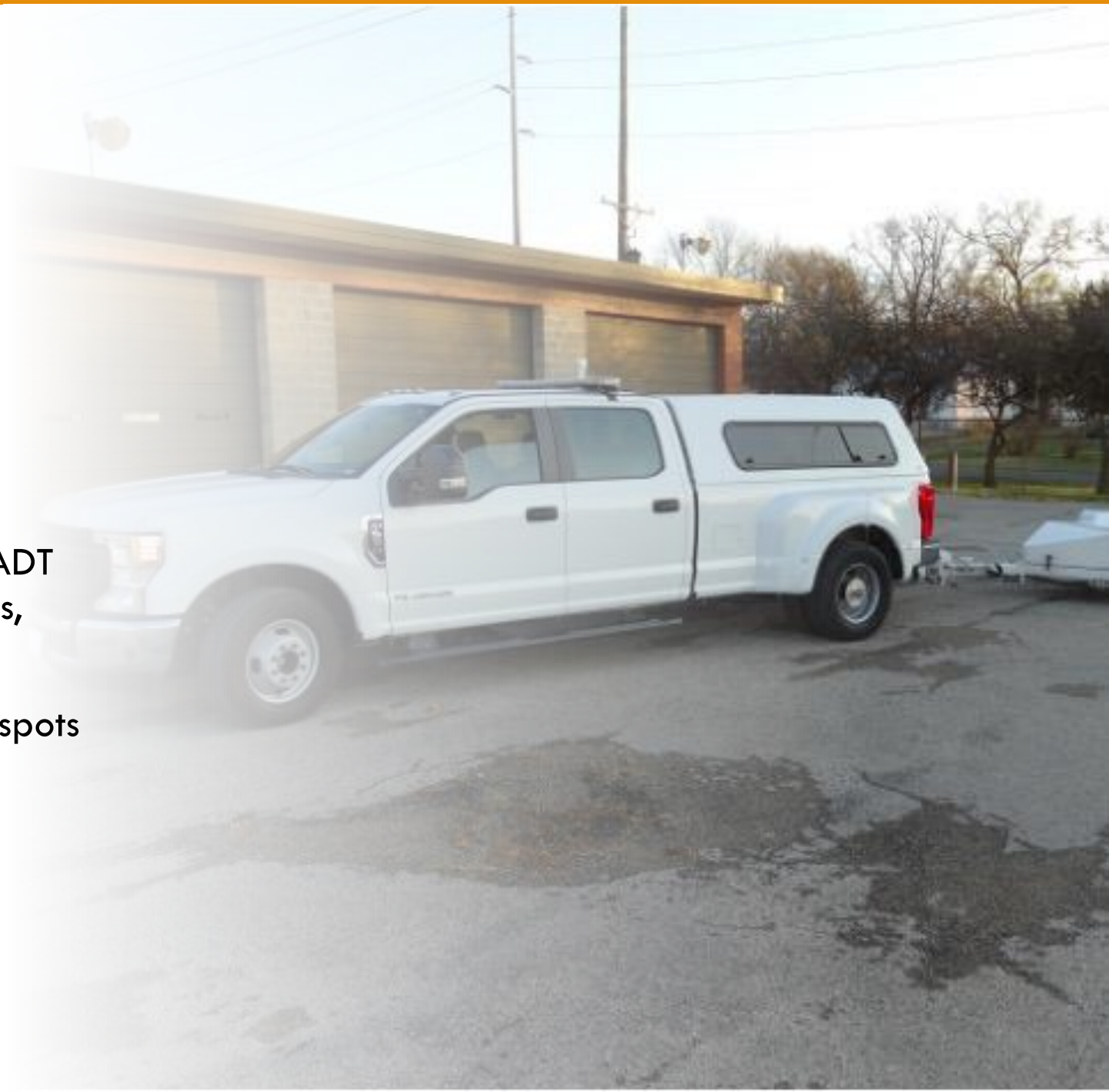
IDOT'S EFFORTS IN FRICTION AND SAFETY

PAST AND PRESENT PROGRAM

- LWST measurements used to support friction aggregate mixture policy
- Friction aggregate mixtures developed for ADT along with guidance to support steep grades, aggressive maneuvers,…
- LWST measurements collected at known hot spots
- LWST data collected for research projects

