



Allen King, Caltrans

King to head Caltrans Office of Concrete Pavements

Tom Pyle, State Pavement Engineer, recently announced Allen King as Caltrans' new Chief of the Office of Concrete Pavements.

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Pavement Preservation Academy Coming in April

A big achievement of the Center has been the development and delivery of workforce training in the form of a Pavement Preservation Academy (PPA) sponsored by the SB-1 'fuel tax' funding. Online registration is open.

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CCPIC Update

The City County Pavement Improvement Center (CCPIC) has recently reached a new milestone in the offering through Berkeley Tech Transfer of the first self-paced classes.

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Caltrans Survey on HMA 'Pay Adjustments'

In a collaborative effort, led by Caltrans METS, a national survey was created to enhance the understanding of how contractors are compensated in dense-graded hot mix asphalt (HMA) projects.

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RSA Update: Microtrenching vs. FDR

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MTAG Update Is Underway!

Since its first publication in 2003, the Caltrans Maintenance Technical Advisory Guide (MTAG) has been a go-to reference for all aspects of pavement maintenance.

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City of Elk Grove's Pavement Preservation Program A Winner!

Robert French, Operations Supervisor of the City of Elk Grove, gave an excellent presentation on February 7, 2024, on how strategic spending on pavement preservation helped the city to achieve the commendable PCI of 80!

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Rubberized Binder for Dense Graded HMA

Rubber modified hot mixed asphalt (RHMA) is not a new product to the pavement industry in California. Caltrans has been using RHMA-gap graded (RHMA-G) for the past 50+ years as a wearing course on asphalt concrete pavements.

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2024 WRAPP Workshop

The annual Workshop of the Western Region Association for Pavement Preservation (WRAPP) gave a crowd of over 200 attendees a lineup of speakers recognized as experts in their various fields of pavement preservation (P2) technology.

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SWCPA Announces 2024 Workshop Line-Up

Now in its third year, the SWCPA "Concrete Pavement Workshop Series" delivers fundamental, easily accessible.

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BBRWG Update

The Building Better Roads Working Group (BBRWG) is comprised of stakeholders from all sectors of the paving industry interested in improving the quality of roads in the San Diego Region.

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UPCOMING EVENTS

Pavement Preservation Academy	April 2,3-9,10,11, 2024	Online
SWCPA Concrete Pavement Workshops	Various Dates	Online and In Person
RMWPPP	November 12-14	Sacramento

Berkeley Tech Transfer / CCPIC Pavement Classes

Pavement Construction Specifications and Quality Assurance	March 12-20, 2024	Online
Asphalt Concrete Materials & Mix Design	April 22-25, 2024	Online
Pavement Management Systems and Preservation Strategies	May 6-10, 2024	Online
Pavement Preservation Construction Inspection	Self-Paced	Online
Construction Inspection of Asphalt-Rubber Pavement Materials	Self-Paced	Online

CalAPA Classes

"Asphalt Forensics"	April 23, 2024	Online
"Asphalt Pavement 101"	April 24, 2024	West Sacramento OR Online
"Quality Asphalt Paving"	April 25, 2024	West Sacramento OR Online

King to head Caltrans Office of Concrete Pavements

By Roger Smith, CP2 Center



Allen King,
Caltrans

Tom Pyle, State Pavement Engineer, recently announced **Allen King** as Caltrans' new Chief of the Office of Concrete Pavements.

Allen graduated from University of the Pacific in 2008 with a double major in Civil Engineering and Engineering Management and later earned his Masters in Transportation Management from San Jose State University. Prior to joining Caltrans, he began his career with local government agencies working for San Joaquin County and the City of Stockton in their construction, surveying, and public works departments.

He started working for Caltrans in 2008 for Structure Construction on projects in Districts 4, 5, and 10. His stint in construction ended in 2016 when he joined METS as a Structure Representative (now known as a METS Representative) and eventually became an acting Senior Bridge Engineer at METS in early 2018. During the summer of 2018, Allen rotated through DES design. In November 2018, Allen joined the Pavement Program within the Office of Asphalt Pavements as the Senior TE for the Asphalt Recycling branch and technical lead for asphalt pavement smoothness. February 2023, Allen became the acting Office Chief for the Office of Concrete Pavements where he oversaw statewide concrete pavement design training, PMPC (Pavement & Materials Partnering Committee) work products within the CTG (Concrete Task Group), and hiring of 3 transportation engineers to complete a well-rounded team.

Allen is excited to continue leading the seasoned and outstanding personnel in the Office of Concrete Pavements. He is also looking forward to continuing partnering with industry, academia, and his Caltrans colleagues towards improving pavement quality across California!

Pavement Preservation Academy Coming in April By Roger Smith, CP2 Center

A big achievement of the Center has been the development and delivery of workforce training in the form of a **Pavement Preservation Academy** (PPA) sponsored by the SB-1 'fuel tax' funding. The third offering of this online Academy will be April 2, 3, 9, 10 and 11, 2024, from 9am to noon on each of its 5 days. Instructors are: Roger Smith, Gary Hicks, Leros Lane, Ding Cheng, and Erik Updike.

The 5 segments of the PPA have corresponding **manuals** that were developed by the CP2 Center, and are published on the MTI website. In addition to being used in the Academy, these manuals are free to the public and downloadable using the following links:

- Asphalt Pavement Repair and Resurfacing Preparation: https://scholarworks.sjsu.edu/mti_publications/414/
- Chip Seals: <https://transweb.sjsu.edu/sites/default/files/1845A-Chip-Seal-Manual.pdf>
- Slurry Seals and Microsurfacing: <https://transweb.sjsu.edu/sites/default/files/1845B-Cheng-Manual-Slurry-Surfacing.pdf>
- Cape Seals & Multilayer Systems: <https://transweb.sjsu.edu/sites/default/files/1845C-Cheng-Cape-Seal-Manual.pdf>
- Thin Asphalt Overlays: <https://transweb.sjsu.edu/sites/default/files/1906-RB-Cheng-Manual-Thin-Asphalt-Overlay.pdf>

Since its inception, over 250 people have completed the Academy. As part of the PPA, follow-up exams may be taken on each of the segments, and successful completion earns a Certification. The registration site for the Academy is now open at the CP2 Center's website:

<https://www.csuchico.edu/cp2c/educational-opportunities/pp-academy.shtml>.

