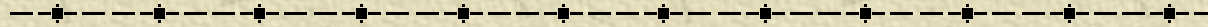
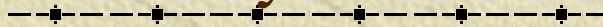


# The Superpave System - Where Does the Future Take Us?



John D'Angelo/John Bukowski  
Federal Highway Administration  
(Presented by Steve Cooper)



# Superpave Implementation Survey III

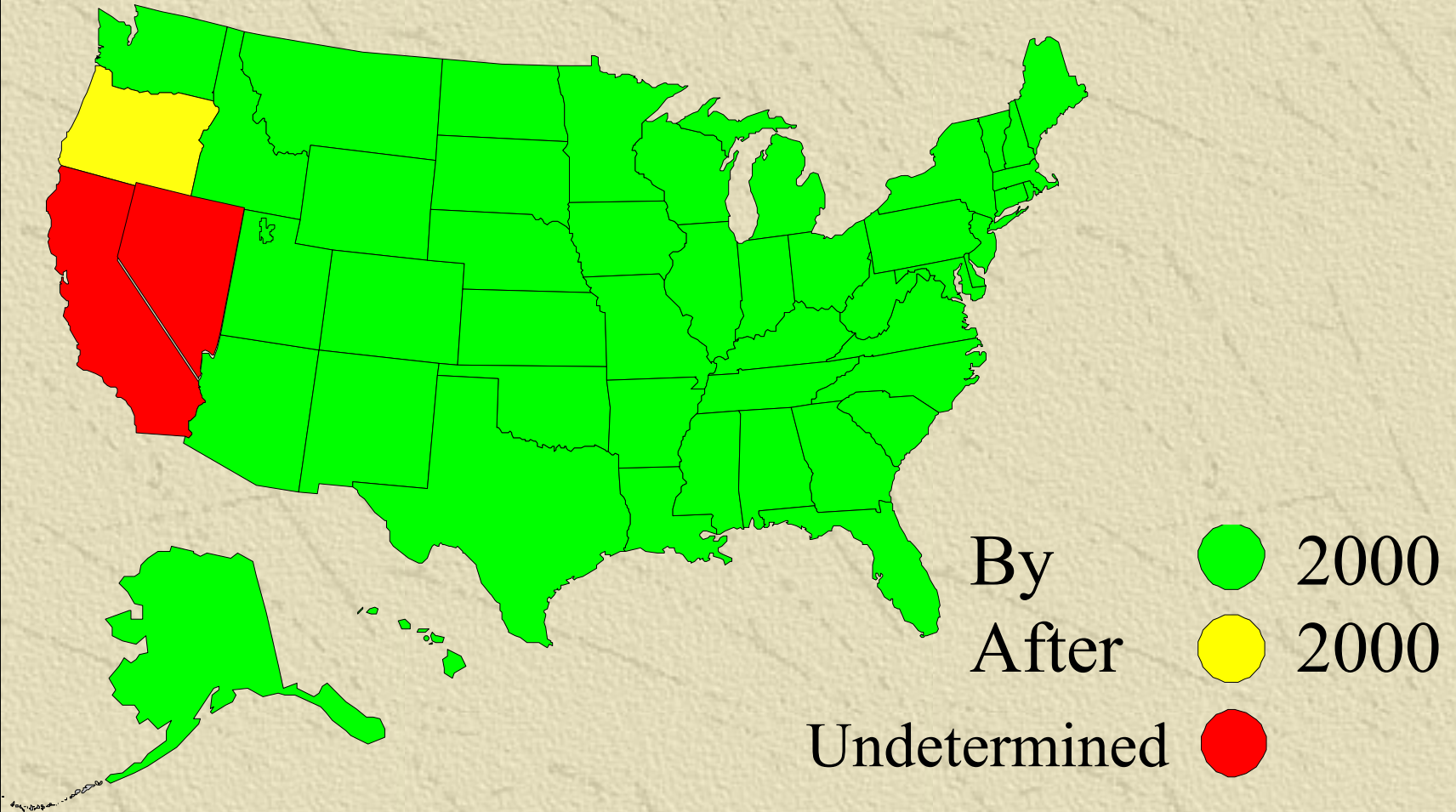
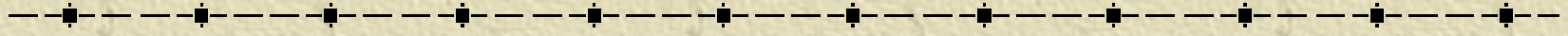
1999 - 2000