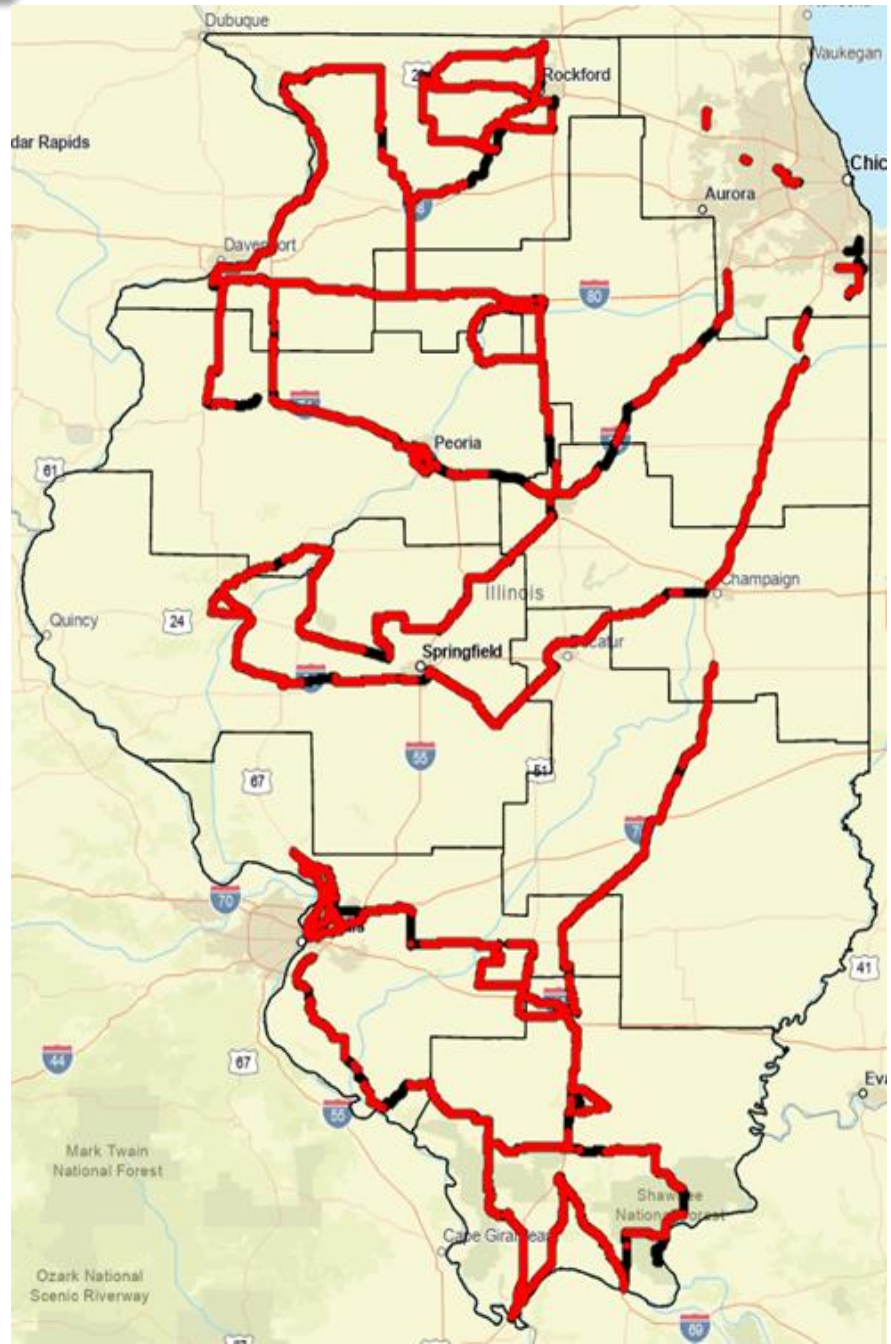


CONTINUOUS PAVEMENT FRICTION MEASUREMENTS

2020 – DEMONSTRATION COLLECTION

DATA COLLECTION:
SURVEYED 2,040 MILES
ANALYZED 1,808.6 MILES

	Lane-Miles Analyzed		
District	**Interstate**	**Primary**	**Total**
1	33.9	0	**33.9**
2	117.9	657.4	**775.3**
3	288.2	72.1	**360.3**
4	163.7	181.6	**345.3**
5	176.2	0	**176.2**
6	120.5	359.3	**479.8**
7	176.3	22.2	**198.5**
8	139.4	361.4	**500.8**
9	190.9	443.7	**634.6**
Total	**1,407.0**	**2,097.7**	**3,504.7**



