

Pavement Preservation and Preservation Activities at the National Level

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26th Regional Local Road Conference

October 26, 2011

Rapid City, SD

Without Pavement, We Would Be Stuck in the Mud!



Washington-Richmond road, 1919
NMAH, Archives Center, API Collection

Topics to be discussed:

- 1) Pavement Preservation and Asset Management Concepts**
- 2) FHWA and Our Activities in Pavement Preservation**
- 3) Useful Resources**
- 4) 2010 LTAP Center Director Survey Results**

Less Than 100 Years Ago...

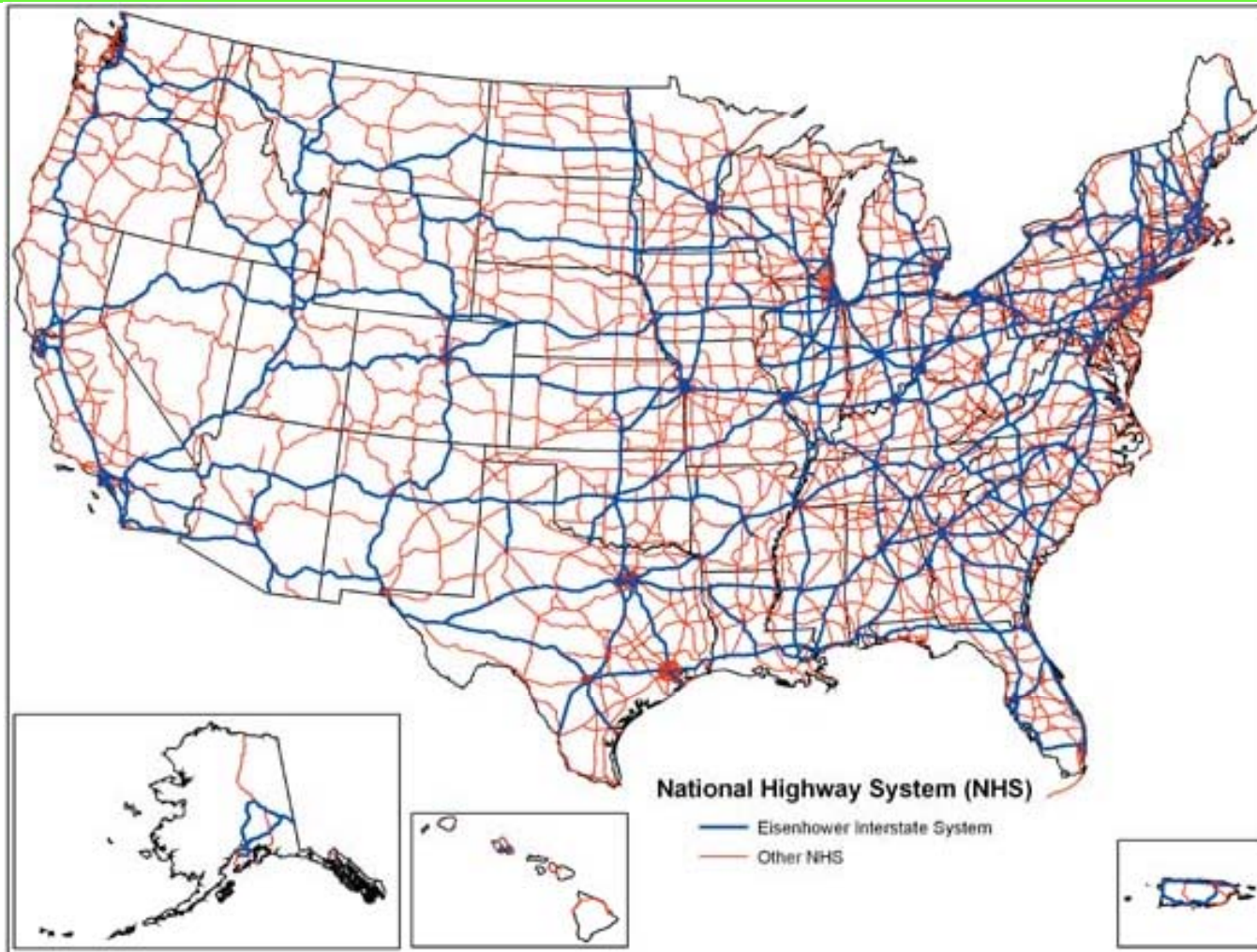


We've Come a Long Way ...

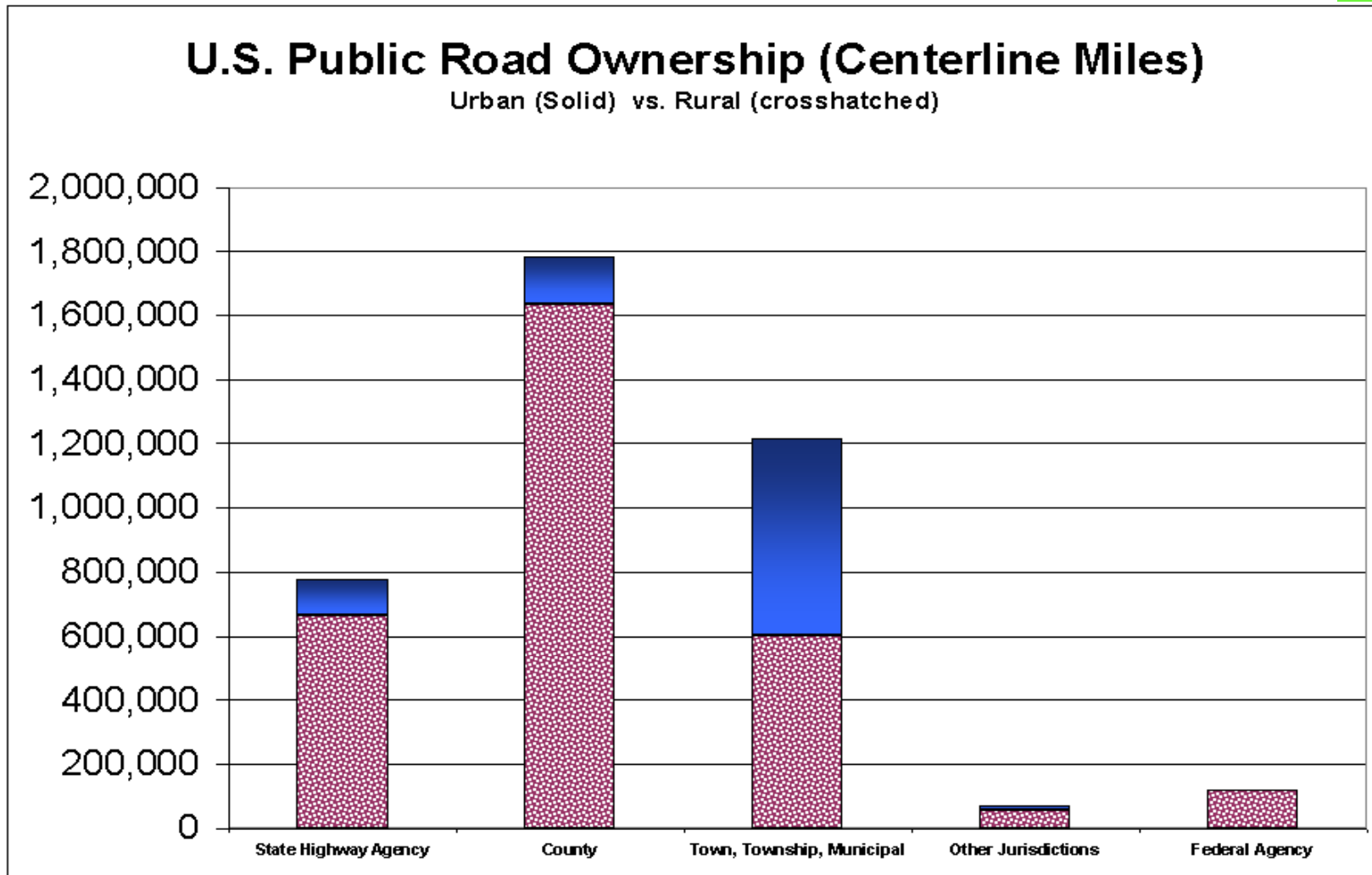


4 Million Miles of Roads

600,000 Bridges



National Statistics: 3,963,262 miles of Roads



Statistics We Should Know:

Federal = 3%

State = 20%

Local – 77%

2/3 are Paved (1/3 Unpaved)

94% of Paved have an Asphalt Surface

Society Depends on Infrastructure

SOCIAL INTERACTIONS

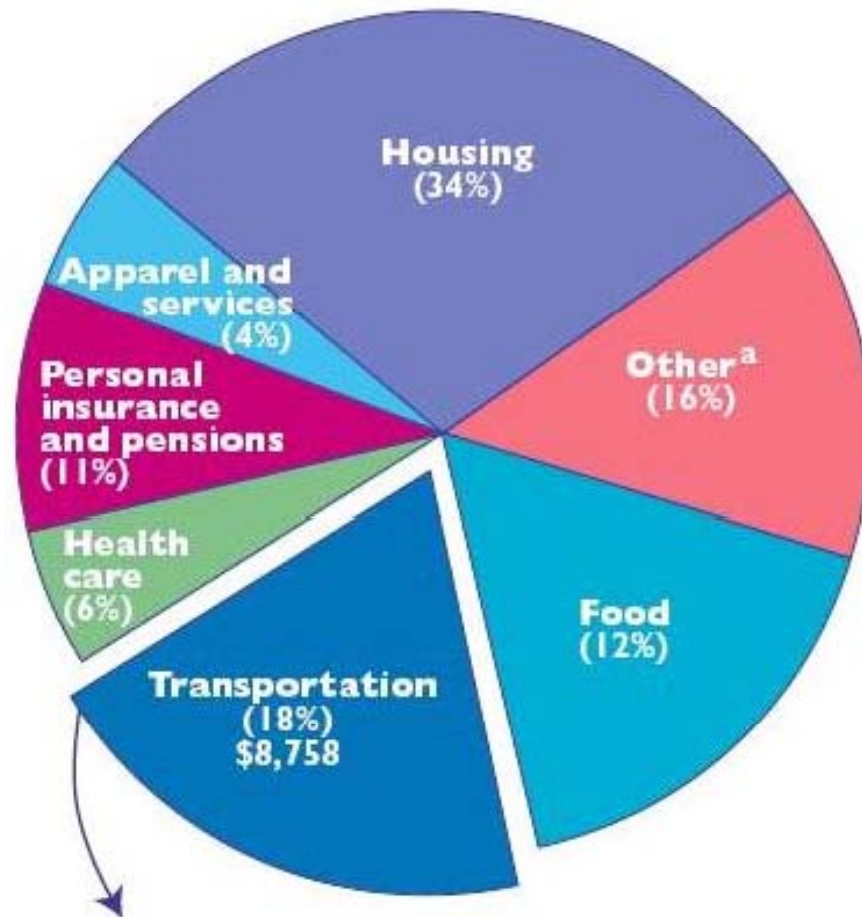
ECONOMIC TRANSACTIONS

INFRASTRUCTURE

Roads, Bridges, Airports, Water Systems, Wastewater Systems,
Gas, Electric, Telephones, Waterways, Coastal Facilities, Parks, Etc.

