FHWA's Pavement Program

Federal Highway Administration
Washington, DC

Tommy Beatty,
Director, Office of Pavement Technology

Presentation Overview

- Office Organization/Mission/ Responsibilities
- Pavement Technology Activities
- Reauthorization

Website:
http://www.fhwa.dot.gov/pavement/

FHWA



“Long-Life Pavements Program”



Goal

Provide leadership for the delivery of Long Life Pavements that meet our customer's needs and are safe, cost effective and can be effectively maintained.

Responsibilities include:

- National policy and technical guidance
- National program leadership
- Development of new technologies
- Develop/support technology delivery
- Foster innovation

Office of Pavement Technology
HIPT

Tommy Beatty
Director
Alberta Dean, Program Administrator
Shirley Howard, Admn. Assistant

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Assistant Director
Senior Pavement Engineer

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Concrete Pavement Team
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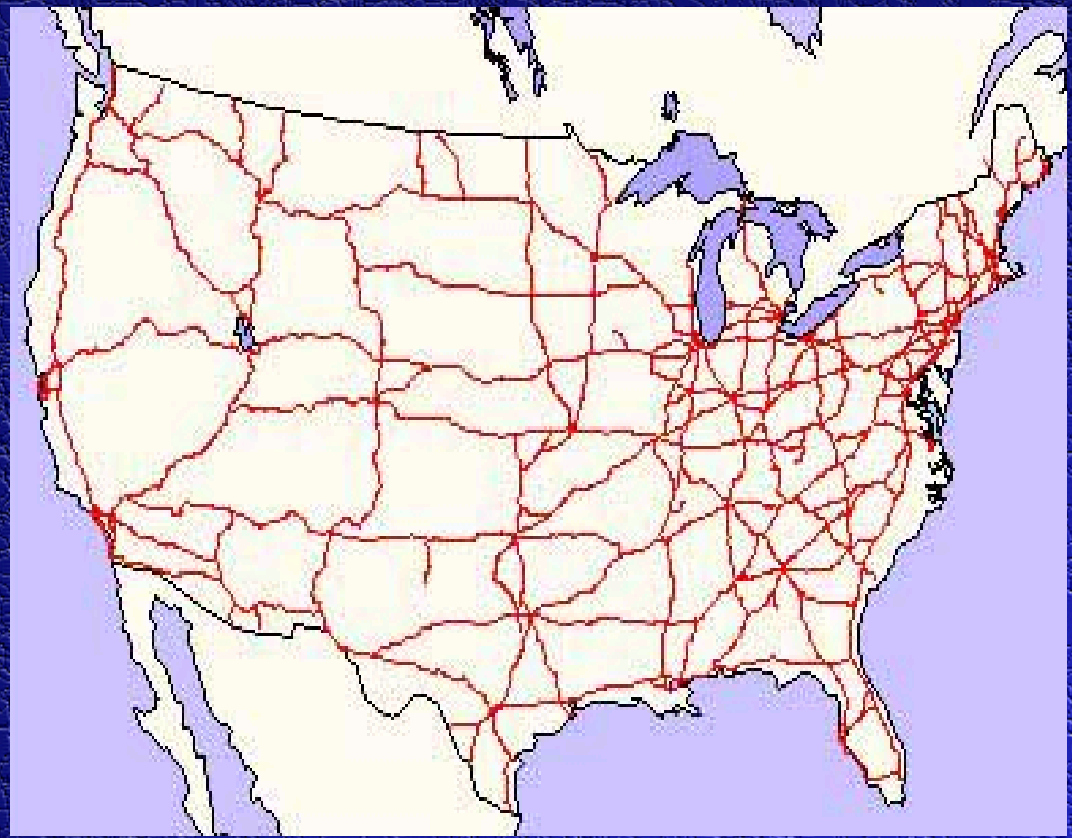
Sam Tyson, Gary Crawford, Ewa Flom, Gene Clark

Asphalt Pavement Team
John D'Angelo, Team Leader
Jason Harrington, Leslie Myers, Matthew Corrigan

Materials Team
Mike Rafalowski,
Vacant

Partners & Customers

- FHWA
- State DOTs
- AASHTO
- Industry
- Academia



Pavement Technology Activities

- Major Technology Efforts
  - Quality Assurance Systems
  - Pavement Smoothness
  - M-E Design Guide
  - Recycling
- Asphalt Technologies
- Concrete Technologies

CONCRETE PAVEMENT
CPTP
TECHNOLOGY PROGRAM

Use of Contractor Tests in Acceptance

- Technical Advisory on Use of Contractor Test Results and Recommended Practice on Acceptance Sampling Plans issued 2004.