FUTURE POSSIBILITIES – CFME COLLECTION

Bureau of Research and Bureau of Safety Programs and Engineering partner to collect IDOT maintained roadways – 15,000 miles a year

Data will be used to in R27-264

Future CPFM requirements will be outlined

A new friction testing program will be developed to support a Pavement Friction Management Program

PAVEMENT FRICTION MANAGEMENT PROGRAM

R27-264 is started on 9/1/2023 and will be completed on 2/28/2026.

The objective of the research project is to develop a pavement friction management program that will replace IDOT's current process.

The friction data will be analyzed along with Safety data and CRS data to determine if friction supply is less than demand.

The program will recommend treatment options with the associated cost benefit ratio.

FRICTION TOOLBOX

High friction surface treatment – Epoxy resin binder
Micro surfacing with calcined bauxite and ACBF slag
Chip seal
Diamond grooving
Diamond grinding
SMART overlay
Ultra-thin Bonded Wearing Course

ASPHALT EMULSION BASED HIGH FRICTION SURFACE TREATMENTS

Illinois submitted a research needs statement to NCHRP program

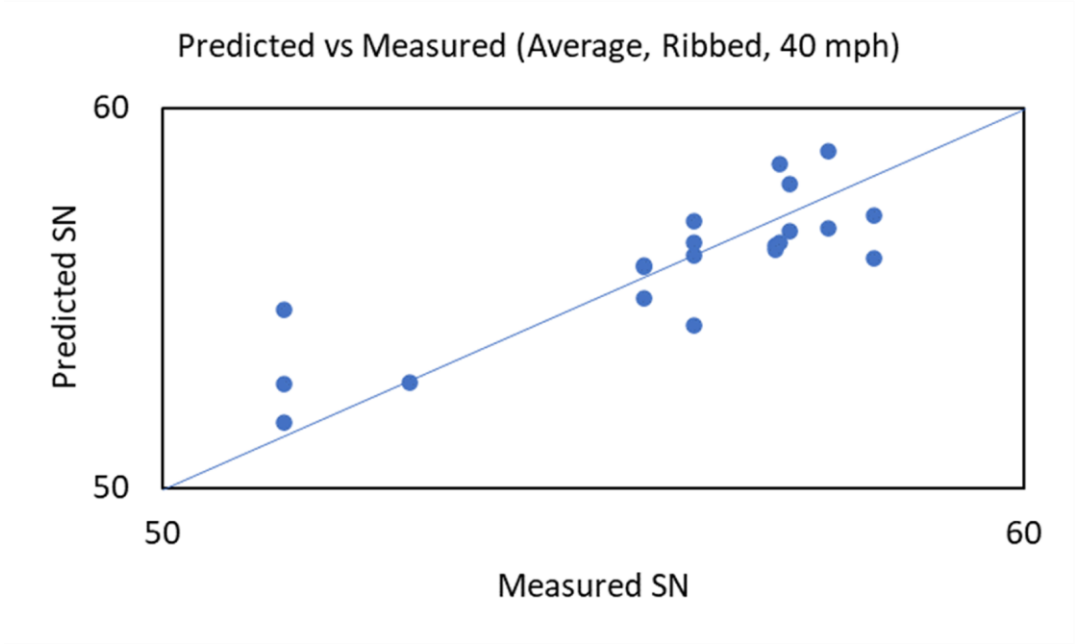
The project was selected to move forward and Kelly Senger, IDOT's Chief Chemist, was selected to chair the project

The project will investigate the possibility of enhancing some of the emulsion-based preservation treatments with high friction aggregates to see if we can expand their use in agency's friction toolboxes.