If you need more information regarding the CP2 Center, please contact Dr. Ding Cheng at dxcheng@csuchico.edu or go to: <https://www.csuchico.edu/cp2c/>

MTAG Update Is Underway!

Roger Smith, CP2 Center

Since its first publication in 2003, the Caltrans Maintenance Technical Advisory Guide (MTAG) has been a go-to reference for all aspects of pavement maintenance. The 'MTAG' is often referred to as the pavement maintenance 'Bible'! But updates are needed. Its last update was in 2009. So, an updating effort has begun, with the **CP2 Center** playing a major role as part of our support work for Caltrans.

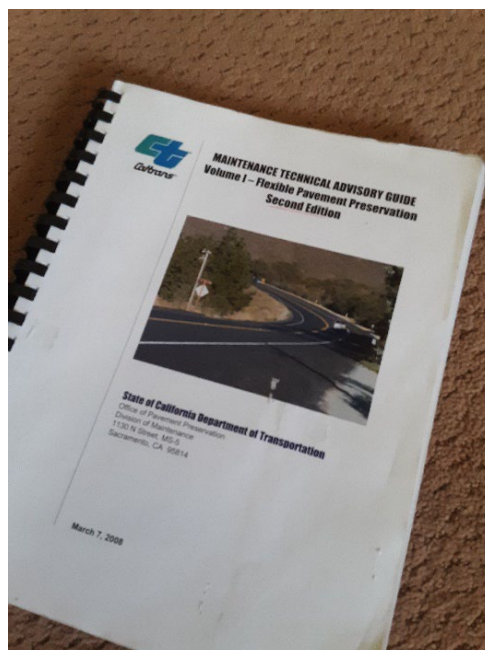
The MTAG has been a 2-Volume reference - Volume 1 is for Flexible (Asphalt) Pavement Preservation, and Volume 2 addresses Rigid (PCC) Pavement Preservation. The Guides cover a lot. The full Caltrans Guides can be found at:

<https://dot.ca.gov/programs/maintenance/pavement/mtag>

Our updating work will be limited to Volume 1, which currently has 14 Chapters addressing topics including: Pavement Preservation Concepts, Materials, Strategy Selection, Crack Sealing, Patching, Fog Seals, Chip Seals, Slurry Seals, Mirosurfacing, Multilayer Systems, Thin Overlays, Bonded Wearing Courses, Interlayers, and In-Place Recycling. It's a very comprehensive Guide!! The CP2 Center has been assigned the task, from Caltrans, of updating this valuable reference and has already begun work. Because the update will involve input from experts from Industry as well as Caltrans, the initial task has been identifying Subject Matter Experts (SME) within both Caltrans and Industry. The Western Region Association for Pavement Preservation (WRAPP) has been assisting with this effort.

The CP2 Center team will solicit input by circulating individual chapters to SME's for review and comment, then incorporate appropriate updates. This will also include updating and simplifying the references that are included for each chapter / topic.

For more information contact Gary Hicks, Program Manager, at: rghicks40@outlook.com



MTAG in print form

Caltrans Survey on HMA 'Pay Adjustments' By Clinton Edmiston, Caltrans METS



Introduction

In a collaborative effort, led by the California Department of Transportation Materials Engineering and Testing Services (Caltrans METS), a national survey was created to enhance the understanding of how contractors are compensated in dense-graded hot mix asphalt (HMA) projects. The survey was disseminated in partnership with the American Association of State Highway and Transportation Officials, Committee on Materials and Pavements (AASHTO COMP). The goal was to uncover insights that might lead to improvements in contractor pay adjustment within the industry. This effort was part of a broader initiative under the Caltrans-Industry 'Pavement and Materials Partnering Committee' (PMPC).

Survey Timeline and Participation

The survey, titled "Dense-Graded Asphalt Concrete Mixtures Acceptance and Pay Criteria," was comprised of 10 questions. The questions were meticulously designed and crafted in various formats, such as multiple-choice, single-choice, document upload, and comment-based. The purpose was clear – to collect not only technical information but also the practical insights embedded in the collective knowledge of state highway agencies (SHAs).

Documenting the survey timeline from May 11, 2023, to June 2, 2023, the geographic participation map (Figure 1) illustrates collaboration. With 33 U.S. agencies and one response from the Ontario Ministry of Transportation in Canada, the dark green regions on the map showcase a united front of SHAs actively engaged in the survey.

Summary of Findings

The survey uncovered key findings that shed light on current practices and trends within the industry. Notable highlights include:

- **Statistical Approaches:** Approximately 88% of SHAs reported the use of statistical processes for some or all projects. This emphasis on statistical analysis underscores a commitment to data-driven decision-making in contractor pay adjustment.
- **Quality Measures:** PWL (percent within limits) was identified as the predominant quality measure, reported by ~62% of agencies. The prevalence of PWL reflects a concerted effort to maintain quality standards within specified limits.
- **Contractor Test Data:** Close to 50% of SHAs incorporate contractor test data into their acceptance program, utilizing methods such as F-test and t-test.
- **Weight Factors:** In calculating the composite pay factor (CPF), in-place density emerged with the highest average weight factor (~42%). This highlights the significance of density in determining overall project acceptance.
- **Project Classification:** Approximately 44% of SHAs reported no project classification based on tonnage, while another 44% use two tonnage levels. This diversity in project classification approaches highlights the adaptability of SHAs in aligning with project requirements.
- **Acceptance Quality Characteristics (AQC):** In-place density, asphalt binder content, lab-compacted air voids at Ndes, and gradation emerged as widely used AQCs, with varying methodologies reflecting the diverse approaches used by SHAs.
- **Non-Compliance of Non-Pay Factors:** 'Stop Production' and 'Remove & Replace' emerged as common practices for dealing with non-compliance of non-pay factor quality characteristics.

