

FHWA

**PAVEMENT PRESERVATION
EXPERT TASK GROUP**

(PPETG)

&

Emulsion Task Force

(ETF)



- 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.



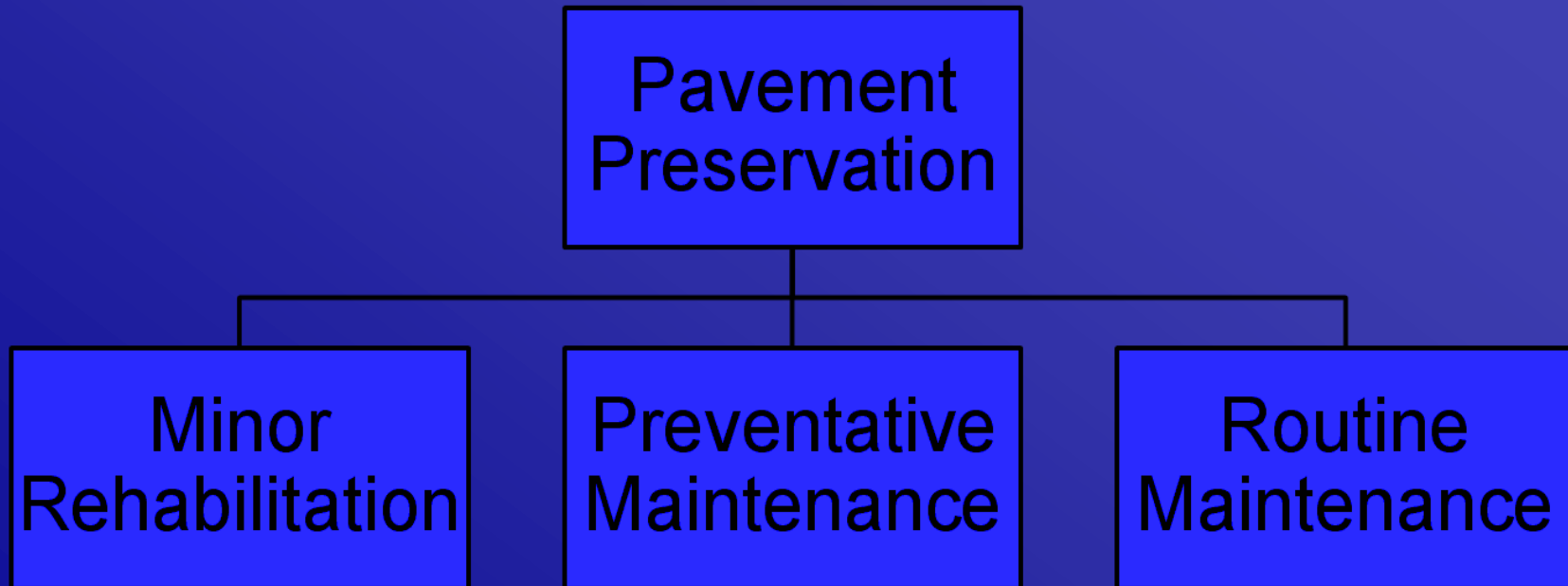
- Pavement Preservation

“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
- MAP21 – Recognizes Pavement Preservation

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



PPETG Emulsion Task Force

(ETF)



- ✓ **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



✓ ***Advance the Effort to Develop Performance Based Methods & Specification for Emulsions***

- *Protocols for design*
- *Protocols for performance*
- *Protocols for inspection & acceptance*

✓ ***Encourage Adoption of Uniform National Standards***



❖ ***ETF is comprised of:***

➤ ***Members***

➤ ***Friends***

➤ ***Experts***



Task Force Representation

ETF

Co-Chair- Chris Lubbers, Kraton Polymers

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

Members From:

- Industry: AEMA/ ARRA/ ISSA**
- Academics: CSU/ Tx A&M/ U.WISC/ NC State**
- State DOT's: TX, IA, RI, CA, LA, AZ**
- FHWA**
- National Center PP (NCP)**



1. **Residue Recovery and Testing** - 18 members
 - Arlis Kadrmas (Chair) BASF - AEMA

2. **Design Group**
 - **Spray** (17 members) – Gary Hicks (Co-chair) CS4
 - **Mix** (13 members) – Jim Moulthrop (Co-chair) Fugro FP2

3. **Supplier Certification and Quality Assurance** - 16 members
 - Tom Wood (Chair) MnDOT

4. **Recycling Emulsions** - 9 members
 - Todd Thomas (Chair) COLAS ARRA

5. **Research** - 12 members
 - Darren Hazlett (Chair) TxDOT



- ✓ 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

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- ✓ **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



- ✓ **Develop Performance Specifications and Design Standards** for Adoption by AASHTO for All Emulsion Treatments and Uses in Pavement
- ✓ Work with the PPETG to **Facilitate Adoption of Emulsion Treatments** in Pavement Preservation



ETF Survey

Emulsion Use and Performance

- Emulsion Product/System Evaluation
- **Identify/prioritize** widely used emulsion applications
- Define **2 critical distresses** and mechanism of **failure** for priority application
- Determine testing needs
 - Existing Tests which are applicable
 - Research needs for new test methods
- Conducted by Andrew Hanz of Univ. Wisconsin Madison and Colin Franco of RIDOT



ETF Survey Results

- Top Emulsion Product **Usage** Priority
 - Chipseals= 100%
 - Tack Coat= 66.7%
 - Microsurfacing= 62%
- Modes of **Failure** Defined- e.g: Chipseals
 - Chip Loss
 - Bleeding
 - Binder Cracking (Reflective or Environmental)
 - Underlying Mechanisms Identified
- Existing Tests Available- 84% Yes



AASHTO Submittals - Deliverables

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



AASHTO Submittals - Deliverables

- **Six Provisional Standards submitted to AASHTO (currently being reviewed by ETF)**
 1. Test for Determining the **Strain Sensitivity of Asphalt Emulsion Residue Using Strain Sweeps** Performed on a Dynamic Shear Rheometer (DSR)
 2. Test for **Embedment Depth of Chip Seal Aggregates** in the Lab and the Field
 3. Test for Laboratory **Chip Loss** from Emulsified Asphalt Chip Seal
 4. Test for Measuring **Moisture Loss from Chip Seals**
 5. Test for **Recovery of Asphalt from Emulsion by Stirred-Can Method**
 6. Test for **Field Emulsion Viscosity**



Current ETF Status

- Subcommittees have to come up with:
 1. Short term plan
 2. Long term plan

- Short term missions include getting the following treatments into AASHTO Standards
 - Micro-surfacing
 - Chip Seal
 - a) Design Specification
 - b) Design Practice
 - c) Construction Guide Spec



Current ETF Status

- Best Practices Document
 - This was the original deliverable for Chip Seal and Micro-surfacing.
 - This is a working reference document for the 3 standards as well as for determining the gaps and needs for research.
- Low temperature Recovery Method



Current ETF Status

- ETF is moving toward standards for:
 - Tack Coat
 - Fog Seal
 - Scrub
 - Sand Seal
 - Slurry Seal
 - Micro-surfacing
 - Chip Seal
 - Foam Asphalt Stabilization
 - Bonded Surface Treatment (NOVA Chip)
 - Cold Mixes
 - Virgin
 - Recycled
 - CIR



Questions

