"The guidelines provide a comprehensive design guide to support decision making about pavement preservation treatments. While Texas already has its own pavement preservation decision process, there is always room for improvement, and the guidelines provide those options."

—Magdy Mikhail, Texas Department of Transportation

Photo Courtesy PennDOT

Workshop in Alabama.
Photo courtesy Stephen J. Cooper

"The guidelines provide a means of looking at preservation options to reconsider for high-volume roads because times have changed, the economy has changed, and the applications may be quite different now."

—Richard Miller, Kansas Department of Transportation

SHRP2 Solutions

preserving high-traffic roadways

Photo Courtesy Kentucky DOT/ US127B in Anderson County KY

What the *Guidelines* Contain

Factors Affecting Project and Treatment Selections for Pavement Preservation

- Traffic level
- Pavement condition
- Climate and environment
- Work zone duration restrictions
- Expected treatment performance
- Costs

Treatment Selection Process

- Treatments for Hot Mix Asphalt (HMA)-surfaced pavements
- Treatments for Portland Cement Concrete (PCC)-surfaced pavements
- Preservation treatment selection
  - Preliminary identification of feasible preservation treatments
  - Final identification of feasible preservation treatments
  - Treatment cost-effectiveness analysis
  - Selection of the preferred preservation treatment

Preservation Treatment Summaries

Examples of Identifying Feasible Preservation Treatments

What your colleagues are saying about *Preservation Approaches* and the *Guidelines*:

"This tool is about opportunity; this tool is giving the states a portfolio of options and choices. I think it will help us redefine how we do our decision making in terms of infrastructure management."

—Andrew Williams, Ohio Department of Transportation

"The *Guidelines* will help us move into using these techniques on higher-volume roads with a little more reassurance that there's research and support behind that decision making."

—Chris Bauserman, Delaware County, Ohio

"If you can keep your treatment costs down for a longer period of time and push out those major rehabs, then you've saved real dollars."

—Judith Corley-Lay, North Carolina Department of Transportation

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STRATEGIC HIGHWAY RESEARCH PROGRAM

Pavement Preservation Solutions in Action

- **Pennsylvania:** With an aging and underfunded road network, the Pennsylvania Department of Transportation (PennDOT) applied **flexible micro-surfacing products** on four test sections in Lancaster and completed a pilot using **polymer-modified thin overlay** and **asphalt rubber gap-grade** at two other locations. PennDOT officials say that the Lancaster site is already showing differences in pavement resilience.
- **Kentucky:** Facing sharply rising asphalt prices, the Kentucky Transportation Cabinet (KYTC) is using the guidelines to broaden use of pavement preservation, help them keep good roads in good condition longer, and "catch more miles for less money." Using the guidelines, KYTC is testing **multiple treatments** on a four-lane rural arterial with average daily traffic of 12,800 vehicles. KYTC officials say the guidelines provide useful information that motivated the state to move toward newer approaches to extending the life of roads.
- **Rhode Island:** The Rhode Island Department of Transportation (RIDOT) already has considerable experience using preservation on its high-volume roads; however, it is using the guidelines to broaden the range of successful treatments being used. RIDOT is testing a **stress-absorbing membrane interlayer (SAMI) chip seal** on a five-lane rural collector with average daily traffic of 16,200 vehicles, including 2.8 percent truck traffic. The goal is to broaden the preservation options beyond the "usual suspects."

Photo Courtesy PennDOT

Extending the life of the nation's busiest roads

The *Guidelines for the Preservation of High-Traffic-Volume Roads* help transportation agencies save lives, money, and time.

Saving Lives

Extending the life of pavement reduces the frequency of major reconstruction projects. Fewer reconstruction projects reduce the risk and frequency of work-zone crashes.

Saving Money

Applying the right pavement preservation techniques to a broad range of high-traffic roads helps agencies stretch transportation dollars by reducing the frequency of major rehabilitation projects.

Saving Time

The proven preservation strategies reduce lane closures and congestion that come with lengthy rehabilitation and reconstruction projects, saving time for the traveling public.

PAVEMENT

Your guide to the best options for extending pavement life

The Challenge — Knowing when, what, and how to apply smart pavement techniques

Stretching the time between major rehabilitation projects can save transportation agencies money, reduce congestion, and improve safety. For years, transportation agencies have successfully extended the life of lower-volume roadways by applying pavement preservation techniques. Achieving the same results on high-traffic roadways requires a systematic approach that considers a variety of road conditions and proper timing of treatments to reduce traffic impacts.