AASHTO TASK FORCE  
ON SHRP IMPLEMENTATION  
LEAD STATE PROGRAM

# Superpave **Binder** Implementation

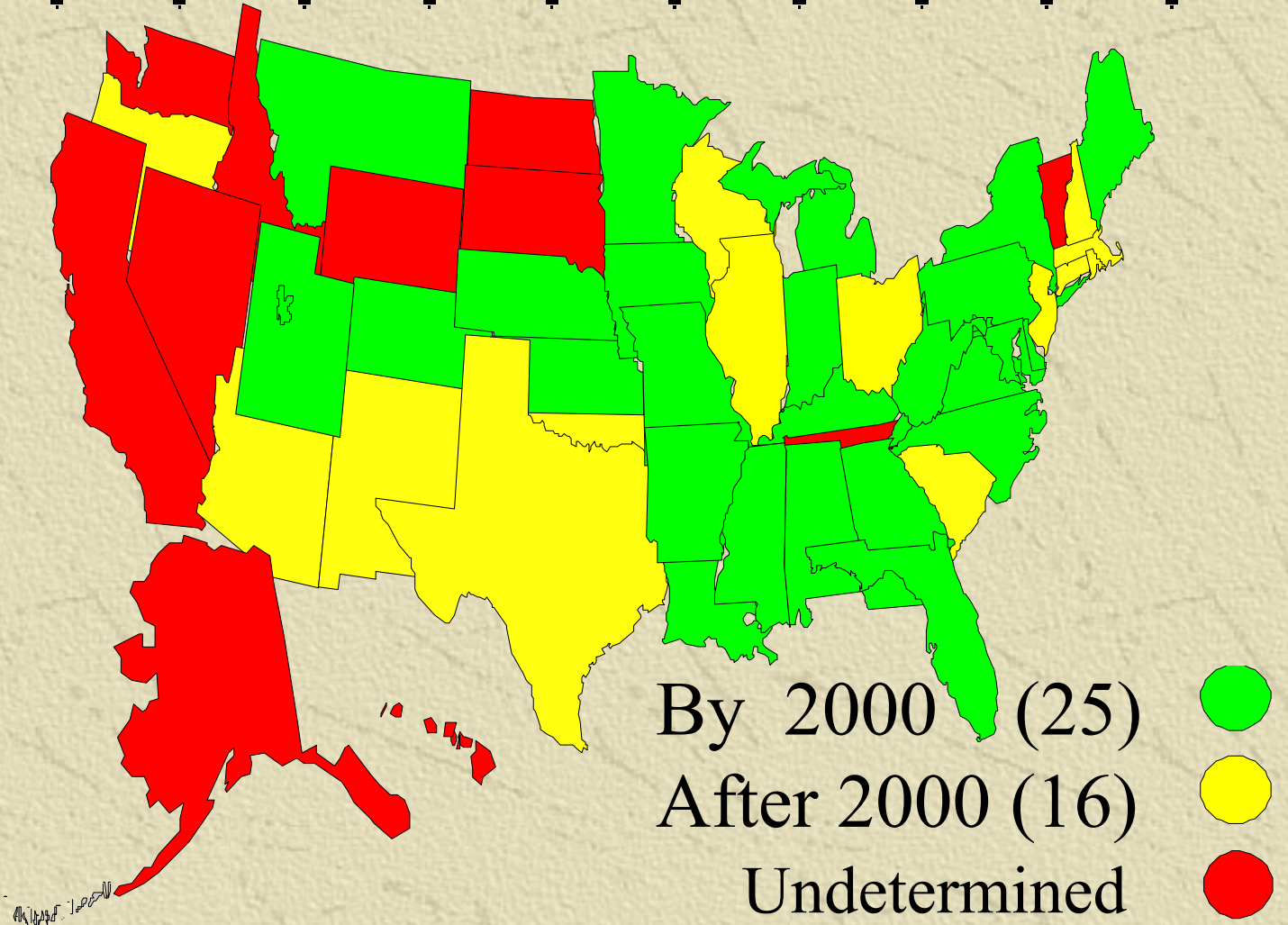
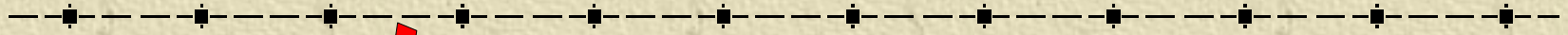
## *1999 – 2000 Lead State Survey*



