PG3 Monitoring Update

March 2025

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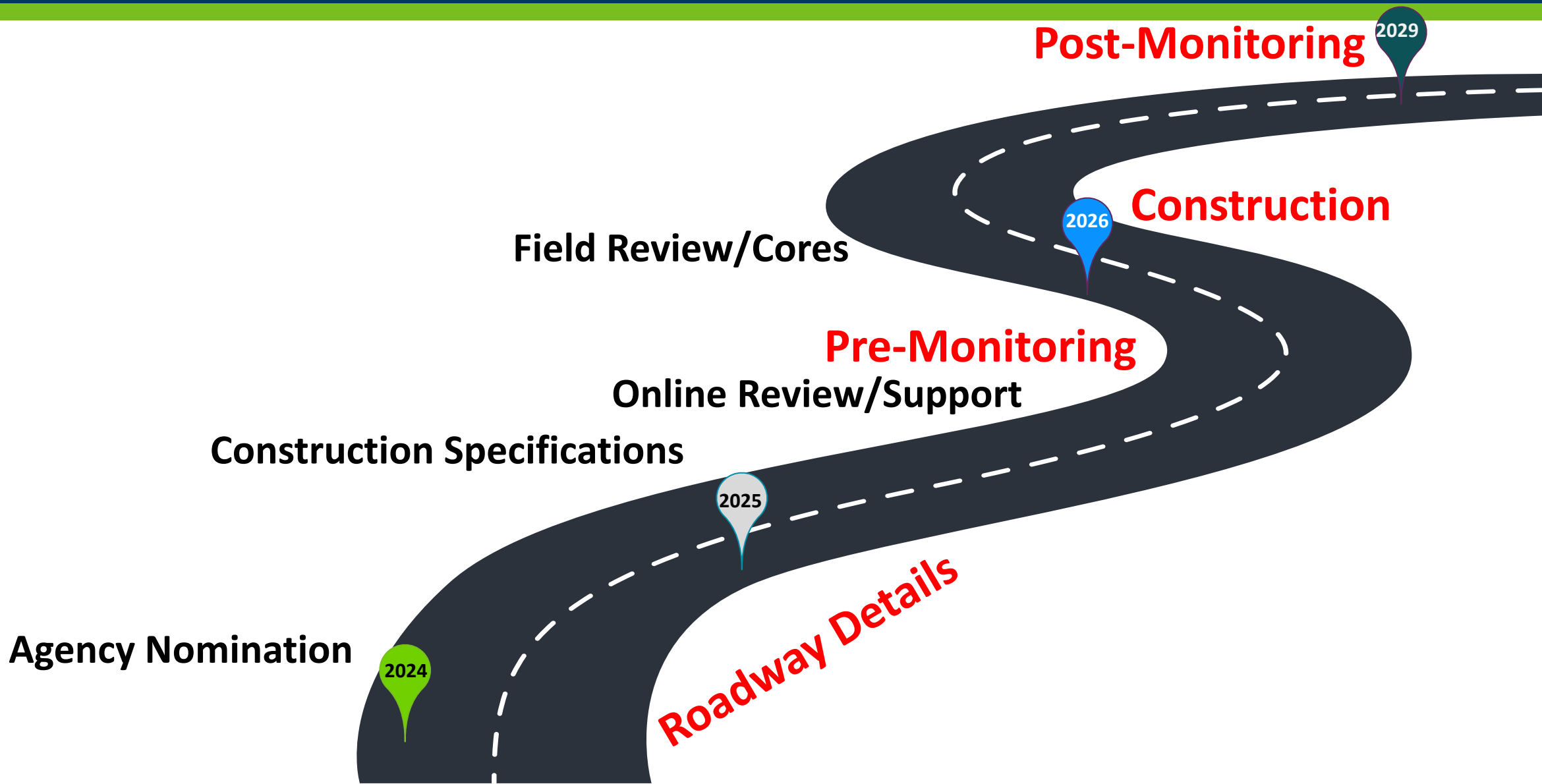
MnROAD

