

City and County Pavement Improvement Center (CCPIC)

Pavement Financial and Environmental Sustainability, Some Best Practices

Shadi Saadeh, Erik Updyke, John Harvey

Orange County
July 22, 2020



City and County
Pavement Improvement Center

**Welcome To
CCPIC**



ITS
Berkeley



- Sponsored by League of California Cities, County Engineers of California, and California State Association of Counties
- Chartered 28 September 2018

www.ucprc.ucdavis.edu/ccpic

Agenda

- Welcome and Introductions
- CCPIC:
 - Mission and Vision, Scope, Organization
 - Certificate Program
 - Planned Certificate Curriculum and New Course Development
- Worklist
- Technical Presentation
- Questions and Answers

CCPIC Mission and Vision

- Mission
 - CCPIC works with local governments to increase pavement technical capability through timely, relevant, and practical support, training, outreach and research
- Vision
 - Making local government-managed pavement last longer, cost less, and be more sustainable

CCPIC Organization

- University of California Partners
 - University of California Pavement Research Center (lead), administered and funded by ITS Davis
 - UC Berkeley ITS Tech Transfer, administered and funded by ITS Berkeley
- California State University Partners
 - CSU-Chico, CSU-Long Beach, Cal Poly San Luis Obispo
 - Funding partner: Mineta Transportation Institute, San Jose State University

CCPIC Organization

- Governance:
 - Chartered by League of California Cities, California State Association of Counties, County Engineers Association of California, also provide staff support
 - Governance Board consisting of 6 city and 6 county transportation professionals
- Current Funding
 - Seed funding for CCPIC set up and initial activities from SB1 funding through the ITS at UC Davis and UC Berkeley, and Mineta Transportation Institute at San Jose State University

CCPIC Scope

- Technology Transfer: training
- Technical resources: technical briefs, guidance, sample specifications, tools, and other resources
- Pavement engineering and management certificate program for working professionals: through UC Berkeley ITS Tech Transfer
- Resource center: outreach, questions, pilot study documentation, and forensic investigations
- Research and development: for local government needs that are not covered by state and federal efforts

CCPIC Training: Certificate Program

- Pavement Engineering and Management Certificate Overview
 - For engineers, asset managers, upper-level managers, technicians and construction inspectors
 - 92 hours of training
 - 60 hours in core classes, 32 hours elective
 - Majority of classes to be offered online
 - In four categories:
 - Pavement Fundamentals
 - Pavement Management
 - Pavement Materials and Construction
 - Pavement Design

Status

- Plan approved by Governance Board
- Initial classes being delivered, including updated TechTransfer classes and newly developed classes

CCPIC Training: Planned Certificate Curriculum

	Fundamentals	Hrs	Management	Hrs	Materials and Construction	Hrs	Design	Hrs
CORE 60 required	CCA-01 Introduction to Pavement Engineering and Management	10	CCB-01 Life Cycle Cost Analysis	4	CCC-01 Asphalt Concrete Materials and Mix Design	8		
	CCA-02 Pavement Sustainability	6	CCB-02 Pavement Management Systems and Preservation Strategies	16	CCC-02 Pavement Preservation Materials and Treatments	8		
					CCC-03 Pavement and Hardscape Construction Specifications and Quality Control Management	8		
	Fundamentals, CORE	16	Management, CORE	20	Materials and Construction, CORE	24	Design, CORE	0
ELECTIVE 32 required 106 offered			CCB-21 Financing and Cash Flow for Pavement Networks	4	CCC-21 Concrete Materials	8	CCD-21 Asphalt and Concrete Pavement and Rehabilitation Structural Design	16
			CCB-22 Integrated Asset Management	8	CCC-22 In-Place Recycling	8	CCD-22 Design of Integrated Hardscape Assets	8
					CCC-23 Gravel Roads Engineering, Construction, and Management	8		
					CCC-24 Asphalt and Concrete Pavement Construction Processes and Scheduling	6		
					CCC-25 Construction Inspection	16		
					CCC-26 Pavement and Hardscape Construction Inspection	8		
					CCC-27 Asphalt Pavement Maintenance Construction	8		
					TS-10 Work Zone Safety	8		
	Fundamentals, ELECTIVE	0	Management, ELECTIVE	12	Materials and Construction, ELECTIVE	70	Design, ELECTIVE	24
TOTAL	Fundamentals	16	Management	32	Materials and Construction	94	Design	24

CCPIC Training: New Course Development

Code	Title	Instructor(s)	Expected	Format	Duration
CCA-01	Introduction to Pavement Engineering and Management	Harvey	Completed	Online	10 hours
CCA-02	Pavement Sustainability	Harvey	Summer 2020	Online	6 hours
CCB-01	Pavement Life Cycle Cost Analysis	Hicks, Cheng	Completed	Online	4 hours
CCB-02	Pavement Management Systems and Preservation Strategies	Yapp, Signore	Completed Spring 2021	Classroom Online	16 hours TBD
CCC-01	Asphalt Concrete Materials and Mix Design		Summer 2021	Online	8 hours
CCC-02	Pavement Preservation Materials and Treatments	Hicks, Cheng	Late Fall 2020	Online	8 hours
CCC-03	Pavement and Hardscape Construction Specifications and Quality Control Management		Fall 2021	TBD	8 hours
CCC-23	Gravel Roads Engineering, Construction, and Management	Jones	Spring 2021	Online	8 hours

Worklist

- Pavement Condition Index (PCI) 4-Pager
 - A four page paper describing how PCI is measured, what it doesn't measure, and how similar or same PCI may have different implications for pavement preservation and pavement rehabilitation strategies.
- Superpave Lite
 - Lead the development of specifications in Caltrans and Greenbook format for a Superpave specification for use by local agencies.

