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ACADEMIES

Sciences  
Engineering  
Medicine

**TRB** TRANSPORTATION RESEARCH BOARD

# TRB Webinar: Performance of Concrete Overlays on Asphalt Pavement

*April 4, 2023*

*3:00 – 4:30 PM*



NOVEMBER 2022 UPDATE

# PDH Certification Information

1.5 Professional Development Hours (PDH) – see follow-up email

You must attend the entire webinar.

Questions? Contact Andie Pitchford at [TRBwebinar@nas.edu](mailto:TRBwebinar@nas.edu)

*The Transportation Research Board has met the standards and requirements of the Registered Continuing Education Program. Credit earned on completion of this program will be reported to RCEP at RCEP.net. A certificate of completion will be issued to each participant. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the RCEP.*

ENGINEERING



REGISTERED CONTINUING EDUCATION PROGRAM

# Purpose Statement

This webinar will provide agencies with a national perspective on the design, construction, maintenance, and performance of bonded concrete overlays on asphalt pavements. Presenters will provide viewpoints on how recent research may be implemented by roadway authorities, enhance ongoing technology transfer related to concrete overlays, and the potential impacts on acceptance of concrete overlays.

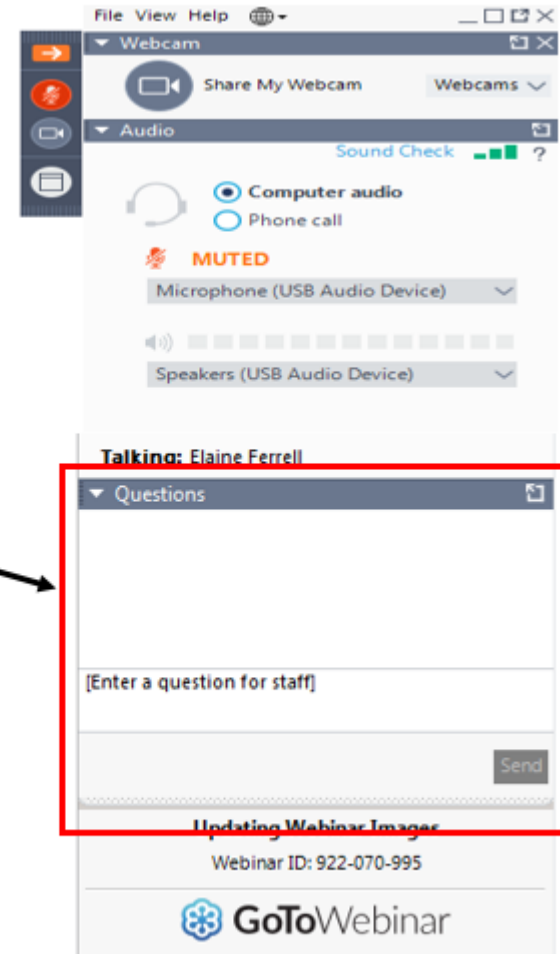
## Learning Objectives

At the end of this webinar, you will be able to:

- (1) Identify the design procedures, construction methods, maintenance, and historical performance of bonded concrete overlays on asphalt pavements throughout the U.S.
- (2) Apply research in NCHRP Research Report 1007 to enhance technology transfer related to concrete overlays
- (3) Explain the potential impacts the report might have on acceptance of concrete overlays  
    ' " " as implementation

# Questions and Answers

- Please type your questions into your webinar control panel
- We will read your questions out loud, and answer as many as time allows



# Today's presenters



**John Donahue**

*Missouri Department  
of Transportation*  
[john.donahue@modot.mo.gov](mailto:john.donahue@modot.mo.gov)



**Dan King**

*Concrete Pavement Technology  
Center at Iowa State University*  
[deking@iastate.edu](mailto:deking@iastate.edu)

**NATIONAL  
ACADEMIES** Sciences  
Engineering  
Medicine



**Tom Burnham**

*Minnesota Department  
of Transportation*  
[tom.burnham@state.mn.us](mailto:tom.burnham@state.mn.us)



**Dr. Linda Pierce**  
NCE

[lpierce@ncenet.com](mailto:lpierce@ncenet.com)





# Transportation Research Board Webinar

## Performance of Concrete Overlays on Asphalt Pavement: Overview of the National Performance

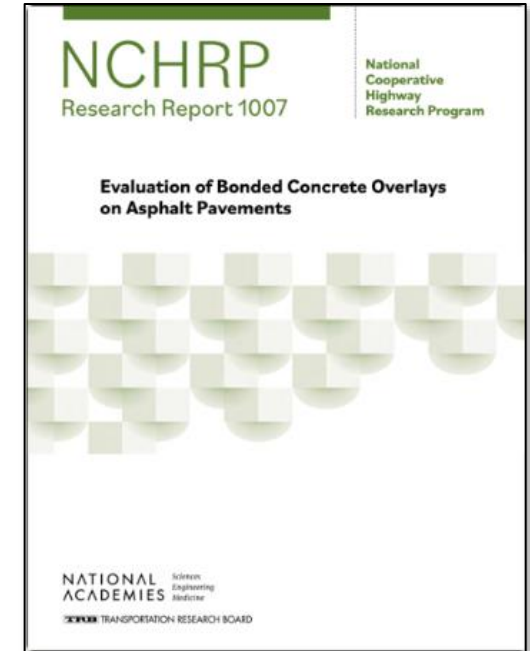
Linda Pierce, PhD, PE  
NCE

April 4, 2023

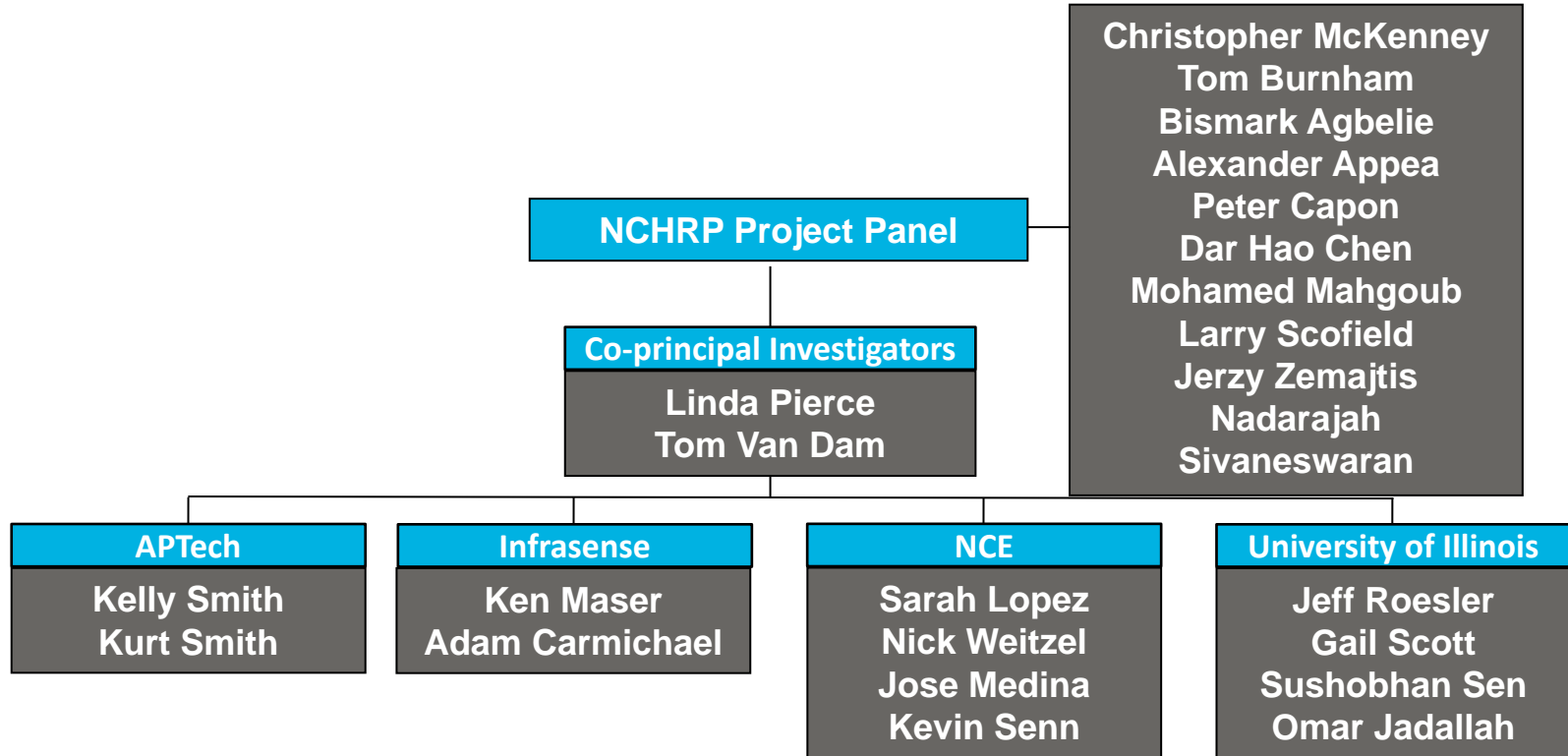


# Background

- BCOAs successfully used since the 1990s
  - Mostly in the Midwest
  - Design and performance not well documented
- National Cooperative Highway Research Program
  - Project 1-61 completed 2020
  - Objective: Assess in-service performance
    - Site investigations
    - Factors impacting performance
    - Further facilitate implementation



# Acknowledgements





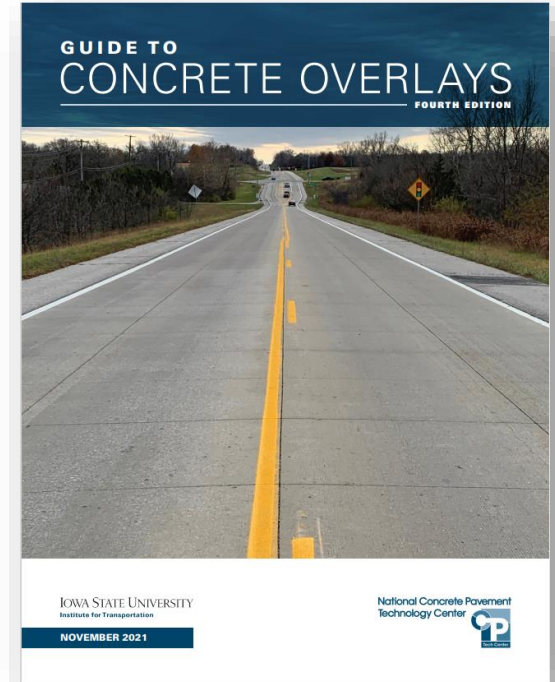
# Why BCOA?