SAFER, SMARTER, SUSTAINABLE PAVEMENTS THROUGH INNOVATIVE RESEARCH

Data Timelines



General Responsibilities

PG3 Participating Agencies

- Traffic control/Construction Costs
- Nomination Forms
- Roadway Details
- Pre-Construction Monitoring
- Construction
  - Equipment
  - Material Testing
  - Construction Report
- Post-Construction Monitoring

NCPP

- Spec Help & Online and In-Person training, Field construction support

FP2

- Spec Help & Online and In-Person training, Field construction support

NCAT

- Review of data collection
- Pass onto MnDOT for database
- Analysis of data

Minnesota DOT (Lead State)

- Database Entry
- Provide and Publish data to NCPP/NCAT/Agencies for data analysis

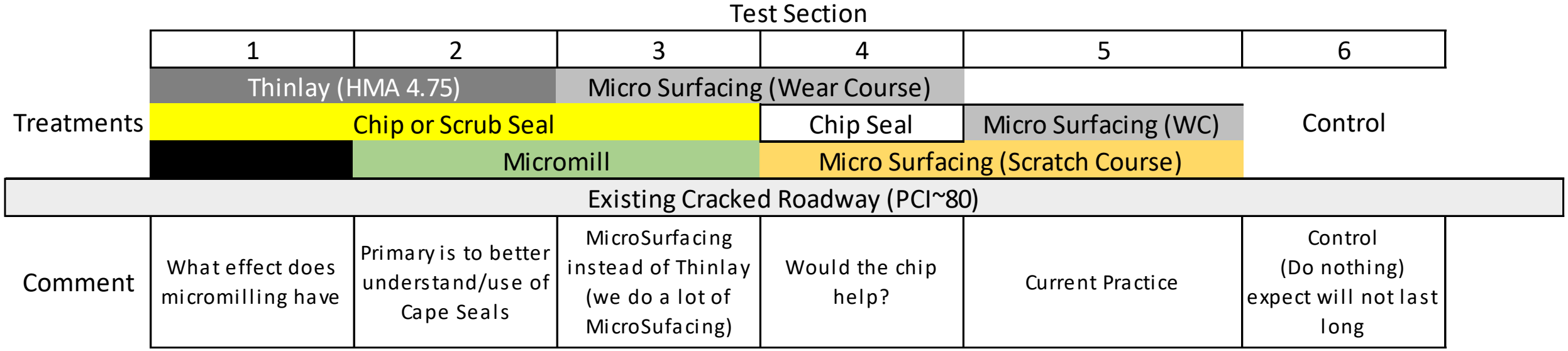
Minnesota's Interest/Expectations for PG3 "Minnesota Sections"
Example

Primary Focus

- CapeSeal (Thinlay over Scrub Seal)
- Performed well CSAH8 and US-169

Secondary Efforts

- Crack Sealing / Micro milling
- Treat 700 feet and select 500 feet for each test section (200 ft transitions)



Roadway Details

Agency Provides (Nomination)

- Number of Test Sections
- Basic Roadway Details
- Layers, Thickness, Materials, Traffic, Roadway History, GPS locations, ……
- Establish test sections (500 feet with transitions)
- Pictures

PG3 Team

- Additional questions will be asked to gain the needed fields/clarification based on the nomination for the core roadway data for the tables in the database.
- MnROAD enters the data in the database
- ND has provided a project to do testing on

Construction

Agency/PG3 Team

- Inspector/Contractor Training
  - Equipment
    - Condition Review
    - Calibration
- Construction Documentation
  - LTPP forms for each type of treatment
  - Sampling and testing Results
  - Agency provide testing of materials/Results
  - Construction Summary Report
  - Establish test sections (500’ for each section)

Use existing resources

- FHWA Check Lists
- RoadResource.org
- NCAT PG3 website

Monitoring

Agency

- Mark out test sections and maintain
- Document future treatments (Discussion item?)
- Pre and Post Coring of the roadway
  - 4 (6” cores) to be shipped to NCAT for initial PG grading of existing roadway for the core treatment location
- Testing
  - Testing Requirements
  - Optional Testing
- FHWA is looking into monitoring support

