

FHWA

**PAVEMENT PRESERVATION
EXPERT TASK GROUP
(**PPETG**)**



- The **FHWA PPETG** will advance and improve the state of the practice in the area of **pavement preservation** by working collaboratively with federal, state, local agencies, industry, and academic interests.



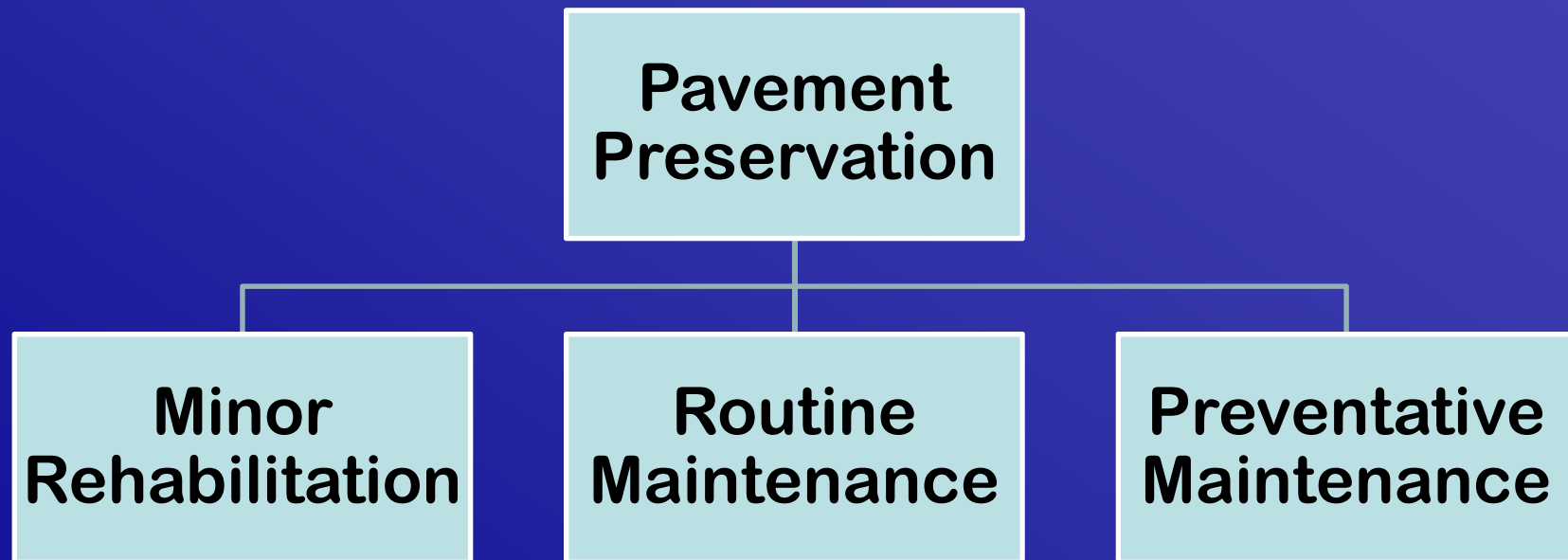
- Pavement Preservation

“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”



Components of Pavement Preservation

PPETG



■ Goals

- Pavement preservation **acceptance** and **implementation** by Agencies
- **Support preservation programs** at the federal, state, and local levels
- Identify and **address customer needs**
- **Support preservation centers** for excellence/regional organizations
- **Integrate** pavement preservation into pavement management



- Established in 1991
- Promote the institutionalization of the concepts of pavement preservation
- Parent group of “**Emulsion Task Force**”



- Advocate the **implementation** of Pavement Preservation
- Expand **Training and Certification** Efforts in Conjunction with the Pavement Preservation Road Map
- Advance Pavement Preservation **Research**
- Examine **Impacts of New Policies** on Pavement Preservation Implementation

(cont)



- **Sanction** Emulsion Task Force Efforts
- **Endorse Advancement** of New Treatment Technologies



PPETG Emulsion Task Force (ETF)