National Surface Transportation Financing Commission Report 2009

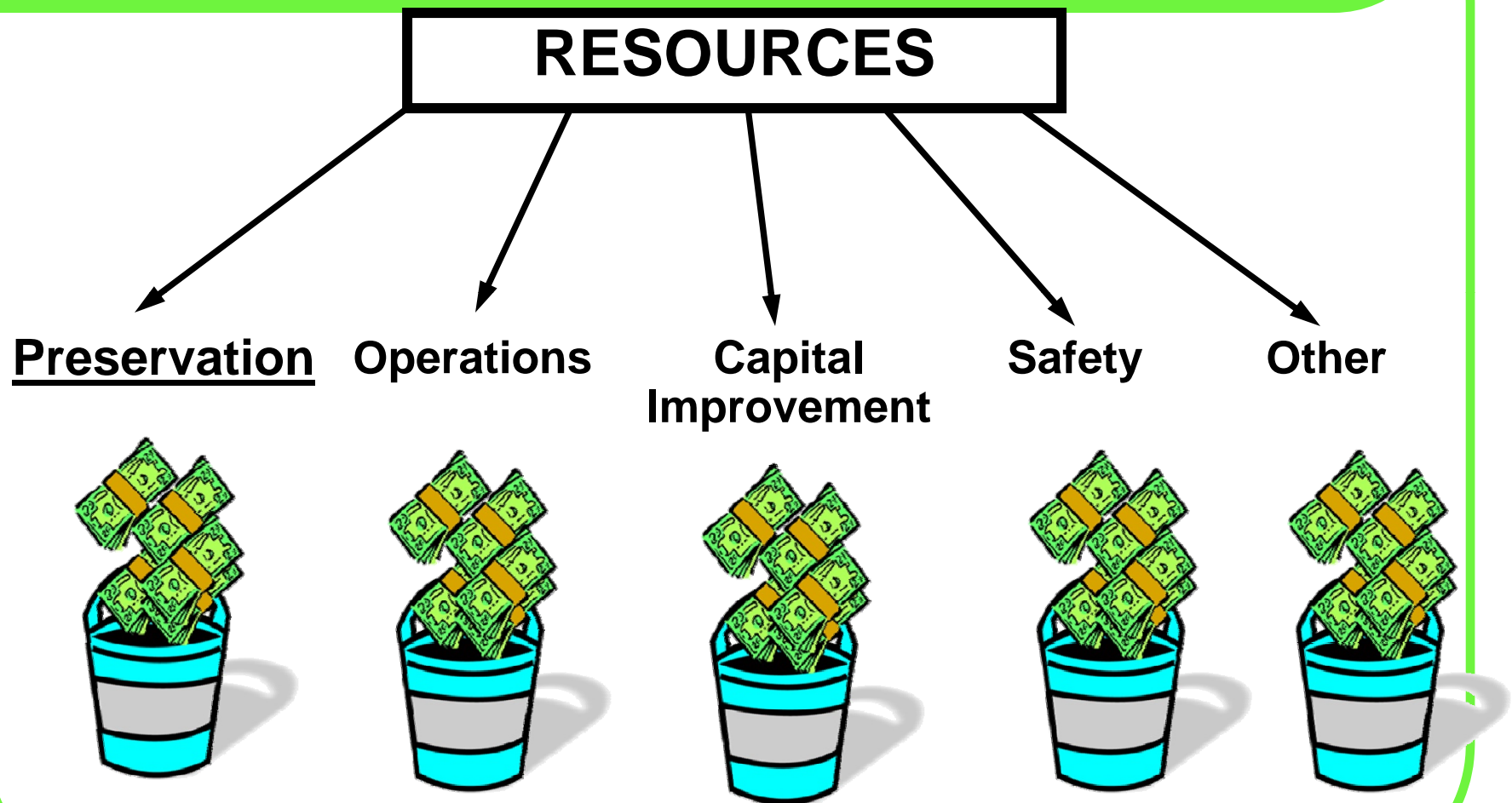
**2007 Average
US
Household
Expenditures
18% for
Transportation**



The Stakes are LARGE!

- **\$2 Trillion Investment in Transportation Infrastructure.**
- **There are MANY owners.**
- **There is shared expertise.**
- **Our Country DEPENDS on Our Success!!!**

Transportation Asset Management



Motivation for Asset Management

- **Funding Constraints**
- **Aging System**
- **Increasing User Demands**
- **Loss of Senior Experienced Staff**
- **Public Demands on Government**
 - **Accountability**
 - **Return-on-Investment**

Asset Management

- Extends the life of existing facilities
- Retains the value of an asset and its ability to perform as designed
- Effective Pavement Management and Preservation provides:
 - **Long term cost savings**
 - **Less disruption to the traveling public**
 - **Improves the overall network condition**
 - **Reductions in environmental impacts**

The Federal Role:

- Promote uniformity, quality, and safety aspects of highway construction and maintenance.
- Develop, promote, and provide new technologies and training.
- Stewardship of the Federal-aid program and its investments.

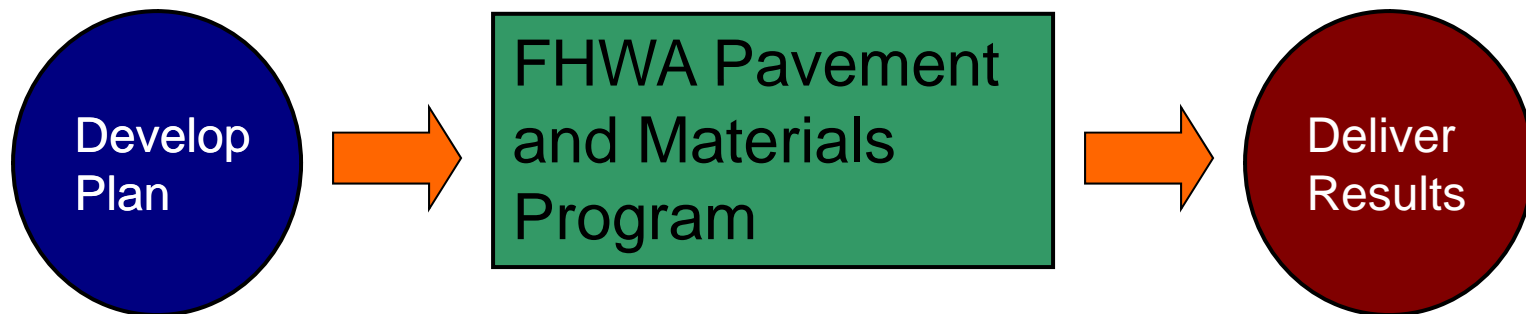
FHWA Vision → Mission

- **“Our Agency and our transportation system are the best in the world.”**
- **“Improve Mobility on our Nation’s Highways through National Leadership, Innovation, and Program Delivery.”**

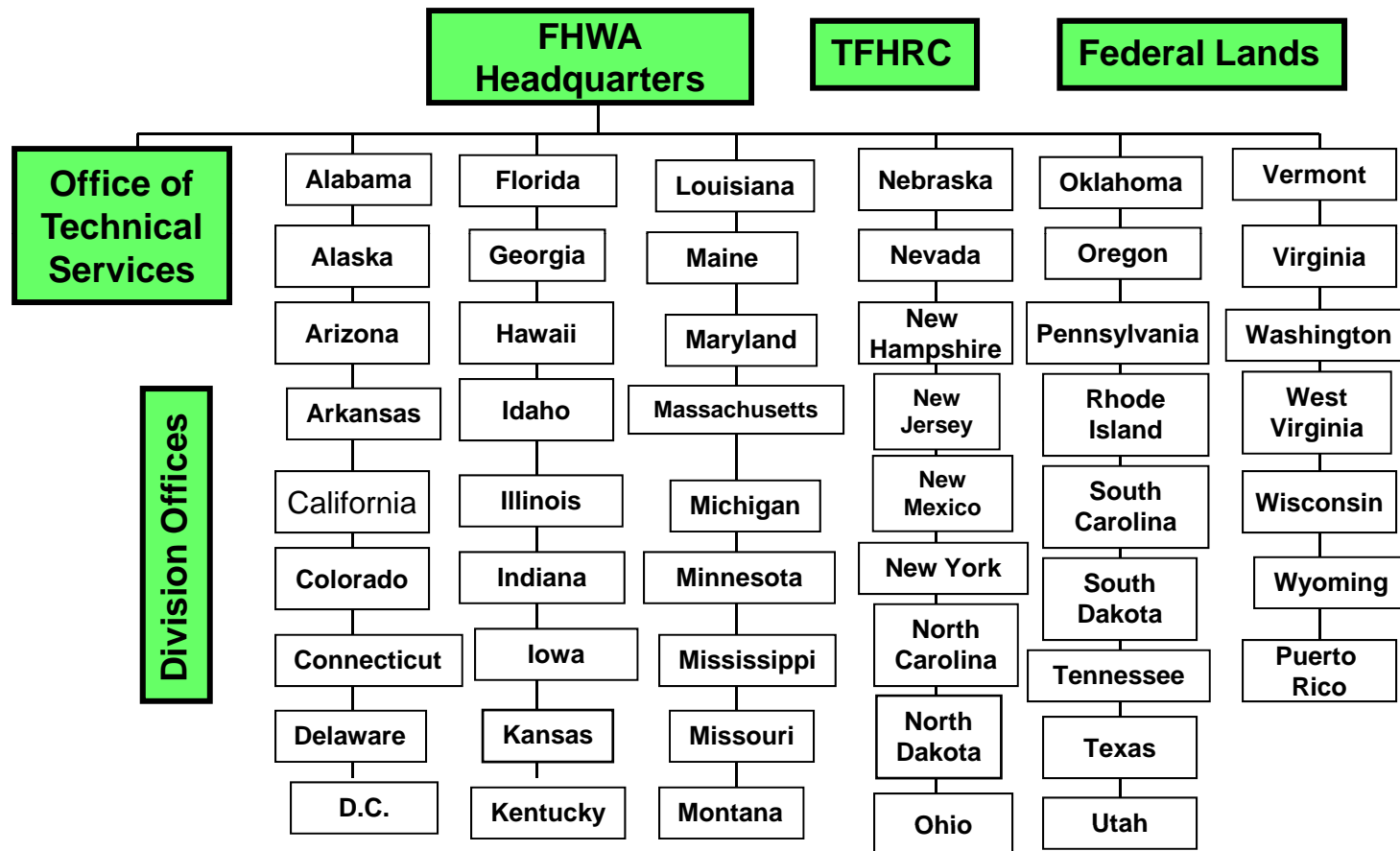
FHWA Pavement & Materials Program

Process to Deliver National Pavement Network That Is:

- Safe
- Cost Effective
- Long Lasting
- Effectively Maintained



FHWA Organization



RC Technical Services Teams



Office of Asset Management, Pavement and Construction

4 Teams

- **Design and Analysis**
- **Materials**
- **Construction**
- **Asset and Pavement Management**

New –

**Office of Program Performance Management
also with 4 New Teams**

FHWA Asset Management, Pavement and Construction

Points of Contact

Butch Wlaschin, Director

- **Suneel Vanikar**
Design and Analysis Team Leader
- **John Bukowski**
Materials Team Leader
- **Bryan Cawley**
Construction and Construction Management Team Leader
- **Steve Gaj**
Asset Management and Pavement Management Team Leader

FHWA Preservation Contacts

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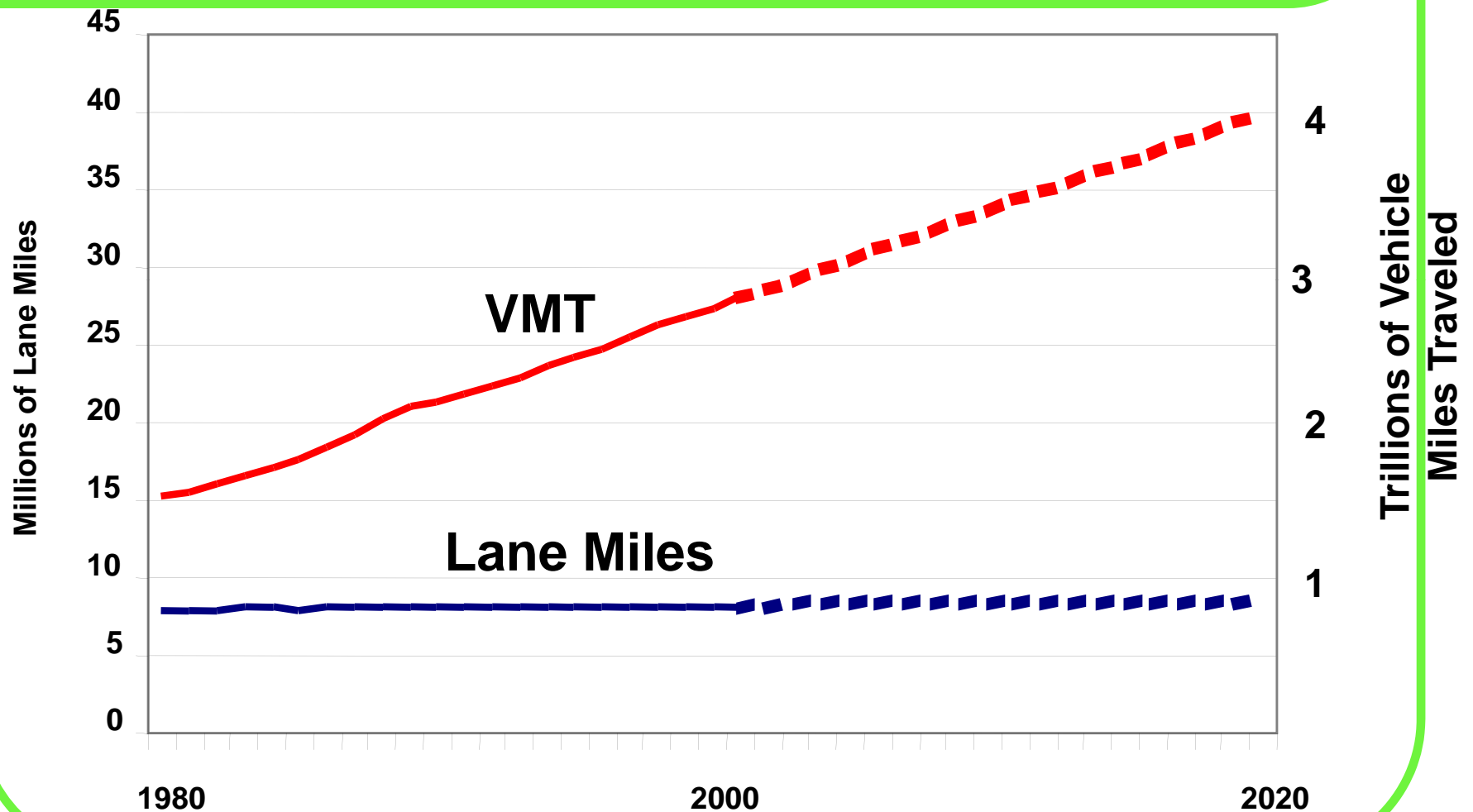
- **Steve Cooper**

