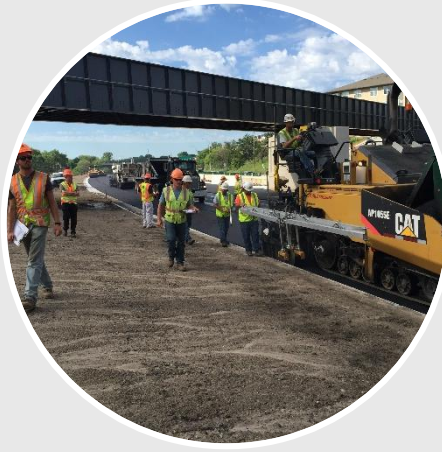


2118 (Aggregate Surfacing)

- On Hold -

(1901.6.D Computerized Loader Bucket Scales (5,000 tons or less))

Bituminous Paving



2360 (Plant Mixed Asphalt Pavement)

2363 (PASSRC and PASB)

2365 (Stone Matrix Asphalt)

Concrete Paving



2301 (Concrete Pavement)

Discussions have started – anticipate piloting in 2028 but open to volunteers

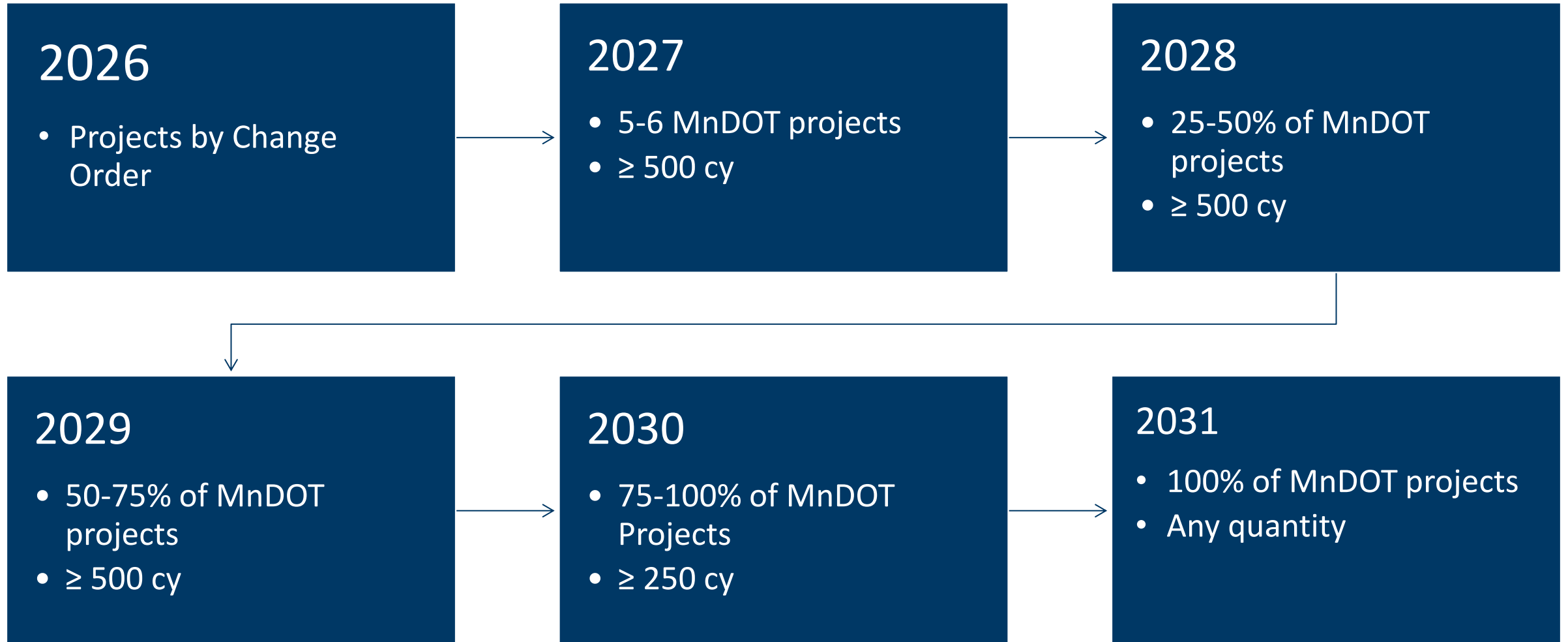
Ready-Mixed Concrete



2461 (Structural Concrete)

2461 Structural Concrete – MDMS Implementation Roadmap

- Projects distributed 50% Metro area/50% Greater MN





Questions?

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