The Solution — Strategies and techniques to make the right decision

Many conventional preservation techniques–and some new ones–can be used to extend the life of high-traffic roadways without major reconstruction and traffic disruption. A **new comprehensive guide** developed through the second Strategic Highway Research Program (SHRP2) offers the technical background and decision-making framework needed to bring preservation strategies widely into play for high-traffic roads.

Preservation Approaches for High-Traffic-Volume Roadways, and its companion, ***Guidelines for the Preservation of High-Traffic-Volume Roadways,*** (also referred to as R26) are the first systematic and comprehensive resources designed to expand the use of pavement preservation on high-traffic roads. The guidance is based on the findings from a comprehensive survey of 40 state highway agencies, seven Canadian provinces, and three cities, as well as a review of existing successful preservation techniques.

The ***Guidelines*** include a selection process and matrices that enable quick identification of treatment options by various categories, such as rural or urban roads, climate zones, work zone duration restrictions, traffic volumes, and relative costs.

Photo Courtesy MnDOT

Photo Courtesy MnDOT

Workshop in Alabama.
Photo courtesy David Peshkin

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U.S. Department of Transportation Federal Highway Administration
AASHTO THE VOICE OF TRANSPORTATION
TRB

SHRP2 SOLUTIONS
TOOLS FOR THE ROAD AHEAD

SHRP2 Solutions in Action

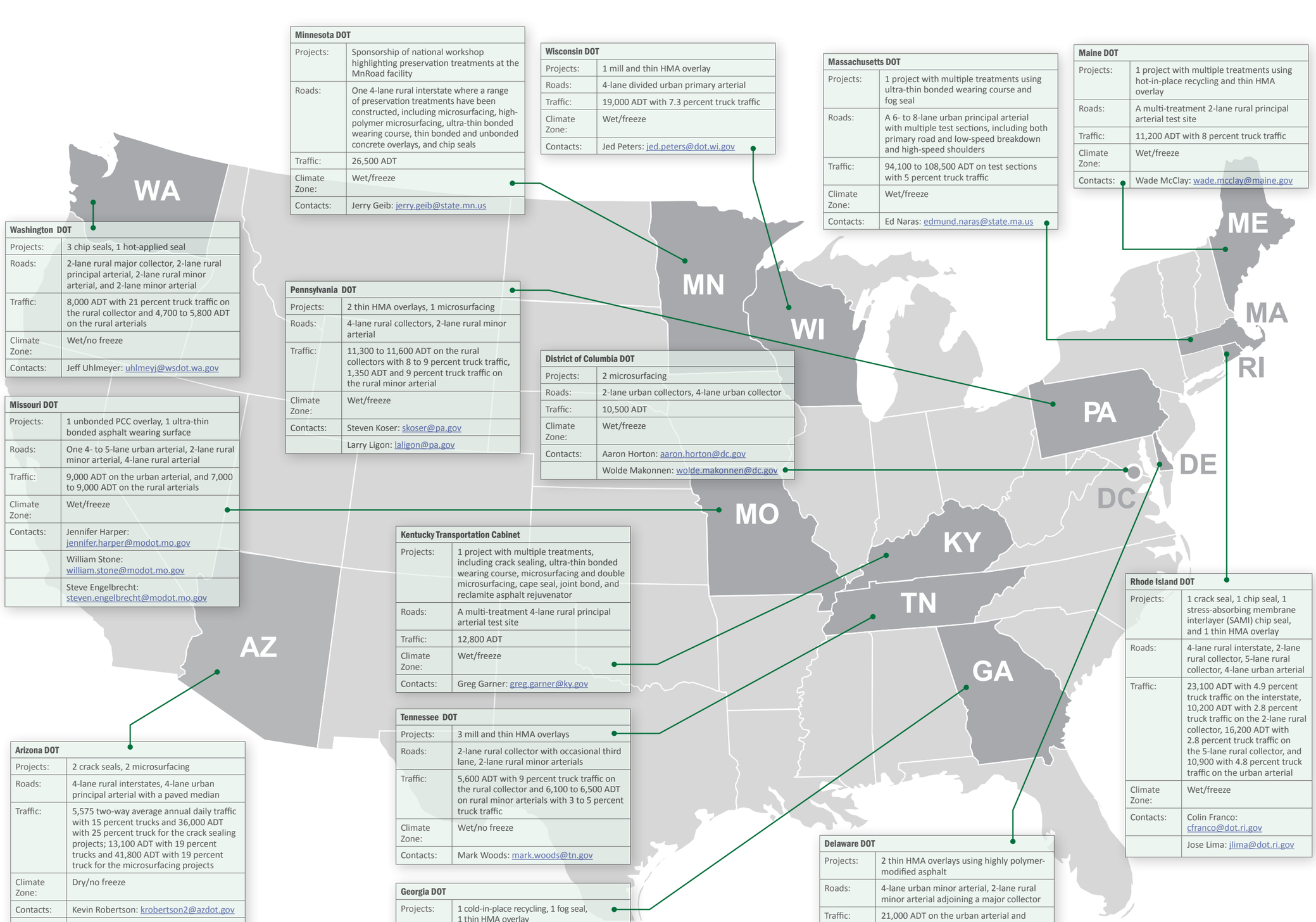
A Vital Resource for Informed Decision Making