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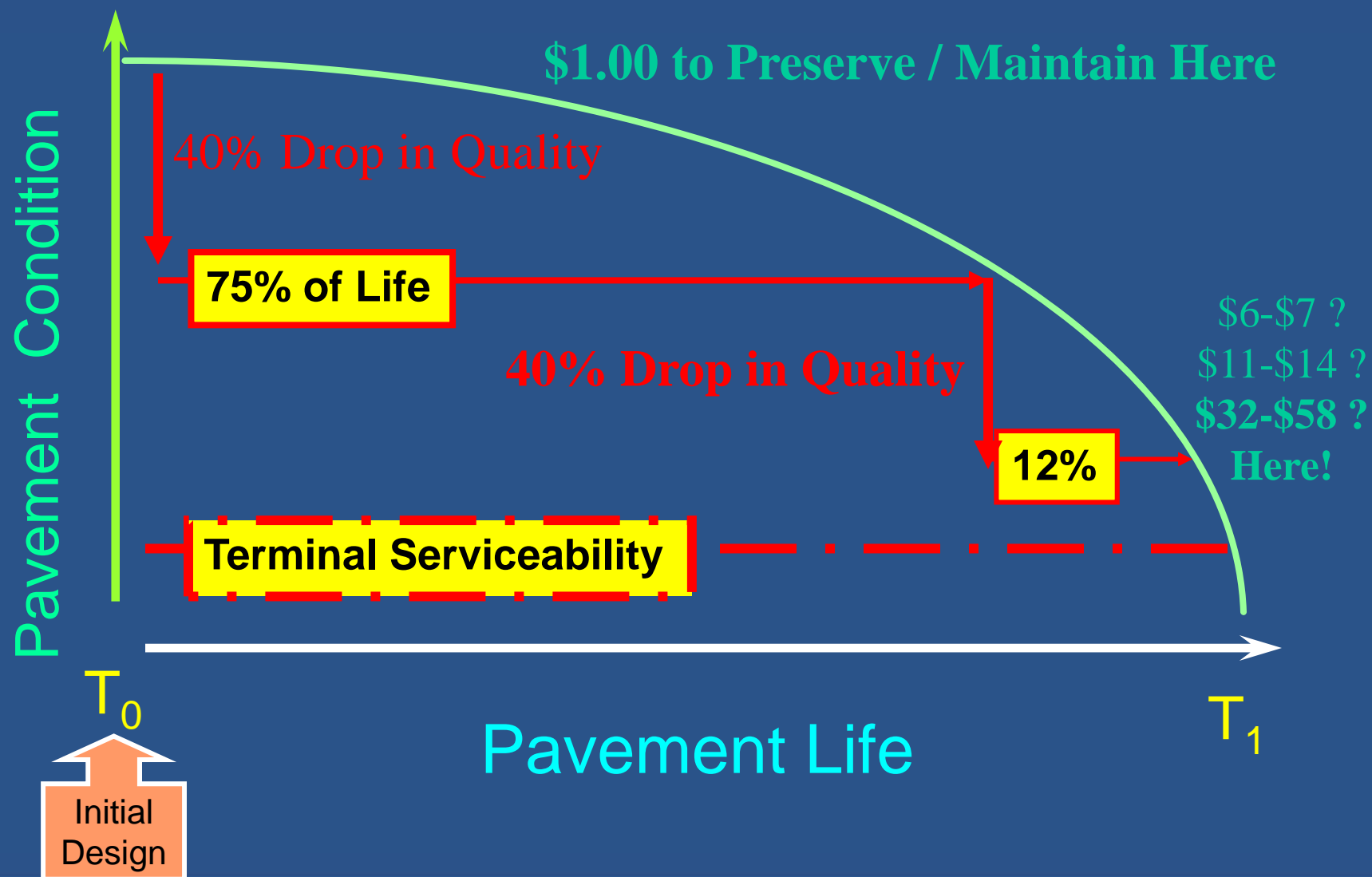
- **Luis Rodriguez**

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New Construction → Preservation



Performance Curves / Costs of Repairs



Pavement Preservation

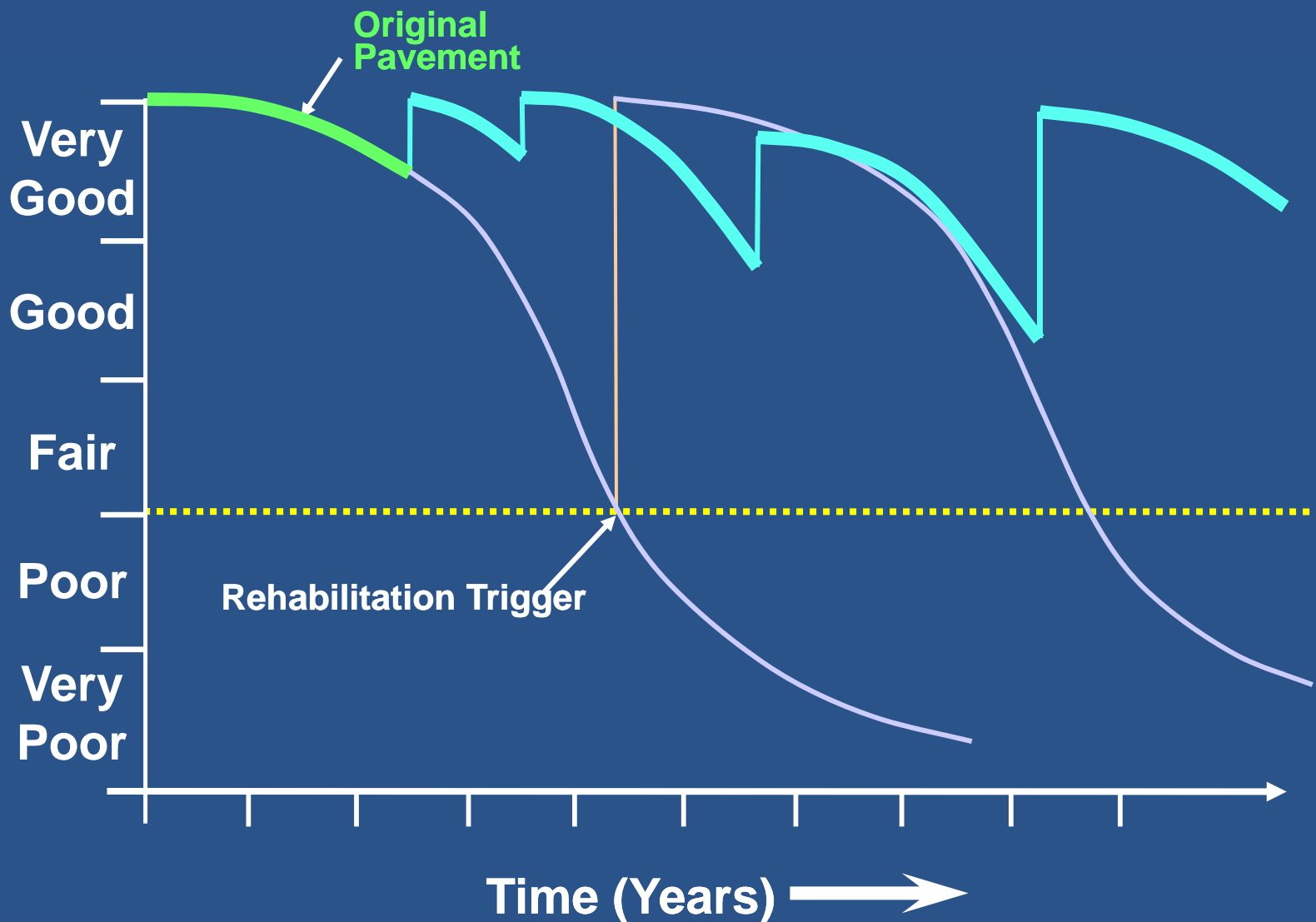
Doing the *right* thing...

...to the *right* pavement.

...at the *right* time...

TO KEEP THE “GOOD” ROADS GOOD!

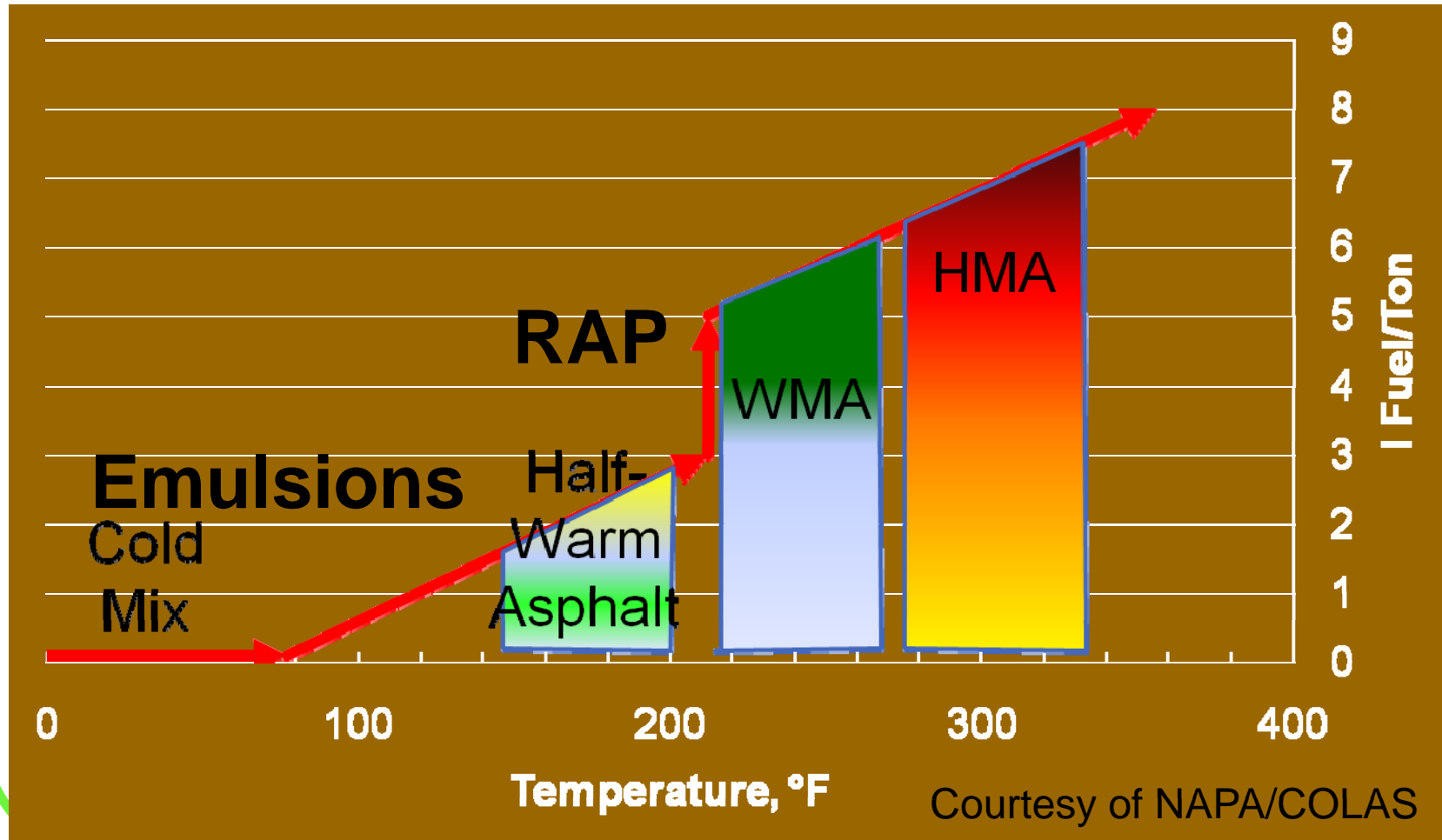
The Pavement Preservation Concept



Which Costs Less???



