



CP2 CENTER NEWS

Newsletter of the California Pavement Preservation Center

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Model HMA Specification For Local Agencies Unveiled

From CalAPA*



HMA Overlay Construction

More than 10 years in development, a model specification for hot mix asphalt (HMA) pavements, that's designed for use by local government agencies, was unveiled last week at the CalAPA Fall Asphalt Pavement Conference in Sacramento. It will go by the acronym HMA-LG.

The idea for the specification grew out of a collaborative effort between the asphalt industry and the California Department of Transportation (Caltrans), and ultimately involved local agency representatives and academia. After several revisions and refinements, the City & County Pavement Improvement Center (CCPIC), hosted by the University of California Pavement Research Center (UCPRC), agreed to publish the specification on its website. Dr. John Harvey, director of the UCPRC, delivered a presentation about the specification at the CalAPA Fall Conference.

The new HMA-LG specification is flexible, featuring mix criteria based on three different levels of traffic loading so that agencies can select the one that is most appropriate for the pavement to be built or rehabilitated.

"We were trying to make it easier for local agencies to have a specification they could use that wasn't so test-intensive," said Tim Denlay with Knife River, co-chair of the CalAPA Technical Advisory Committee and one of the early proponents of an easier-to-use specification for local agencies as an alternative to state asphalt specifications for interstate highways. "A lot of local agencies couldn't do all the testing that Caltrans was asking for, so we wanted to give them an option for a specification they could use that would be more appropriate for local roadways instead of using the full-blown Caltrans specification."

"I think less required testing will lessen the burden on the cities and counties while still doing enough to ensure a quality pavement," Denlay added. "For some of those roadways, the Caltrans specification may not be a good fit. It's made for major highways – it's not always appropriate for a local roadway."

Denlay thanked the UCPRC for its work to coordinate reviews and revisions to the specification and for making it easily accessible on the UCPRC CCPIC website in Word format so it is easy for local agencies to download and modify.

"This is a good spot for it," Denlay said. "We had a very knowledgeable group of people who put this spec together. We had local agency people. We had industry people along with CalAPA. Rita Leahy and Brandon Milar with CalAPA were involved. We had Caltrans involved in the very beginning. We put a lot of work into this and I think it is a really good specification option. We appreciate CCPIC giving this spec a home."

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The origin of the new specification was in the old Rock Products Committee, a Caltrans-industry forum that later morphed into what is now known as the Pavement & Materials Partnering Committee (PMPC). Although Caltrans engineers were heavily involved in the early iterations of the specification, Caltrans decided not to post the specification on their website to avoid confusion with the regular Section 39 asphalt specifications that are the standard for projects on the state highway system. CalAPA endorsed the hosting of the specification at the UCPRC CCPIC site, which also hosts other resources for local agencies.

Harvey, of the UCPRC, walked attendees through the model specification and answered questions from industry and public agency representatives in attendance at the CalAPA Fall Asphalt Pavement conference. Interviewed later, he said of the specification, "It was started with Caltrans, CalAPA and local agencies. Lots of cities and counties are still using the Hveem mix design method, which we think, particularly for the low-volume streets, gives them a mix that's going to crack faster, and we can do better than that. This new specification also brings them into the mainstream with regard to pavement design and laboratories."

"We started with a baseline," Harvey said. "We looked at the current Caltrans spec, and discussed every element of it, and then sat with CalAPA and got some initial critiques. After that we refined it some more, and we took it back and had a contractor group review it and ask questions. We are modernizing the specification, and balancing testing with risk. We have three levels. The bottom two levels are for residential streets and boulevards. The highest level, Level 3, used the same parameters and same spec limits as Caltrans in terms of the volumetric mix properties, but we've simplified the testing, we've simplified the job mix formula approval and the startup, and geared them for local government."

Asked why local agencies should consider using this model asphalt specification, Harvey said, "You should do this because you will get mixes that will likely last longer and you will have a spec that should be practical and

uses modern equipment and methods in terms of the mix design."

Dr. Shadi Saadeh from California State University, Long Beach, also participated in the team that reviewed and proposed changes to the new model specification. "This template specification can be customized to meet the different needs of cities and counties," Saadeh said. "Everyone is a winner as taxpayers will get better roads, local government will get streamlined specs, and industry will be in a better position to meet the specs every time."