These findings, among others, provide valuable insights into the diverse approaches and methodologies employed by SHAs in the realm of contractor pay adjustment for dense-graded HMA projects.

Acknowledgement

Caltrans METS would like to acknowledge AASHTO COMP members and the 34 SHAs involved in this survey. Their dedication and willingness to share valuable insights have significantly enriched the outcomes of this initiative. Additional contributions were made in the development of the survey by Caltrans Office of Asphalt Pavement, Headquarters Construction, and various industry representatives.

Contact Information:

For those interested in the detailed report, please reach out to Clinton Edmiston at Clinton.Edmiston@dot.ca.gov.

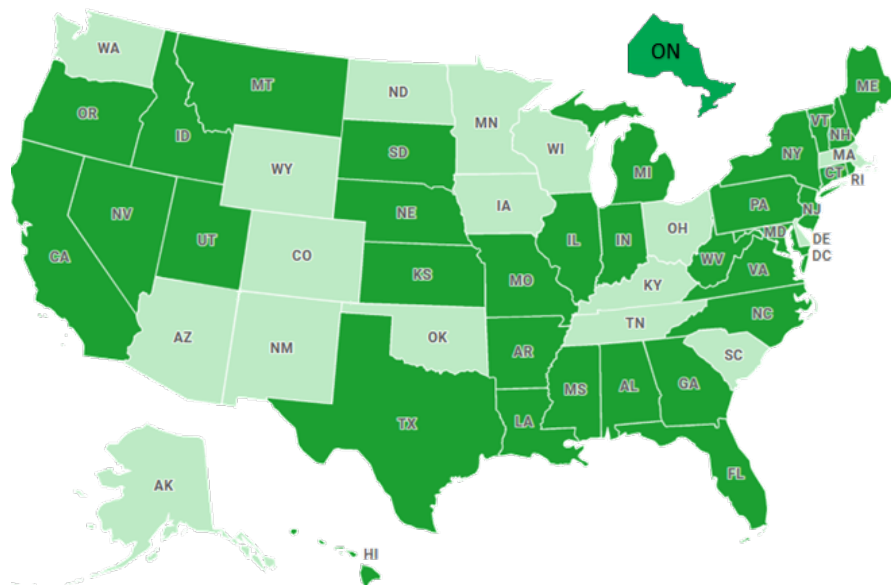


Figure 1. Map of U.S. SHAs and One (1) Canadian agency participating in the survey (participant states are shown in dark green).

RSA Update: Microtrenching vs. FDR

By Tyler Bodnar – RSA / California Nevada Cement Association



California Senate Bill 378 was signed into law in October of 2021, and it likely didn't impact your daily life as you were in the throes of the global pandemic. The **Recycling & Stabilizing Association (RSA)** of California has recognized how this bill has created heartburn for local agencies throughout the state.

Over two years later, the language contained in this law is impacting a plethora of capital projects around us. Let's dive deeper into what many people are referring to as the "microtrenching" bill. Very few people would argue against our state's stance that more (if not all) people should have access to high-speed internet. SB 378 stated that Californians need broadband now more than ever to meet a variety of demands including, "remote work, distance learning, telehealth, emergency response and public safety, agriculture, innovation, and commerce." Language of the law requires local agencies to allow "microtrenching for the installation of underground fiber if the installation in the microtrench is limited to fiber."

Here are the definitions of two key terms:

Local Agency: *means a city, county, city and county, charter city, special district, or publicly owned utility.*

Microtrench: *means a narrow open excavation trench that is less than or equal to 4 inches in width and not less than 12 inches in depth and not more than 26 inches in depth and that is created for the purpose of installing a subsurface pipe or conduit.*

To save you from reading all of SB 378, here's the 'who and what' of it, and how it might impact a project near you. Local agencies are currently actively microtrenching for broadband cable at a depth of 12 to 26 inches under a variety of pavement conditions on our road networks. Furthermore, the law allows, upon mutual agreement, a microtrench to be placed shallower than 12 inches in depth.

While installing these facilities at a shallow depth may allow for quick installation, it also limits an agency's ability to use its full road rehabilitation toolbox (e.g., FDR), when needed. Communication between engineering and planning departments is paramount when planning for detailing these standards. It is not about being anti-high-speed internet and pro-road construction. It's about planning for sustainable maintenance of in-ground facilities that limit future interruption and allow a full suite of rehabilitation solutions to be considered.

While cities and counties are struggling to develop standard plans, RSA has helped these owners see the bigger picture. Current efforts through a 'Greenbook' Specifications subcommittee have seen the development of a proposed standard plan requiring 24" of clearance between the top of the broadband conduit and the final pavement surface. A plan of this nature stays within the confines of the law, but allows for future consideration of deeper road rehabilitation strategies, such as full-depth recycling (FDR). Ultimately, we want to have options for reconstructing our failing roads without damaging or interrupting the high-speed internet our population is so eager to access.

If you are someone struggling with these same issues and would like help developing a standard plan in your area, we can help!

For more information got to: info@rsa-california.com



Damaged shallow
fiber-optic conduit

Rubberized Binder for Dense Graded HMA

By Skip Brown (ACS), Dr. Peter Sebaaly (UNR) and Bob Rivers (USPolyco)

Rubber modified hot mixed asphalt (RHMA) is not a new product to the pavement industry in California. Caltrans has been using RHMA-gap graded (RHMA-G) for the past 50+ years as a wearing course on asphalt concrete pavements. The tire rubber modified binder used in the RHMA-G is produced by blending the ground tire rubber into the base binder at the hot plant, known as Asphalt Rubber (AR), and used immediately in the mixing process.

In the past 20 years, an alternative method of producing tire rubber modified asphalt binders has emerged, where the ground tire rubber is blended into the base binder at the terminal and shipped to hot plants. This process is referred to as the terminal blend and the final binder is known as Rubber Modified Binder (RMB). The advantages of the RMB include: the ability to be stored in tanks and shipped to multiple hot plants, no special blending equipment is required at the plant, it can be formulated to meet multiple performance grades (PG), and it's applicable to both dense and gap-graded HMA mixtures. These RMB products are addressed in the Caltrans Standard Specifications, Section 92, as "PG Modified Asphalt Binders" (e.g., PG 64-28M, Standard PG's and Modified.)

