FHWA

PAVEMENT PRESERVATION

EXPERT TASK GROUP

(PPETG)

Emulsion Task Force

(ETF)

RMWPPP Annual Meeting

Phoenix, Arizona – May 8th – 10th

Background

PPETG

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

Mission

- 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.

Mission

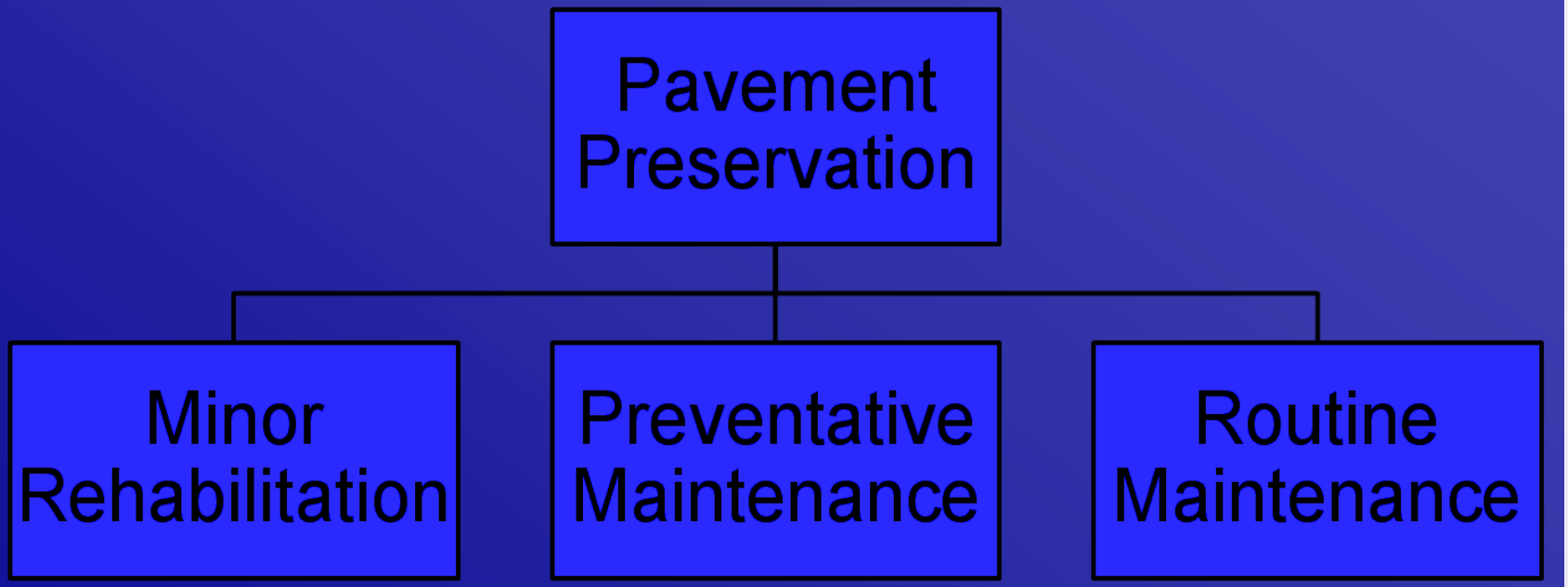
PPETG

- 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

PPETG

- 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

Working Topics

PPETG

- 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

(cont)

Working Topics (cont.)