Erik Updyke, a technical specialist for the UCPRC and recently retired from the Los Angeles County Public Works Department, also has been involved with the "Green Book" of local agency specifications. He said the model HMA-LG specification should be much easier for a public agency to use than the more famous Green Book and Caltrans specifications, both of which are voluminous and can be intimidating.

"It's better for (local agencies) to have something they can easily understand and use than something that will overwhelm them," Updyke said.

Already, the City of San Jose and the City of Stockton are among the local public works departments that have used versions of the HMA-LG asphalt specification, and Updyke said the UCPRC wants to know about other agencies that utilize it so the UCPRC can continue to gather feedback. He said the CCPIC is also available to answer questions about the specification.

A link to Harvey's presentation on this topic is [HERE](#). A direct link to the model specification in Word format is [HERE](#). The main CCPIC website is [HERE](#).

CalAPA will be developing additional educational outreach efforts built around the new specification, which will be announced in future issues of the California Asphalt Insider newsletter.

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www.CalAPA.net

Asphalt Pavement Conference Returns

By Roger Smith, CP² Center

The California Asphalt Pavement Association's (CalAPA) Fall Conference, held October 13, was testimony to the fact that people are ready

for 'in-person' industry events. After a prolonged hiatus due to the Corona virus pandemic, the CalAPA

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Fall Asphalt Pavement Conference returned for the first time since 2019. Over 100 people from public agencies, industry and academia showed up at the Hilton Conference Center in Sacramento for some long overdue personal interaction, featuring the latest information from the asphalt pavement world. The shortened 1-day event featured multiple speakers, an array of vendor exhibits and an evening reception. For the first time, the conference was also broadcast 'live' on the internet for those who could not attend the event in person.

Speakers addressed the latest regulatory and funding actions on the national and state perspective, as well as timely technical information on subjects like RAP management and the possible use of recycling agents (rejuvenators) with high RAP mixes.

Of particular interest to City / County attendees was a presentation on the new hot mix asphalt (HMA) spec developed for local agency use. The new specification was developed via committee work involving local agency and industry representatives. With the moniker 'HMA-LG' (Local Governments), the new spec offers 3 levels of HMA quality for different levels of traffic loading.

(Given the interest in this new specification, it is also featured in the lead article.) The specification is available via the CCPIC website at: <http://www.ucprc.ucdavis.edu/ccpic/>

For the State level perspective, several Caltrans presenters covered topics such as the success of the Joint Training & Certification Program (JTCP), coming new requirements for Environmental Product Declarations (EPD) for asphalt products, cold in-place recycling (CIR), pavement smoothness and other emerging pavement technologies, with an emphasis on the need for industry partnering on experimental pilot projects

CalAPA took the opportunity to announce its new "Quality Paving Certificate" program, whereby paving companies can qualify for a special credential by meeting criteria including taking training classes & written tests, maintaining state contractor licensing, and agreeing to an industry code of ethics. This new program is meant to provide some means for helping identify asphalt paving contractors who take the extra step towards quality work.

For more information on the Conference go to: www.calapa.net



Pavement Recycling - Synthesis Report Available

A new report titled "Practice and Performance of Cold In-Place Recycling and Cold Central Plant Recycling" has been released as NCHRP Synthesis 569.

Cold in-place recycling (CIR) is a process in which 3 to 4 inches of the existing asphalt pavement layers are milled, pulverized, mixed with new asphalt binder and possibly a recycling agent, and repaved in place. Cold Central Plant Recycling (CCPR) involves mixing the pavement millings with asphalt new binder at a central mixing plant and returning it to the street for re-paving. These processes provide agencies with cost-effective and environmentally

friendly pavement maintenance and rehabilitation options for aged asphalt pavements.

The TRB National Cooperative Highway Research Program's NCHRP Synthesis 569: "Practice and Performance of Cold In-Place Recycling and Cold Central Plant Recycling" compiles and documents information regarding the current state of practice on how CIR and cold central plant recycling (CCPR) technologies are selected, designed, constructed, and evaluated by state departments of transportation (DOTs).

For more information go to: <https://www.trb.org/Publications/Blurbs/182332.aspx>



HMA Manual – New Edition By Robert Humer, Asphalt Institute (California)

If you are looking for a comprehensive up-to-date manual covering the principles of constructing quality asphalt pavements, then look no further. The Asphalt Institute (AI) recently released the totally revamped third edition of its popular Manual (MS-22), "Construction of Quality Asphalt Pavements". After 28 years the 2nd edition was in need of updating. In a three year effort, a team of AI Engineers completely

re-wrote this manual to include the latest information on such topics as; different aggregate specific gravities, absorption, new asphalt binder grades, basics of mix design, mix production processes, the importance of tack coats, new developments in laydown and compaction equipment and procedures, RAP considerations, and Quality Control and Quality Assurance (QC/QA).