- Address structurally sound asphalt pavement:
  - Rutting and shoving
  - Intersections and mainline truck routes
- Rapid and straightforward treatment



# BCOA Details

- Conventional concrete with or without fibers
- Concrete overlay
  - Thickness: 4 in. to 7 in.
  - Closely spaced joints
- Existing asphalt
  - Fair to good condition
  - At least 3 in. after milling



# Project Selection

- Existing condition
  - Pavement structurally sound – only needs spot repairs
  - Moderate fatigue cracking – milling/spot repairs
  - Coring and material testing
    - Adequate base support
    - No asphalt layer stripping
- Vertical constraints (e.g., bridges, curb and gutter)

# Pre-overlay Repairs

- Milling
  - Rutting  $\geq 2$  in.
  - Shoving
- Crack filling
  - Crack width  $\geq$  concrete overlay maximum coarse aggregate size
- Pothole repair
  - Low to medium severity fill integrally with concrete overlay
  - High severity make full-depth repair, full lane width

# Construction



Milling



Concrete Placement



Levelling



Texturing



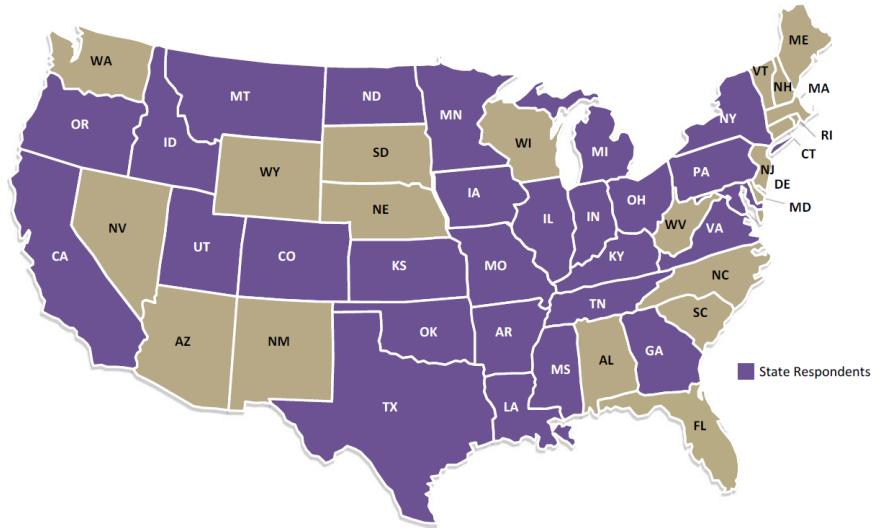
Curing



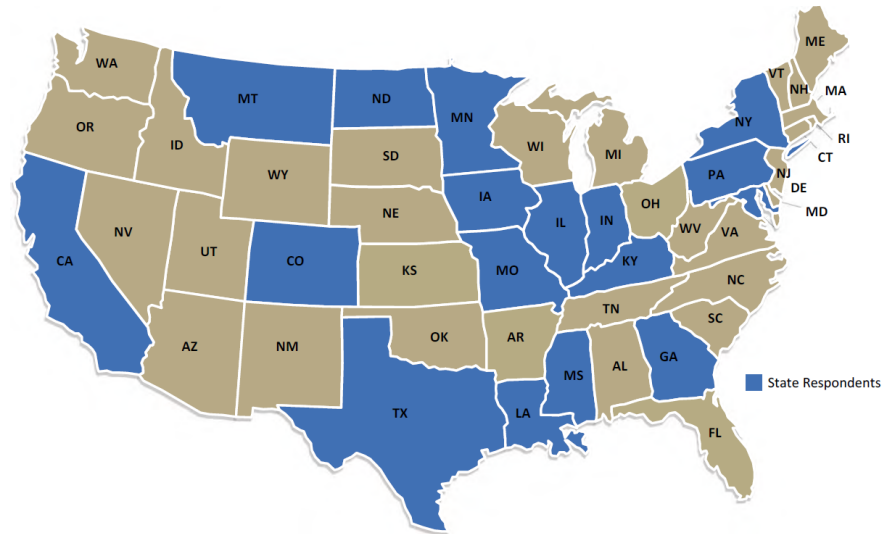
Saw cutting

# State of the Practice

Agencies (28) with BCOA experience



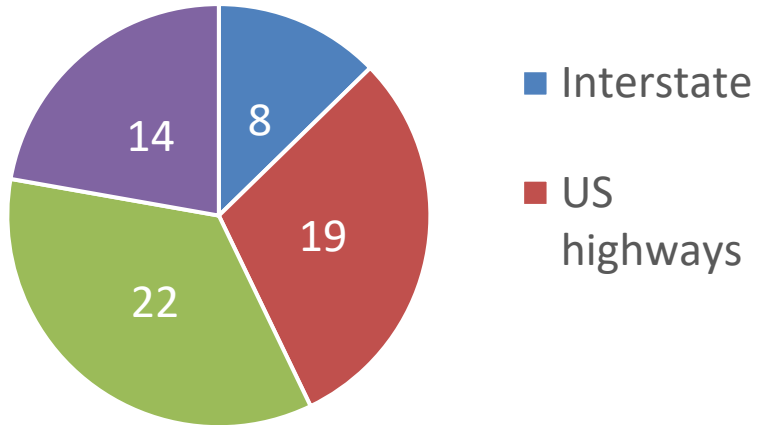
Agencies (18) considering BCOAs (2018-2020)



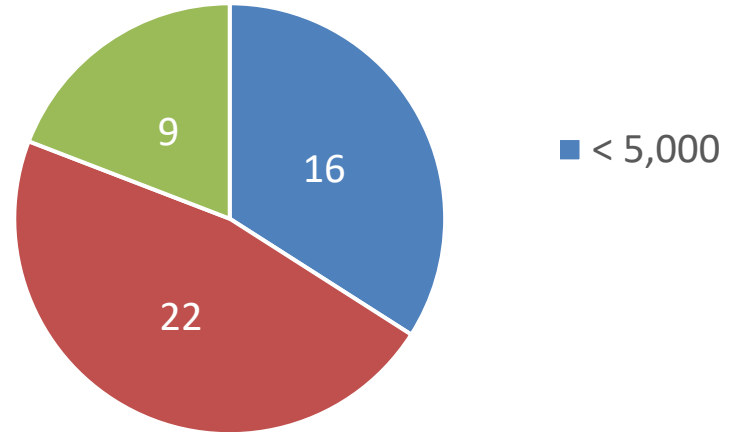
## State of the Practices (continued...)

Application (27 agencies)

Functional Classification



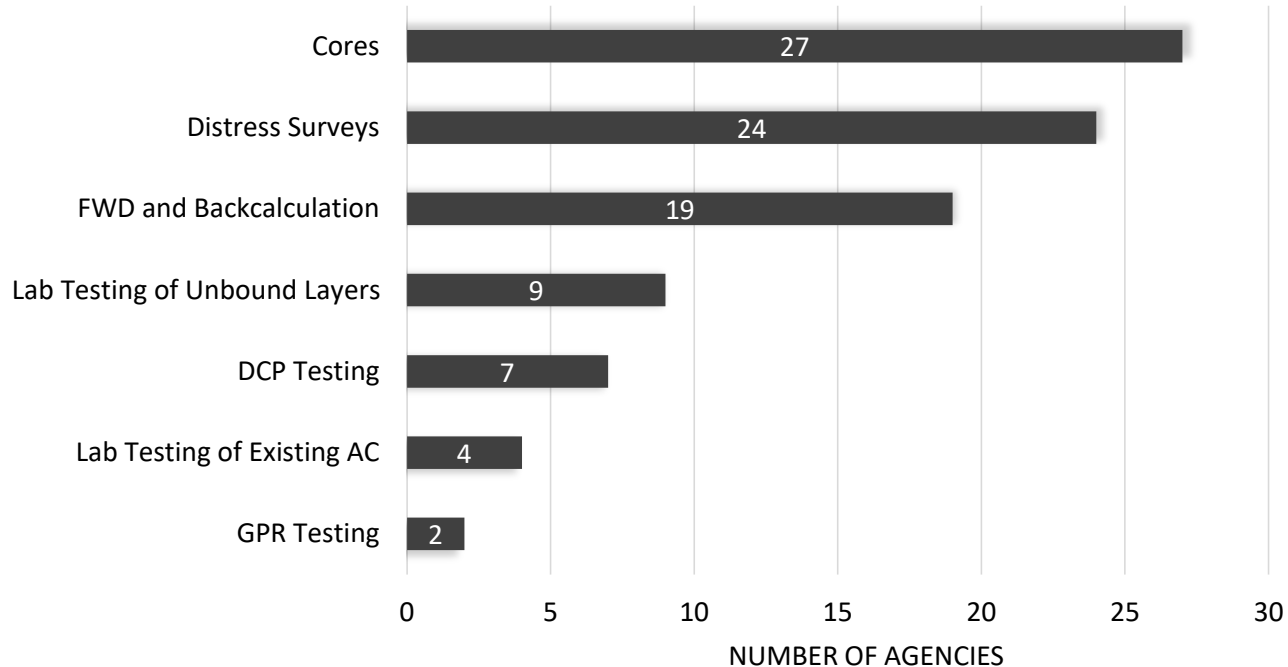
Average Annual Daily Traffic





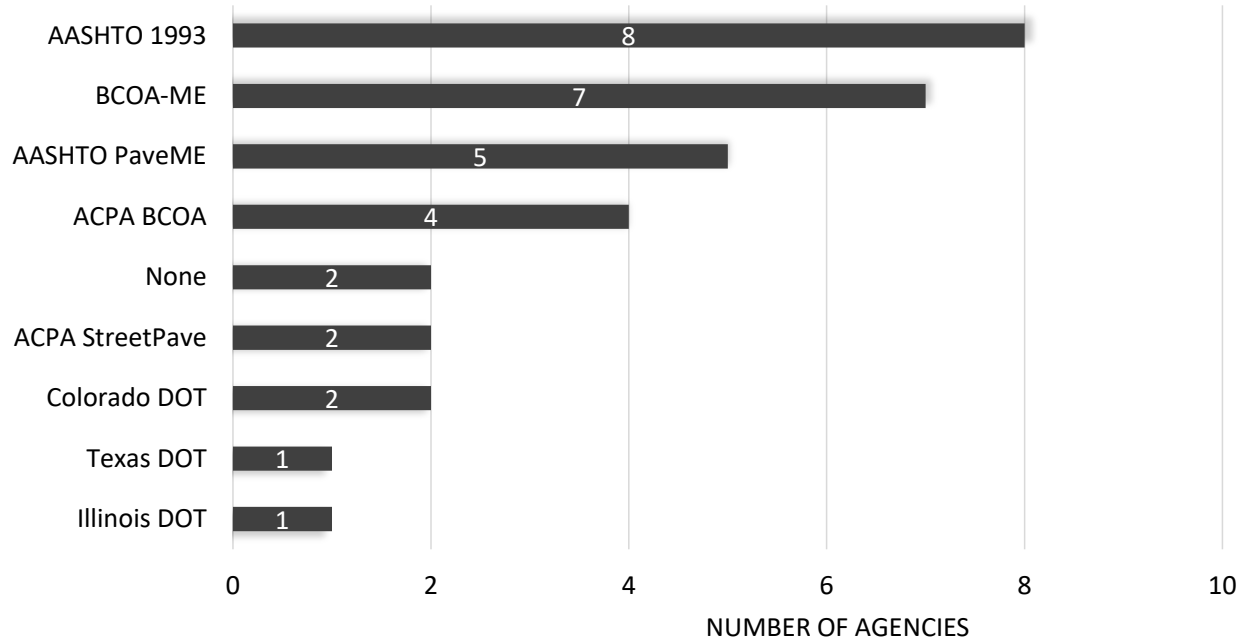
## State of the Practices (continued...)

### Site investigations (27 agencies)



## State of the Practices (continued...)

### Thickness design procedures (26 agencies)



## State of the Practices (continued...)

### Most common slab dimensions and thickness (24 agencies)

- 4-in. slab + 4 ft x 4 ft panel size  
(13 agencies)
- 5-in. slab + 6 ft x 6 ft panel size  
(10 agencies)
- 6-in. slab + 6 ft x 6 ft panel size  
(17 agencies)



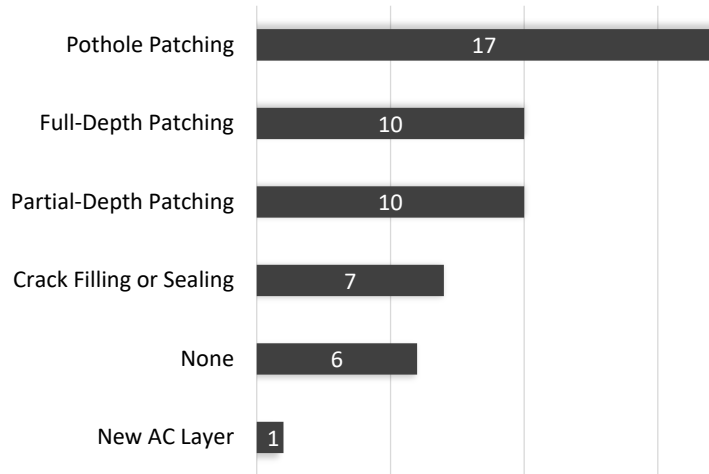
## State of the Practices (continued...)