TEXTURE AND FRICTION RELATIONSHIP

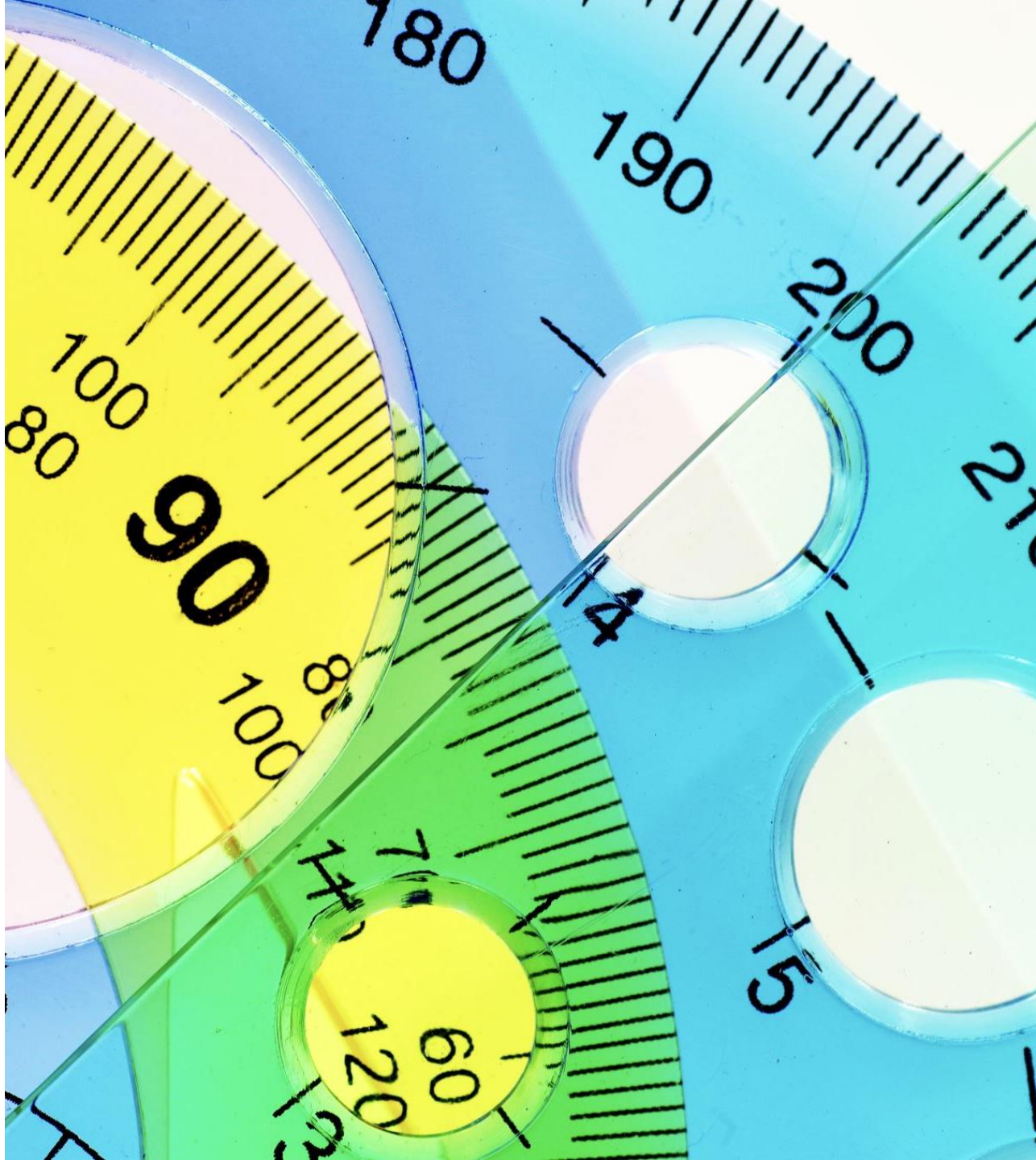
High Resolution Texture Measurements

Wavelets Analysis to Predict Friction Response



NEXT STEPS

- Continue refining the model
  - Seasonal variation
  - Temperature effects on measurements
  - Attempt to get better location data for LWST measurements and get larger texture scans to more precise tie the two measurements together



- “We are continually faced by great opportunities brilliantly disguised as insoluble problems.”
- —Lee Iacocca, American engineer and automobile executive

ILLINOIS CERTIFICATION AND RESEARCH TRACK

Illinois Department of Transportation

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