it’s your move!

Executive Committee

April 19, 2010
Members

- Julie Garbini
- Jerry Voigt
- Steve Kosmatka
- Claude Bedard
- Suneel Vanikar
- Gary Frederick
- Matt Srickland
- Tom Cackler
- Peter Taylor
- Sharon Prochnow

- Randy Riley
- Jim Duit
- Martin Fallon
- Cheryl Richter
- Peter Kopac
- Todd Hanson
- Gordon Smith
- Dale Harrington
- Sabrina Shields-Cook
Goals

Prioritization
- Strategic Planning (Gaps)
- Programmatic thinking
- Leveraging funding

Implementation
- Connecting people and groups
- Collaboration between funders and researchers
- Coordinating work
- Demonstrating findings

Technology Transfer
- Publication of research
- News about successes
- Communicate results

April 19, 2010
CP Road Map
Communications Plan
State DOT visits

• Individual discussions with State DOT representatives about ongoing and upcoming research
  – Identify what research and technology transfer activities are aligned with the CP Road Map, and how they are linked
  – Discuss the merits of aligning and designating upcoming research under the CP Road Map
  – Identify proposed adjustments to the CP Road Map based on the results of these discussions
Road Map E-News

Will highlight research and T2 activities around the country:

• State DOT research and technology showcases
• Articles of interest – content gleaned from both the web and mainstream media.
• MAP Briefs
• Calendar of upcoming events
“Moving Advancements into Practice” (MAP) Briefs

• Describe promising technologies that can be used now to enhance concrete paving practices
  – Diamond grinding
  – Nonwoven Geotextile Interlayers

2 MAP Briefs published

- Diamond grinding
- Nonwoven Geotextile Interlayers
MAP Briefs: Potential topics for 2010

• COMPASS
• Laying a Concrete Foundation
• Enhancing the Durability of Concrete Pavements Subjected to Liquid Chemical Deicers
• Enhancing Concrete Pavement Sustainability through Two-Lift Construction
• Sustainable Concrete Pavements
Track web meetings

- Work with track leaders to schedule web meetings that focus on individual tracks
- Assist track leaders in preparing and distributing agendas to interested participants
- Schedule presenters as needed
Outreach for CP Road Map

• Presentations at key forums to solicit support for the CP Road Map
• Meetings with selected industry contacts for one-on-one “interviews” on pertinent work
• Other interviews can be conducted by phone
Mix Design and Analysis Track

Pooled Fund TAC Meeting

Mixtures that are consistently long-lasting, constructible, and cost efficient
Mix Design & Analysis  Track - #1

• Track Leaders Meeting –
  • No formal meeting
  • Regular updates at NC2
MDA Track

- 5(179) – Permeability MI - Air void system
- 5(117) – Ternary Optimizing cement content
- NRMCA – Minimum Cement Content
- 5(205) – MDA (This project)
- FHWA Contract - MDA
- And others…
Pooled Fund 5(205)

• Participating States (8)
  – IA, KS, MI, MO, NY, OK, TX, WI

• Contract Status
  – Pooled fund contract signed with IA DOT
  – FHWA contract pending
Priority Tasks

• Tests
  • Mix Proportions in fresh concrete - Portable XRF
  • Set time – calorimetry and/or acoustic methods
  • Protocol for integral waterproofers
  • Foam drainage test field validation

• Models
  – What air do we really need
  – Mix proportioning
  – Standard data collection
Priority Tasks

• Specifications
  – Guide specification
  – Checksheets

• Communications
  – Tech briefs
  – Papers and presentations
Track # 2-
Performance-Based Design Guide for New and Rehabilitated Concrete
Design Track Committee

**State DOTs**
- Andy Gisi, KS
- John Donahue, MO
- Mohamed Elfino, VA
- Geoff Hall, MD
- Jeff Uhlmeyer, WA

**Industry**
- Randy Riley, IL ACPA
- Matt Zeller, MN ACPA
- Todd LaTorella, MO-KS ACPA
- Jim Powell, ACPA-NW
- Mike Ayers, ACPA National

**FHWA**
- Tom Harman
- Angel Corera
- Gary Crawford
- Katharine Petros

**Academia**
- Julie Vandenbossche
- Jeff Roesler
Track Leadership Meeting of January 2010

• **Highlights include:**

• This Committee will strive to meet at twice a year.

• The Committee will address the individual items and projects as a whole.

• **Key Area of Concentration:**
  – Concrete Overlays Report:
    • Recommend existing software program for each type of overlay and Include examples.
    • Technology Tech Brief is in final draft form.
  – Research Priorities
Design Priority Track Projects

ME Pavement Design Guide:

• Assistant to State DOT on MEPDG calibration

• Research Needed on MEPDG Inputs

  – Contact AASHTO Standing Committee on Research, JTCP, and SOM.

  – Offer this Committee’s assistance with any research or implementation projects that focus on improving the PCC models in the MEPDG.
Design Priority Track Projects

• Research On Tie-Bars
• Variable Cross-section
• MEPDG
  – Develop an Integrated Concrete Materials Modeling and Design analysis Tools
  – Develop Improved JPCP Deterioration Model
  – Develop Improved Overlay Design Model
  – Improve Performance Data Collection
  – Improve CRCP Design Model
High Speed Nondestructive Testing and Intelligent Construction Systems

- Stakeless construction systems
- Intelligent compaction
- Real time smoothness
- Real time thickness
- Texture monitoring
CP Road Map

Surface Characteristics
Track - #4
Surface Characteristics – Track #4

• Track Leaders Meeting –
  • February 10, 2010 conference call
  • Adjusted membership to reflect current participation in SC activities
  • 13 participants
    • FHWA; DOTs; ACPA; IGGA; Universities; CP Tech Center; Operations Support Group
Surface Characteristics – Track #4