Energy Use Comparisons



FHWA's "3 E's"

● ENGINEERING

- Use Good Engineering Design to Assure Long-Life Pavements and Assets.

● ECONOMICS

- Use Life-Cycle Cost Analysis for Project Selection.

● ENVIRONMENT

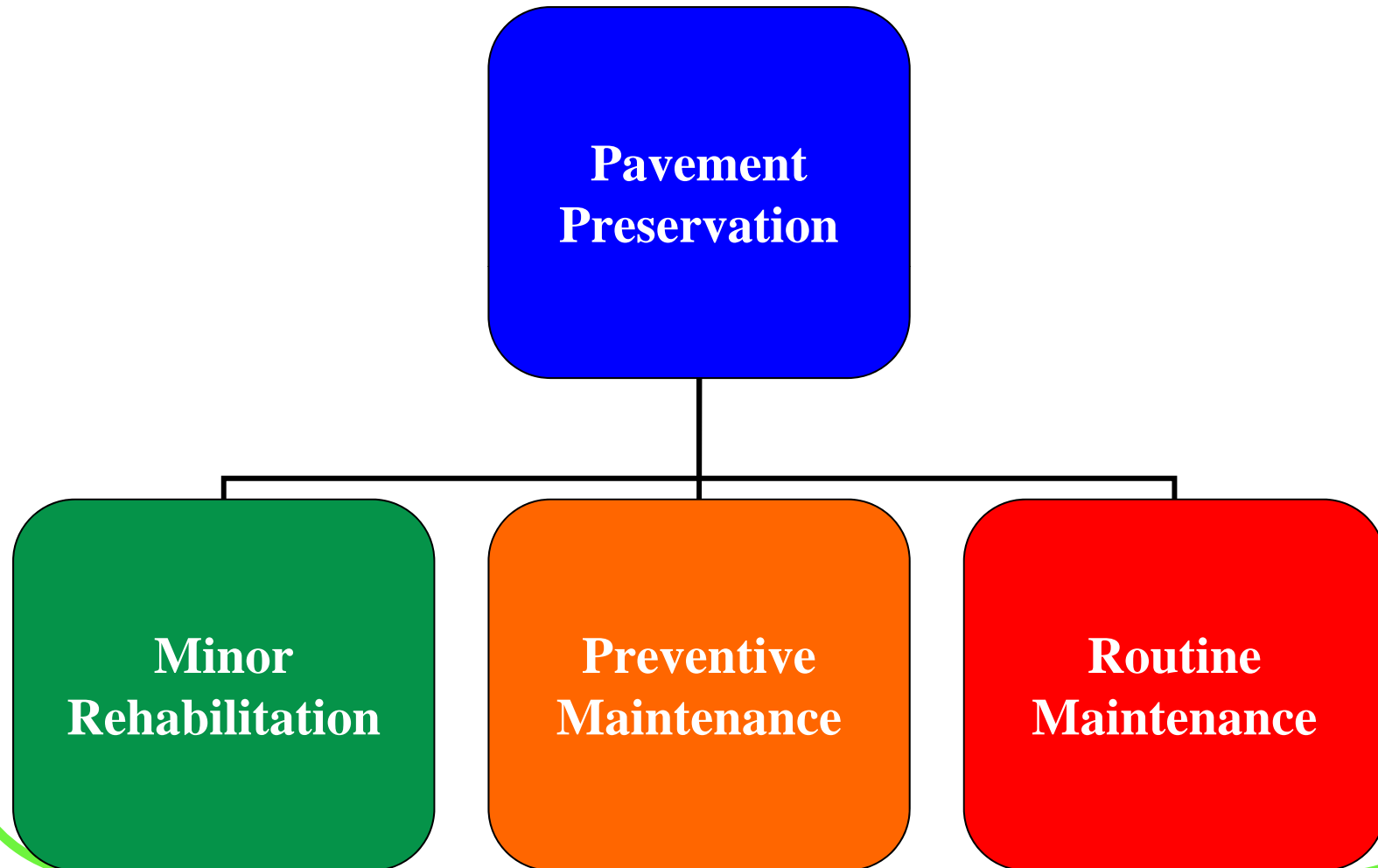
- Consider Recycling First
- Be Good Stewards of the Environment

Key FHWA Policy Memos

- **Preventive Maintenance Eligibility**
 - **10/8/04**
- **Pavement Preservation Definitions**
 - **9/12/05**

<http://www.fhwa.dot.gov/preservation>

Categories of Pavement Preservation

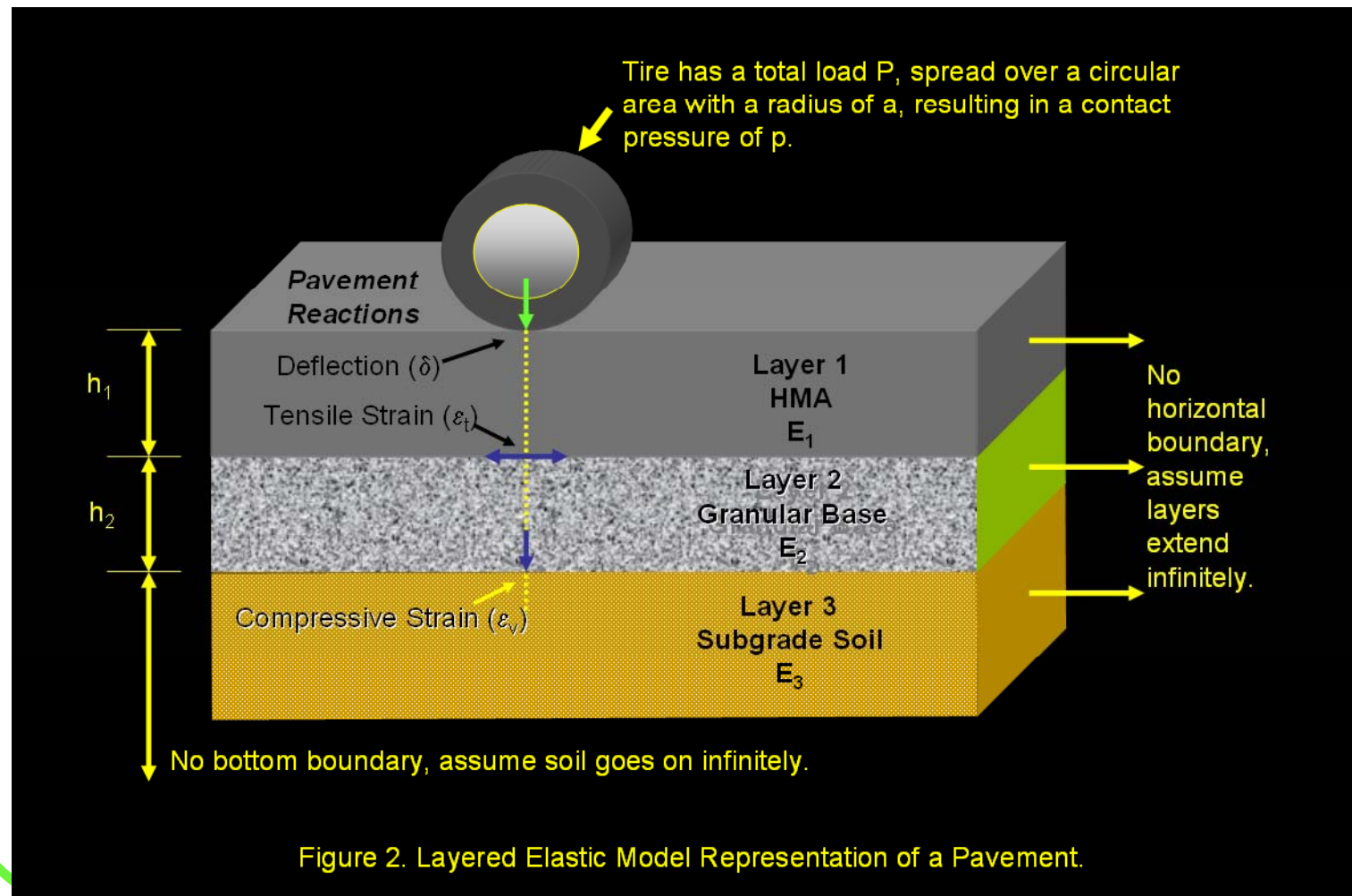


Pavement Preservation Guidelines

Type of Activity	Increase Capacity	Increase Strength	Reduce Aging	Restore Serviceability
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Pavement Preservation	New Construction	X	X	X	X
	Reconstruction	X	X	X	X
	Major (Heavy) Rehabilitation		X	X	X
	Structural Overlay		X	X	X
	Minor (Light) Rehabilitation			X	X
	Preventive Maintenance			X	X
	Routine Maintenance				X
	Corrective (Reactive) Maintenance				X
	Catastrophic Maintenance				X

Stresses and Strains -- but Preservation is Non-Structural!



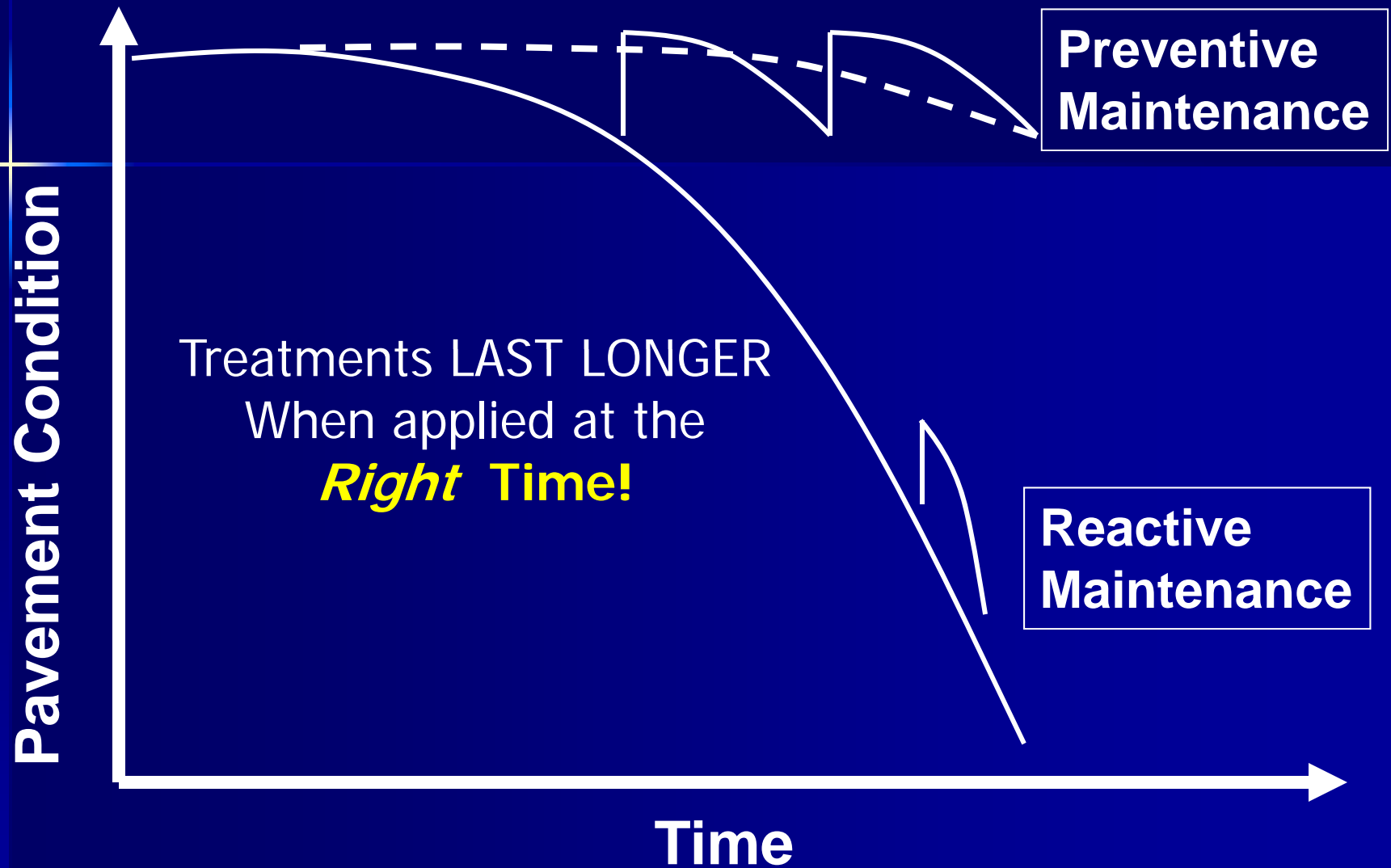
Preservation Activities - Examples

Asphalt:

- **Chip Seals**
- **Fog Seals**
- **Slurry Seals**
- **Surface Seals**
- **Micro-Surfacing**
- **Thin Overlays**
- **Profile Milling**
- **Crack Sealing**

PCC:

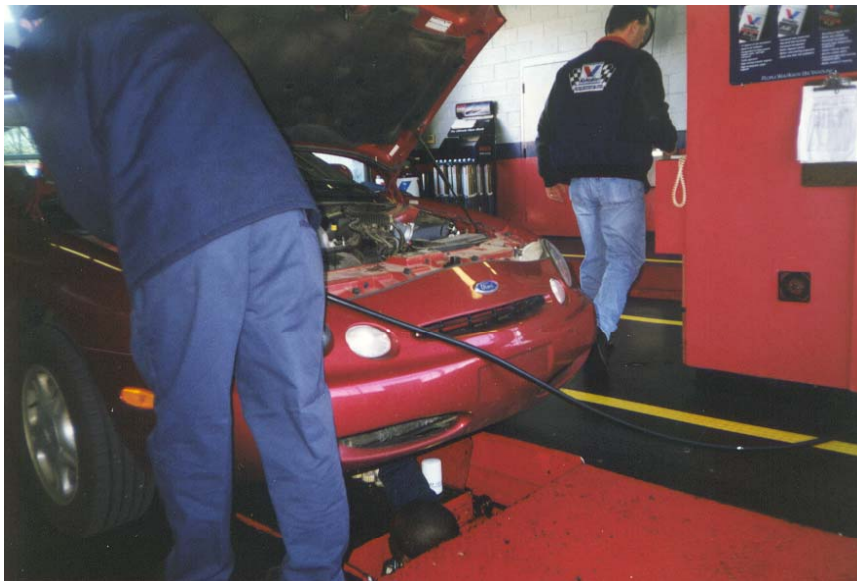
- **Joint Resealing**
- **Crack Sealing**
- **Spall Repair**
- **Dowel Bar Retrofit**
- **Full and Partial Depth Repair**
- **Diamond Grinding**



Benefits of Preservation

- **Improved Customer Satisfaction**
 - Keeps them (and you) happy.
- **Lowers User and Agency Costs in the Long-Term**
 - Saves them (and you) money.
- **Improved Safety**
 - Keeps them (and you) safer.
- **ENVIRONMENTALLY RESPONSIBLE!**

Does Preservation Make Sense?



FHWA Pavement Preservation Support

- **Working with the States**
 - AASHTO and the TSP²
 - Individual States and FHWA Division Offices
- **Working with Industry**
 - Industry Associations: FP2
 - AEMA, ARRA, ISSA, FP2, NAPA, ACPA, IGGA, etc.
- **Outreach Activities**
 - FHWA websites, publications, products, meetings
- **Training – National Highway Institute**
- **Technology Advancement**
 - Research
 - National Center for Pavement Preservation
 - TRB, NCHRP
 - Recycled Materials Resource Center

FHWA Web-Based Resources

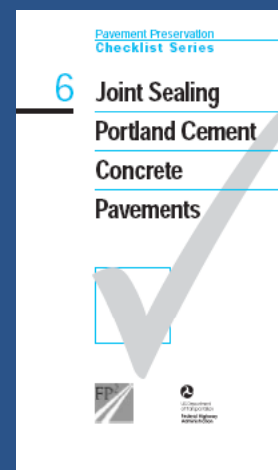
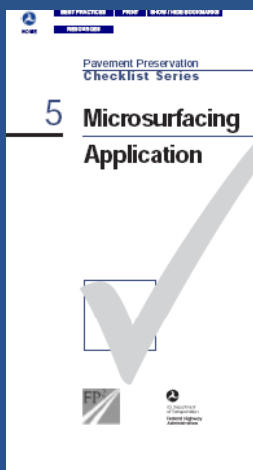
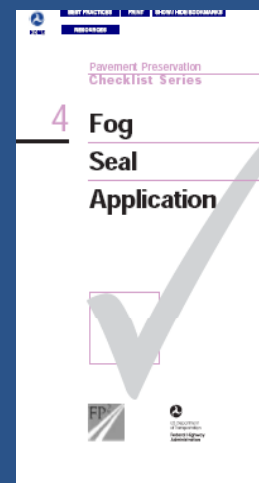
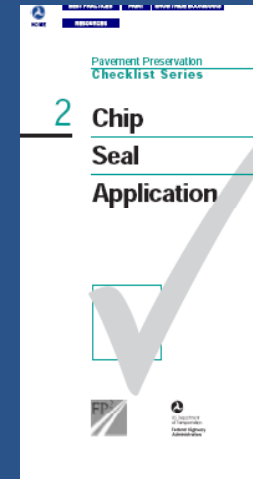
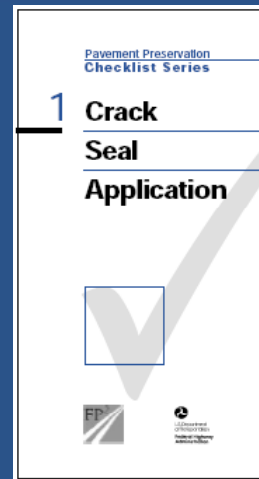
- www.fhwa.dot.gov/pavement
- www.fhwa.dot.gov/preservation



14 CHECKLISTS

CD's/DVD's

COMPENDIUMS



A Quick Check of Your Highway Network Health

by Larry Galehouse, Director,
National Center for Pavement Preservation
and

Jim Sorenson, Team Leader,
FHWA Office of Asset Management

NHI Preservation Training

- **131103 A, B, C – Pavement Preservation: Design and Construction of Preventive Maintenance Treatments**
- **131104 – Pavement Preservation: Integrating Pavement Preservation Practices into Pavement Management**
- **131106 – Transportation Asset Management**
- **131114 - Pavement Preservation: Optimal Timing of Pavement Preservation Treatments**
- **131115 – Pavement Preservation: Preventive Maintenance Treatment, Timing, and Selection**
- **131116A – Pavement Management: Characteristics of an Effective Program**

NHI Preservation Training - FREE

- **131110 – Pavement Preservation Treatment Construction – WEB-BASED**

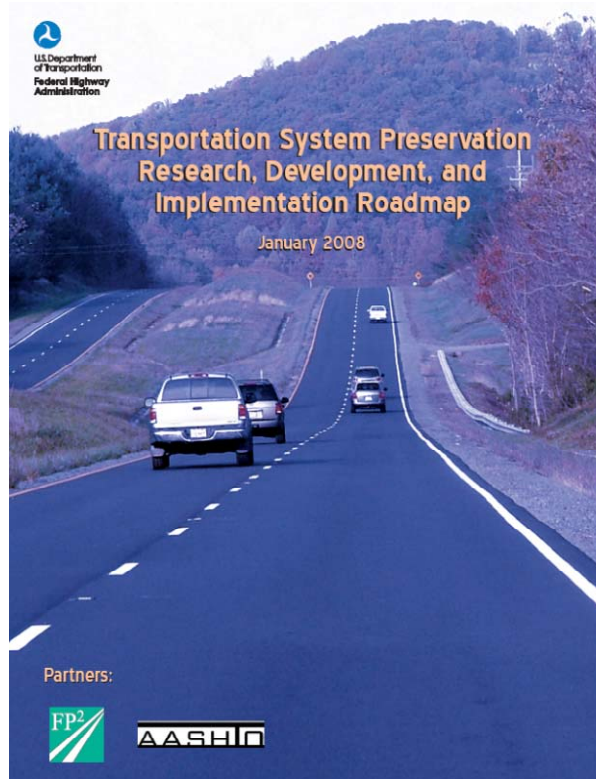
- **HMA Treatments**
- **PCC Treatments**
- **HMA Overlay Inspection**

TCCC: www.nhi.fhwa.dot.gov/tccc

Training Under Development

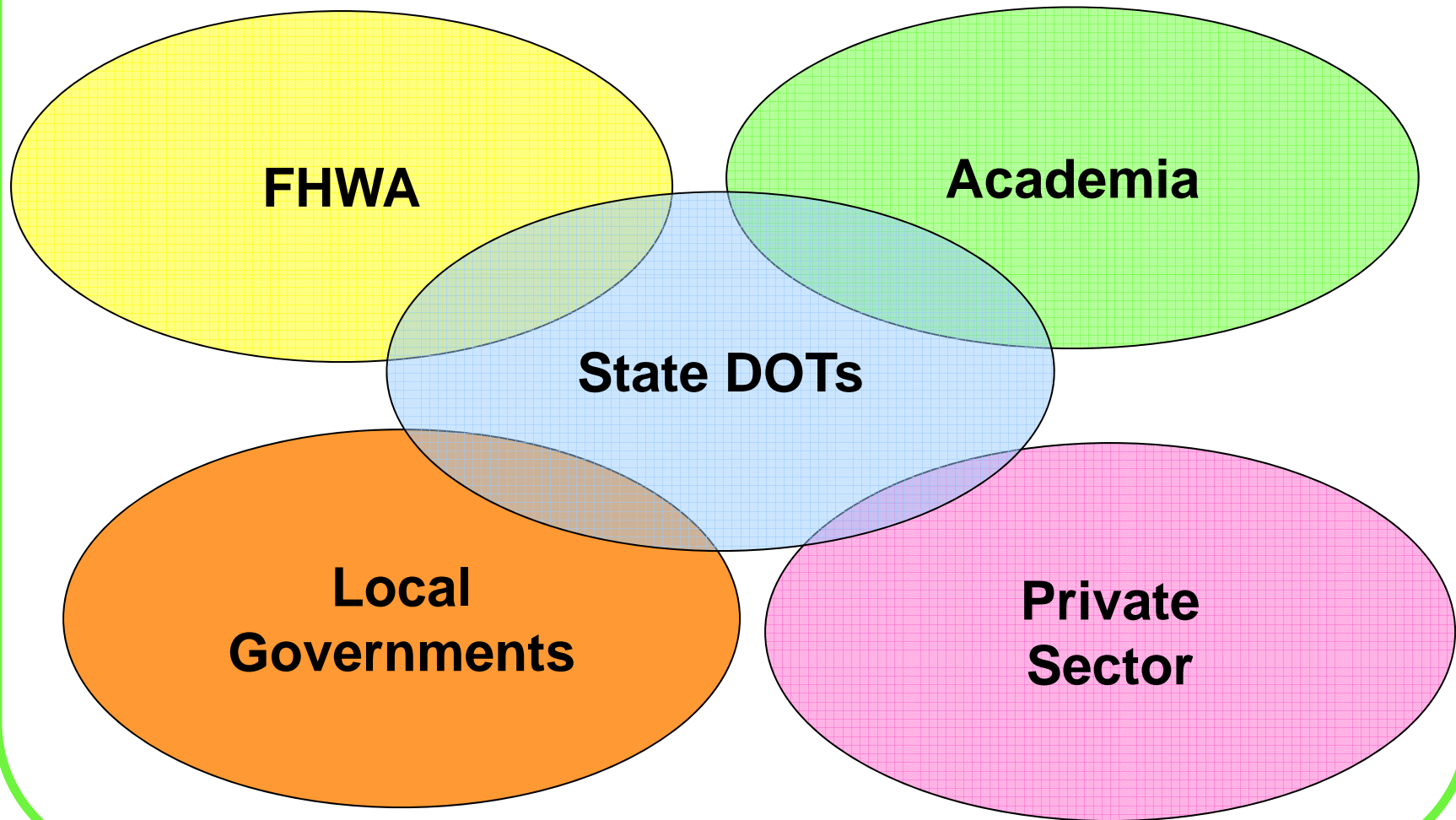
- **Maintenance Academy**
- **PHT – Pavement Health Tool**
- **Advanced Emulsion Technology**
- **Environmental Factors for Construction and Maintenance**