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The Manual also discusses overlays and special preparation activities such as crack sealing, patching and micro-milling.

It is the basis for several of AI's seminars and workshops, and is highly recommended for Industry and Agencies alike. Together with AI's Manual Series MS-2 "Asphalt Mix Design

Methods", it covers most of what we do in asphalt paving. These manuals can be found on the Asphalt Institute's website: www.asphaltinstitute.org.

For more information contact Robert Humer at: rhumer@asphaltinstitute.org



Test Track Report Available

By Roger Smith, CP² Center

The National Center For Asphalt Technology (NCAT) has operated a full-scale test track for accelerated testing of asphalt pavement technologies since the mid 1990's. It has now completed its seventh cycle of research and published NCAT Report 21-03: Phase VII (2018-2021) NCAT Test Track Findings.

In addition to evaluating performance of various Pavement Preservation strategies, this cycle of accelerated pavement testing included new research in the following areas:

- Balanced Mix Design (BMD)
- OGFC

- Thinlays
- Asphalt High Rap with rejuvenators
- Pavement density
- Interlayers vs. cracking
- Bio-Polymer Modifiers for Asphalt
- CCPR long-term performance
- Pavement friction

For more information and to view the NCAT Report go to:

<https://eng.auburn.edu/research/centers/ncat/files/technical-reports/rep21-03.pdf>



NICC Regroups with In-Person Conference

By Roger Smith, CP² Center



Charles Stuart (SWCPA) and Tom Tietz (CNCA)

The Nevada Infrastructure Concrete Conference (NICC) re-established itself as the concrete industry's go-to event for all the latest on the various uses of concrete in infrastructure projects. In addition to live general sessions on concrete materials, there was a break-out session focusing on the latest in concrete pavement technology.

On November 3rd, over 150 people from Nevada and other states filled the ballroom at Reno's Atlantis Resort to hear a great line-up of speakers and browse numerous vendor exhibits. The event was organized by the California Nevada Cement Association (CNCA), the Southwest Concrete Pavement Association (SWCPA) and the Sierra Nevada Concrete Association (SNCA) in cooperation with Nevada DOT and FHWA

Tom Tietz of CNCA, and leader of the organizing committee, welcomed the group, noting that the COVID pandemic had prevented last year's event. Darin Tedford, Deputy Director of Nevada DOT (NDOT), provided a Nevada welcome and an update on state funding gains and NDOT's commitment to partner with Industry on

sustainable concrete technology. He led a contingent of over 40 attendees from NDOT.

The issue of sustainability - reducing 'greenhouse gasses' (GHG) and the carbon footprint of concrete - loomed large at the Conference, and was the topic of an overview presentation by Larry Sutter, PhD, of Michigan Technological University (MTU). He cited the need for the concrete and cement industries to move into a new era of 'innovation' - working smarter to meet their GHG reduction goals. Significant reductions can be achieved by strategies such as using less cement (and more supplemental cementitious materials (SCM's), using less concrete (by reducing the mass of concrete structural elements) and using alternative cement products. He stressed that the technologies are out there, and we can't afford to wait.

Another technology for reducing GHG emissions is the use of Portland Limestone Cement (PLC), as described by Jason Weiss, PhD, of Oregon State University (OSU), who cited reductions in CO₂ of 10-12% with this material.

The importance of proper curing of fresh concrete was addressed by Dan Zollinger, PhD, of the Texas Transportation Institute (TTI). Curing affects initial fine surface

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cracking as well as inhibiting the desired crack formation at sawcut contraction joints. The importance of uniform mechanized application of curing compound was emphasized, and a new device for monitoring moisture evaporation from fresh concrete was presented.

Advances in laser screed technology were presented by Michael Smith of Cemex. This major innovation in concrete finishing allows the use of automated equipment to improve the precision of finished grades, while reducing the number of finishers on a project. These screeds are usually mounted on a boom attached to a side vehicle.

Conventional use of rebar in concrete to provide tensile strength can be enhanced with the use of fiber reinforcement. Tyler Ley, PhD, of Oklahoma State University (OSU) presented his research that shows how microfibers can work to reduce surface shrinkage cracking and to keep larger cracks smaller and tighter. Fibers also help fresh mixes hold their water for better curing, but the mixes tend to be more difficult to finish.