### Materials (27 agencies)

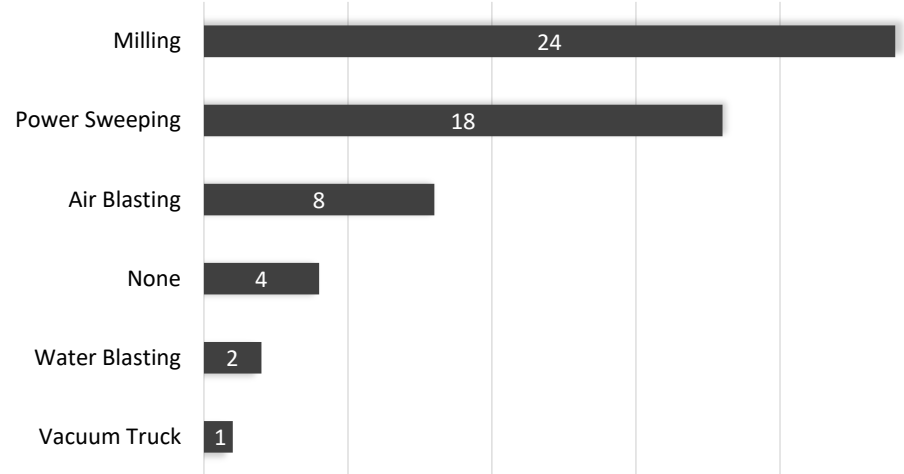
| Mixture  | Yes | No |
|--|-----|----|
| Specialized paving mixture                       | 13  | 14 |
| Use of fibers                                    | 11  | 2  |
| Early-opening-to-traffic concrete mixture        | 8   | 5  |
| BCOA-specific aggregate requirement              | 5   | 7  |
| BCOA-specific cementitious materials requirement | 2   | 9  |
| BCOA-specific chemical admixtures                | 1   | 10 |

## State of the Practices (continued...)

### Pre-overlay repairs (27 agencies)



### Surface preparation (26 agencies)



## State of the Practices (continued...)

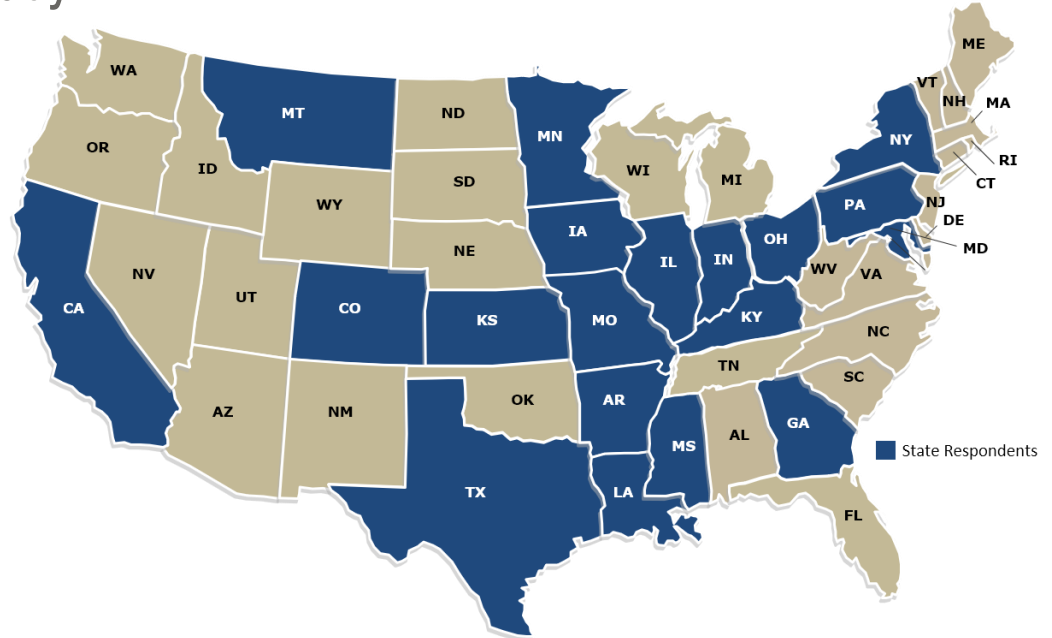
### Maintenance activities (19 agencies)

| Distress Type         | Crack Seal | Joint Reseal | Spall Repair | Partial Slab Replacement | Full Slab Replacement | Diamond Grind |
|-----------------------|------------|--------------|--------------|--------------------------|-----------------------|---------------|
| Corner breaks         | 5          | 1            | 1            | 9                        | 7                     | 1             |
| Transverse cracks     | 9          | 1            | 1            | 3                        | 7                     | 0             |
| Longitudinal cracks   | 9          | 0            | 1            | 2                        | 9                     | 0             |
| Transverse spalling   | 2          | 5            | 12           | 2                        | 3                     | 0             |
| Longitudinal spalling | 2          | 4            | 10           | 1                        | 4                     | 0             |
| Faulting              | 1          | 2            | 0            | 3                        | 4                     | 11            |
| Debonding             | 0          | 0            | 0            | 2                        | 12                    | 0             |
| Seal damage           | 2          | 6            | 0            | 0                        | 0                     | 0             |

# State of the Practices (continued...)

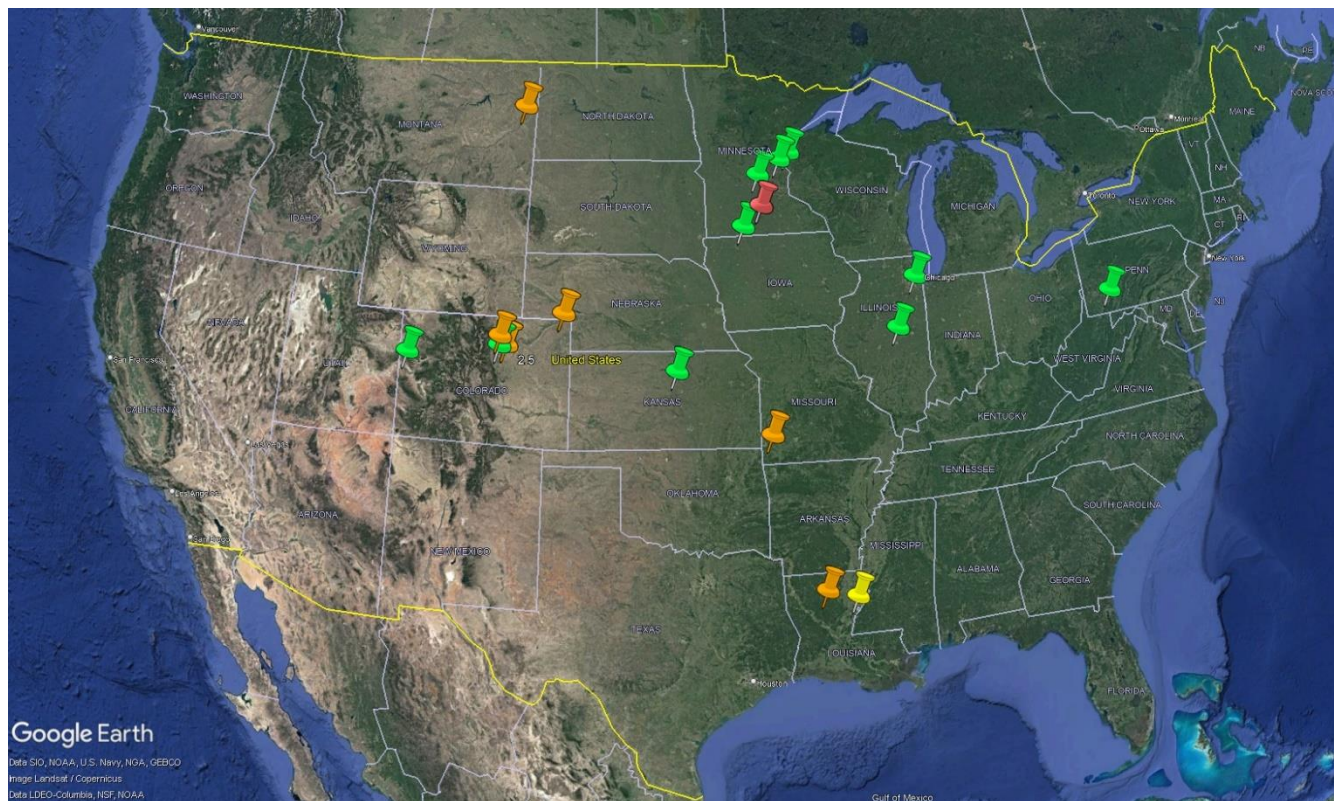
## Site selection

- Willingness to participate in study
- “Typical” performance
- Mainline: length  $\geq 0.5$  mi
  - Tangent sections
- In-service age  $\geq 5$  years
- Received info on:
  - 52 BCOA projects
  - 14 agencies





# Selected Projects



## Project Summary Details

- 4 ft x 4 ft slab sizes
  - Age: 7-21 years
  - Design slab thickness: 4.0 in.
  - Trucks/day: 388-2,277
- 6 ft x 6 ft slab sizes
  - Age: 7-19 years
  - Design slab thickness: 5.0-6.0 in.
  - Trucks/day: 50-2,717
- 12 ft x 12 ft slab sizes
  - Age: 21-26 years
  - Design slab thickness: 5.5-6.0 in.
  - Trucks/day: 13-293

| State | Route   | Age (yrs) | Design (in.) | Slab Size (ft x ft) | Trucks/day |
|-------|---------|-----------|--------------|---------------------|------------|
| MT    | SR-16   | 18        | 4            | 4x4                 | 388        |
| LA    | US-425  | 16        | 4            | 4x4                 | 1,106      |
| LA    | US-167  | 21        | 4            | 4x4                 | 1,315      |
| MO    | US-60   | 20        | 4            | 4x4                 | 2,145      |
| IL    | SR-53   | 7         | 4            | 4x4                 | 2,277      |
| IL    | CH-27   | 16        | 5.3          | 6x6                 | 50         |
| MN    | CSAH-7  | 10        | 5            | 6x6                 | 213        |
| MN    | CSAH-22 | 8         | 6            | 6x6                 | 594        |
| PA    | SR-119  | 9         | 6            | 6x6                 | 698        |
| IA    | US-71   | 7         | 6            | 6x6                 | 940        |
| CO    | SH-121A | 19        | 6            | 6x6                 | 1,058      |
| CO    | SH-121B | 8         | 6            | 6x6                 | 1,444      |
| KS    | I-70    | 8         | 6            | 6x6                 | 1,782      |
| CO    | I-70    | 7         | 6            | 6x6                 | 1,845      |
| MN    | I-35    | 10        | 6            | 6x6                 | 1,985      |
| CO    | SH-83B  | 14        | 6            | 6x6                 | 2,461      |
| CO    | SH-83A  | 19        | 5            | 6x6                 | 2,717      |
| MN    | TH-30   | 26        | 6            | 12x12               | 13         |
| CO    | US-6    | 21        | 5.5          | 12x12               | 293        |

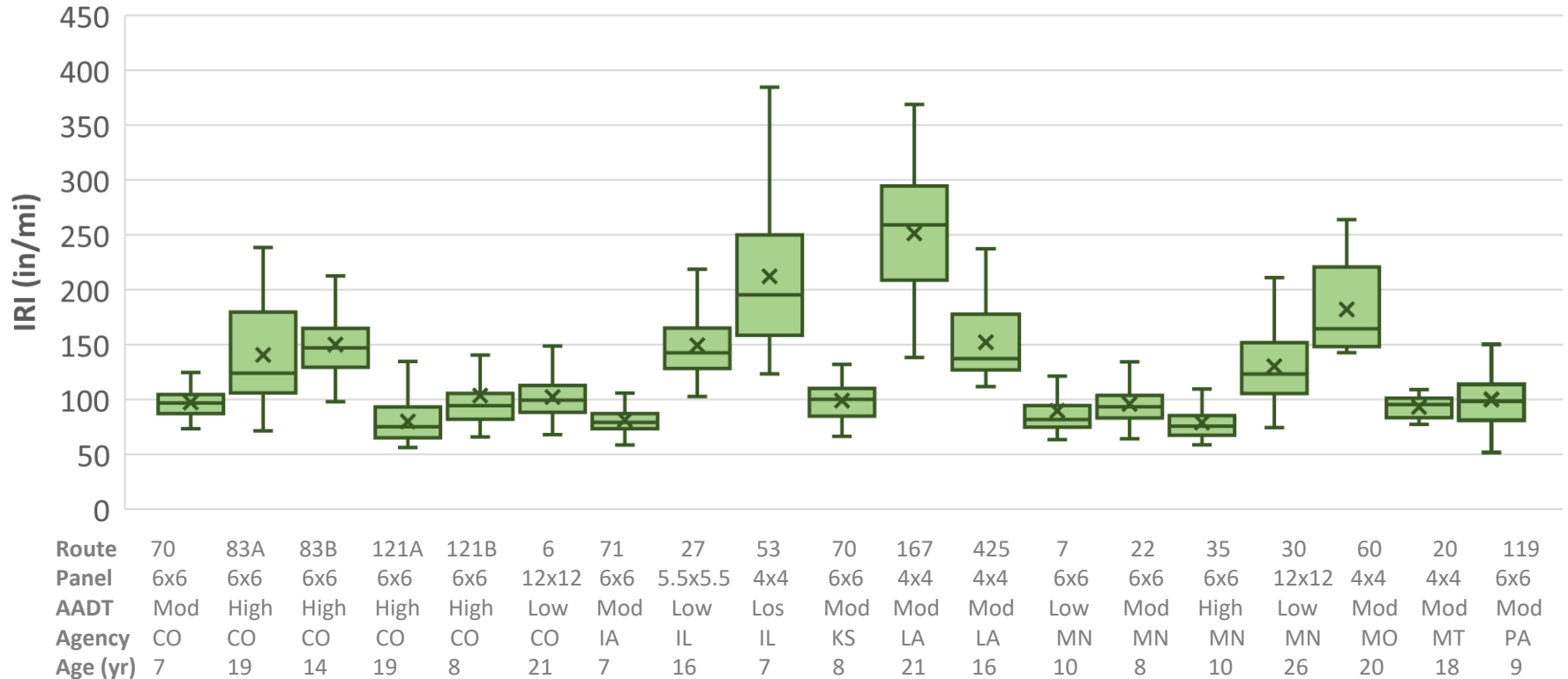
# Site Evaluations

- Conducted on 20 projects
  - 1 project removed from study due to traffic control restrictions
- Automated condition survey
  - IRI
  - Faulting
  - Cracking (corner breaks, transverse, and longitudinal)
- Ground penetrating radar
  - Layer thickness