- 23 CFR allows use of contractor testing on independent samples, if the State performs verification testing on independent samples.

- 34 States allow contractor testing in the acceptance decision.

Quality Assurance Reviews

- Process reviews conducted in Maine, Missouri, Colorado, Oklahoma, California, Georgia, North Carolina and New York
- Reviews continue in 2005
- Workshops on Specifications and Risk Analysis will be conducted and NHI Course on statistics for Quality Control and Quality Assurance issues planned for 2005

Pavement Smoothness Initiative

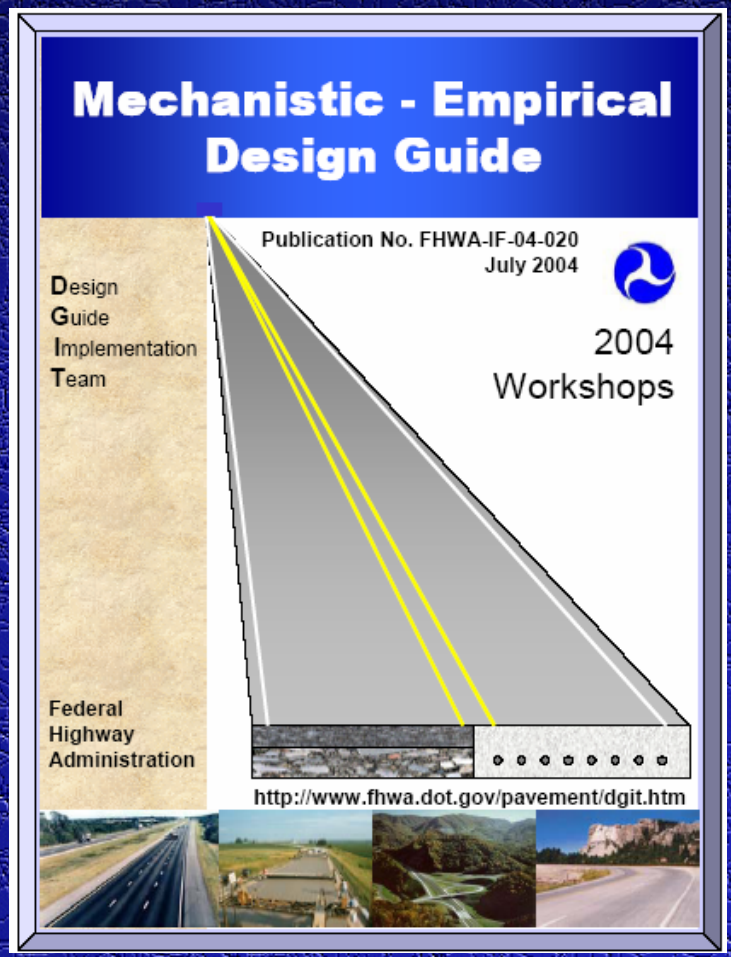
- Management Practices/Briefings
- Develop AASHTO Guide Specification
- Evaluate/Demonstrate Lightweight Profilers
- Best Construction Practices
- Pavement Smoothness Workshops

Mechanistic-Empirical Pavement Design Guide

- FHWA believes in the importance of the new M-E Pavement Design Guide (PDG)
- Efforts have started to help States establish a plan for implementation
- FHWA cooperated with NCHRP in 2004 to organize an implementation Lead States Group

Mechanistic-Empirical Pavement Design Guide

FHWA sponsored and delivered eight introductory regional workshops with the States for the M-E PDG in 2004; additional workshops in 2005.