It has been well known that RHMA-G mixtures exhibit excellent resistance to reflective cracking, which led Caltrans to the 'half-thickness equivalency for the RHMA-G overlays, when used for reflective cracking. In 2007 researchers at University of California Pavement Research Center (UCPRC) published a report on reflective cracking under the Heavy Vehicle Simulator. The report showed that a 90 mm layer of conventional dense graded HMA cracked after 16 million ESALS, where a 45 mm layer of RMB with 15% tire rubber (MAC15TR) in gap-graded HMA did not crack after 91 million ESALS. Currently, that MAC15TR binder is marketed under the name of Sigmabond. The Sigmabond binder is produced in various quantities at a terminal and can be stored in a tank and trucked out for future use.

The information provided in the UCPRC report was informative, but not sufficient to support recommending the 2007 rubberized mix for dense graded overlays. But in 2021, a paper published by researchers at the University of Nevada, Reno (UNR), presented the engineering and performance properties of RMB dense graded HMA mixtures. The published data showed the resistance to reflective cracking of the two dense graded rubber HMA mixtures as 5-6 times those of the unmodified mixture. The mixtures also included 25% reclaimed asphalt pavement (RAP) materials. In addition, the two rubber mixtures exhibited equivalent or better resistances to moisture damage, fatigue, and rutting compared to the unmodified mixture. The RMB evaluated in the UNR study is currently marketed under the name of Sigmabond, by Polyco.

It has been well known that rubberized HMA gap graded (RHMA-G) exhibits excellent resistance to reflective cracking, which led Caltrans to the half-thickness equivalency for the RHMA-G overlays when used for reflective cracking. However, the findings of the UNR research proved that the excellent resistance of RHMA-G mixtures to reflective cracking also holds true for rubberized dense graded mixtures. This supported plans to recommend RMB for dense graded rubberized HMA for overlays on smaller projects, like private streets and parking lots.

Even though private streets and parking lots do not experience fatigue cracking, due to low traffic loads, the majority of them experience block cracking due to aging. The traditional repair method of mill-and-fill does not offer the desired performance since the block cracks are full depth and they tend to reflect through the overlay at the rate of about an inch per year.

Continued, next page

Although thousands of tons of RHMA-G have been successfully placed on Caltrans projects and other public roads, their applications on smaller private paving projects are not as common, for the following reasons:

- The production / blending of these AR binders is not cost effective for smaller quantities.
- Placing and compacting RHMA-G is difficult on private streets due to parking, changing widths, start stop issues, raking, etc. (Compaction must be achieved before the mix drops below about 265°F.)
- RHMA-G does not like handwork and, if necessary, a lower density is almost always the result leading to increased permeability to water

The RMB binders offer a way to realize the benefits of rubber modification on smaller private projects, by allowing:

- Delivering smaller batches of the binder to a plant
- Lengthy storage of the binder in tanks
- Less odor than asphalt rubber binder
- Ease of compaction and use of rubber-tired rollers
- Tough, crack resistant asphalt mix

Armed with the new information about the excellent resistance to reflective cracking of dense graded RMB mixes, an RMB binder (SigmaBond by Polyco) containing 15% ground tire rubber (and polymer when a grade PGxx-xxM requires it) was shipped to and tanked at Pacific Northwest Oil in Stockton, CA, in summer 2023, ready to be trucked directly to hot plants for individual projects. In July 2023, a dense graded RHMA mix with the RMB binder was placed on two private projects. The 3% air void dense graded mix design was developed by Asphalt Paving and Recycling Technologies (APART). The projects specified 92% Maximum Theoretical Density (MTD) for acceptance.

The first project was done at the Rancho Murieta Community Association where about 1,400 tons were placed on two locations (one street and one parking lot). The overlay thickness was 2 inches. The mix - produced by Teichert Perkins plant - behaved more like dense graded HMA than RHMA-G. The mix was compacted with steel and pneumatic rollers having no pick-up problems, and achieving 92% density (the tests averaged 93%). Additional in-place density was achieved at temperatures down to 225°F.

The second location was at a street in the Los Lagos Community Association in Granite Bay, CA. The mix was produced by the George Reed Elkhorn plant and placed as a 2-inch overlay. Again, the RMB mix behaved like a classical dense grade HMA, allowing normal raking and compacting with both vibratory steel and pneumatic rollers. The workmanship was excellent and the mix averaged over 92.5% MTD. There were no issues with raking or stopping the paver waiting for trucks in regards to density requirements.

The third project was constructed at Brookside Golf in Stockton, CA, in summer of 2023. The dense graded RHMA with RMB binder was produced by Tiechert's Perkins plant. The in-place mix met all the applicable specifications. The photo below shows the highly uniform and tight texture of the finished surface.

With all the interruptions encountered and handwork required on private projects, both the parking lot and streets projects went very smoothly, achieving in-place density and delivering very uniform pavement surfaces. Additional projects are in the pipeline.

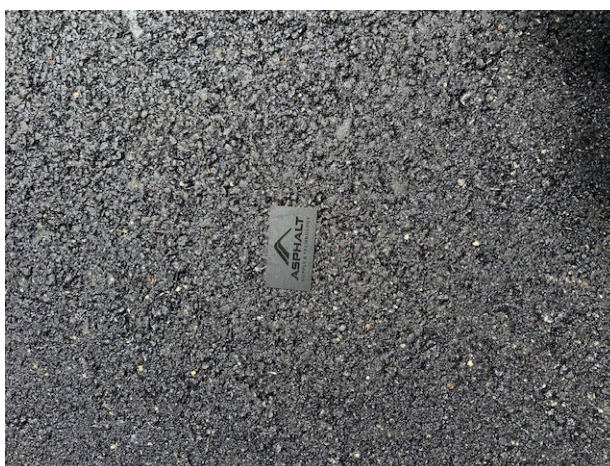
Worth noting is that with conventional dense graded HMA, crews commonly use 60# jackhammers to cut the asphalt to raise manholes. But they had to bring out 90# hammers to make the cuts in the RHMA with the RMB binder.