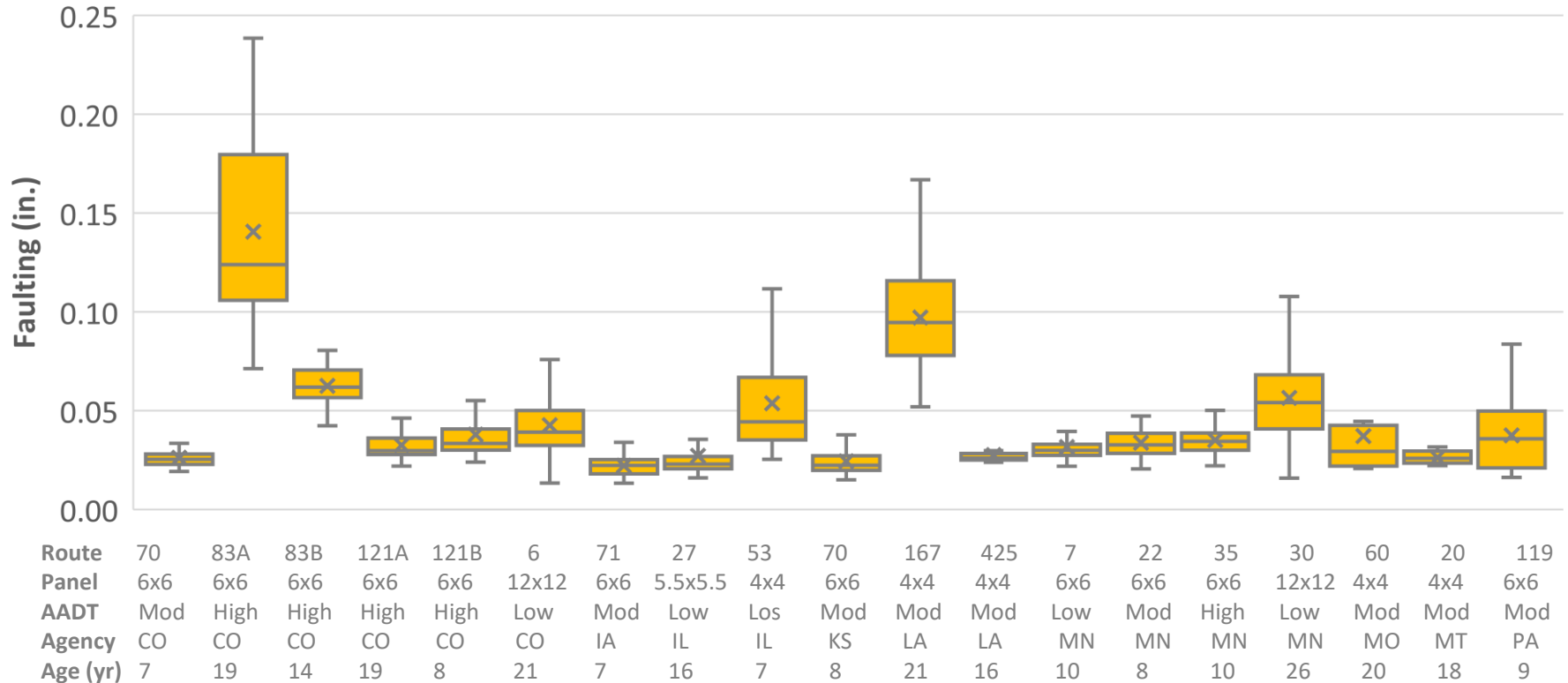


Low =  $\leq 5,000$  AADT  
 Mod =  $5,000 - 20,000$  AADT  
 High =  $\geq 20,000$  AADT