Transportation System Preservation Research Roadmap



<http://www.tsp2.org/roadmap/index.php>

Partnerships Are Required

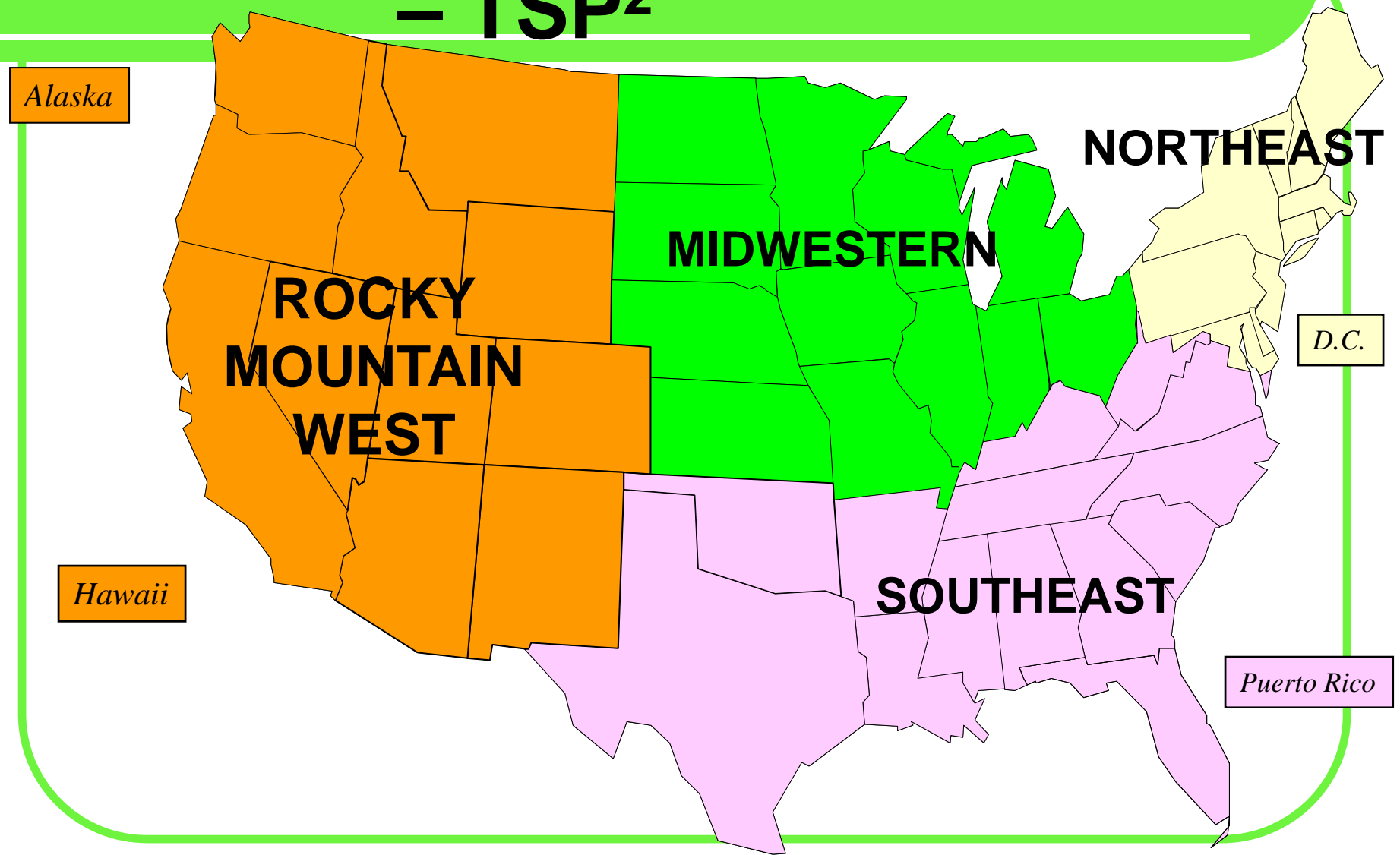


Partnerships are Required

- **1 FHWA**
- **52 State DOTs (including DC and PR)**
- **3,034 County governments;**
- **35,933 Municipal, Town and Township governments.**
- **4,140 Colleges and Universities**
- **_____ contractors/industry reps.**

UNITED WE STAND....

Preservation Partnerships – TSP²



Pavement Preservation Partnerships

- If your State, Municipality, or County is not a member yet...
- Please get a flyer
- And Join Us in preserving our existing assets in good condition!

www.pavementpreservation.org or www.tsp2.org



The flyer is titled "Rocky Mountain Pavement Preservation Partnership" and features a map of the Rocky Mountain region. It lists benefits of joining the partnership, such as lower costs and better pavement condition. It also includes a comparison of spending \$1 now versus \$6-\$14 later. The flyer is signed by the National Center for Pavement Preservation (ncpp) in partnership with the FHWA.

Rocky Mountain Pavement Preservation Partnership

If your State, Municipality, or County is not a member yet, here's why they should be...

Knowing the Right Treatment for the Right Pavement at the Right Time promises:

- Lower costs over time
- More predictable costs
- Fewer premature failures
- Better pavement condition
- Extended pavement life
- More effective use of taxpayer dollars
- A happier driving public
 - Less delays
 - Less vehicle damage

Spend \$1 Now

Spend \$6 - \$14 Later

Pavement Preservation
Pavement Preservation is "a program employing a network level, long-term strategy that enhances pavement performance by using an integrated, cost-effective set of practices that extend pavement life, improve safety and meet motorist expectations."
Source: FHWA Pavement Preservation Expert Task Group

What is the Rocky Mountain Pavement Preservation Partnership?
The RMPPP is an alliance of state DOTs, county and local municipality officials, and members of industry in the Rocky Mountain region. The focus of the RMPPP is to collaborate on as well as promote the most effective pavement preservation strategies being used in the region. With increased awareness focused on effective preservation strategies for state and local governments, greater adoption and funding will be the result.
If you haven't already, join now.

In partnership with the 

For more information, call 517.432.8220 or email ncpp@egr.msu.edu

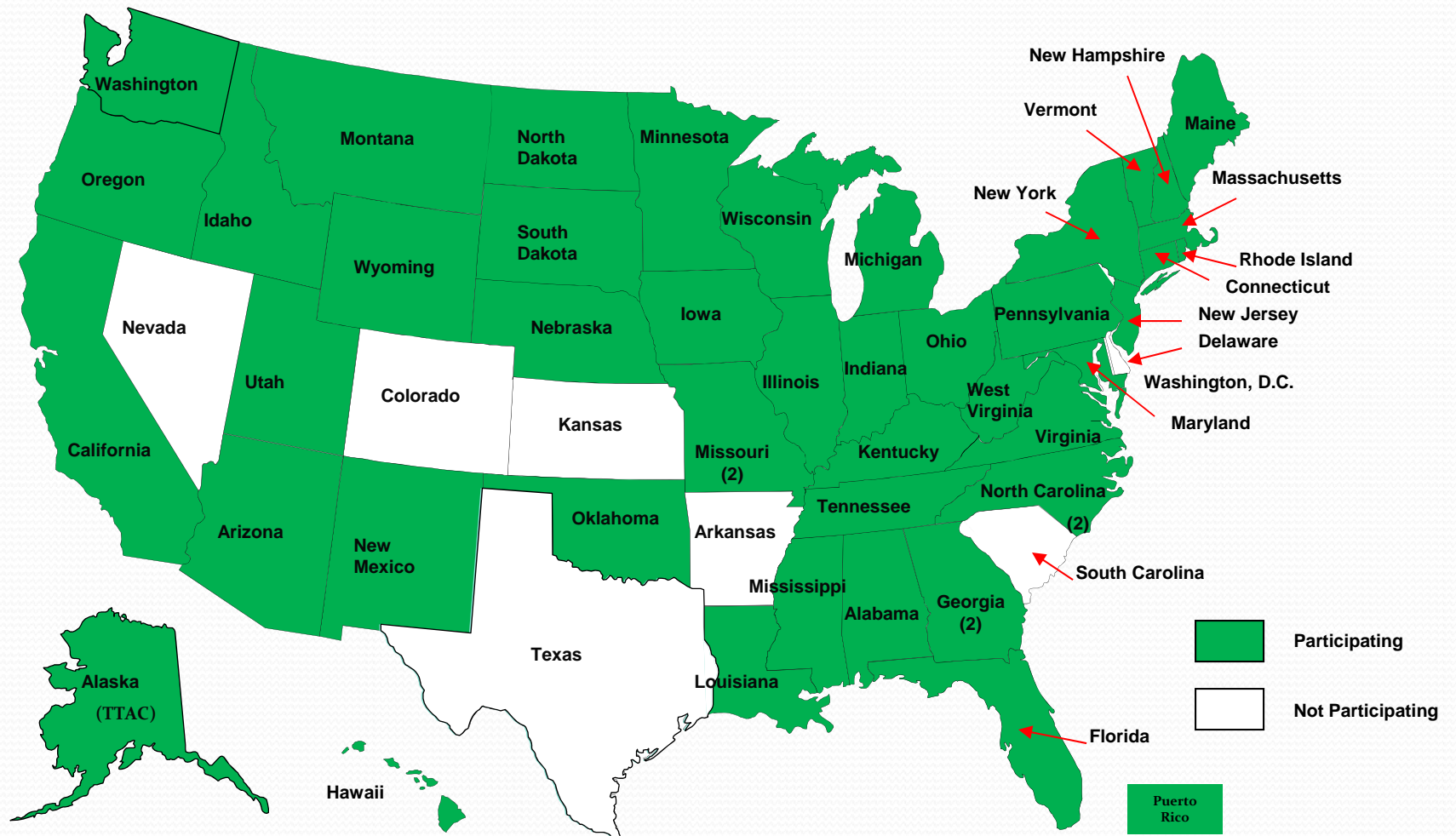
LTAP Center Directors Survey on Pavement Preservation Topics

Prepared for:
FHWA Pavement Preservation Expert Task Group Meeting,
July 26, 2010

Prepared by:
PPETG Subcommittee on Support for Pavement
Preservation Centers and Regional Partnerships