An overview of diamond grinding for smoothness was presented by Larry Scofield of the International Grinding & Grooving Association (IGGA). Since the first project – by Caltrans in 1965 – this technology has had extensive use on concrete pavements. Arizona DOT has embarked on a program of removing rubberized asphalt overlays on Phoenix freeways, and grinding the underlying concrete pavement to restore smoothness. The Next Generation Concrete Grinding (NGCG) strategy combines the diamond grinding with a grooving operation for noise reduction and wet weather safety.

The use of Roller-Compacted Concrete (RCC) was presented by Jason Shykowski, DPW of the City of Roseville, CA,

and Clay Slocum, CNCA. RCC is a drier, zero-slump concrete mix typically mixed in a portable pugmill mixer, trucked to the job in dump trucks, and placed with a conventional 'high density' paving machine typically used for asphalt. No forms or rebar are used, and the mix is compacted with a conventional steel-drum roller. Lift thicknesses averages from 4" to 10". In addition to smaller projects, RCC was used in repair of the Oroville Dam and more recently at large trucking facility in Sparks, NV. The City of Roseville did 3 pilot projects on their streets in 2016. All have been very successful.

Perhaps the most unusual pavement story presented focused on the use of precast concrete slabs even for longer runs of pavement reconstruction. As presented by Mark B. Snyder, Ph.D., P.E., President, Pavement Engineering and Research Consultants, this process especially lends itself to pavement reconstruction projects in urban areas, where it could minimize lane 'downtime' and traffic disruption. Slabs are formed off site, possibly using prestressing technology, and trucked to the job for placement, usually followed by injection of cement grout under the slab for uniform support. The Hawaii DOT even did a big 4 lane-mile project on their H1 Freeway, which involved fabricating 1200 custom slab panels, 9" thick.

NICC hopes to be back as an annual event. And according to Tom Tietz, "We plan on continuing to build on the success of this yearly conference. It really felt great to do a live event this year. Aside from the learning from the experts, nothing beats the in-person networking at this event."

For more information on the Conference go to: www.nicc2021.com



FHWA Update

Webinar Series – Asphalt Pavement Technologies

A series of webinars has been developed under the FHWA cooperative agreement, *Development and Deployment of Innovative Asphalt Pavement Technologies*. It will share current information and implementation aspects on topics including ground tire rubber, quality assurance, reclaimed asphalt shingles, and more. The webinars will be moderated by FHWA and hosted by University of Nevada, Reno with open access. For more information,

By Chu Wei, FHWA – Sacramento

please visit [Webinar Series | University of Nevada, Reno \(unr.edu\)](#) The upcoming Webinar *Overcoming Obstacles to Achieve Mat Density and Improve Joint Performance*, will be held virtually on January 2022. Related publications are:

[Enhanced In-place Density: Demonstration Project One-Pager](#)

[Tech Brief 3: Overcoming Obstacles to Achieving Density](#)

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GENERAL
NEWS

Tech Brief 4: Improving Longitudinal Joint Performance

Please contact Tim Aschenbrener at timothy.aschenbrener@dot.gov if you have any questions.

FHWA / PPRA Webinars

The FHWA has been collaborating with Pavement Preservation & Recycling Alliance (PPRA) to deliver a series of webinars. Each of the FHWA/PPRA Webinars is focused on technical information from each association's practices, disciplines & treatments. For more information on the PPRA/FHWA webinar series, please visit https://roadresource.org/featured_stories/16

The most recent webinar *Slurry/Micro Surfacing Construction Best Practices, Part 2*, was held on Thursday, December 16, 2021, 11:00:00 AM PST - 12:30:00 PM PST.

2022 Slurry System Workshop, Las Vegas, NV, January 17-20

This workshop will offer a challenging and informative program on slurry seals, micro sur-

facing, chip seals and crack treatments. You can attend in person or virtually. <https://www.slurry.org/page/ISSA2022SSWS>

For more information on FHWA contact Chu Wei at: chu.wei@dot.gov



CCPIC Update

By John Harvey (UCPRC), Laura Melendy (UC Berkeley, Tech Transfer), and Gary Hicks (CP² Center)



The City and County Pavement Improvement Center (CCPIC) was officially formed in 2018 to work with local governments to increase pavement technical capability through timely, relevant, and practical support, training, outreach and research. The vision for the Center is to make local government-managed pavements last longer, cost less, and be more sustainable. The scope of the Center's work is to:

- Increase knowledge through training, peer-to-peer exchanges, and tech briefs
- Develop sample specifications and other resources,
- Establish a pavement engineering and management certificate program, and
- Serve as a resource, research and development center.