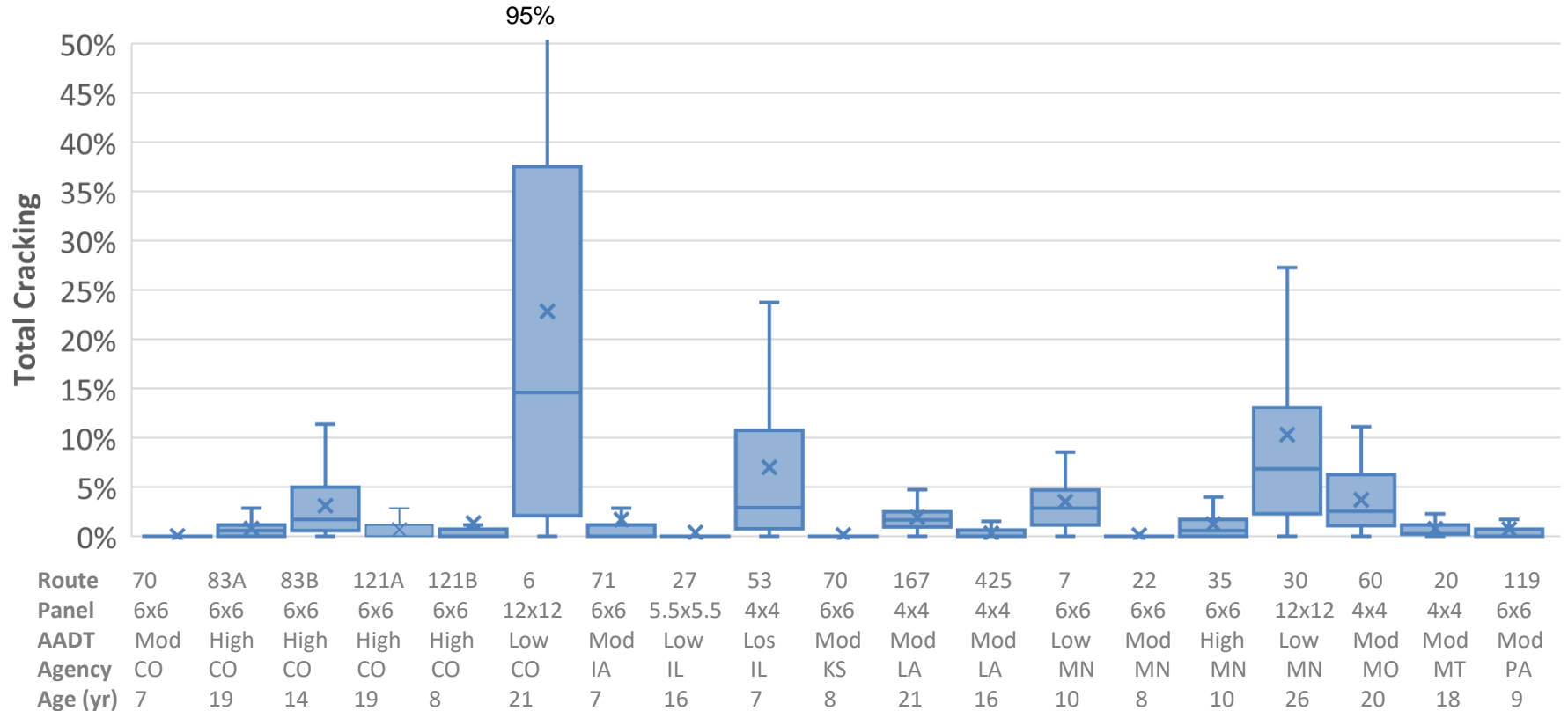
# Overall Performance – IRI



# Overall Performance – Faulting (automated)



# Overall Performance – Total Cracking (automated)



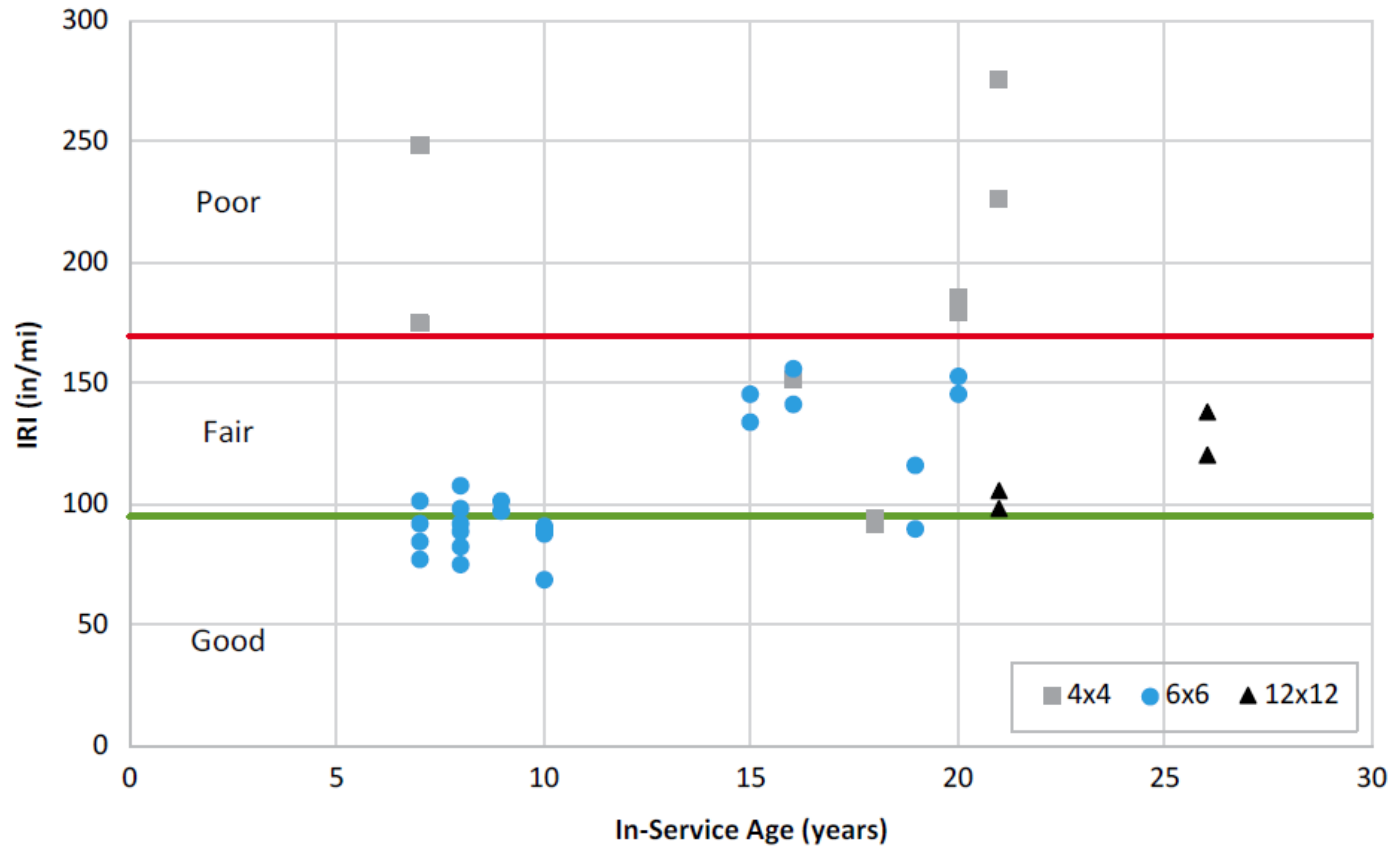
# Performance Assessment

- Based on the National Highway Performance Program
- 0.10-mi segments

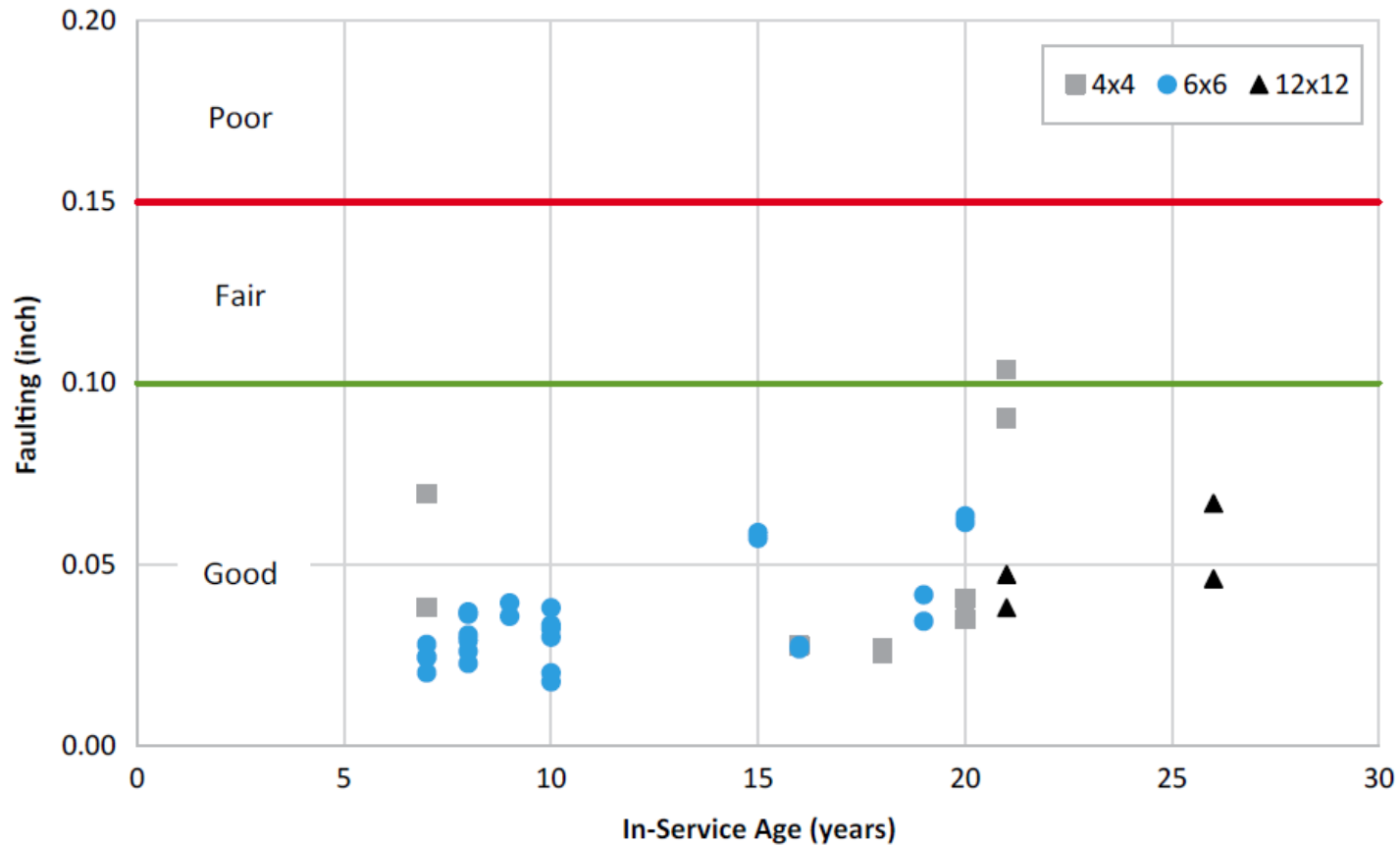
| Overall Condition | Good        | Fair        | Poor        |
|-------------------|-------------|-------------|-------------|
| IRI (in/mi)       | $\leq 95$   | 95 – 170    | $\geq 170$  |
| Cracking (% area) | $\leq 5$    | 5 – 15      | $\geq 15$   |
| Faulting (inch)   | $\leq 0.10$ | 0.10 – 0.15 | $\geq 0.15$ |