Emulsion – Part III



- ✓ **Idea conceived** at AEMA-ISSA-ARRA meeting February 2008 under guidance of Jim Sorenson, FHWA
- ✓ Identified need for **industry expertise** and involvement in ongoing **research activities** pertaining to asphalt emulsions and finished product systems
- ✓ **First meeting** in Newport Beach, CA April 7-8, 2008



Task Force Representation

ETF

Co-Chair- Roger Hayner, Colas Inc., AEMA

**Co-Chair- Colin Franco RI DoT, TSP²,
PPETG, SOMtrls, SCOR**

Members From:

- Industry: AEMA/ ARRA/ ISSA**
- Academics: CSU/ TX A&M/ UWisc./Cal State**
- State DOT's: TX, IN, UT, RI, CA, LA**
- FHWA**
- National Center PP (NCPP)**



ETF Survey Results

- Top Product **Usage** Priority
 - Chipseals= 100%
 - Tack Coat= 67%
 - Microsurfacing= 62%



- Emulsion Testing & Residue Recovery Methods
 - Arlis Kadrmas- Chair
- Aggregates, Mix Design, and Performance Tests
 - Gary Hicks- Chair
- Approved Supplier Certification
 - Roger Hayner- Chair
- Inspection & Acceptance
 - Colin Franco- Chair
- Tack Coat Review (Formed 7/26/10)
 - Chris Abadie- Chair
- Recycling Emulsions (New)



- ✓ Review **needs** for Preservation **Materials Research**- Emulsion & Aggregate
- ✓ Evaluate **existing R&D** Roadmap Problem Statements in the Area of Emulsions
- ✓ Evaluate Work Plans and **Review Ongoing Research** in PP Emulsion

(cont)



- ✓ **Coordinate** and Share Activities and Results with Existing **Superpave binder/mix/ modeling** ETGs
- ✓ Facilitate **Adoption** of New Findings and Research Results Through Appropriate AASHTO / ASTM Channels
- ✓ AEMA / ISSA / ARRA Coordination



Deliverable - NCHRP Research Pending

NCHRP 09-50 Project “Performance Based Specification for Binders in Chipseals”

- Problem statement proposed by ETF
- Recently Funded - \$500,000 project allocation



AASHTO Submittals - Deliverables

- **Four Standards submitted to AASHTO for Adoption**
 - Standard Practice for **Certifying** Suppliers of Emulsified Asphalt
 - **Recovering Residue** from Emulsified Asphalt using Low Temperature Evaporative Techniques
 - Determining **Asphalt Binder Bond Strength** by Means of the Bitumen Bond Strength Test (BBS)
 - **Performance-Graded** Asphalt Binder for Surface Treatments (Surface Performance Graded (**SPG**) Spec)



Asphalt Emulsion Certification Emulsion Task Force Update

- Draft document submitted to AEMA board and membership for review and AASHTO for balloting.
 - Based on those drafted by north central states and midwest states

Standard Recommended Practice for

Certifying Suppliers of Emulsified Asphalt

AASHTO Designation: x xx-xx (2009)