Rancho Murieta parking lot



Los Lagos Community Association road



Brookside Golf in Stockton

Rodney Hart, General Manager of the Rancho Murieta Association commented, "I've been employed here for over 40 years. I have been responsible for maintaining the roads here in our community for the past 35 years. We have tried several different asphalt mix designs along with both fabric and mat inner layers to manage clack reflection. In early 2023 I was introduced to Terminal Blend Tire Rubber Hot Mix; after much discussion about this mix design, I decided to move forward with this new mix design. My first concern was cost. However, removing the interlayer from our specs decreased the cost impact of using a better-performing rubberized asphalt. As I have done in the past when trying a new process, this year, we had a few test locations that in any other overlay we would have marked these test locations as dig-out repairs before the overlay. These locations were badly alligatored. After 10 months, these test locations look as good as they did the day the work was done. We are extremely satisfied with the performance of the RHMA overlay."

For more information contact:

Bob Rivers (Asphalt Supply & Technology) at: brivers@USPolyco.com

Skip Brown (Asphalt Consulting Services) at: skipbrown@asphaltconsultingservices.com

Dr. Peter Sebaaly (University of Nevada, Reno) at: psebaaly@unr.edu

2024 WRAPP Workshop

By Roger Smith, CP2 Center



The annual Workshop of the **Western Region Association for Pavement Preservation (WRAPP)** gave a crowd of over 200 attendees a lineup of speakers recognized as experts in their various fields of pavement preservation (P2) technology. Numerous vendor exhibits and an equipment display were also part of the show at the Holiday Inn March 7-8, 2024, in Sacramento.

President Tim Schmidt (Pavement Coatings Co.) welcomed the group and Sergio Aceves, Caltrans Director of Maintenance & Operations, provided the Keynote Address emphasizing Caltrans' continuing dedication to preservation efforts on its 50,00 lane miles of pavement, and thanking their partners from Industry for their role saying, "We couldn't possibly do it without you!"

The 2-day event included speakers on popular strategies for P2 – including micro-milling, crack sealing, chip seals, scrub seals and slurry and micro surfacing. Combinations of these treatments into multi-layer treatments was also discussed.



Sergio Aceves,
Caltrans

Dr. Ding Cheng, Director of the CP2 Center, was on the agenda to overview the Center's work planned for 2024, including offering the next "Pavement Preservation Academy" in April. He also announced that the Center has been assigned the task of updating Caltrans' "Maintenance Technical Advisory Guide" (MTAG), which hasn't been updated since 2008. This important effort will involve Caltrans staff and input from Industry experts on the various P2 strategies.

Mike Concannon (PRS) provided timely information on the especially hot topic of the use of RAP aggregate in surface treatments, especially chip seals and slurries, citing that RAP can often outperform native aggregate. Caltrans has a working group addressing this practice of sustainability.

A special Agency / Contractor 'Roundtable' triggered informative discussion on Type 2 vs. Type 3 slurry seal and the value of rolling slurry, slurry machine calibration and moisture control, and the importance of pre-job meetings in getting high quality results.

An out-of-state perspective was offered by representatives from the City of Bend, OR, one of the fastest growing cities in the West. They use MTC's "Street Saver" Pavement Management Program, and their street network is now about 70% slurry seal. Worth noting is they use 'in-house' crews to do all their concrete curb cutting for ADA ramps – as well as for their crack sealing, patching, striping and minor paving. They've also built over 50 roundabouts with nice landscaping and artwork.

As usual, WRAPP honored four special P2 projects, including projects in Caltrans District 7 (Los Angeles) with Intermountain Slurry, City of Carlsbad with VSS, City of Cottage Grove, OR, with Albina and Butte County with APS.

WRAPP also presented their Distinguished Service Award to Jeff Reed, President of VSS International, a long-time stalwart in the pavement preservation industry.

The President's Gavel was passed to Matt Ferguson for 2024, who wrapped up the Workshop by reviewing the past year's accomplishments, which included:

1. held quarterly partnership meetings with Caltrans (with both Director Tony Tavares and The Office of Asphalt Pavements).

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2. completed the update of Caltrans Standard Specs, Section 37 – Fog Seals (via the Pavement Materials Partnering Committee (PMPC) Preservation SubTask Group)
3. conducted two 'hybrid' trainings for Caltrans on Pavement Preservation (These events were well attended, with close to 100 at each.)
4. identified Subject Matter Experts (SME) for the task of updating the Caltrans Maintenance Technical Advisory Guide (MTAG), being done by the CP2 Center at CSU Chico
5. presented the 2023 WRAPP Workshop in Long Beach, CA, with over 200 attendees!

An evening reception provided an opportunity for networking and informal discussion of the Workshop topics.

For more information go to: www.wrapp.org



WRAPP Board with Jeff Reed (VSSI), and his Award

SWCPA Announces 2024 Workshop Line-Up

By Mark Gudenas, SWCPA

Now in its third year, the **Southwest Concrete Pavement Association's (SWCPA)** "Concrete Pavement Workshop Series" delivers fundamental, easily accessible, and project-focused concrete pavement information from the top experts in the industry.

Our mission is to illuminate the road to great concrete pavement by bringing you presentations from the most knowledgeable subject-matter experts in the business. Join us this year in this series of workshops that will educate, engage, and often entertain – all at no cost, courtesy of the Southwest Concrete Pavement Association, our Member Sponsors and our Supporting Organizations including FHWA, CP Tech Center, ACPA, Caltrans, Nevada DOT, and CNCA.

Mark your calendars and sign up now! Here's the lineup for 2024 with individual registration links:

Concrete Airport Runways, Taxiways & Aprons

March 19

Gary Mitchell, ACPA

Dave Rath, Southwest Concrete Paving Company

Register today for this session:

https://us02web.zoom.us/webinar/register/WN_R4dET4zT_2_q88zpXdLmg

The Speed of Concrete / How Fast is Your Concrete?