PG3 Team

- NCAT and NCPP will receive the data
- MnDOT will enter it into the database

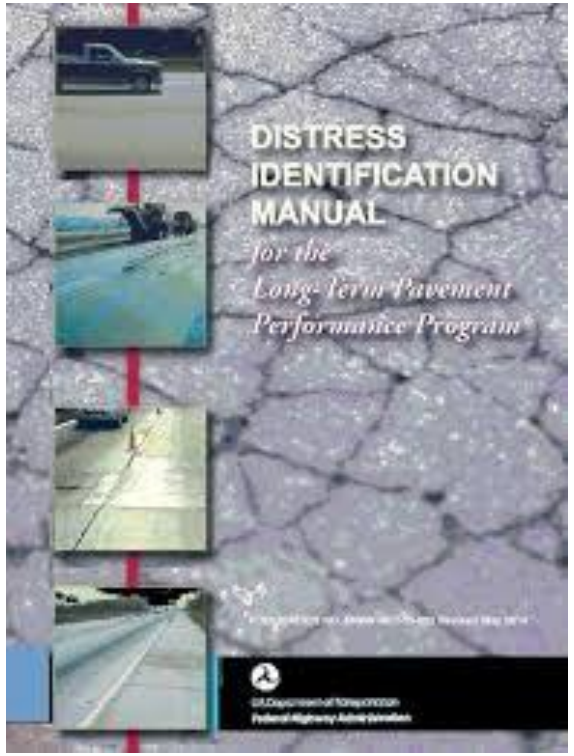
Agency Monitoring

Monitoring	Minimum Frequency	Process
Manual Distress Survey	1 / Year	LTPP Manual Distress Survey LTPP Manual Distress Survey (definitions, process, forms) File Format (will provide)
Annual Site Survey	1 / Year	Form (see appendix A)
Falling Weight Deflectometer (FWD)	Pre-Testing only optional post testing 1 / Year	Outer Wheel Path minimum testing and optional mid-lane testing at 100' spacing (25-100-200-300-400-500) per 528' test section. Can do more points or stationing. Test Setup – (use LTPP flexible setup – no load histories required) - LTPP Manual for FWD Testing File Format – Access file format

Agency Monitoring

Monitoring	Minimum Frequency	Process
Pavement Texture (Locked Wheel)	1 / Year	LTPP Friction Test Background Rib tire is preferred along with smooth tire testing per testing standard. File Format – Share output from agencies devise. Contractor will pull into database form needed.
Digital Inspection Vehicle (Ride, Rutting, Video, ….)	1 / Year	Collection with the calibrated statewide pavement management van. Could include a number of manufactures. Database contains ride, rutting, macro texture, … Spreadsheet Format – Provided by MnDOT
Photographs/Video	1 / Year	Collection of a minimum of 4 photos per test section. 1 showing the start, 2 in the middle, 1 at the end. More can be taken. Pictures can be added to the Annual Site Survey or shared separately but should be renamed with Section-MonthDay-Year-# taken and shared with contractor. Example 16901-March12-2024-1 then 2,3,4,… Best to utilize a "camera" with metadata with GPS information attached to each file.

Site Condition Surveys



Detailed LTPP Distress Survey
And
Site Survey Summary

Site Survey Summary

Test Section	
Agency (State)	
Date	
Observer (s)	
Visual Documentation	Pictures / Video (circle what is done)
Report Developed	Yes / No

General Observations

	Distress	Reflected Percent	Overall Severity	Comment
Cracking	Transverse		Low – Med – High Sealed % - _____	
	Centerline		Low – Med – High Sealed % - _____	
	Wheel path		Low – Med – High Sealed % - _____	
	Other			
Pavement Marking Performance			Low – Med – High	
Treatment Retention (% roadway)				
Bleeding (% roadway)				
Comment				

Add photos below.