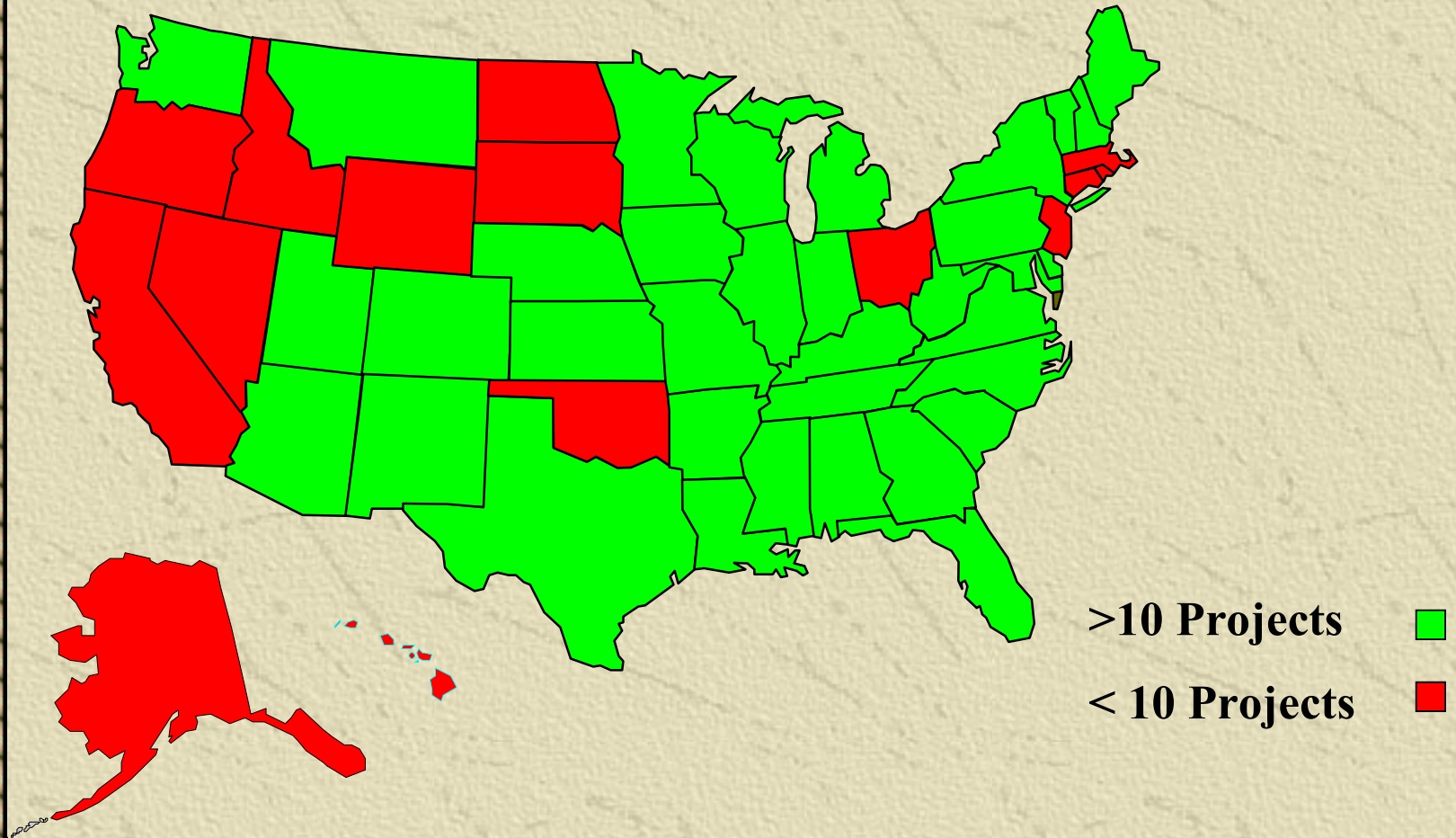
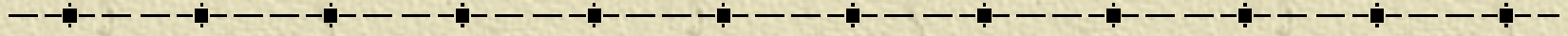