LTAP/TTAP Director Survey Respondents

47 Total Respondents - (3 duplicates / 1 TTAP) – Survey Monkey

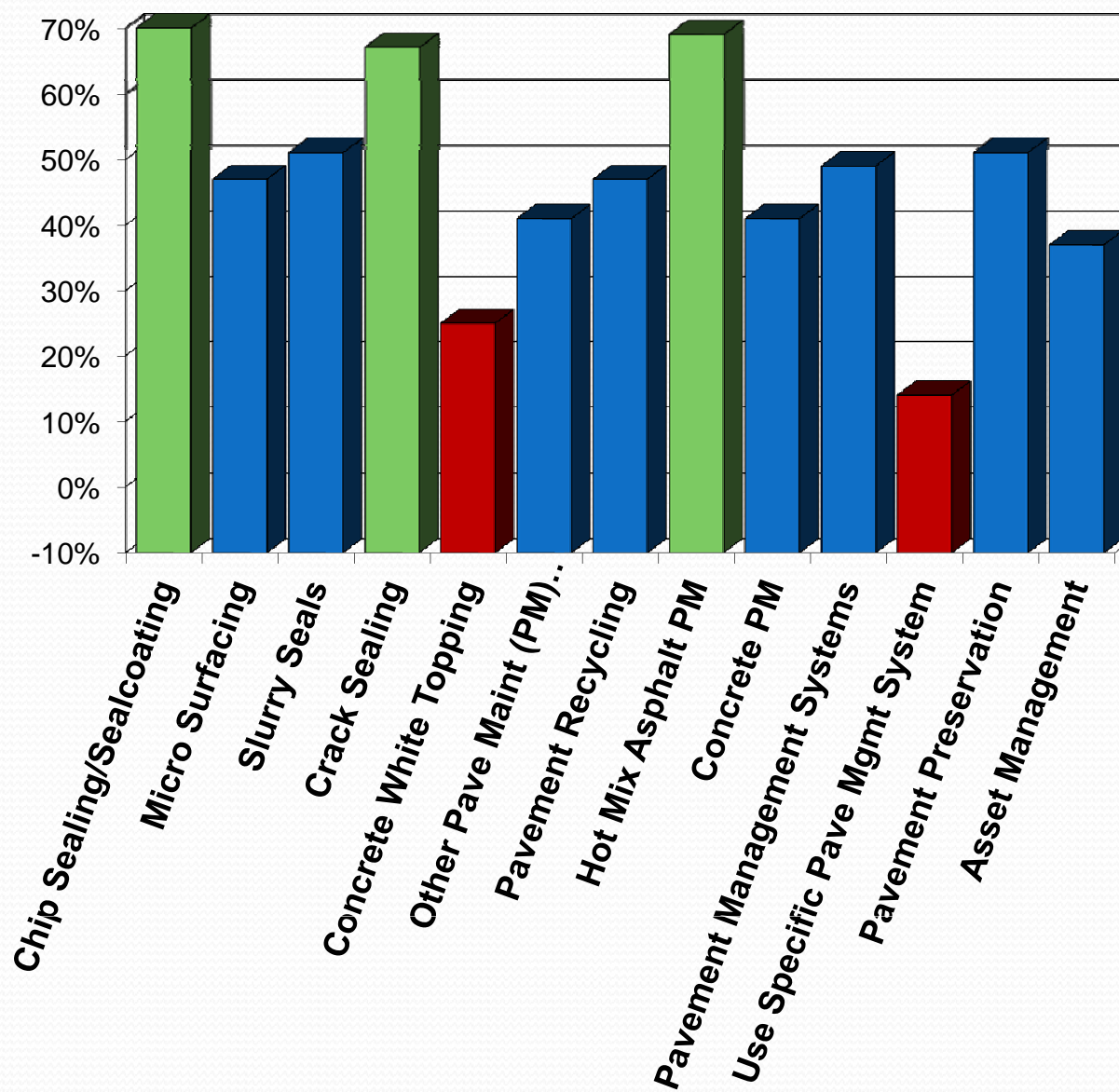




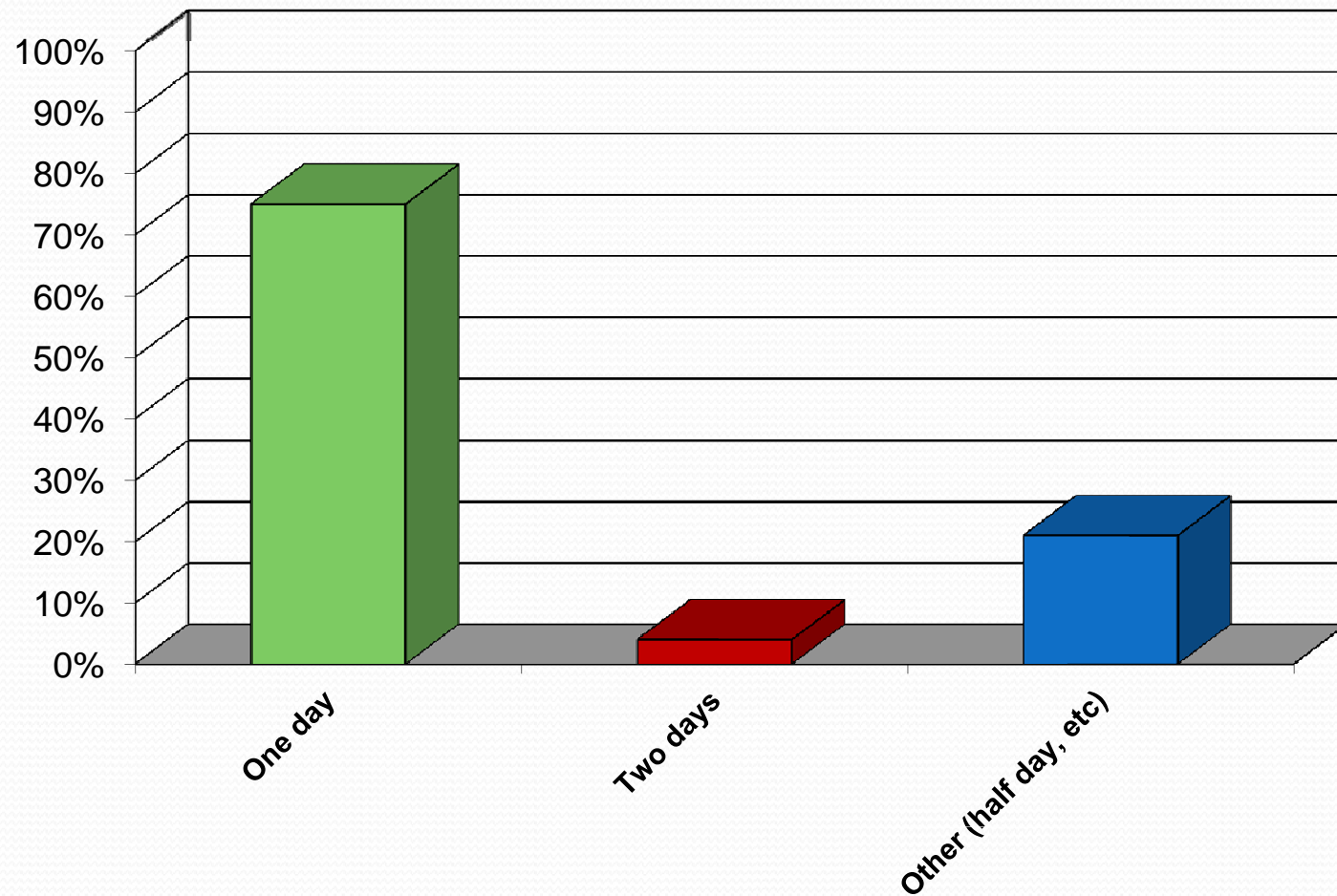
Section 1

- **Has your LTAP center offered any classes on these topics in the last 3 years?**
- **What is the preferred length of training sessions for your customers?**
- **What are the barriers to presenting pavement preservation training?**

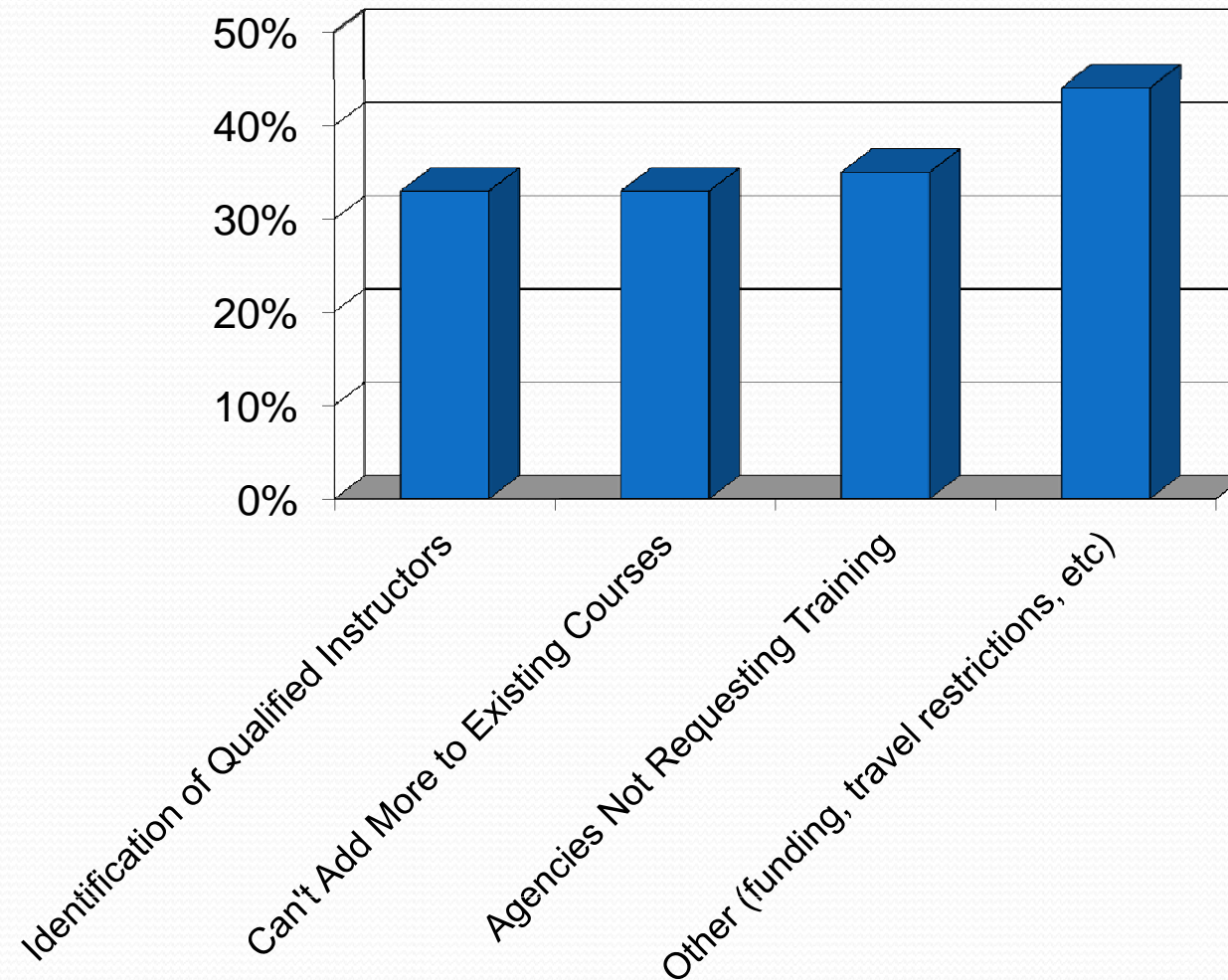
Has your LTAP Center offered any of these classes in the last 3 years?



What is the preferred length of training sessions?



What are the barriers to pavement preservation training?