PPETG

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

PPETG Emulsion Task Force

(ETF)

History

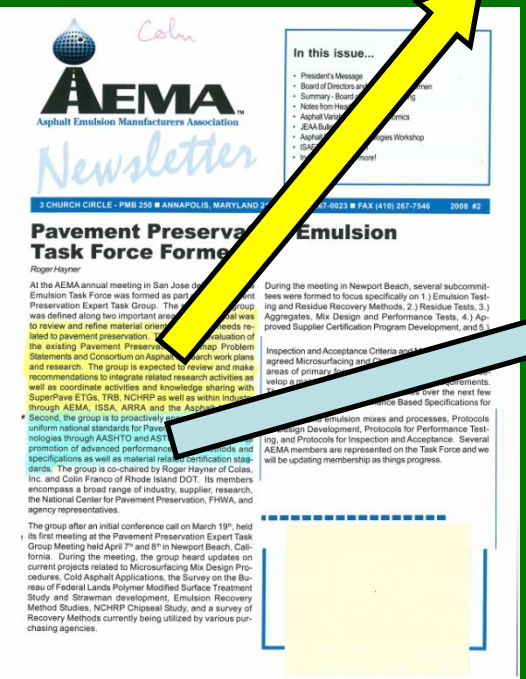
ETF

- ✓ **Idea for ETF 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

AEMA Newsletter 2008

ETF

"First, its goal was to review and refine material oriented research needs related to pavement preservation. This includes evaluation of the existing Pavement Preservation Roadmap Problem Statements and Consortium on Asphalt Research work plans and research. The group is expected to review and make recommendations to integrate related research activities as well as coordinate activities and knowledge sharing with SuperPave ETGs, TRB, NCHRP as well as within Industry through AEMA, ISSA, ARRA and the Asphalt Institute."


AEMA
Asphalt Emulsion Manufacturers Association
Newsletter

In this issue...

- President's Message
- Board of Directors and ...men
- Summary - Board ...g
- Notes from Hea...
- Asphalt Vend...mics
- JEAA Bull...
- Asphalt ...gies Workshop
- ISA...
- ...ore!

3 CHURCH CIRCLE - PMB 250 ■ ANNAPOLIS, MARYLAND 2... ...7-0923 ■ FAX (410) 267-7546 2008 #2

Pavement Preserva... Emulsion Task Force Forme...

Roger Hayner

At the AEMA annual meeting in San Jose d... Emulsion Task Force was formed as part ... Preservation Expert Task Group. The ... was defined along two important area... to review and refine material orient... lated to pavement preservation. ... the existing Pavement Preserva... Statements and Consortium on Asphal... and research. The group is expected to review and make recommendations to integrate related research activities as well as coordinate activities and knowledge sharing with SuperPave ETGs, TRB, NCHRP as well as within Indust... through AEMA, ISSA, ARRA and the Asphal...

- Second, the group is to proactively ... uniform national standards for Pave... nologies through AASHTO and AST... promotion of advanced performanc... ...thods and specifications as well as material related certification stan... dards. The group is co-chaired by Roger Haymer of Colas, Inc. and Colin Franco of Rhode Island DOT. Its members encompass a broad range of industry, supplier, research, the National Center for Pavement Preservation, FHWA, and agency representatives.

The group after an initial conference call on March 19th, held its first meeting at the Pavement Preservation Expert Task Group Meeting held April 7th and 8th in Newport Beach, California. During the meeting, the group heard updates on current projects related to Microsurfacing Mix Design Procedures, Cold Asphalt Applications, the Survey on the Bureau of Federal Lands Polymer Modified Surface Treatment Study and Strawman development, Emulsion Recovery Method Studies, NCHRP Chipseal Study, and a survey of Recovery Methods currently being utilized by various purchasing agencies.

During the meeting in Newport Beach, several subcommittees were formed to focus specifically on 1.) Emulsion Testing and Residue Recovery Methods, 2.) Residue Tests, 3.) Aggregates, Mix Design and Performance Tests, 4.) Approved Supplier Certification Program Development, and 5.)

Inspection and Acceptance Criteria ... agreed Microsurfacing and ... areas of primary ... velop a ... ...ements. over the next few ... ...rce Based Specifications for ... ...emulsion mixes and processes, Protocols ...Design Development, Protocols for Performance Testing, and Protocols for Inspection and Acceptance. Several AEMA members are represented on the Task Force and we will be updating membership as things progress.