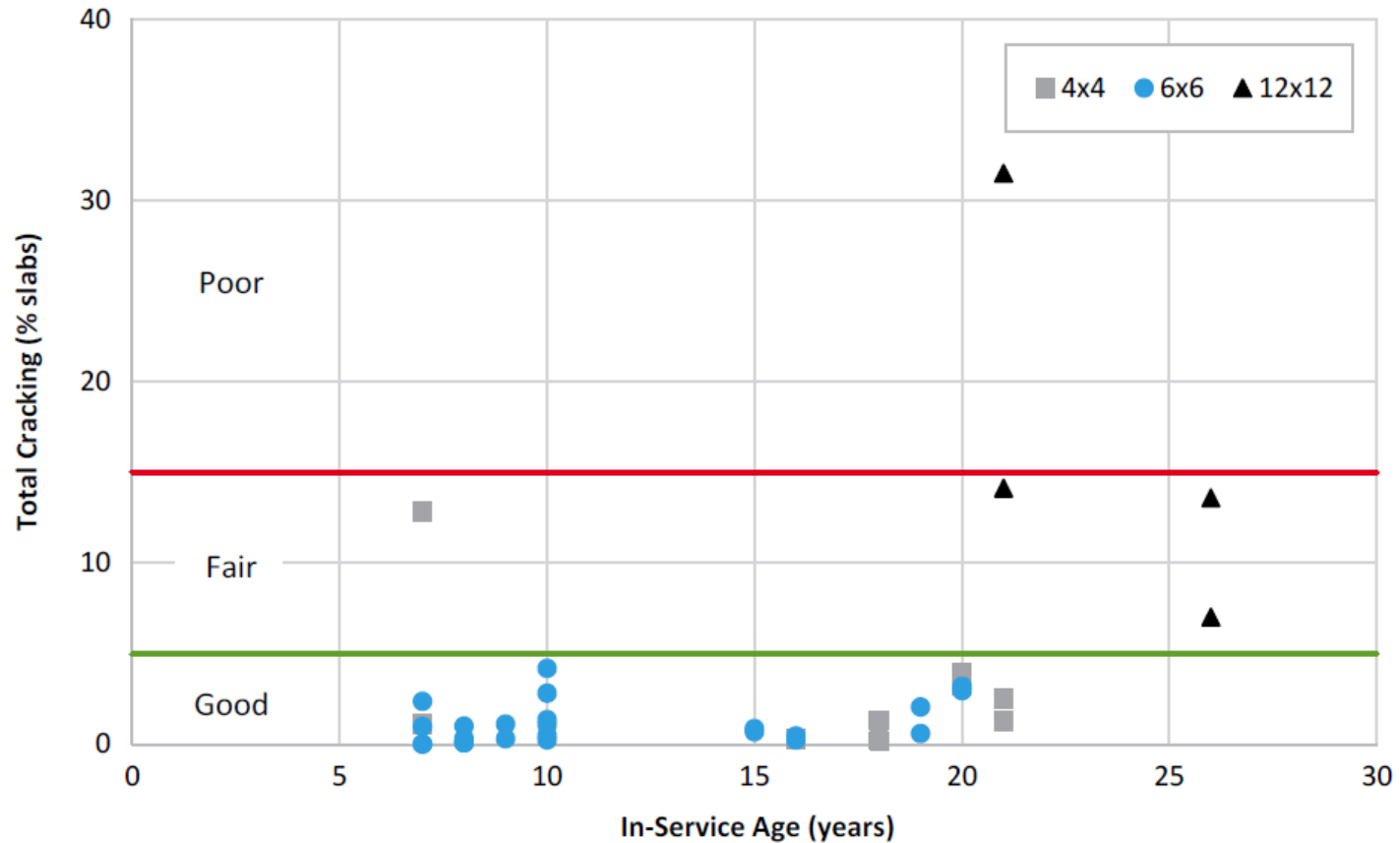
# IRI – Slab Size



# Faulting – Slab Size

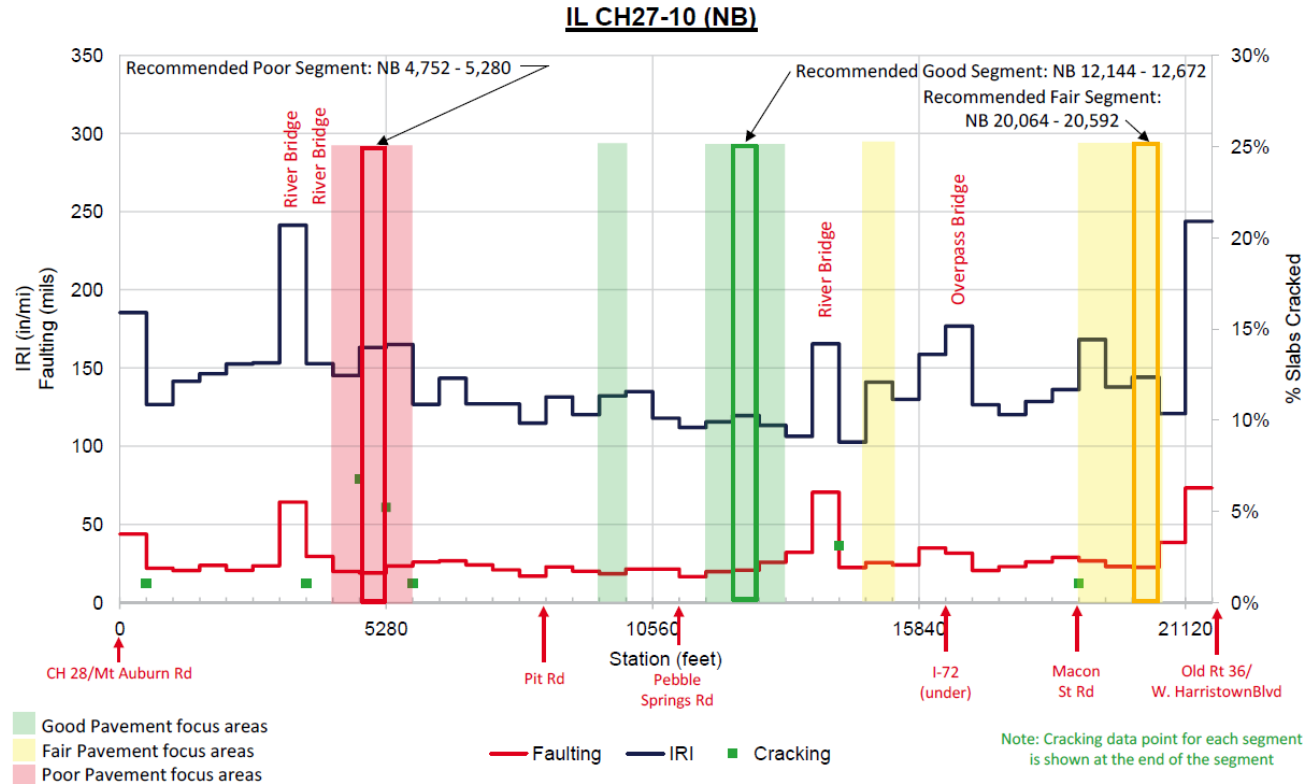


# Total Cracking – Slab Size



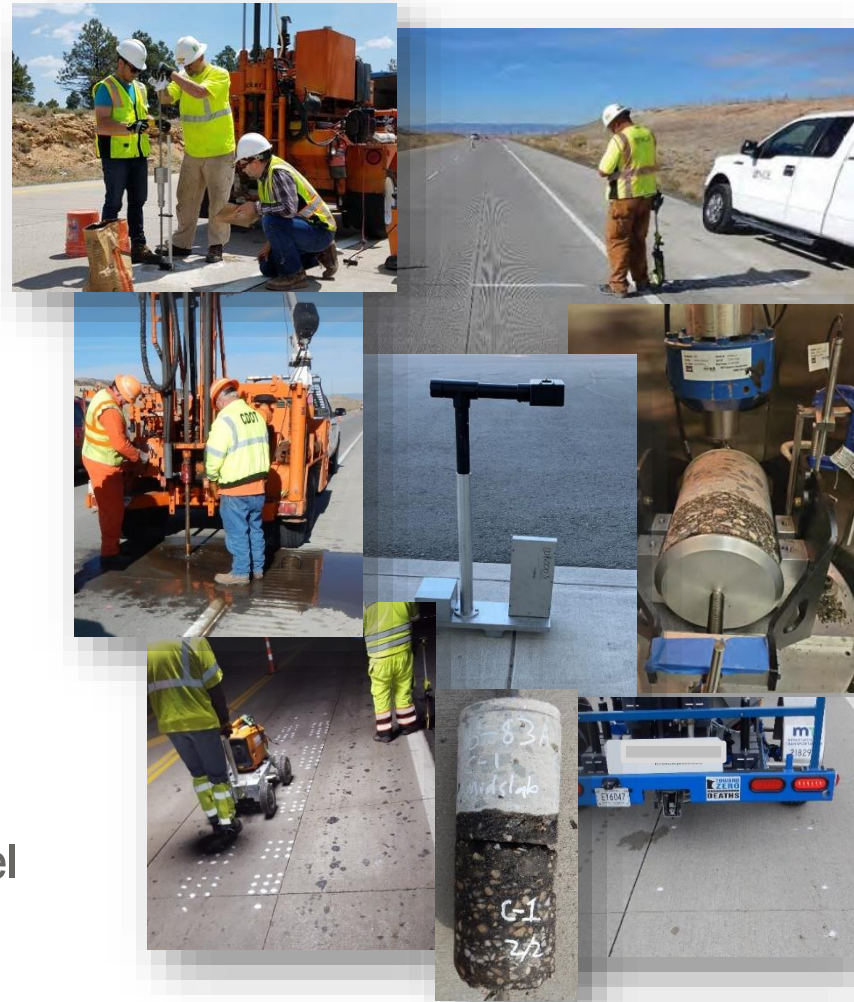
# Detailed Assessment

- Using automated results:
  - Identify 0.10-mi segments of “good, fair, and poor” condition for detailed assessment

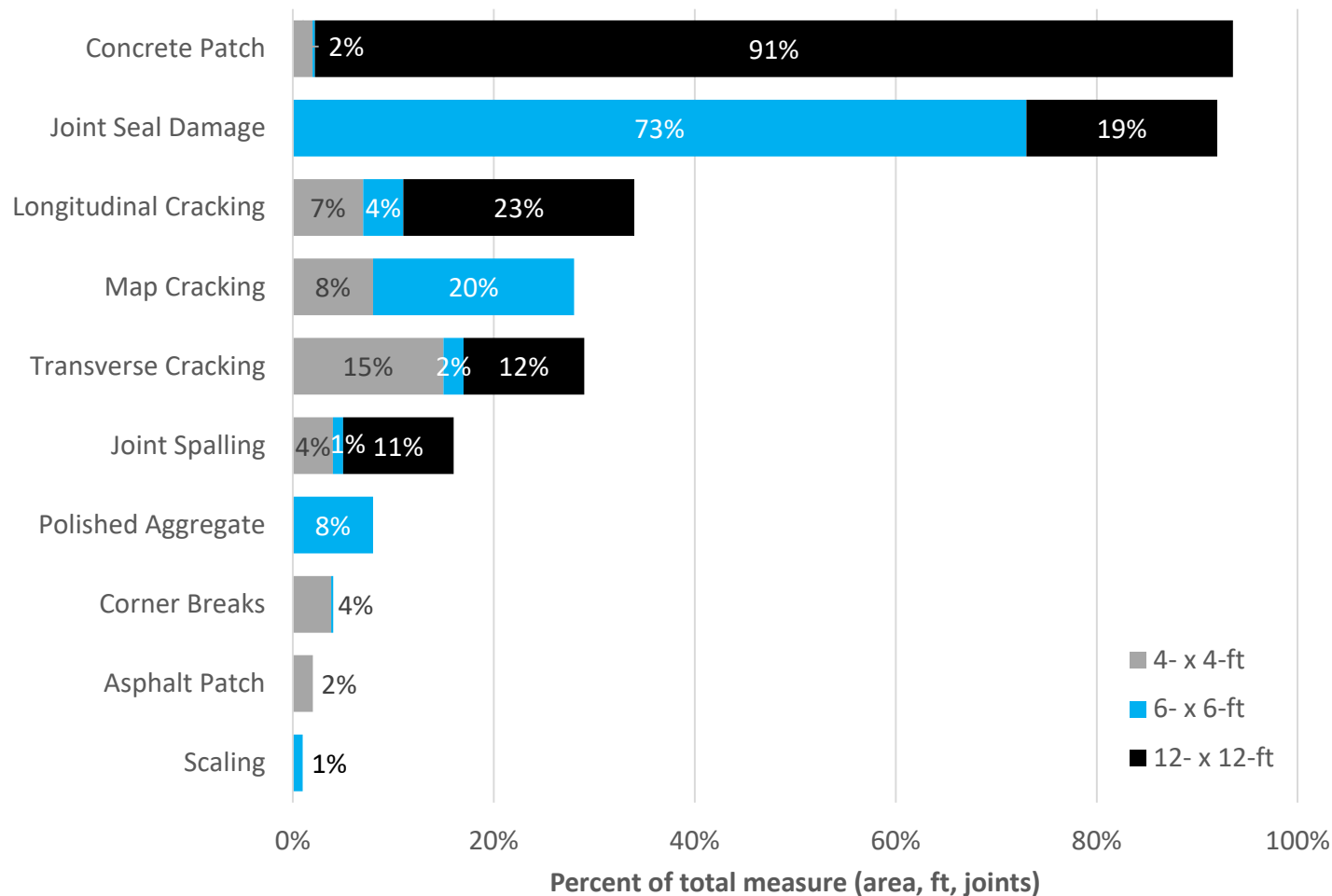


## Detailed Assessment (continued)

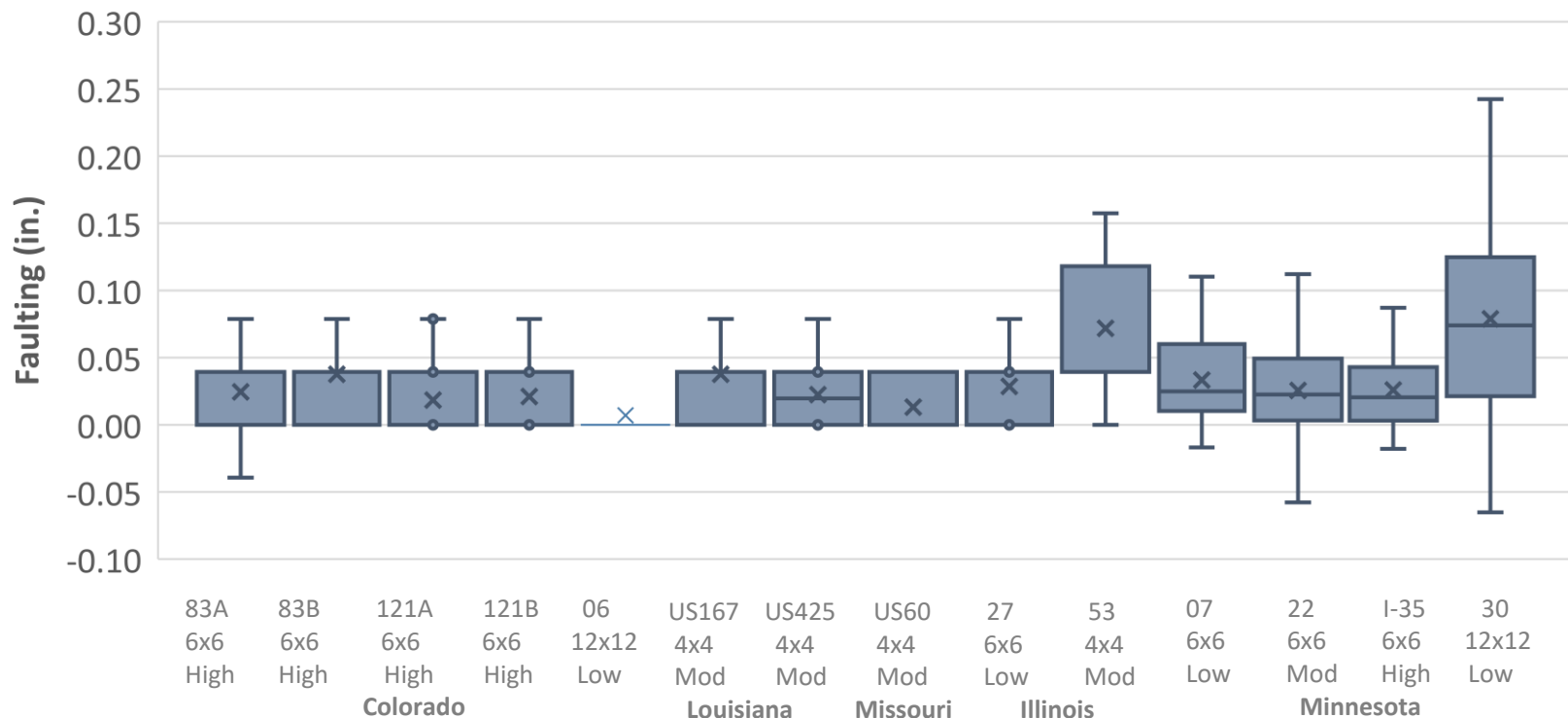
- LTPP distress survey
- Faultmeter
- Ultrasonic tomography
- Falling weight deflectometer
- Coring and dynamic cone penetrometer
- Laboratory testing
  - Soil characterization
  - Concrete strength and CTE
  - Asphalt complex modulus and Hamburg wheel
  - Concrete-asphalt bond shear



# Visual Distress Survey



# Faultmeter





## Study Findings

- Successful and cost-competitive rehabilitation option
- Simple pre-overlay preparation
- Relatively easy to construct
- Expediate construction due to placement of thinner concrete layer

## Study Findings (continued...)

- Nearly 90% of the tested segments had IRI < 170 in/mi
- Faulting (detailed survey)
  - Range: 0 to 0.30 in. (all but 3 projects < 0.16 in.)
  - Average: 0.04 in.
  - Std: 0.05 in.
- Less than 5% of slabs had any type of cracking
- 6 ft x 6 ft slabs performed better than 4 ft x 4 ft and 12 ft x 12 ft slabs

Many of the evaluated projects evaluated are in fair or better condition after more than 15 years of service

# Questions?

Linda Pierce

NCE

[lpierce@ncenet.com](mailto:lpierce@ncenet.com)

(505) 603-7993

# NCHRP Research Report 1007 & Concrete Overlay Technology Transfer Initiatives

Dan King, P.E.  
[deking@iastate.edu](mailto:deking@iastate.edu)

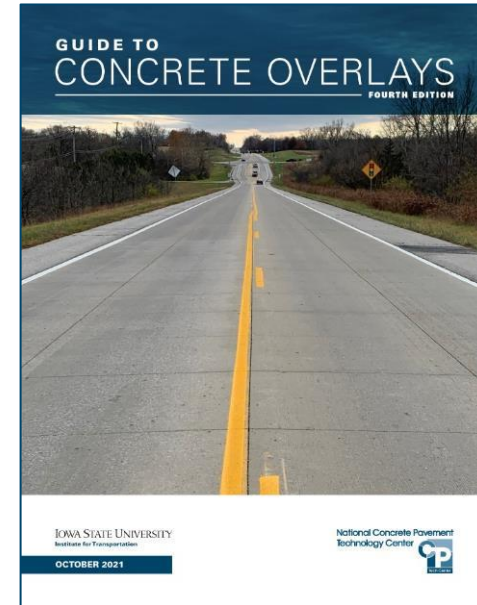
**IOWA STATE UNIVERSITY**  
**Institute for Transportation**

**National Concrete Pavement  
Technology Center**



# Concrete Overlay Technology Transfer

- A wide variety of guidance is available to assist and educate agencies, engineers and contractors
  - CP Tech Center
  - FHWA
    - EDC-6: TOPS
  - ACPA
  - NRRA



# Concrete Overlay Technology Transfer

[illegible]

The cover features a white background with a black border. At the top right, the FHWA logo is present. The title "HISTORY OF CONCRETE OVERLAYS IN THE UNITED STATES" is centered in a large, bold, black serif font. Below the title is a large photograph of a long, straight highway with a yellow center line, receding into the distance under a clear sky. At the bottom of the cover, there is a dark blue horizontal band. On the left side of this band is the U.S. Department of Transportation logo, consisting of a stylized "a" inside a circle. To the right of the logo, the text "U.S. Department of Transportation" and "Federal Highway Administration" is written in white. On the far right of the blue band, the text "Technical Summary" and "June 2013" is written in white.