CCPIC is currently supported by SB-1 (fuel tax) funds provided to the University of California, and to the California State Universities.

Campuses involved include UC Davis, UC Berkeley, CSU Chico, CSU Long Beach, Cal Poly San Luis Obispo, and funding partners CSU San Jose (Mineta Transportation Institute), UCLA and UC Irvine.

The following provides an update on recent accomplishments and future plans of the CCPIC.

1. Training CCPIC will continue to offer all classes online via UC Berkeley's TechTransfer Program. A 'group discount rate' is available to agencies. When one person registers at full price, they will receive a discount code that they can share with up to 5 colleagues from the same agency to register for the same class at half-price. Classes currently open for enrollment:

- CCC-01 Asphalt Concrete Materials and Mix Design, January 24-27, 2022
- CCC-03 Pavement Construction Specifications and Quality Assurance, February 8-16, 2022

Space is still available for these classes. Registration is limited to 40 per class so sign up

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soon to reserve a space. Registration information is at: <https://www.techtransfer.berkeley.edu/training/pavement-courses>

The core courses for the Pavement Engineering and Management Certificate have been completed and will have been delivered with the offering of CCC-03 in February 2022.

The CCPIC governance board of city and county pavement officials has also requested development of a new Pavement Construction Inspection Certificate. This new certificate program will include some of the pavement engineering and management classes as well as adding new classes to ensure agencies are able to properly inspect all types of pavement projects. The courses are under development.

2. Technical Guidance and Tools

Efforts completed or underway on Technical Guidance and Tools include:

Best Practices for Pavement:

- Writing and enforcing specifications for asphalt compaction - completed
- Writing concrete mix specifications to improve durability and sustainability - completed
- 'Unpaving' to Create Affordable, Safe, Smooth Gravel Roads - completed
- Pavement Condition Index - completed

Tools and Model Specifications

- Pavement life Cycle Cost Analysis Spreadsheet Software - completed
- Asphalt Compaction Model Specification Language - completed
- Concrete Pavement Model Specification Language – completed
- Superpave Mix Design for Local Government (SPLG) – completed and looking for pilot projects
- Tack coat specification - completed

All completed guidance and tools are posted on the CCPIC website: www.ucprc.ucdavis.edu/ccpic.

Other technical guidance efforts currently underway include:

- Site Investigation guidance manual for local agencies
- Recycling Guidance for Cold In-place (CIR) and Cold Central Plant (CCPR)

- Economic analysis of improvements in local agency pavement practices
- Environmental life cycle assessment tool for local governments

Upcoming technical guidance topics include:

- Interlocking concrete pavement specifications
- Soil Stabilization Guidance for local agencies (update of the Caltrans/UCPRC soil stabilization guidance document)
- Catalog of pavement designs for local agencies based on CalME software
- Guidance on pavements for bike and walking paths

Let us know if you have other ideas we should consider by sending an email to eupdyke@ucdavis.edu.

3. Resource Centers Recent activities for the three resources centers - Northern, Central, and Southern California - have been somewhat hampered by COVID 19, but all presentations can be found on the CCPIC website. If interested in a presentation, please let the CCPIC know by sending an email with the subject "Resource Center Presentation" to eupdyke@ucdavis.edu.

Presentations can be on the best practices, technical guides and tools or other related items.

The CCPIC is also working to develop a Contact List of people responsible for pavement in the cities and counties in the state. The list will be used to provide targeted information regarding upcoming training and other activities and to gather input regarding technical information. We are looking for informal self-identification. To get on the list send an email to eupdyke@ucdavis.edu with the subject "Pavement Contact Person" and provide your name and contact information, as well as a short note about what your pavement responsibilities are. The information will only be used for official CCPIC outreach activities.