Transportation departments in 13 states and the District of Columbia are testing, implementing, and sharing their options for extending the life of heavily traveled roads using the ***Guidelines for the Preservation of High-Traffic-Volume Roadways***. Collectively, 13 different preservation treatments are being tested on more than 30 roads with average daily traffic (ADT) ranging from 5,000 to more than 50,000 vehicles. The guidelines:

- Provide a portfolio of vital information on more than 20 treatments that have proven cost-effective.
- Consider diverse environmental and traffic conditions.
- Consolidate useful information in one place to save time on research and cost comparisons.
- Help engineers move quickly and confidently to select the right treatments at the right time.
- Make it easier to invest in preservation strategies on high-volume roads based on information that is tried and tested.
- Are useful to states with considerable experience in pavement preservation that are eager for new approaches to use on their higher-traffic roads as well as those that are new to pavement preservation.

"The long-term financial impact of investing in pavement preservation is very exciting. The guidelines provide useful information that motivated the state to move toward newer approaches to extend the life of our roads."

—Greg Garner, Kentucky Transportation Cabinet



Minnesota DOT	
Projects:	Sponsorship of national workshop highlighting preservation treatments at the MnRoad facility
Roads:	One 4-lane rural interstate where a range of preservation treatments have been constructed, including microsurfacing, high-polymer microsurfacing, ultra-thin bonded wearing course, thin bonded and unbonded concrete overlays, and chip seals
Traffic:	26,500 ADT
Climate Zone:	Wet/freeze
Contacts:	Jerry Geib: jerry.geib@state.mn.us

Wisconsin DOT	
Projects:	1 mill and thin HMA overlay
Roads:	4-lane divided urban primary arterial
Traffic:	19,000 ADT with 7.3 percent truck traffic
Climate Zone:	Wet/freeze
Contacts:	Jed Peters: jed.peters@dot.wi.gov

Massachusetts DOT	
Projects:	1 project with multiple treatments using ultra-thin bonded wearing course and fog seal
Roads:	A 6- to 8-lane urban principal arterial with multiple test sections, including both primary road and low-speed breakdown and high-speed shoulders
Traffic:	94,100 to 108,500 ADT on test sections with 5 percent truck traffic
Climate Zone:	Wet/freeze
Contacts:	Ed Naras: edmund.naras@state.ma.us

Maine DOT	
Projects:	1 project with multiple treatments using hot-in-place recycling and thin HMA overlay
Roads:	A multi-treatment 2-lane rural principal arterial test site
Traffic:	11,200 ADT with 8 percent truck traffic
Climate Zone:	Wet/freeze
Contacts:	Wade McClay: wade.mcclay@maine.gov

Washington DOT	
Projects:	3 chip seals, 1 hot-applied seal
Roads:	2-lane rural major collector, 2-lane rural principal arterial, 2-lane rural minor arterial, and 2-lane minor arterial
Traffic:	8,000 ADT with 21 percent truck traffic on the rural collector and 4,700 to 5,800 ADT on the rural arterials
Climate Zone:	Wet/no freeze
Contacts:	Jeff Uhlmeyer: uhlmeyj@wsdot.wa.gov

Pennsylvania DOT	
Projects:	2 thin HMA overlays, 1 microsurfacing
Roads:	4-lane rural collectors, 2-lane rural minor arterial
Traffic:	11,300 to 11,600 ADT on the rural collectors with 8 to 9 percent truck traffic, 1,350 ADT and 9 percent truck traffic on the rural minor arterial
Climate Zone:	Wet/freeze
Contacts:	Steven Koser: skoser@pa.gov
	Larry Ligon: laligon@pa.gov