# Tech Brief

## THIN CONCRETE OVERLAYS

OCTOBER 2017 FININGHER #17-032

### INTRODUCTION TO OVERLAYS

Concrete overlays have been successfully used in the United States for centuries by the military, airports, and on private roads. These overlays can be as thin as 1 1/2 in. thick, depending on the application. They can be as thin as 1 1/2 in. thick, depending on the application. They can be as thin as 1 1/2 in. thick, depending on the application.

### Thin Concrete Overlay Types and Definitions

Thin concrete overlays can be categorized into three main types: 1. **Thin Concrete Overlay (TCO)**: This type of overlay is typically 1 1/2 to 2 inches thick and is used for general paving applications. 2. **Thin Concrete Overlay (TCO)**: This type of overlay is typically 1 1/2 to 2 inches thick and is used for general paving applications. 3. **Thin Concrete Overlay (TCO)**: This type of overlay is typically 1 1/2 to 2 inches thick and is used for general paving applications.

### Benefits

- Reduced life-cycle design and construction costs
- Faster opening to traffic in general
- Reduced maintenance and the potential for future overlay

### Unbonded

- Surface is not attached to the substrate
- A bonding agent is used to attach the overlay to the substrate
- The overlay is not attached to the substrate
- A bonding agent is used to attach the overlay to the substrate
- The overlay is not attached to the substrate

U.S. Department of Transportation

American Concrete Institute  
 9080 Rockledge Drive, Suite 300  
 Farmington Hills, MI 48334-3029  
 Tel: 248/846-3500  
 Fax: 248/846-3501  
 Email: [concrete@acinet.org](mailto:concrete@acinet.org)  
[www.concrete.org](http://www.concrete.org)

## Targeted Overlay Pavement Solutions (TOPS)

*Targeted concrete has been introduced to the condition of the existing pavement.*

### Unbonded Concrete on Asphalt

#### Minnesota

A 4.5 mile long unbonded concrete overlay project was placed on County Road 462 Highway 3 (CR462) in MN and County Road 106, approximately 10 miles west of the Twin Cities. CR462 is a major collector and primary connector of the cities of Glenwood and Tucka Highway 171 (TH 171) to the west, the road carries some of the heaviest traffic loads. Additionally, it is a historic, scenic and historical corridor.

The existing bituminous roadways were 24' wide with 4' to 6" deep aggregate shoulders. The 24' wide project involved installing the existing 4' to 6" depth base material to a designed profile and cross section to maintain the site and correct the longitudinal separation transitions associated with the existing bituminous lanes. The concrete overlay consisted of 4 inches of unbonded concrete overlay placed over a 4 inch subgrade with a 4 inch subgrade of which was placed in a single 16' foot wide concrete overlay.

Placing concrete on existing pavement.

4.5 mile on 4.5 mile.

#### Missouri

A 4.5 mile stretch of I-44 near St. Louis, Missouri, part of the Missouri Turnpike, was closed for 10 days by the Lake of the Clouds. The 4.5 mile stretch was closed for resurfacing. With the Lake of the Clouds being a major recreation and winter sports destination, contractors installed a self-healing dense concrete overlay. Furthermore, the contract included the installation of a concrete overlay on the project's associated viaduct. The 1 inch thick concrete overlay was placed and tapered into the existing concrete overlay. Seven miles of the 4.5 mile project was completed on 4.5" unbonded concrete overlay using a targeted overlay procedure. The contractor placed 220,000 square yards of concrete in 47 days and turned over the project to the DOT in 56 days.

Placing concrete on existing pavement.

4.5 mile on 4.5 mile.

**Visit our website for more information on Targeted Overlay Pavement Solutions.**

Concrete Materials

800 779 2000

FACED OFFICE OF PROFESSIONAL CONSTRUCTION AND FINANCIAL

CONCRETE

[www.concrete.org](http://www.concrete.org)

December 2010

FRONTIER 2010

CONCRETE


CONCRETE

CONCRETE

# Concrete Overlay Performance on Iowa's Roadways

## Field Data Report July 2017


National Concrete Pavement  
Technology Center








The four photographs show different concrete overlay performance scenarios on roadways. Top-left: A long, straight concrete road with a yellow center line, flanked by green grass. Top-right: A concrete road with a yellow center line, showing a slight curve and grass on the sides. Bottom-left: A close-up of a concrete road surface with a yellow center line, showing some surface texture and a grassy shoulder. Bottom-right: A concrete road with a yellow center line, showing a slight curve and grass on the sides.

IOWA STATE UNIVERSITY  
*Sustaining our Transportation*

Sponsored by  
Iowa Highway Research Board  
(IHRB) Project ER-0002  
Iowa Department of Transportation  
11.13.2016



**IOWA STATE UNIVERSITY**  
Department of Transportation

**DECEMBER 2011**

**National Concrete Pavement  
Technology Center**

**Concrete Pavement Restoration for Bonded Concrete Overlay of Asphalt Synthesis**

NBSA PREVENTIVE MAINTENANCE TEAM



*A completed final project submitted for the Minnesota Department of Transportation*

Report No. MNDOT2005

MINNESOTA DEPARTMENT OF TRANSPORTATION

# Fiber-Reinforced Concrete for Pavement Overlays: Technical Overview

Final Report  
April 2019



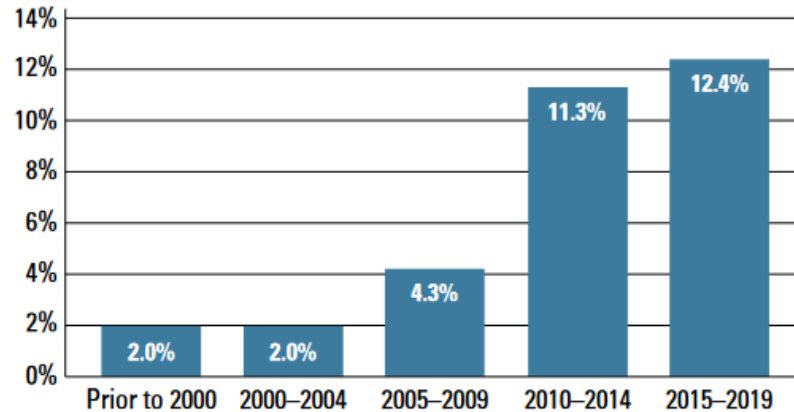
Sponsored by  
Federal Highway Administration  
Technology Transfer/Concrete Consortium (TTCC) Project Fund, 1795 SCB-0  
(Part of Initiative Project 15-510)

IOHIA STATE UNIVERSITY  
Department of Civil and Environmental Engineering

National Concrete Pavement  
Technology Center

# Concrete Overlay Technology Transfer

- Efforts to date have helped make a significant impact in recent years:

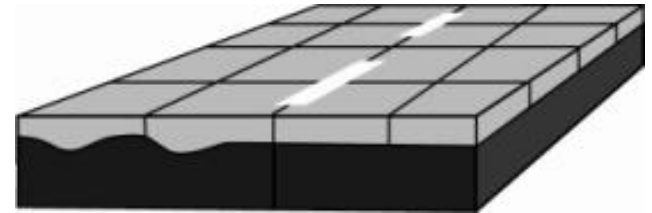


Based on data from ACPA

**Figure 3. Concrete overlays as a percentage of total concrete paving in the United States**

# Concrete Overlay Technology Transfer

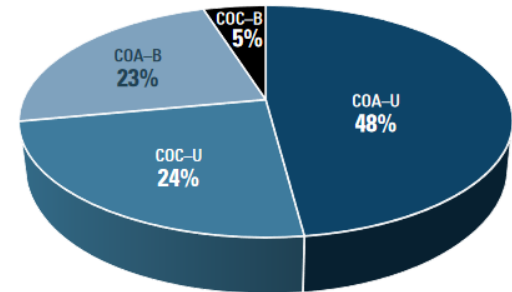
- Today's tech transfer guides offer a wealth of information on planning, design, and construction of BCOAs
- Several design tools are in use around the country:
  - University of Pittsburgh's BCOA-ME
  - ACPA BCOA Thickness Designer
  - Pavement ME
  - Colorado DOT
  - Illinois DOT





# Tech Transfer Needs

- BCOAs are still a relatively new type of pavement and a relatively new type of concrete overlay
  - Many state agencies have yet to build a BCOA
- Several BCOA design concepts have only been in use for a limited amount of time
  - Shorter joint spacing designs
  - Fiber-reinforced concrete
- As projects age, agencies are just starting to recognize typical preservation and repair needs and evaluate best practices



Based on data from ACPA

Figure 2. Types of concrete overlays built in the US between 2000 and 2017

# Tech Transfer Needs

- We need performance data!
  - Helps agencies who use BCOA evaluate their typical design, construction, and maintenance practices
  - Provides guidance to agencies who are new to BCOA



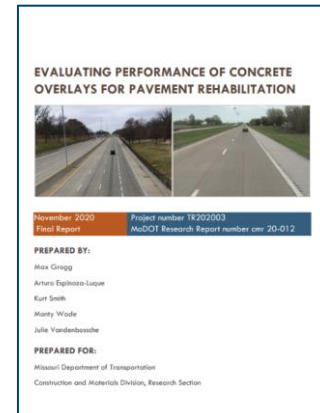
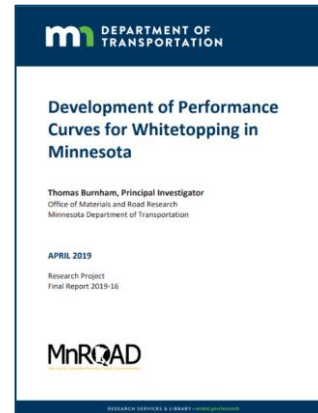
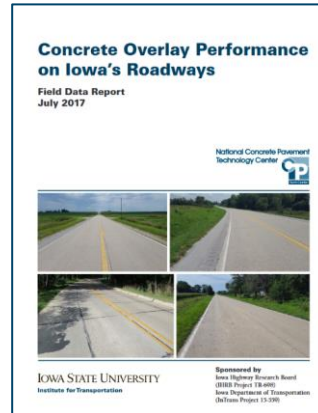
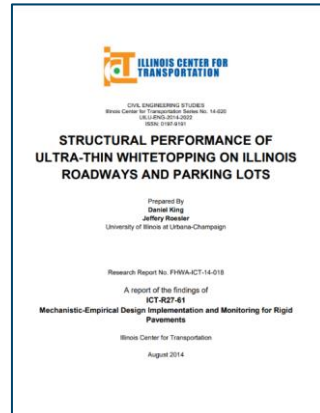
Boone County, Iowa  
Constructed 1977  
Pictured 2016



Tuscola, Illinois  
Constructed 1999  
Pictured 2012

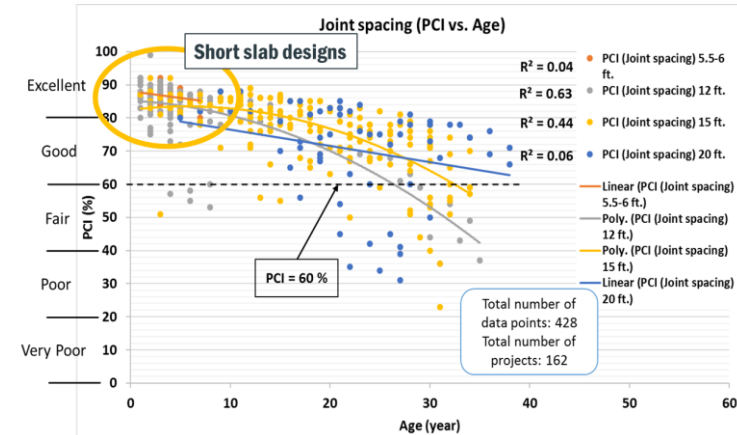
# BCOA Performance

- Several states have conducted performance studies to document BCOA performance:
  - Illinois
  - Iowa
  - Minnesota
  - Missouri