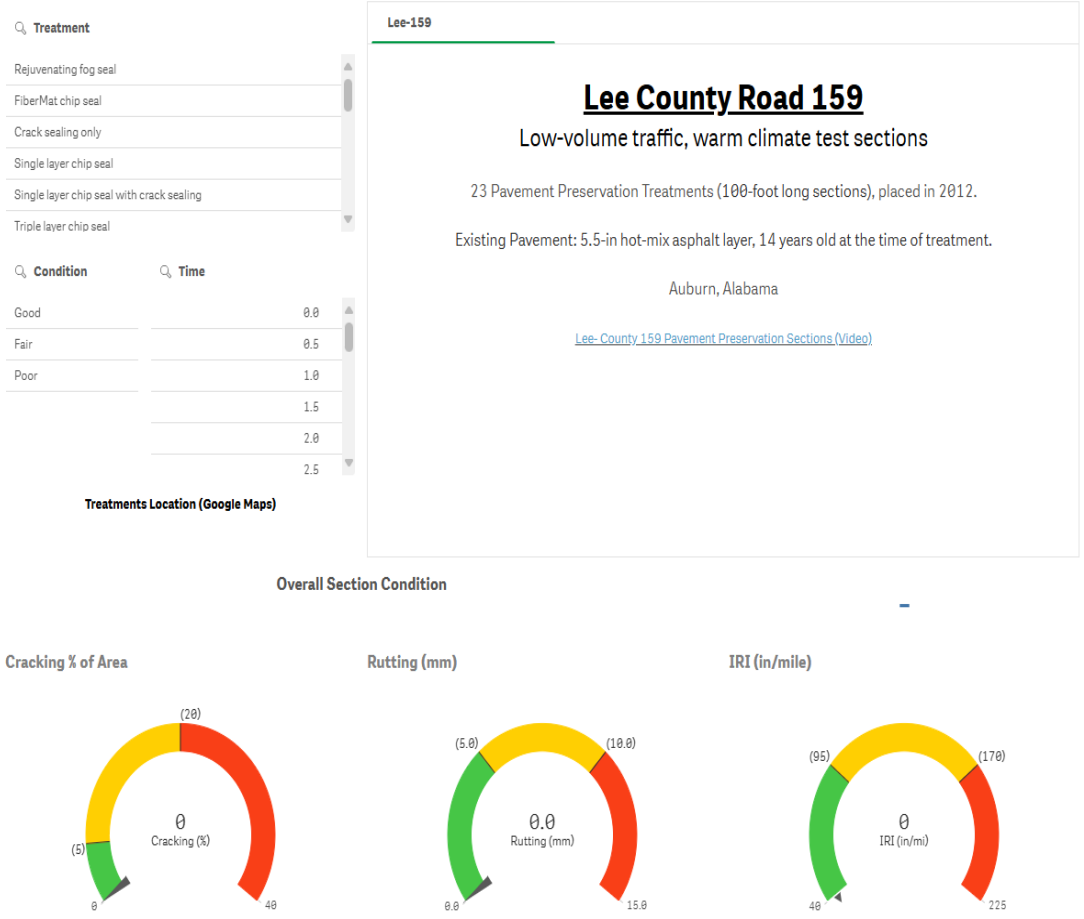
Agency Monitoring – Other types not required but will accept

Drone Videos

Monitoring	Process
Automated Distress	Technology is still be developed but output should be ortho-mosaic format that can be utilized for later processing
Light Weight Profiler	
Rut Depth (straight edge)	
Permeability	
Pavement Texture (Sand Patch)	
Pavement Texture (Circular Texture Meter)	
Pavement Texture (Dynamic Friction Tester)	
On-Board Sound Intensity (OBSI)	
Other Monitoring?	NA • Work with MnDOT to determine the tables that might be needed to accommodate other data types

MnROAD Database / InfoPave / NCAT Software

- MnDOT staff enters data into the MnROAD Database
- MnROAD have existing database views to pull the data into a form that i-engineering pulls into LTPP InfoPave system
- InfoPave then is available on the web
- Custom data outputs will also be given to NCAT for their PG online viewer
- PG3 Website will have links



Questions / Comments

Working together you can be a part of something bigger than yourself

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