# Superpave Mixture Implementation

## *1999 – 2000 Lead State Survey*



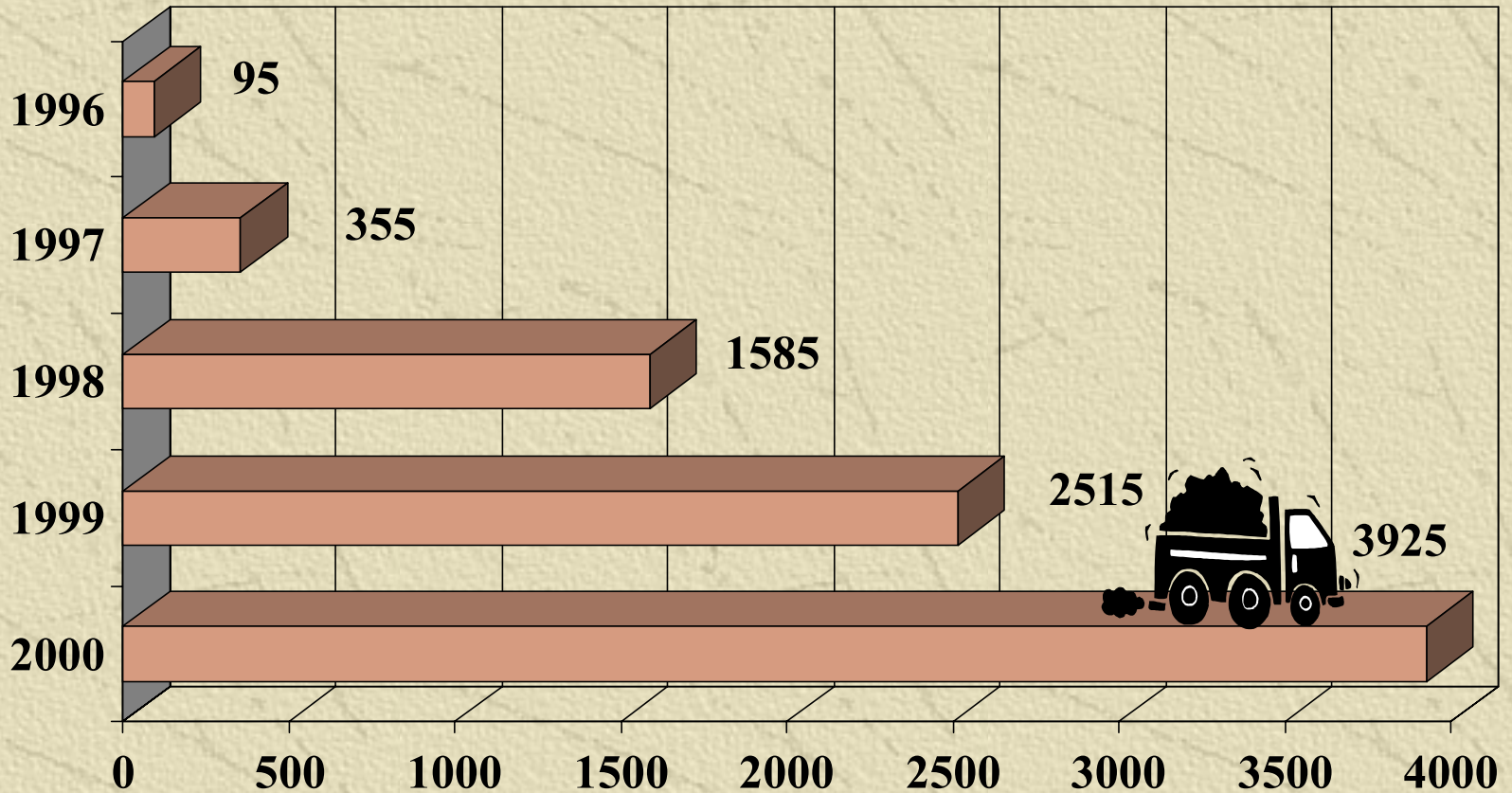
# Superpave 1999 Projects





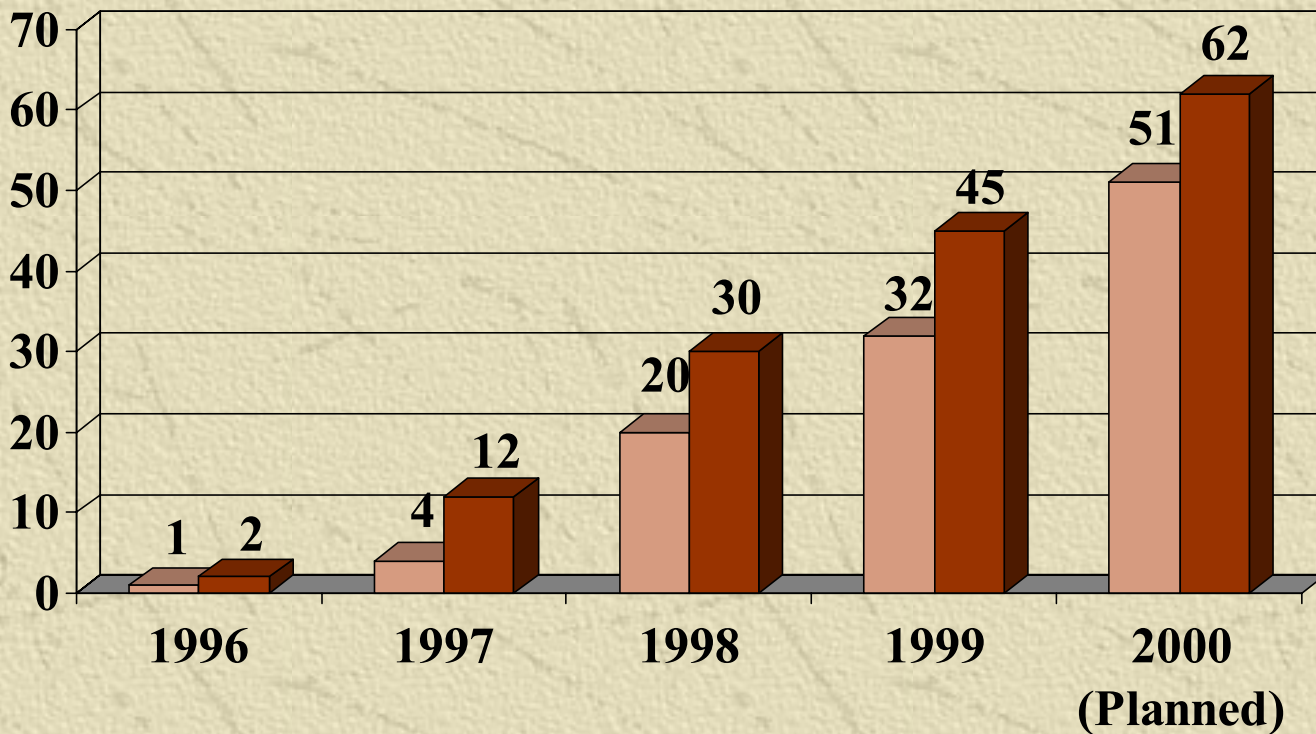


# Superpave Projects Awarded





# Superpave Market Share