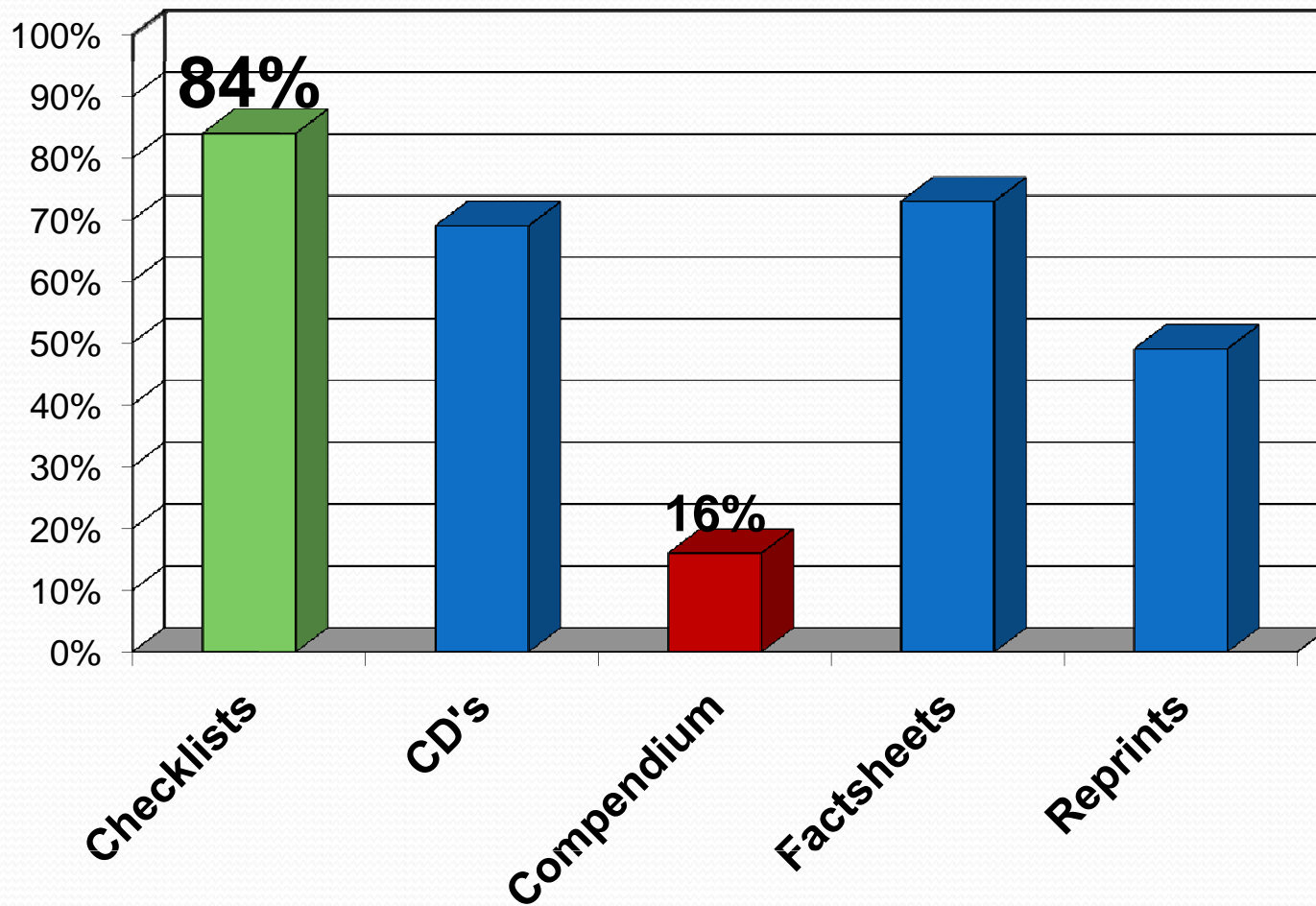




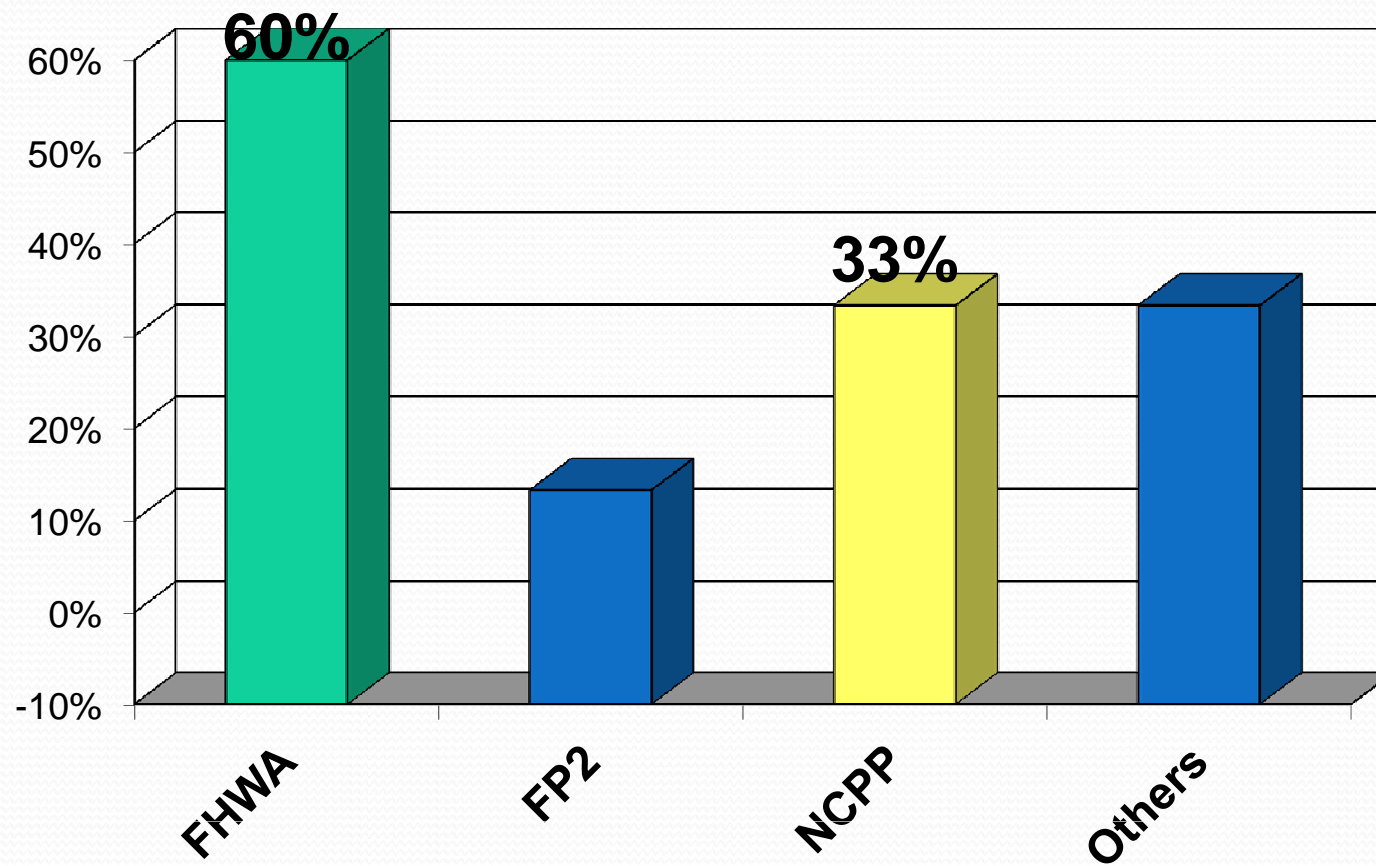
Section 2

- Which items do the LTAPs believe are valuable to their local agency customers?
- To which websites do the LTAPs link from their websites?
- Are there any unmet needs for PP materials or training in your state?

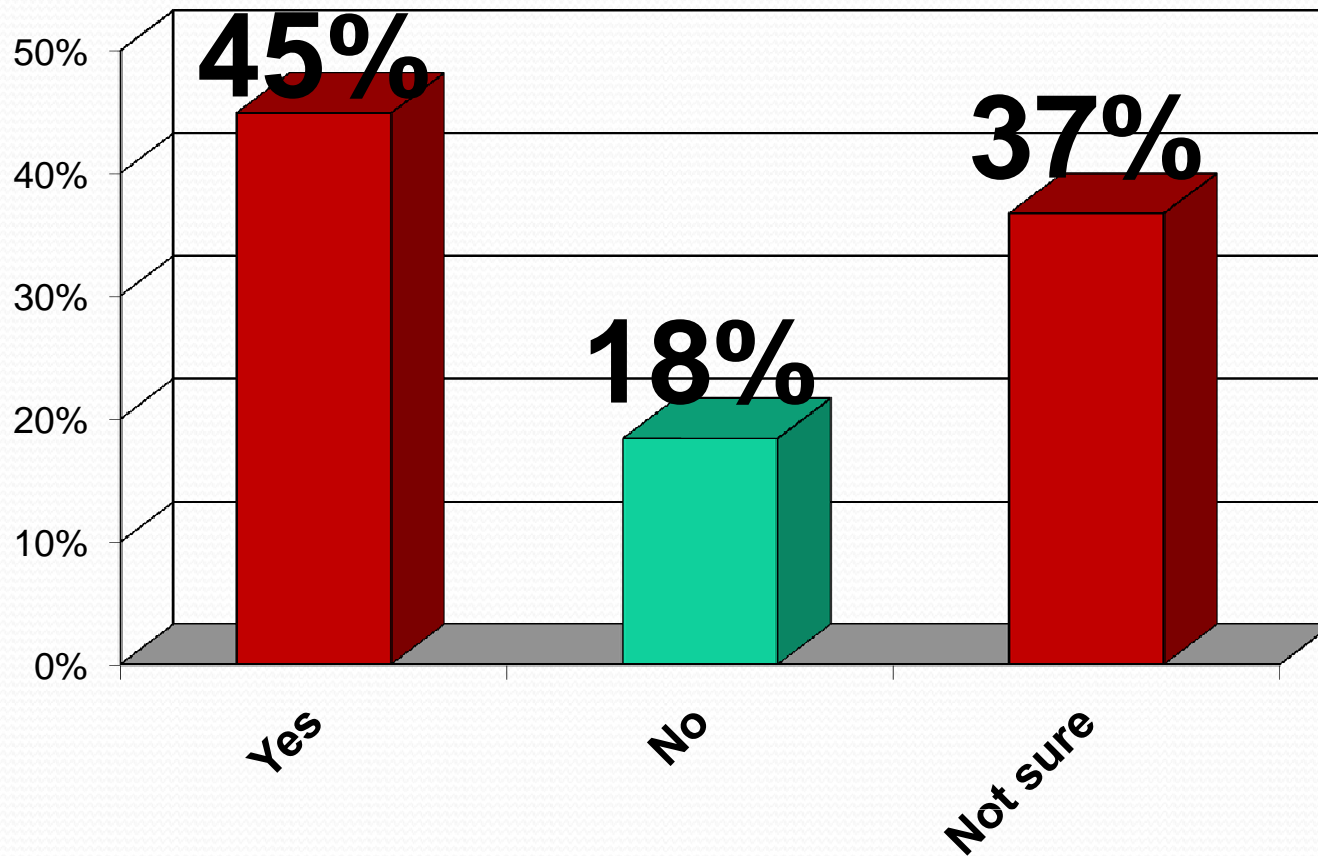
Which of these items are valuable to your customers?



To which websites do the LTAPs link from their websites?



Are there any unmet needs?





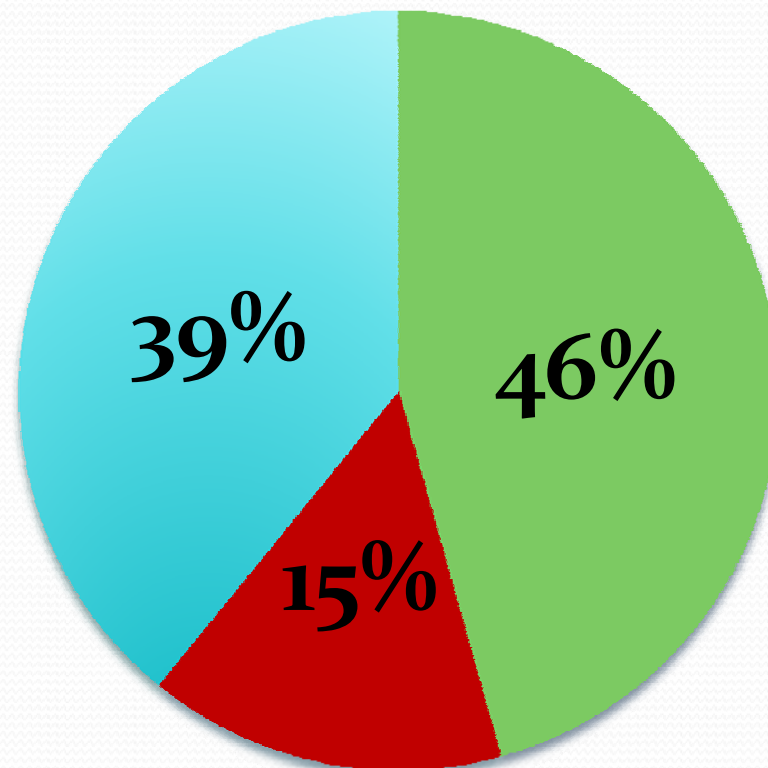
Section 3

- Is the pavement preservation message adequately communicated to your local government customers?
- Do you have any other comments on pavement preservation that you would like to share with the Expert Task Group?
- Please provide your contact information.

1. Is the pavement preservation message adequately communicated to your local government customers?

Responses

■ YES ■ NO ■ NOT SURE





2. Do you have any other comments on pavement preservation that you would like to share with the Expert Task Group?

12 Comments

1. Request for Spanish Language publications/training
2. There is still institutional inertia to be overcome
3. PP not a big issue in our State
4. PP is a growing issue in our State
5. PP Training is embedded in our other training
6. Need help with unpaved surfaces



LTAP Survey Observations (1/3)

- Most common training in area of Chipseal and Hot Mix Asphalt
- Least Common in the area of White Topping and Asset Management
- Training courses need to be kept to one day or less
- Self Directed Webinars are the most beneficial to local agencies



LTAP Survey Observations (2/3)

- LTAP barrier to providing training is identifying qualified instructors (32%)
- Local Agencies have not requested PP training from LTAPs (34%)
- PP Check List Series is most valuable publication/Material for Local Agencies
- Many LTAP centers are not providing key PP web links on their sites



LTAP Survey Observations (3/3)

- 80% of LTAPs indicated there are unmet or unknown needs in PP training
- More than 50% of LTAPs indicated that the PP message was not adequately communicated to Local Agencies



LTAP Training Recommendations

- Promote the need for PP
- Pavement Management System key to successful PP program
- Training Courses one day or less
- Utilize Web Based Training (WBT)
- Identify qualified instructors

FHWA Supports Pavement Preservation!



Left to right: Associate Administrator for Infrastructure King Gee; Administrator Tom Madison; James B. Sorenson, Highway Engineer; and Executive Director Jeff Paniati.

THANK YOU!

Steve Mueller

FHWA Resource Center

Pavement and Materials Engineer

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MOVING THE
AMERICAN
ECONOMY