District of Columbia DOT	
Projects:	2 microsurfacing
Roads:	2-lane urban collectors, 4-lane urban collector
Traffic:	10,500 ADT
Climate Zone:	Wet/freeze
Contacts:	Aaron Horton: aaron.horton@dc.gov
	Wolde Makonnen: wolde.makonnen@dc.gov

Missouri DOT	
Projects:	1 unbonded PCC overlay, 1 ultra-thin bonded asphalt wearing surface
Roads:	One 4- to 5-lane urban arterial, 2-lane rural minor arterial, 4-lane rural arterial
Traffic:	9,000 ADT on the urban arterial, and 7,000 to 9,000 ADT on the rural arterials
Climate Zone:	Wet/freeze
Contacts:	Jennifer Harper: jennifer.harper@modot.mo.gov
	William Stone: william.stone@modot.mo.gov
	Steve Engelbrecht: steven.engelbrecht@modot.mo.gov

Kentucky Transportation Cabinet	
Projects:	1 project with multiple treatments, including crack sealing, ultra-thin bonded wearing course, microsurfacing and double microsurfacing, cape seal, joint bond, and reclamite asphalt rejuvenator
Roads:	A multi-treatment 4-lane rural principal arterial test site
Traffic:	12,800 ADT
Climate Zone:	Wet/freeze
Contacts:	Greg Garner: greg.garner@ky.gov

Tennessee DOT	
Projects:	3 mill and thin HMA overlays
Roads:	2-lane rural collector with occasional third lane, 2-lane rural minor arterials
Traffic:	5,600 ADT with 9 percent truck traffic on the rural collector and 6,100 to 6,500 ADT on rural minor arterials with 3 to 5 percent truck traffic
Climate Zone:	Wet/no freeze
Contacts:	Mark Woods: mark.woods@tn.gov

Rhode Island DOT	
Projects:	1 crack seal, 1 chip seal, 1 stress-absorbing membrane interlayer (SAMI) chip seal, and 1 thin HMA overlay
Roads:	4-lane rural interstate, 2-lane rural collector, 5-lane rural collector, 4-lane urban arterial
Traffic:	23,100 ADT with 4.9 percent truck traffic on the interstate, 10,200 ADT with 2.8 percent truck traffic on the 2-lane rural collector, 16,200 ADT with 2.8 percent truck traffic on the 5-lane rural collector, and 10,900 with 4.8 percent truck traffic on the urban arterial
Climate Zone:	Wet/freeze
Contacts:	Colin Franco: cfranco@dot.ri.gov
	Jose Lima: jlima@dot.ri.gov

Arizona DOT	
Projects:	2 crack seals, 2 microsurfacing
Roads:	4-lane rural interstates, 4-lane urban principal arterial with a paved median
Traffic:	5,575 two-way average annual daily traffic with 15 percent trucks and 36,000 ADT with 25 percent truck for the crack sealing projects; 13,100 ADT with 19 percent trucks and 41,800 ADT with 19 percent truck for the microsurfacing projects
Climate Zone:	Dry/no freeze
Contacts:	Kevin Robertson: krobertson2@azdot.gov
	Bill Hurguy: whurguy@azdot.gov

Georgia DOT	
Projects:	1 cold-in-place recycling, 1 fog seal, 1 thin HMA overlay
Roads:	Interstate, 2-lane rural minor arterial, 2-lane rural major collector
Traffic:	7,500 to 8,400 ADT
Climate Zone:	Wet/no freeze
Contacts:	Georgene Geary: ggeary@dot.ga.gov
	Binh Bui: bbui@dot.ga.gov

Delaware DOT	
Projects:	2 thin HMA overlays using highly polymer-modified asphalt
Roads:	4-lane urban minor arterial, 2-lane rural minor arterial adjoining a major collector
Traffic:	21,000 ADT on the urban arterial and 6,600 ADT on the rural road
Climate Zone:	Wet/freeze
Contacts:	Jennifer Pinkerston: jennifer.pinkerton@state.de.us

For more information on these and any other SHRP2 Solutions, contact Pam Hutton, AASHTO's SHRP2 Implementation Manager, phutton@aashto.org, 303-263-1212.

http://www.fhwa.dot.gov/goshrp2/ or http://SHRP2.transportation.org