For more information on the CCPIC activities please go to our website at: <http://www.ucprc.ucdavis.edu/ccpic/> or email us at: eupdyke@ucdavis.edu



WRAPP Update



The Western Region Association For Pavement Preservation (WRAPP) has finalized plans for its 2022 Conference, and registration will open soon on our website www.wrapp.org. This popular Conference, to be held February 1-3 at the Holiday Inn in downtown Sacramento, will be a 'hybrid' because the speakers will be streamed virtually for those that cannot attend in person. As always, the Conference will offer a stellar line-up of speakers and topics, including Caltrans officials, local agency street managers, pavement preservation groups and national

By Cesar Lara, WRAPP President
pavement groups, as well as specific technical topics including microsurfacing, multi-layer systems, CIR and FDR strategies.

In addition to Conference planning, WRAPP is set to continue its program of pavement preservation training for Caltrans, with another round of training set for December 6th. The topic will be 'Multilayer Lift Treatments', presented by Scott Dmytrow of Prism Worldwide.

All information and presentations from the Conference and other training events will be on the WRAPP website, along with updates on specifications.

For more information go to: www.wrapp.org



AASHTO ETF Update

By Colin Franco (RI DOT), Larry Galehouse (NCPPI) and R. Gary Hicks (CP² Center)

The American Association of State Highway and Transportation Officials (AASHTO) TSP-2 Emulsion Task Force (ETF) met to continue its work on developing material specifications, design practices, quality assurance specifications, and construction guides for all asphalt emulsion-based pavement preservation treatments. Many of the materials specifications and design practices have already been approved and published by AASHTO. The AASHTO construction guides for chip seals, micro surfacing, and fog seals, developed under NCHRP Project 14-37, have also been approved, and they should be published soon. Other guides are currently being developed through NCHRP Project 14-43 for Cold Central Plant Recycling and Cold In-Place Recycling, and NCHRP Project 14-44 for Slurry Seals, Scrub Seals, and Tack Coats. All presentations given at the AASHTO TSP-2 ETF meeting on November 30 and December 1, 2021 can be found at: <http://tsp2-etf.org/>.

Reorganization

The ETF has currently reorganized to Focus on the future deliverables. The new Subcommittees include:

- Emulsion Treatments
- Quality Assurance, Education and Certification
- Messaging and Implementation
- Research
- Emulsion Binders

Under each of these subcommittees there are working groups assigned to produce specific deliverables. Presentations from the co-chairs of each subcommittee can be found at <http://tsp2-etf.org/>.

Research - Current and Planned

A 'research needs' statement proposed by the ETF resulted in the approval of NCHRP Project 9-63. The project will address a continues its work to develop and validate a performance graded (PG) specification for asphalt emulsions. This work includes recommending a 'recovery' method for obtaining an emulsion's residual asphalt, and a suite of tests which relate to the performance of emulsion treatments like chip seals, slurry surfacing systems and others. The project is being performed by the Asphalt Institute (AI) and NCAT.

At the recent meeting of the ETF, Gary Hicks of the CP² Center at Chico State gave a report on NCHRP project 14-44, "Development of Construction Guides for Slurry Seals, Scrub Seals and Tack Coats". Phase 1 was completed earlier in 2021, and the Draft Final Report, along with the Draft "Construction and Quality Assurance Guides" were submitted on December 1, 2021. The final report and the guides are due in early March 2022.

The ETF also developed an important research problem statement on the topic of "Developing Performance and Safety Specifications for Rejuvenating Seals". The project, submitted by Rhode Island DOT

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was approved for FY 2022 as NCHRP project 10-114. Another NCHRP project (14-48) was also submitted by RI DOT, and approved, to develop construction guides for sand seals and Ultra-Thin Bonded Wearing Courses (UTBWC).

Another effort underway by the ETF's Subcommittee on Quality Assurance, Education, and Certification is to develop incentives and disincentives for pavement preservation treatments.

Accepted 'Best Practices'

'Best practices' documents for emulsified asphalt chip seals and slurry systems were started in 2020. The chip seal document is now complete and can be found on the ETF website at <http://tsp2-etf.org/>, while the 'best practices' for slurry systems is in final review. Best practices for all the other treatments are also planned. These documents will be used as the reference manual to support the AASHTO TSP-2 Certification Program for agencies, consultants, and contractors.

Implementation Project

The 'best practice' documents will also be used in NCHRP Project 20-44(26) "Implementing Guide Specifications for the Construction of Chip Seals, Micro Surfacing, and Fog Seals" to facilitate the use of the new AASHTO standard specifications and guides. The project also include an outreach to state and local agencies, free training, and construction of demonstration projects.