■ Percent Total Projects ■ Percent Total Tonnage

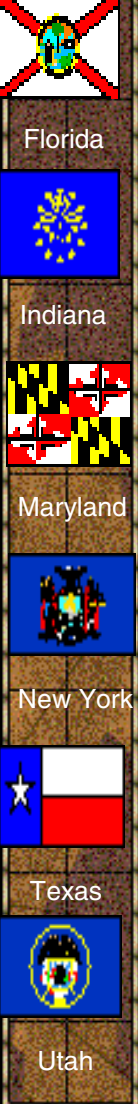
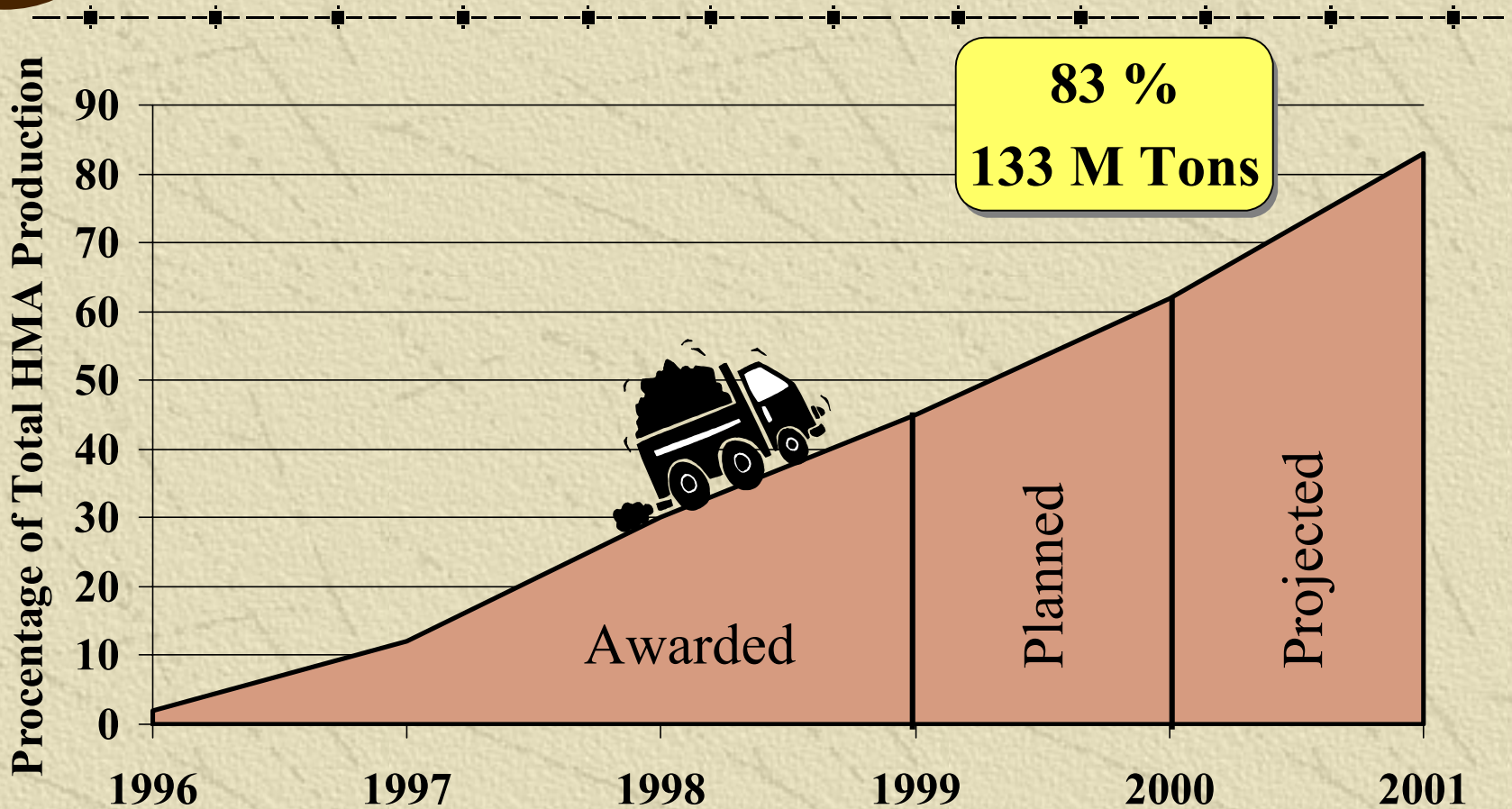






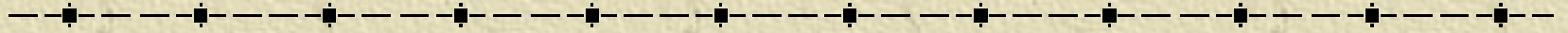
# Projected Superpave Tonnage

(based on 160 million metric tons per year)





# How is Superpave Performing?



# Mississippi SPS – 9 Project

---

✦ I 55, 3 binders same mix design, 2 years and 2.4 million ESAL's

- ✦ 58-22 exhibited 7 mm of rutting.
- ✦ 64-22 exhibited 3 mm of rutting.
- ✦ 76-22 exhibited no rutting.