April 23

Improve the Constructability of Concrete Pavements by Using the Right Concrete Mix

Charles Stuart, Southwest Concrete Pavement Association

Frank Stevenson, Sully-Miller

Gary Kirk, CalPortland

Register today for this session:

https://us02web.zoom.us/webinar/register/WN_DX79v7YxTIa7Nr6Qcv4Z1w

Next Generation of Performance Specifications for Concrete Pavements

May 21

Aiming for Performance Over Prescription

Register today for this session:

https://us02web.zoom.us/webinar/register/WN_kEMmGX16SUeh24GBPmwmYA

Concrete Pavement Design

June 18

What does it take to design a 50-, 75- or 100-year roadway?

Register today for this session:

https://us02web.zoom.us/webinar/register/WN_eRLbianbRouAzWxVxUV0QQ

Navigating Pavement Defects

July 23

Discover How to Identify, Repair, and Resolve Defects in Concrete Pavement.

Register today for this session:

https://us02web.zoom.us/webinar/register/WN_Wz_qULLHQ0OH_fz57TfAyg

Smoother Concrete Pavements

August 20

Best Practices for Designing and Constructing Smoother Concrete Pavements

Register today for this session:

<https://us02web.zoom.us/j/89541544420?pwd=UTdOVG5HU1JaVkVGdXFIRjFFR3pxUT09>

CRCP Design & Constructability

September 17

Register today for this session:

https://us02web.zoom.us/webinar/register/WN_gZvCCdrHSE2CAtaThfD6hQ

The Concrete Pavement Investment

October 15

A Primer for Transportation Engineers, Asset/Network Managers, and Policymakers

Register today for this session:

https://us02web.zoom.us/webinar/register/WN_a8_bmzx4T5SUhBIC2-rtSA

Pavement Joints and Transitions

November 19

The Best Use of Joints and Pavement Transitions to Reduce Defects and Improve Long-Term Performance

Register today for this session:

https://us02web.zoom.us/webinar/register/WN_InfHM6IJRmC8ds2fi1khag

Maturity Testing

December 17

Using Embedded Sensors to Determine the Strength of Pavement

Register today for this session:

https://us02web.zoom.us/webinar/register/WN_3ZpJiPvyRAe-VwPmmMzIJw

For more information go to: www.swcpa.org

BBRWG Update

By Orland Mott, San Diego County

The **Building Better Roads Working Group (BBRWG)** is comprised of stakeholders from all sectors of the paving industry interested in improving the quality of roads in the San Diego Region. The group meets 3 times annually in February, June and October.

February 2024 Working Group Meeting The BBRWG kicked off its 2024 meeting series on February 6th with their event hosted by the City of San Diego. Representatives from various sectors of the pavement management industry participated both in person and online. Facilitator Orland Mott (SNC CIVIL) of San Diego County was optimistic about the increasing attendance numbers. "Overall attendance is up 32% compared to last year. That tells me we are starting to gain some traction within the region, thanks in large part to the efforts of our subcommittee leads who have continued to make progress on the topics of Regional Mix Designs and AB 2953 Compliance".

Brandon Millar (CalAPA), Mike McManus (AGC) and Maro Estrada (RSA) each provided industry updates and Sarah Chavez (City of San Diego) gave an update on the 2024 Greenbook. Garrett Fountain (Tensar) led the featured presentation on geosynthetic use in road construction. Highlights of the presentation included an overview of the impact of geosynthetics in pavement design - specifically the reduction in overall pavement thickness, and strategies to improve both the subgrade and pavement sections.

Guidance Documents The BBR released its latest guidance document titled "California Assembly Bill 2953 Compliance" in December 2023. AB 2953 (Salas) requires local governments to adopt specifications starting January 1, 2024 for use of recycled construction materials including road base, asphalt and concrete to the levels allowed by Caltrans 2018 Standard Specifications.

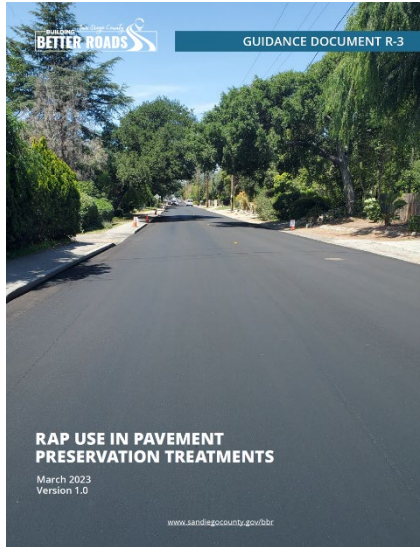


This document is excellent resource for local agencies looking to determine their compliance with AB 2953. In addition to highlighting the specific requirements of the bill, the document also details steps to compliance based on the standard specifications used. It and other valuable Guidance Documents can be found at: [Building Better Roads sandiegocounty.gov](https://www.sandiegocounty.gov/building-better-roads)

For more information on the BBRWG or to propose a topic for a featured presentation, please contact Orland Mott at orland.mott@sdcounty.ca.gov.

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Pilot Studies



In 2022 the BBR kicked off a pilot study with the County of San Diego to evaluate 100% RAP pavement seals. Both chip and slurry seals using 100% RAP aggregate were placed adjacent to control sections of the same treatments. While the evaluation is ongoing, The County was encouraged by the initial results from the RAP chip seal. Based on early results the County included approximately 10 centerline miles of this treatment in their most recent resurfacing contract which is scheduled for advertisement in March 2024.



[About Us](#) | [Members](#) | [Subcommittees](#) | [Meetings](#) | [Guidance Documents](#) | [Pilot Studies](#)

Members

BBR Agency / Organization Members List (2/2021)



Join BBR Today!

[Click here](#), fill out a brief form, and never miss a meeting invitation or special announcement.

MISSION

Through the establishment of a working group of industry associations and public agencies, with a localized emphasis on the regions resources and the County's needs, identify means, measures, and methods to improve the quality of regional roads.