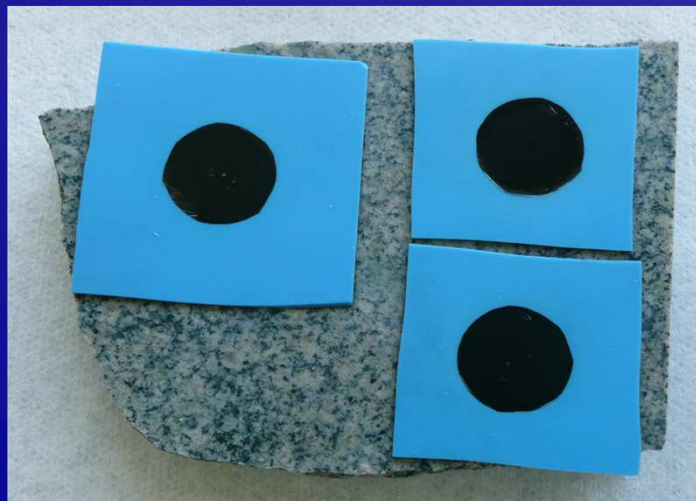
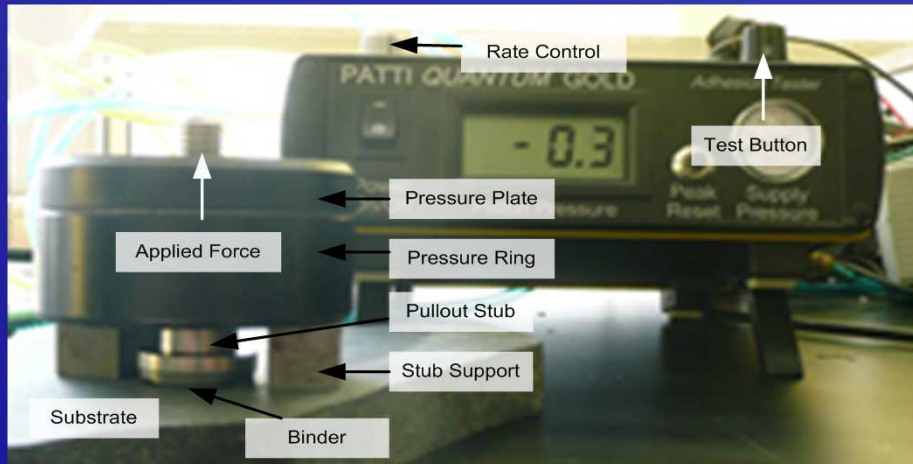
Experimental Approach

(Initial Strawman)

Strawman Specification for Chip Seal Emulsified Asphalt - Draft Revision August 2010			
Purpose	Test	Conditions	Report
Tests on Emulsified Asphalt			
Residue Recovery	Low Temperature Evaporation - AASHTO XXXX - Method B	6 hours @ 60°C	% Residue
Emulsion Viscosity - Production	Brookfield Viscosity	50°C & 80°C? - Shear Rate TBD	Viscosity for Placement
Emulsion Viscosity - Field Acceptance	Wyoming	Temperature - as received	Viscosity for Placement
Tests on Residue from Low Temperature Evaporation			
High Temperature	DSR	52, 58, & 64°C	G*, G*/sin delta, phase angle
	DSR - MSCR	Th and Th-12°C @ 1.0, 3.2 & 10 kPa	% Recovery and Jnr
	DSR - Stress Sweep	Th	Sweep Data
Low Temperature	DSR - Frequency Sweep	5°C & 10°C	Sweep Data
Tests on Residue from PAV Aged Material (Optional)			
Aging - Life Cycle Evaluation	UW Procedure for PAV - Frequency Sweep	5°C & 10°C	Sweep Data
Procedures Under Review for Chip Retention			
Sweep Test	Modified ASTM D7000	35°C or Placement °C & humidity	% Loss
Bitumen Bond Strength	UW Procedure	35°C & 30% H	Pull off tensile strength
Linear Amp. Sweep Test	Developing Procedure	19°C, Residue & PAV aged Residue	Cycles for failure at a given strain



Bitumen Bond Strength Test



Emulsion – Part III



Bitumen Bond Strength

Standard Method of Test for

Determining Asphalt Binder Bond Strength by Means of the Bitumen Bond Strength (BBS) Test

AASHTO Designation: TP-91-11



Cohesion



Adhesion

Emulsion – Part III



New Emulsion Products

Trackless Tack Coats

- Identified Industry changes moving to trackless requirements
 - Lots of methods emerging to reach “**Trackless**” properties- Uncertain effect on performance
 - **Subcommittee formed** to investigate and research requirements
 - Chris Abadie Chair, Gayle King, Mike Voth, Hussein Bahia, Roger Hayner



New Emulsion Products

Cold In Place Recycling – Emulsion Modifier

- Identified need to add to ETF as an emulsion using process
- Work being done by Cal Poly Pomona, CA
- Subcommittee will be formed at next meeting for this area

(RI Case Study Later)



Questions