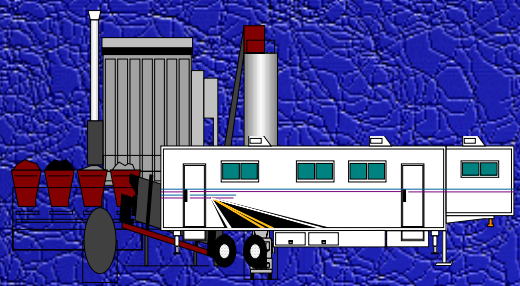
Pavement Material Recycling

- Develop tools to promote recycling and use of recycled materials
- FHWA Expert Task Group
- Publications & Workshops (Foundry Sand, Slag, Asphalt, PCC, Flyash, etc.)
- AASHTO SOM Task Force on Recycling.
- Recycled Material Resource Center, at University of New Hampshire

http://www.rmrc.unh.edu

Asphalt Pavement Program

- Mobile Asphalt Lab
- Support AASHTO Superpave Committee, ETGs and Sub Committee on Materials (Mobile Asphalt Lab & Binder Lab)
- New Technologies
  - Simple Performance Tester
  - Aggregate Imaging System
  - Intelligent Compaction
  - Warm Mix Asphalt



Mobile Asphalt Laboratory

Purpose

- To introduce state-of-the-art technology in asphalt and aggregates, design, testing and field control
- To provide the States with independent and unbiased mix technical support
- Provide field verification for new tests
- Conduct detailed State studies/ workshops
- Implement NCHRP projects

Superpave Binder Equipment Laboratory

- Purpose
  - Refine and validate Superpave binder equipment and related test procedures

- Current Activities
  - Review of NCHRP 9-10 modified binder test procedures
  - To provide the States with independent and unbiased binder technical support
  - Conduct training, ruggedness, final development, validation

Asphalt Pavement Program

- New Technologies
  - Simple Performance Tester
  - Aggregate Imaging System
  - Intelligent Compaction
  - Warm Mix Asphalt

Simple Performance Tester

- To identify a fundamental based but simple performance test to support mix design
- Determine dynamic modulus test for use in Pavement Design Guide
- Conduct procedural ruggedness
- Field validation and evaluate feasibility for future mix quality verification and QC tool

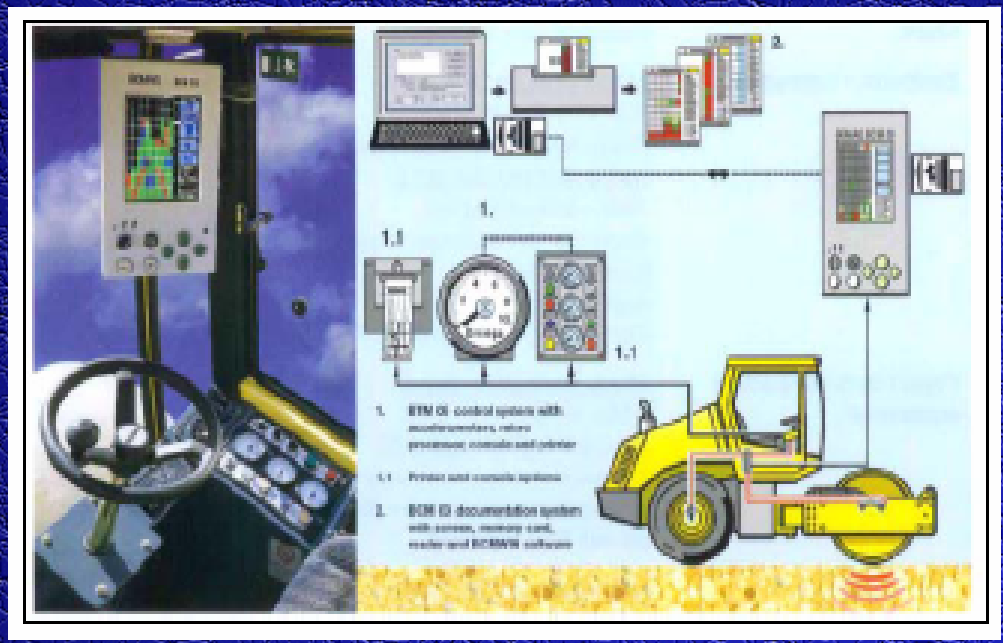
Aggregate Imaging System

FHWA plan to:

- Test wide range of aggregates
  - Establish standard procedure for test
  - Relationship between shape & performance
- Identify methods & practicality for implementation
  - Correlation with field performance?
  - Tool for QC/QA at plant/quarry?