[Working Group Charter](#)



Upcoming Events

February 2024
BBR Working Group
Meeting

The Building Better Roads Working Group is comprised of stakeholders from all sectors of the paving industry interested in improving the quality of roads in the San Diego Region. The group meets 3 times annually in February, June and October. For more information or to propose a topic for a featured presentation, please contact Orland Mott at orland.mott@sdcounty.ca.gov. To view published guidance documents, pilot studies, subcommittee progress and more please visit our website at:

www.sandiegocounty.gov/BBR



CCPIC Update

by Erik Updyke, P.E., CCPIC

The City County Pavement Improvement Center (CCPIC) has recently reached a new milestone in the offering through Berkeley Tech Transfer of the first self-paced classes. Self-paced classes are taken at the convenience and pace of the enrollee. The two classes currently offered are CCI-06, *Construction Inspection of Asphalt Rubber Pavement Materials* with Instructor Mike Robinson and CCI-04, *Pavement Preservation Construction Inspection* with Instructor Lance Brown. Upcoming online classes include CCC-01, *Asphalt Pavement Materials & Mix Design* with Instructor Brandon Milar, and CCB-02, *Pavement Management Systems and Preservation Strategies* with Instructors Sharlan Montgomery Dunn and James Signore,

The CCPIC currently has several technical projects underway including the development of a *Site Investigation Guide for Cities and Counties*, which is in the draft stage; a review of research, studies and agency policies and standard plans for trench restoration, which is in progress; and the development of a California mechanistic-empirical (CalME) pavement design catalog, which is also in progress.

The CCPIC gave two well-received presentations during the last quarter of 2023. The first was hosted by the City of Desert Hot Springs and presented in cooperation with the APWA Coachella Valley Branch and had 47 attendees. The second was hosted by the City of El Cajon in cooperation with the ASCE San Diego Section and the APWA San Diego & Imperial Counties Chapter and had 108 attendees. Topics included the proper use of PCI, the importance of AC/HMA compaction, and AB 2953 requiring agencies to use recycled construction materials. The CCPIC offers presentations at no cost.

If you have any questions or wish to schedule a presentation, please contact Erik Updyke at: eupdyke@ucdavis.edu.

City of Elk Grove's Pavement Preservation Program A Winner!

By Gary Hicks (CP2 Center)

Robert French, Operations Supervisor of the City of Elk Grove, California, gave an excellent presentation on February 7, 2024, on how strategic spending on pavement preservation helped the city to achieve the commendable PCI of 80! The presentation was part of the Pavement Preservation & Recycling Association (PPRA) webinar series titled "How I Built This Network", and can be found at www.roadresource.org under the subheading of 'Resources'.

Elk Grove is a City in Sacramento County with 1,170 lane miles. It currently has an annual budget of \$10.2 million, plus some other reactionary funds. The average PCI of Sacramento County and neighboring cities is 53, ranging from 38 to 80.

According to French, elements of successful pavement network management include the following;

- Robust arsenals of treatments
- Network level considerations
- Draws on the success and innovations of others
- Keeps in touch with industry at large

Where They Started Initially, the city found that the pavement inspections were inconsistent. Some roads were inspected regularly while other sections have large gaps in their inspections. Up to 2017, all pavement inspections were completed visually; now they are done using a semi-automated process by NCE. Also, the City was primarily a 'Contracted City' with limited City Staff. This began to change in 2019. As a result, the City PCI improved from 68 to 80 from 2015 to 2023.

Creating a Plan, the city now determines the PCI with annual inspections. This includes assessing 25% of the residential streets and 50% of the arterials/collectors annually. They also started an annual crack sealing program beginning in 2019 in which 1/7 of the city is completed every year. The MTC pavement management system (Street Saver) is being used to store the data, and they are constantly updating the decisions trees. Also, Cape seals were added to the treatment list for cost savings. To reduce complaints, they have included new items in their specs, such as working hours and traffic control. All projects are now reviewed for lessons learned and to make improvements to their specs. They have lowered costs by bringing on project development staff in-house. A 5-year plan is now available on the City's website at: <https://www.elkgrovecity.org/sites/default/files/city-files/Departments/Finance/cip/cip-2023-2028.pdf>

How They Pick the Streets The city uses the PCI as a starting point, but they then review all streets in the field before determining the best course of action. For streets requiring more than a slurry seal, they have to plan /budget for ADA upgrades (e.g., curb cuts/ramps). All projects are grouped by subzone to lower costs and minimize impacts to residents and we work in various subzones throughout the city to spread the projects across the city. They also review the project scope against other city or utility projects to avoid conflicts and overlaps. Annual list of projects always includes some residential, collector and arterials streets. A slurry does not trigger ADA upgrades, but a slurry doesn't last forever. Approximately 10-15% of their street maintenance goes into ADA improvements. The city bids their ADA projects separately from the maintenance treatments and they try to do it 1 year ahead of the preservation treatment. Bidding larger ADA projects has lowered the overall cost per ramp.

Treatment Toolbox Currently the city uses the following treatments:

- Crack seal-3 to 7-year lifespan
- Slurry seal- 5 to 7-year lifespan
- Microsurfacing-6 to 8-year lifespan
- Cape seal- 8 to 10-year lifespan
- 2.5 to 3-inch grind and overlay- 10-15-year life span
- FDR- 15 to 20-year lifespan

The city has also begun to try new treatments such as fiberglass-reinforced slurry treatments and 3- layered Cape seals with success.

Current Goals The current goals are to keep their PCI at 80 and to touch every street on a 7-year cycle, while maintaining funding levels to minimize backlog and maintaining PCI. They will continue the current inspection process, incorporate arterials into the annual pavement treatments program, and continue to upgrade the ADA ramps. The city will continue to look at new treatments as needed.

Partnerships with Contactors Some of the things to consider here include: 1) Writing project specs to get the best pricing and competitive bids, while ensuring a successful project, 2) Keeping an open line of communication with contractors and working as a team to ensure a successful project, and 3) Asking contactors for recommendations on areas where the agency is facing challenges in treatment selection or scheduling work.

Increasing In-House Expertise According to Robert French, "By training staff, you build a team of experts. This builds project ownership and leads to more successful projects and fewer failures. Don't be afraid to plan, as this will allow staff to learn from mistakes and build a stronger team."