# Are we finished?

---

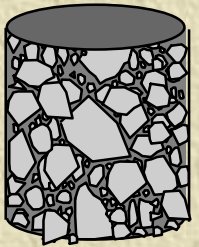
✦ The response of our Superpave users is,  
*“We still need to address several items  
within the Superpave system.”*

✦ The response of any good researcher is,  
*“We need more research.”*

# SUPERPAVE – Prioritized Needs

*Lead States, St Louis 9/19/2000*

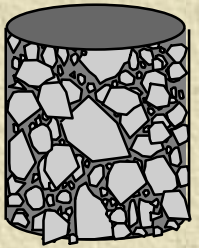
- 
1. Simple Performance Tester (Lab & Field)  
*(9-19 & Mix ETG)*
  2. Education/Outreach/Training  
*(Communication ETG)*
  3. New Moisture Sensitivity Test  
*(Superpave Committee/2002 Problem Statement)*
  4. Select Direction of Models Program  
*(Superpave Committee/TRB/AASHTO/FHWA)*
  5. Uniform Adoption  
*(All ETGs)*





# SUPERPAVE –

## Prioritized Needs



---

### 6. Validation

*(Superpave Committee/TRB/AASHTO/FHWA)*

### 7. Develop Performance Related Specs.

*(NCHRP 9-15/9-22)*

### 8. Document Field Activities

*(Pooled Fund FHWA/State DOTs)*

### 9. QC/QA Specifications

*(Construction Spec./NCHRP)*

### 10. National Uniform Testing

*(Mixture ETG & Communication ETG)*

# Superpave Implementation

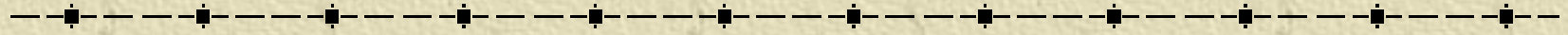
## Additional User Needs

---

- ✦ Improve binder characterization
- ✦ Improve RAP use
- ✦ Improve asphalt modifier protocols and equipment
- ✦ Complete equipment ruggedness testing
  - Direct Tension, Shear Tester, Indirect Tension Tester
- ✦ Resolve construction tenderness issues
- ✦ Refine aggregate standards



# Superpave Implementation Research Needs



- ✦ There is a great deal of work underway and planned to address these needs.
- ✦ This work is being done cooperatively by FHWA and AASHTO through NCHRP.

# Superpave Long Range Plan

---

- ✦ Goal 1. Mix design completed by 2003. Recommended binder type and mixture based on anticipated environment, loading conditions, and layer location.



# Superpave Long Range Plan

---

- ✦ Goal 2. Performance predictions available by 2005. Predict the ability of a mix to withstand rutting, fatigue, thermal cracking, and moisture damage through a series of laboratory tests and mechanistic models.

# Superpave Long Range Plan

---

- ✦ Goal 3. Integrate the binder and mix requirements into a performance-based quality control system during construction by 2005.



# Superpave Long Range Plan

---

- ✦ Goal 4. Superpave to be fully understood by public and private-sector engineers, technicians, and contractors through continuing training and outreach programs by 2005

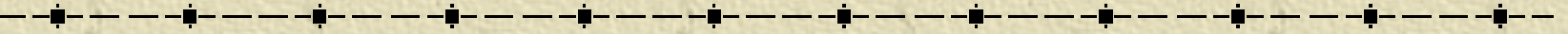
# Superpave Long Range Plan

---

- ✦ Goal 5. Integrate the Superpave models with a fully mechanistic pavement structural design system by 2008.



# FHWA Binder lab



✦ Continuous support to the States:

- Training / Ruggedness / Development / Validation

✦ Trouble shooting of binder problems.

# FHWA Mobile Asphalt Labs

---

- ✦ Provide “Hands-on” of Superpave System
  - ◆ Volumetric Mix Design
  - ◆ Field QC/QA Procedures, NCHRP 9-7
  - ◆ Simple Performance Test Device, NCHRP 9-19
  - ◆ Performance Related Specifications 9-22
  
- ✦ 4 to 6 week visits
- ✦ Data used to support ETG’s



# The Superpave System

---

- ✦ Superpave is in place and it does work.
- ✦ There is a great deal of work needed to fill gaps in the system.
- ✦ Work is continuing to fill the gaps.
- ✦ A plan is in place to complete the system by 2005.

Thank You