Intelligent Compaction

- Rollers with detectors to monitor pavement resistance and densification
- Aid to optimize process
- 2004 Workshop
- Future demos

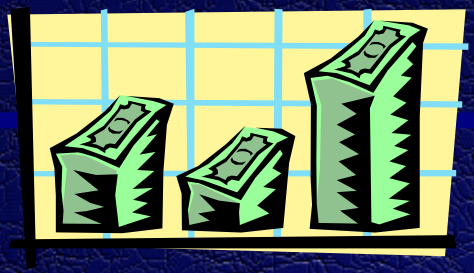


Warm Mix Asphalt

Technology appears to allow a reduction in the temperatures at which asphalt mixes are produced and placed.

Investigation into:

- Long term performance
- Cost benefits
- Plant operations
- Workability at the paving site



Reauthorization Overview

- Reauthorization Proposals
  - –Administration (SAFETEA)
  - –Congress (SAFETEA)
- Status/Progress

SAFETEA - Safely Moving America

- Increased Safety Funding
- Strong Infrastructure
- Improved Operations
- Long Range Planning
- Environmental Stewardship

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Emphasized Areas

- **Highways for Life**
- Safety
- Quality
- Research
- Work Zones

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Emphasized Areas

- Highways for Life
- Safety
- Quality
- **RESEARCH**
- Work Zones

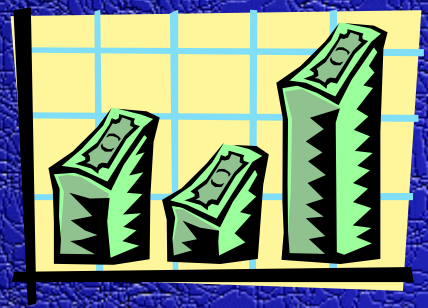
Emphasized Areas

- Highways for Life
- Safety
- Quality
- Research
- **Work Zones**

SAFETEA - Administration

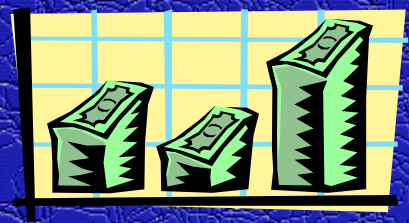
Roll-out
2004 to 2009

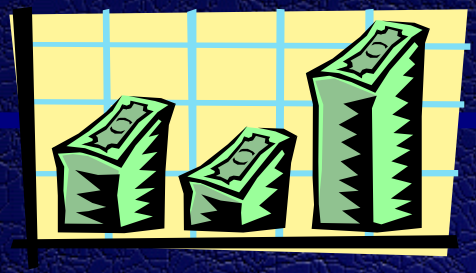
- Surface Transportation Research and Deployment Program ($199M annually)
  - Defines Federal Role
  - Specifies Stakeholder Input
  - Combines STR and Technology Deployment
  - Creates Innovative Pavement Research and Deployment Program
  - No F-SHRP funding
- Highways for LIFE



SAFETEA - Congress

- Surface Transportation Research Program
  - Combines STR and Technology Deployment
  - Establishes priority areas
  - Establishes Research Advisory Committee
  - Creates Technology Applications Initiative and Partnerships Program
  - Creates Innovative… Infrastructure Research and Construction Program
  - Provides for F-SHRP
  - No provision for Highways for LIFE





SAFETEA - Congress

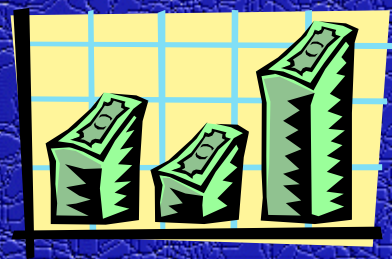
Funding

- Surface Transportation Research Program ($211M)
  - Advanced Research ($27M)
  - LTPP ($18M to $10M)
  - Technology Application Program ($60M)
  - Asphalt Research ($6M)
  - Concrete Research ($6M)
  - Aggregates Research ($3M)
  - Alkali Silica Reactivity Deployment ($4.75M)
- F-SHRP ($75M)

Status/Progress

January 2005

- FY-05 Appropriations – Continuing Resolution Provides New Funding at FY-04
- TEA – 21 Extended 6 times since September 30, 2003
  - Eight Month Extension thru May 31, 2005
- Senate and House resolved differences on Reauthorization
  - Will have to re-start process next Congress



Thank You!

FHWA Pavements Program

- Optimize Pavement Performance
- Advanced Quality Systems
- Enhanced Surface Characteristics
- Stakeholder Involvement
- Environmental Stewardship