Also, they stress the need for transparency in the program. The city of Elks Grove does this by including the 5-year program and PCI maps in material published online. They also have a crack sealing video on line and will add 5 treatment videos in the near term. This results in trust with the public and the local politicians.

Cost and Sustainability Cost comparisons between various treatments are made in all cases. The city uses to cost calculator at: https://roadresource.org/network/lc_calc to make simple comparison between the alternates. The city also has an important role to ensure our community is sustainable. Sustainable is defined as being able to meet the needs of the present without compromising the ability of the future generations to meet their own needs. Preservation treatments can reduce greenhouse gases and emissions and reduce waste. A simple sustainability calculator can be found at: <https://roadresource.org/preservation/calculator>.

Final comments In summary, here is some advice from the City of Elk Grove for others embarking on a pavement preservation program:

- Set reasonable goals based on available funding.

- Have a plan where results and be tracked
- Have open communication between staff and the public to build trust.
- Don't' rely on the PCI alone to determine the treatment. You have to get in the field to see for yourself.
- Always learn from past treatment and be willing to go outside your comfort zone.
- Build project ownership by having staff involved through the entire process.

For more information contact Robert French at: rfrench@elkgorvecity.org or go to www.roadresource.org

COMING EVENTS

By Roger Smith, CP2 Center

Pavement Preservation Academy April 2,3 – 9, 10, 11 (online)

The CP2 Center's 2024 Academy will be offered over 5 days in April, from 9 to noon each day. Instructors are Roger Smith, Gary Hicks, Lerosé Lane, Ding Cheng and Erik Updike.

The five half-day segments of the Academy are based on manuals that have been developed by the CP2 Center. Topics covered over the 5 days are:

- Asphalt Pavement Repair and Preparation for Resurfacing
- Chip Seals
- Slurry Surfacing
- Multi-layered Seals
- Thin Asphalt Overlays

(See the article elsewhere in this Newsletter.)

The registration site for the Academy is open at the CP2 Center's website:
<https://www.csuchico.edu/cp2c/educational-opportunities/pp-academy.shtml>.

Berkeley Tech Transfer / CCPIC Pavement Classes (various dates)

Three classes below are developed in partnership with the City and County Pavement Improvement Center (CCPIC), funded by California Senate Bill 1, the Road Repair and Accountability Act of 2017. This class delivery is supported by the Caltrans Division of Local Assistance, which offers reduced registration fees to employees of California's city, county, regional, and other public agencies. For more information go to:

[Home | TechTransfer \(berkeley.edu\)](#)

Spring Pavement Training We are happy to offer many of our amazing pavement training classes this spring semester. If you need/want some great pavement training, register today because our pavement classes have limited seating and fill fast.

[Pavement Construction Specifications and Quality Assurance \(CCC-03\)](#)

March 12-20, 2024: Tu, W and Th from 10:00 AM to 12:30 PM: Online

\$195 Public Agency Fee, \$390 Standard Fee

Instructors: Erik Updyke, Clay Slocum, and Nathan Forrest

[Asphalt Concrete Materials & Mix Design \(CCC-01\)](#)

April 22-25, 2024: M, Tu, W and Th from 2:00 PM to 4:00 PM: Online

\$195 Public Agency Fee, \$390 Standard Fee

Instructor: Brandon Milar

[Continued, next page](#)

[Pavement Management Systems and Preservation Strategies \(CCB-02\)](#) NEW DATES

May 6-10, 2024: M, Tu, W, Th and F from 10:00 AM to 12 N: Online

\$195 Public Agency Fee, \$390 Standard Fee

Instructors: Sharlan Montgomery Dunn and James Signore

[Pavement Preservation Construction Inspection \(CCI-04\)](#) NEW

Self-Paced Online: Approximately 4 hours

\$145 Public Agency Fee, \$290 Standard Fee

Instructor: Lance Brown

[Construction Inspection of Asphalt-Rubber Pavement Materials \(CCI-06\)](#) NEW

Self-Paced Online: Approximately 2.5 hours

\$145 Public Agency Fee, \$290 Standard Fee

Instructor: Mike Robinson

CalAPA Classes

"Asphalt Pavement 101" April 24 (West Sacramento OR online)

This half-day class is a good review of the basics of asphalt pavement including materials, design, construction and acceptance testing.

"Asphalt Forensics" April 23 (online)

The "Asphalt Forensics" class delves into the what can cause asphalt pavements to fail, and a step-by-step approach (forensic engineering) to determining the cause and developing a solution. The class is ideal for engineers, pavement designers, inspectors and others in the industry or employed by public works agencies.

"Quality Asphalt Paving" April 25 (West Sacramento OR online)

This fast-paced session, provides a practical, 'boots on the ground' overview for what makes for a high-quality paving operation. It addresses best practices as well as how to identify and avoid problems.

For more information on these CalAPA classes go to: www.calapa.net

SWCPA Concrete Pavement Workshops (various dates)

(See the full lineup of workshops elsewhere in this Newsletter or go to: www.swcpa.org)

RMWPPP

November 12 – 14 (Sacramento)

The Rocky Mountain West Pavement Preservation Partnership (RMWPPP) will hold its annual meeting in Sacramento, November 12-14. The RMWPPP is a

regional forum of pavement professionals from State, Regional, Local and Provincial Agencies, Contractors, Suppliers, Academia, Local and Federal Government Officials. State DOT's - including Caltrans - participate in this group. The Partnership aims to develop sound pavement preservation practices by a beneficial sharing of information on treatment designs, construction practices, performance measures, and research needs. For more information got to:

<https://tsp2pavement.pavementpreservation.org/rocky-mountain-west-rmwppp/>



Newsletter of the California Pavement Preservation Center

No. 69



Disclaimer: Caltrans does not endorse any industry products or services, and the contents of newsletter articles reflect the views of the authors and do not necessarily reflect the official views or policies of Caltrans, the CP2 Center, or the State of California.

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.

CP² Center News is published quarterly by the CP² Center, Langdon Hall Suite 203, California State University, Chico, Chico, CA 95929-0603, Subscriptions by e-mail: contact cp2c@csuchico.edu to add your name to the distribution list.