If any state or local agency is interested in participating in the construction of a chip seal, micro surfacing, or fog seal demonstration project, please contact Larry Galehouse of the National Center For Pavement Preservation (NCPP) at galehou3@egr.msu.edu. Free training and assistance with the assembly of project contract documents will be available upon request. All specification final drafts can be found at the ETF website located at: <http://tsp2-etf.org/>.

Certification and Training

The ETF also is endorsing a "National AASHTO Certification Initiative", where individual practitioners and companies can get certified in all aspects of design and construction of emulsion-based pavement preservation treatments. More information about the National Certification process can be found at <https://www.tsp2.org/certification-information/>

Summary

In summary, the AASHTO TSP-2 ETF has made considerable progress in developing national specifications for pavement preservation treatments during the past 5 years. It is expected that with improved specifications, as well as certification and training, fewer early failures with preservation treatments will occur. For more information on any of the AASHTO TSP-2 ETF current or planned activities please contact Colin Franco at colin.franco@dot.ri.gov



New Manual Coming!

The California Pavement Preservation (CP2) Center has been working on a new manual, *Pavement Repairs and Preparations for Resurfacing*. This manual will be one of five new manuals the Center has produced related to asphalt pavement preservation. The other four companion manuals deal with Chip Seals, Slurry Surfacing, Cape Seals, and Thin Asphalt Overlays.

The new manual discusses pavement repairs (crack sealing and patching), done either as stand-alone repairs or as preparation for a pavement preservation treatment. It also addresses other common surface preparations done prior to placing a preservation treatment, and will provide information on Quality Assurance and troubleshooting of repair work. A training presentation (in PowerPoint) will also be developed for this new manual.

By Ding Cheng, Director, CP² Center

The four completed Manuals can be found at the following links:

1. Chip seals: <https://transweb.sjsu.edu/sites/default/files/1845A-Chip-Seal-Manual.pdf>
2. Slurry surfacing: <https://transweb.sjsu.edu/sites/default/files/1845B-Cheng-Manual-Slurry-Surfacing.pdf>
3. Cape seals: <https://transweb.sjsu.edu/sites/default/files/1845C-Cheng-Cape-Seal-Manual.pdf>
4. Thin asphalt overlays: <https://transweb.sjsu.edu/sites/default/files/1906-RB-Cheng-Manual-Thin-Asphalt-Overlay.pdf>

These Manuals and presentations will be used in the new Pavement Preservation Academy for the Certificate Program, which began in 2021, and will be offered in March of 2022 (See article below).

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For more information contact Ding Cheng at:
dxcheng@csuchico.edu

For other information on the CP2 Center's

activities go to:

<https://www.csuchico.edu/cp2c/>



2022 Pavement Preservation Academy Announced

By Ding Cheng and Gary Hicks, CP2 Center



As part of the Senate Bill 1 (SB-1) funding through the CSU Transportation Consortium headed up by Mineta Transportation Institute (MTI) in San Jose State University, the California Pavement Preservation Center (CP2C) is pleased to announce training for its Certificate Program in pavement preservation, via "The Pavement Preservation Academy". The purpose of the program is to help state and local agencies improve the design and construction of pavement preservation treatments.

The effort began in 2018 with the development of technical manuals for chip seals, slurry surfacing, Cape seals, and thin hot mix overlays. These four manuals can be found with the following links:

<https://transweb.sjsu.edu/research/1845A-Chip-Seal-Manual>

<https://transweb.sjsu.edu/research/1845B-Slurry-Surfacing-Manual>

<https://transweb.sjsu.edu/research/1845C-Cape-Seal-Manual>

<https://transweb.sjsu.edu/research/1906-Manual-Thin-Asphalt-Overlay>

The fifth manual, on Pavement Repairs is under development and should be completed in early 2022.

The first Academy was offered on March of 2021. The second Academy for the Certificate Program, covering the five topic areas, will be held online March 21-25 and consist of five 3-hour modules. The student must pass an exam to gain a Certificate. Initially the Academy will be offered once per year. Each of the five modules will cover the following topics:

- Overview of the treatment
- Project selection
- Materials and design
- Specifications
- Construction
- Safety
- Quality Assurance
- Trouble shooting
- Other resources available

The Academy is designed to empower state and local agency staff, and contractors, to optimize preventative maintenance funds. Most local agencies defer road maintenance over many years, and there are thousands of miles of public roads that are currently in poor condition. With new state funding (e.g. SB1) available for maintenance and construction projects, proper preventative maintenance is an issue of paramount importance. Treatments that can preserve pavements and defer the need for costly road reconstruction are very important.