• Track Leaders Meeting-
  • Reviewed the Framework Document
    • Goal statement re-affirmed
    • Discussed interrelationships depicted by the pyramid – added functional performance to the surface characteristics element
Human Experience & Societal Demands

Pavement Surface Characteristics (Functional Performance)

Pavement Properties

Factors

30
Key Concept

Better practices to improve surface properties are really about establishing a higher order of control over the materials, texture, and other surface properties.
Surface Characteristics – Track #4

• Track Leaders Meeting- (cont.)
  • Discussed on-going research
    • Critical to get new methods integrated into practice
  • After discussion- no change to short term projects list
• Update Framework – improved surface uniformity; functional performance; motivation for innovation; measurement systems; communications; implementation
Track Priorities

• Development of an Integrated Functional Classification System
  – Identify links between societal factors and PSC
• Development of an Unified Model relating pavement texture to other PSC
• Characterizing Design and Construction Artifacts in PSC
• Development of accurate, economical texture measurement technologies
• Training to implement research advances
Concrete Pavement Rehabilitation (Overlays)

Overlay Guide (what do we know!)

Concrete Overlay Application Program

Field Research (What we don’t know & how to solve a problem)

Field Application Program (We can build it!)

Simpler Design Explanation of Current Programs
Overlay Committee (17 Members)

- Andy Bennett, Michigan Department of Transportation
- Jim Cable, P.E., Iowa State University
- Dan DeGraaf, Michigan Concrete Paving Association
- Jim Duit, Duit Construction Co., Inc., Oklahoma
- Todd Hanson, Iowa Department of Transportation
- Randell Riley, Illinois Chapter ACPA
- Matt Ross, Missouri/Kansas Chapter ACPA
- Jim Shea, New York State Chapter ACPA
- Gordon Smith, Iowa Concrete Paving Association
- Sam Tyson, Federal Highway Administration
- Leif Wathne, American Concrete Pavement Association
- Jim Grove, CP Tech Center
- Matt Zeller, Concrete Paving Association of Minnesota
- Jeff Uhlmeyer, Washington State DOT
- Kevin Maillard, OHM Advisors
- Robert Rodden, American Concrete Paving Association
- Shannon Sweitzer, North Carolina Turnpike Authority
Overlay Priority Track Projects

Rehabilitation and Construction (Overlay)

- Overlay field research that would help solve construction technique limitations
- Determination of the required quality of bond breaker for unbonded overlays
- Determine bonded strength for bonded overlays
- Develop ways to allow overlays to be placed on two lane roads without road closure.
Field Application States

Joined the Program
1. Delaware
2. Georgia
3. Louisiana
4. Maryland
5. Nevada
6. New Mexico
7. North Dakota
8. Pennsylvania
9. South Dakota
10. Washington
11. West Virginia

Interested States
1. Arkansas
2. California
3. Indiana
4. Kentucky
5. Maine
6. Minnesota
7. Nebraska
8. North Carolina
9. Texas
10. Virginia

5 States – 6” Bonded Overlays over HMA (6’x6’ joints)
3 States – 6” Unbonded Overlays over Concrete (6’x6’ joints)
1 State – 7” Bonded CRCP over Plain Jointed Concrete
Overlay Research

The research elements are:

- Establish profile grades & machine control before or immediately after letting
- Determine ways to guide longitudinal joint forming operation to match the underlying joint alignment
- Determine the appropriate opening strength for depths of concrete of 6 inches or less
- Determine ways of handling traffic control for construction of single lane overlays as part of a two lane or multilane overlay
- Determine the best way to establish the level of need and timing of milling for existing asphalt surface preparation
- Minimizing pavement train width
- Use of innovative materials, such as geotextile layers, for use as bond separator layers
Global positioning system (GPS) controls will likely be able to eliminate the need for a string line in the future.
Robotic Total Stations and Prisms

Leica Machine Control Command Center
Matching Centerline Joints by Satellite
Track # 13- Sustainability
Track Leadership

- Gina Ahlstrom
- Robb Jolly
- Kevin Gardner
- Michael Sprinkel
- Jim Duit
- Steve Muench
- Barry Descheneaux
- Ken Kobetsky
- Larry Sutter
- David Weber
- Andrew Pinneke
- Steve Kosmatka
- Tim Smith
- Leif Wathne
- Kevin McMullen
- Jennifer Distlehorst
- Joep Meijer
- Tom Pyle
- Erin Ashley
Leadership Meetings

- Regular webmeetings
- Last held January, 27 2010
- Next Planned for May 2010 and every two months thereafter
- To include input from researchers in the field including
  - MIT
  - Arizona State
  - U C Chico
Products

– Framing Document
– Briefing Document
– International Conference
  • Sacramento, Sept 15 -17 2010
– Manual of Practice
– Interactions with other programs
Priority Tasks

• Materials and Mixture Design Procedures for Sustainable Concrete Pavement.
• Design Procedures for Sustainable Concrete Pavements.
• Construction Practices for Sustainable Concrete Pavements.
• Preservation, Rehabilitation and Recycling Strategies for Sustainable Concrete Pavements.
Priority Tasks

• Improved Economic Life Cycle Cost Analysis for Sustainable Concrete Pavements.
• Adoption and Implementation of Environmental Life Cycle Assessment for Sustainable Concrete Pavements.
• Identification and Quantification of Additional Environmental and Social Considerations for Sustainable Concrete Pavements.
• Sustainable Concrete Pavement Technology Transfer and Implementation.
Long Life Concrete Pavements

- Has not been an active priority track
- Increasing interest among STA’s
- Recommend initiating activities under TOPR 4