"Second, the group is to proactively encourage adoption of uniform national standards for Pavement Preservation technologies through AASHTO and ASTM. This would include promotion of advanced performance based methods and specifications as well as material related certification standards."

Original Mandate

ETF

- ✓ ***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***

Original Tasks

ETF

- ✓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)

Original Tasks (cont.)

ETF

- ✓ **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

Additional Tasks

ETF

- ✓**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

Deliverables – Pre 2013

ETF

Emulsion Use and Performance Survey

- 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

Deliverables – Pre 2013

ETF

AASHTO Standards 2010

- **Four Standards submitted to AASHTO for Adoption**
  1. Standard Practice for **Certifying** Suppliers of Emulsified Asphalt – Provision (PP 71)
  2. **Recovering Residue** from Emulsified Asphalt using Low Temperature Evaporative Techniques – Provision (PP 72)
  3. Determining **Asphalt Binder Bond Strength** by Means of the Bitumen Bond Strength Test (BBS) – Provision (TP 91)
  4. **Performance-Graded** Asphalt Binder for Surface Treatments (Surface Performance Graded (**SPG**) Spec) – tabled

Current Members

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, LA, AZ, MN
- FHWA
- National Center PP (NCPP)

Current Subcommittees ETF

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

2. **Design Group**
   - **Spray** (17 members) – Gary Hicks (Co-chair) CSU
   - **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

6. **SWG – Update M140/M208/M316+SPG** – 5 members
   - Mike Voth (Chair) Central Federal Lands

ETF Reenergized Mission - 2013 ETF

1) Advance the Effort to Develop Performance Based Methods & Specification for Emulsions
2) Encourage Adoption of Uniform National Standards
   - Develop AASHTO STDs for all the Emulsion Treatments
     a) Design Specs
     b) Design Practices
     c) Construction Guide Specs

To Accomplish Reenergized Mission

- **ETF subcommittees should establish:**
  1. Short term plan (1 year)
  2. Long term plan (3 years)

Next Steps (cont.)

ETF

- Short term Plan – Drafting AASHTO Stds for:
  - Micro-surfacing
  - Chip Seal
    a) Design Specification
    b) Design Practice
    c) Construction Guide Spec
- Certification: Protocols for various treatments
- Research
  - Studies
  - Update Roadmap

Next Steps (cont.)

ETF

- Draft AASHTO standards for:
  - Tack Coat
  - Fog Seal
  - Scrub Seal
  - Sand Seal
  - Slurry Seal
  - Cold Mixes
    - CIR

Next Steps (cont.)

ETF

Long term Plans

- Promoting Emulsion Technologies through ETG
- Large Scale Studies
  - NCHRP
  - Pooled Fund
- QA Protocols for Emulsion Treatments

- Develop a PG Specification for Emulsion Using Superpave Principles.

Questions

Original Members

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/ U.WISC/ Cal State**
- **State DOT's: TX, IA, UT, RI, CA, La**
- **FHWA**
- **National Center PP (NCPP)**

Original Subcommittees

ETF

- **Emulsion Testing & Residue Recovery Methods**
  - Arlis Kadrmas- Chair
- **Residue Tests**
  - Gayle King- Chair

Note: Subcommittees Combined as of March 2010

- **Arlis Kadrmas to chair combined group**

Original Subcommittees (cont.) ETF

- **Aggregates, Mix Design, and Performance Tests**
  - Mary Stroup-Gardiner- 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)

Deliverables – Pre 2013 ETF

Emulsion Use and Performance Survey

- Emulsion Product/System Evaluation
- **Identify/prioritize** widely used emulsion applications
- Define **2 critical distresses** and mechanism of **failure** for priority application
- Determine testing needs
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Deliverables – Pre 2013

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

Deliverables – Pre 2013 ETF

AASHTO Standards 2011

- **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**

Deliverables – Pre 2013 ETF

- Best Practices Document (draft)
  - 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
  - Plan for Interlab Study and data collection (ongoing)