The instructors for the various modules will be recognized names in the field, including Gary Hicks, Leros Lane, Ding Cheng, Roger Smith and Erik Updyke.

Registration information can be found on the Center website at: <https://www.csuchico.edu/cp2c/educational-opportunities/pp-academy.shtml>.

For more information, please contact Dr. Ding Cheng, the CP2 Center Director, at dxcheng@csuchico.edu.



COMING EVENTS - Mark Your Calendar!

By Roger Smith, CP2C

"Asphalt Pavement 101" Class January 11-12 (Online) March 16 (Ontario)

This popular class from the California Asphalt Pavement Association (CalAPA) offers an overview of the basics of asphalt pavement including asphalt materials and HMA pavement construction. This class is also available by request to road agencies or companies. For more information go to: www.calapa.net

U.C. Berkeley Technology Transfer Courses (All Online)

These courses were developed in partnership with the City and County Pavement Improvement Center (CCPIC) and funded by California Senate Bill 1, the Road Repair and Accountability Act of 2017. Classes currently open for enrollment:

Continued, next page



- CCC-01 Asphalt Concrete Materials and Mix Design, January 24-27, 2022
- CCC-03 Pavement Construction Specifications and Quality Assurance, February 8-16, 2022

Registration information is at: <https://www.techtransfer.berkeley.edu/training/pavement-courses>

WRAPP Workshop February 1-3 (Sacramento)

The Western Region Association for Pavement Preservation (WRAPP) annual Workshop, a premier west coast training function, will again offer an outstanding lineup of pavement technical experts focusing on the topic of pavement preservation. A good mix of Agency, Industry and Academic speakers will make up the program. For more information go to: www.wrapp.org

CalAPA Spring Conference March 16-17 (Ontario)

The annual Spring Asphalt Pavement Conference will be held March 15-16 at the DoubleTree Hotel in Ontario, CA. The premier event of its type is in its 13th year and features a diverse lineup of speakers covering everything from updates on asphalt pavement technology, regulations, legislative matters and funding projections. For more information go to: www.calapa.net

Pavement Preservation Academy March 21-25 (Online)

The California Pavement Preservation Center (CP2C) is pleased to announce training classes for its certificate program in pavement preservation, via "The Pavement Preservation Academy". The purpose of the program is to help state and local agencies improve the design and construction of pavement preservation treatments including pavement repairs, chip

seals, slurry surfacing, Cape seals, and thin hot mix overlays. For more information visit the Center's website at: <https://www.csuchico.edu/cp2c/educational-opportunities/pp-academy.shtml>.

Nevada LTAP Center Classes Various Dates (Online)

The Nevada center for the Local Technical Assistance Program (NV-LTAP) regularly offers classes on a variety of pavement maintenance topics. For more information go to: <https://nv-ltap.com/>

FHWA / PPRA Webinars Various Dates (Online)

FHWA will continue to team up with the Pavement Preservation and Recycling Association (PPRA) to offer short webinars on various popular pavement maintenance treatments, including crack sealing, slurry surfacing, chip seals, cape seals, and proper handling of asphalt emulsion products. Registration is at: <https://connectdotcqp1b1.connectsolutions.com/content/connect/c1/7/en/events/catalog.html?folder-id=1296478025&from-origin=connectdot.connectsolutions.com>

Find more information and dates contact: Jason.Deitz@dot.gov

The Asphalt Institute and NAPA Webinars (Online)

The Asphalt Institute offers national training on pavement design, asphalt binders, mix design and asphalt construction. For more information go to: <http://www.asphaltinstitute.org/training/seminars/>

The National Asphalt Pavement Association (NAPA) offers webinars on various asphalt pavement topics. For current listings go to: <https://www.asphaltpavement.org/programs/napa-webinars>



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Caltrans established the California Pavement Preservation (CP² Center) at CSU, Chico in July 2006, and fully funded the Center in January 2007. Dr. DingXin Cheng is the current Director of the Center. Mr. Rukesh Maharjan is the current Contract Manager of Caltrans.

The purpose of the Center is to provide pavement preservation support services to Caltrans and other public agencies, and to industry. Unique services include developing educational programs in pavement preservation, providing training and staff development opportunities, providing needed technical assistance to public agencies and industry, and managing/conducting research and outreach services, such as this newsletter.

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