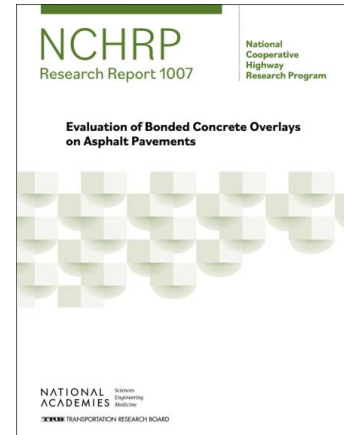
# BCOA Performance

- Limitations of state studies:
  - Materials, design practices, traffic levels, distress types, etc., can depend on state practices or the regional environment
  - Varying methodologies for surveys, data collection
  - Sometimes difficult to compare performance of newer BCOA design concepts to other types of concrete overlays



# NCHRP Research Report 1007

- Collects state of the practice & performance data from BCOA projects across the US, covering multiple states and regions
- Contains detailed field evaluations for selected projects with comprehensive & uniform data collection
  - Testing provides additional insight into structural behavior and performance
  - Large project set for comparing performance of different design parameters, like joint spacing
- Performance is connected back to predictions from the most-used design procedures



# NCHRP Research Report 1007

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- The findings of this report will provide support for future tech transfer efforts:
  - Further BCOA-specific commentary on design and construction best practices
  - New information on use of innovative materials/methods
    - Fiber-reinforced concrete
    - GPR, ultrasonic tomography for evaluation
  - Insight into medium-to-long term BCOA behavior and appropriate preservation, rehab, and end-of-life strategies

# NCHRP Research Report 1007

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- Setting the stage for further research and areas of emphasis in BCOA tech transfer:
  - Incorporating BCOA into pavement management and planning
  - Improving design methods and commentary
  - Identifying of areas requiring further investigation, such as joint sealing, joint behavior, and bond interface
  - Evaluating how BCOAs can meet emerging needs for sustainable and resilient pavement solutions



## NCHRP Research Report 1007 - Implementation Challenges

Tom Burnham, P.E. | Senior Road Research Engineer, Minnesota Department of Transportation

TRB Webinar: Performance of Concrete Overlays on Asphalt Pavement

4/4/2023



# Implementation Into Practice

## **Definition according to pavement professionals:**

- **Determined to be better than existing practice**
- **New specification**
- **Construction industry can build successful projects**
- **Economically justifiable**

# Challenges to Implementation

**Pavement industry in general very conservative toward changes**

- **Restrained budgets – first cost often controls**
- **Empirical knowledge – has worked well over the years**
- **Liability – don't want to deal with failures early or long term**
- **Investment in high cost specialized equipment**
- **Training needed for new materials/equipment**

# Implementation Poll

## Survey of state agency members of National Concrete Consortium

- Experience with concrete overlays on asphalt
- Real or perceived barriers to their implementation
- Primary sources of information about the design, construction, and performance of COAs
- Awareness of the NCHRP Project 01-61
- Use of NCHRP Report 1007
- Will report lead to changes in implementation of COAs
- Use of NCHRP final reports to influence practices

# Implementation Poll

## Survey Caveats:

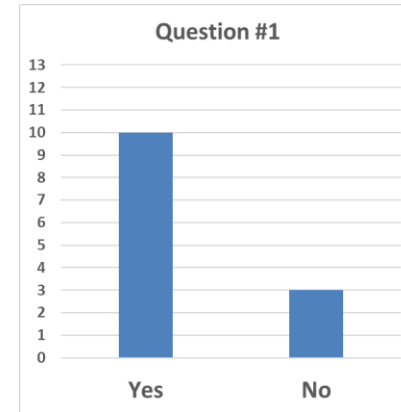
- Respondents may not make project selection decisions
- Some states have very small concrete pavement industry
- Conservative personalities
- Restrained budgets control decisions
- View of NCHRP products

# Survey Results

**Question #1: Have concrete overlays on asphalt been built and/or are there agencies in your state planning to build COAs in the future?**

➤ **Select responses:**

- “several of them from 7 years ago”
- “two projects I am aware of”
- “No, any concrete overlay we have done has been on our bridges”
- “both thin (6") and thick (11")”
- “Yes, but I’m don’t think they were designed as a bonded system”
- “in the future I would expect to see more on the county system vs. the state system”



# Survey Results

**Question #2: If COAs have not been built in your state, what are the real or perceived barriers to their implementation?**

➤ **Select responses:**

- **Most were “N/A”**
- **“Even though we build some, I still think the perceived barrier is maintenance (how to fix)”**
- **“Accommodating the grade change has been a big challenge”**
- **“Concerns exist regarding use on base pavements that are not in great condition”**
- **“No plans that we are aware of at this time”**
- **“cost/construction difficulty”**
- **“We don't do many as they're somewhat cost prohibitive for us”**

# Survey Results

**Question #3: Prior to the complete of NCHRP Report 1007, what have been your primary sources of information about the design, construction, and performance of COAs?**

**Select responses:**

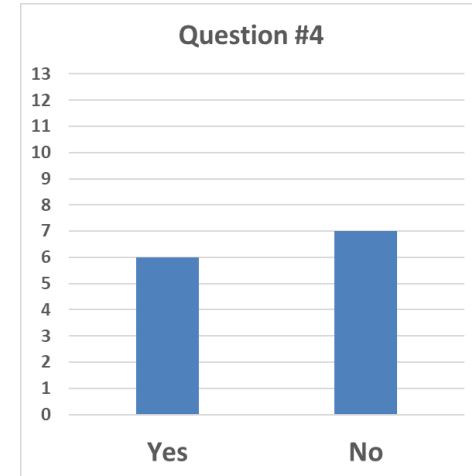
- **“Publications from research facilities in the U.S., including FHWA, NCHRP, and National Concrete Pavement Technology Center, TRB, FHWA sponsored webinars and/or workshops”**
- **“ACPA”, State Chapter ACPA guidance**
- **“CPTech Center, University of Pittsburgh (BCOA-ME, surrounding SHA’s(MnDOT, IowaDOT, WiscDOT and CoDOT)”**
- **“NCHRP Synthesis 338”**

# Survey Results

**Question #4: Were you aware of the NCHRP Project 01-61 that produced Report 1007?**

**Select responses:**

- **“We participated in the study”**



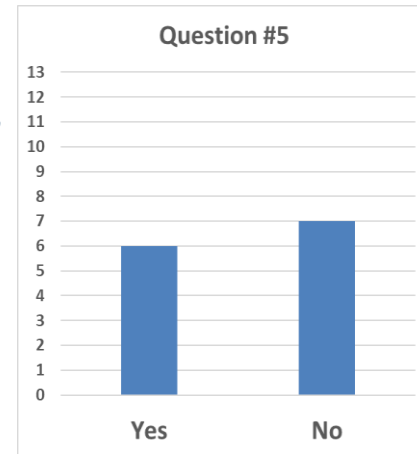


# Survey Results

**Question #5: Have you read/reviewed NCHRP Report 1007, and do you think it will lead to changes in your implementation of COAs?**

**Select responses:**

- **“We do not have a lot of concrete pavements, but this NCHRP report may lead to changes of COAs implementation in the future”**
- **“The conclusions did not provide anything to cause us to rethink our current BCOA design”**
- **“Will continue to implement COA’s as tool in tool box”**
- **“No, since very few concrete pavements are currently being placed in our state”**
- **“Probably not many, we may be able to bring it up as a rehabilitation option for more projects”**

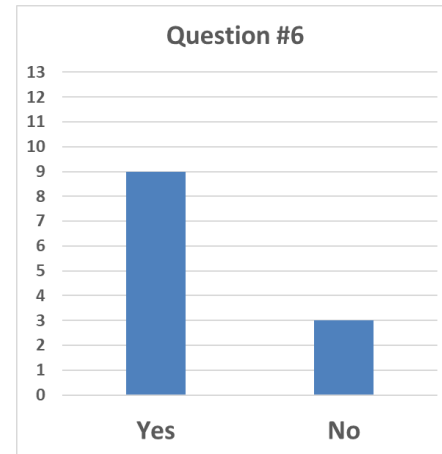


# Survey Results

**Question #6: Do you regularly read NCHRP final reports and/or have they influenced practices in your state in the past?**

Select responses:

- **“I do not unless someone draws my attention to information that may be relevant to a concrete concern we have”**
- **“Only occasionally, when very pertinent to work activities. Time constraints limit reading opportunities”**
- **“Yes, as smaller agency we rely on NCHRP and other collaborative research efforts for guidance on adopting new practices frequently”**
- **“occasionally read relevant NCHRP reports, some have influenced”**



# Overview

- This study was valuable in that it has been nearly 20 years since last NCHRP synthesis on concrete overlays on asphalt performance
- Studies involving a “snapshot” of pavement performance are limited in assessment of current or future performance
- Concrete overlays on asphalt remain a “tool in the toolbox”, and a significant increase in adoption will not likely occur due to findings from this study
- Implementation of findings in NCHRP Reports often controlled by factors outside of technical advancements

# Questions?

**Tom Burnham**

[tom.burnham@state.mn.us](mailto:tom.burnham@state.mn.us)

# Today's presenters



**John Donahue**

*Missouri Department  
of Transportation*  
[john.donahue@modot.mo.gov](mailto:john.donahue@modot.mo.gov)



**Dan King**

*Concrete Pavement Technology  
Center at Iowa State University*  
[deking@iastate.edu](mailto:deking@iastate.edu)

**NATIONAL  
ACADEMIES** Sciences  
Engineering  
Medicine



**Tom Burnham**

*Minnesota Department  
of Transportation*  
[tom.burnham@state.mn.us](mailto:tom.burnham@state.mn.us)



**Dr. Linda Pierce**  
NCE

[lpierce@ncenet.com](mailto:lpierce@ncenet.com)



# Upcoming events for you

**July 8, 2023**

TRB's National Conference on  
Transportation Asset Management



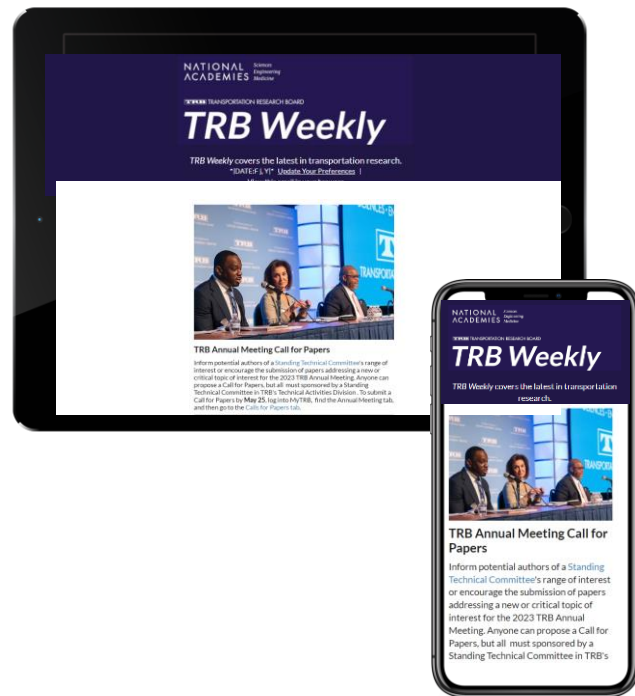
[https://www.nationalacademies.org/trb/  
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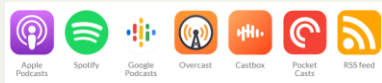
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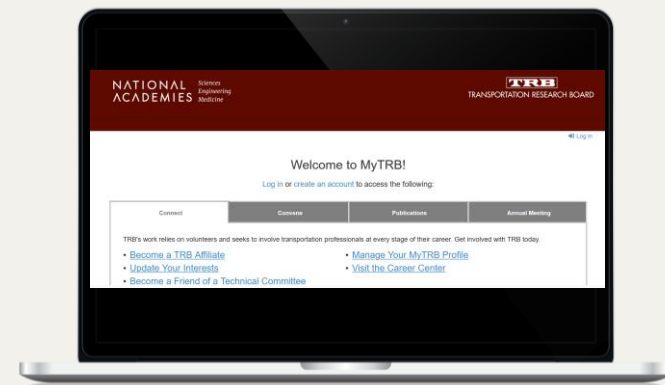
Network and pursue a path to Standing Committee membership

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