Worklist

- Tech Topics/Pavement Technology Updates
 - Review the publications from 1998 through 2011. Prioritize for editing, updating, and posting on the CCPIC web site.
- Local Agency Survey
 - Working through LoCC/CEAC, conduct a survey of local agencies on the use of Superpave, interest in a Superpave specification, RAP, warm mix, and other subjects. Results will provide insight and serve as a basis for future CCPIC initiatives.

Worklist

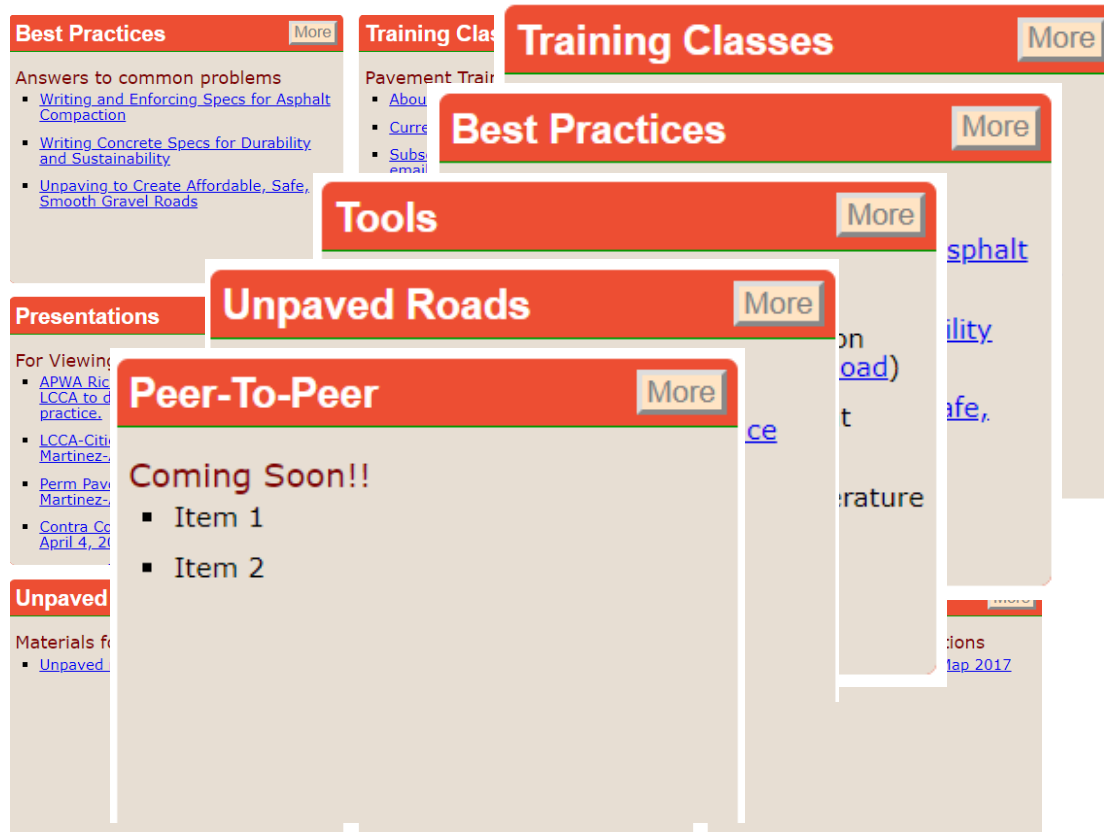
- **Local Agency Survey:**
 - Working through LoCC/CEAC, conduct a survey of local agencies on the use of Superpave, interest in a Superpave specification, RAP, warm mix, and other subjects. Develop a contact list of each Agency's "go to" person. Results will provide insight and serve as a basis for future CCPIC initiatives.
- **Interested** in being on the "Go to" list?
- Send an email to: eupdyke@ucdavis.edu

Greenbook Committee Superpave Initiative

- Concept
 - Asphalt Concrete Task Force has initiated “round-robin” testing of three different Hveem mixes to equate the number of gyrations needed to produce a mix with 3% air voids. Essentially, a simplified conversion from Hveem to Superpave.
 - Results to date have been inconsistent.
- CCPIC Support:
 - Review test protocols and procedures. Make recommendations for changes as necessary.
 - Review and interpret test results.
 - Provide guidance and recommendations throughout the process.
 - Upon completion, prepare formal conclusions and recommendations.
 - Assist the Asphalt Concrete Task Force members as requested.

CCPIC Website

www.ucprc.ucdavis.edu/ccpic



- Pavement training
- Best practices technical briefs
- Tools
- Unpaved roads
- Peer-to-peer

How to get involved?

- Get training
- Get your organization to take training
- Host in-person training classes
- Read the tech briefs and see if your agency can make improvements
 - See the draft specification language
 - We can support you
- Get involved with governance board
- Start a peer-to-peer chat group
- Take a look at the tools on the website



www.ucprc.ucdavis.edu/ccpic

