



# CP<sup>2</sup> CENTER NEWS

Newsletter of the California Pavement Preservation Center

No #8

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Gene Mallette

## Interview with Gene Mallette, Caltrans first State Pavements Engineer

**G**ene Mallette is a registered professional engineer, who attended CSU, Chico, in Civil Engineering, and obtained a Bachelor of Science degree in Business Administration from CSU, Sacramento. He has worked for the State of California for 38 years, 27 with Caltrans. He has broad management experience with the department having served as Assistant Division Chief in several divisions, was Deputy District Director of Construction in District 3, Marysville, and was the Assistant State Construction Engineer prior to becoming the Chief, Division of Pavement Management in 2007. He is responsible for developing the Department's pavement management initiative, including the development of a new pavement organization in the Department. The new division is responsible for all things related to pavements, from pavement project programming and pavement engineering standards and specifications to contracting pavement preservation and maintenance.

### What is Caltrans' vision for the New Pavement Management Division? How do you plan to implement the vision?

The Pavement Management Division's vision is "California highways are safe, smooth, quiet, durable and sustainable." The new Division is the only one in the Department which has delegations from two Deputy Directors: Maintenance and Operations, and Project Delivery. It also has four offices, chairs one committee, sponsors another, and by delegation and work agreements, authorizes work on pavement specifications and construction means and methods. These include:

- Office of Planning and Programming – maintenance and SHOPP funding and project selection.
- Office of Pavement Engineering – pavement design standards, policies, and procedures.
- Office of Pavement Preservation – preservation standards, policies, and procedures.
- Office of Pavement Systems – pavement management system, and associated pavement structure and condition databases.
- Chairs the Pavement Program Advisory Committee (old Steering Committee).
- Sponsors the Rock Products Committee.
- Leads the Pavement Standards Team (staff in various Project Delivery Divisions).

The functions of the new Division are to:

- Build, preserve, and operate facilities more cost effectively with improved asset performance.
- Deliver the best value for the public tax dollar spent.
- Enhance credibility and accountability of the Department to its partners, stakeholders and the legislature.
- Establish a cross functional pavement focus, shifting from 'worst-first to keeping good roads good.

The Division is now in existence, but still requires the governor's approval before it is formally an official part of the Department. However, we are making progress on several fronts.

### What are the tasks that have been completed so far and what needs to be accomplished over the next three to five years?

The tasks completed so far include:

- Developed a cross-functional, pavement-focused organization with full authority over all things pavement.
- Developed a plan and funding request for a robust pavement management system to be implemented starting in FY 09/10.

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- Developed, secured funding for, and advertised a contract for collecting pavement structure information for each lane of each highway using ground penetrating radar (GPR) – one of the two necessary foundation elements of a pavement management system.

Tasks to be completed include the following:

- Develop, fund, and advertise a contract for collecting pavement condition information of each lane of each highway over time using automated data gathering techniques – the second of the two necessary foundation elements of a pavement management system.
- Develop, fund and implement a robust pavement management system that can forecast pavement conditions, perform optimization studies for maximizing the benefits of our limited pavement funding, and forecast the overall condition of the highway network.
- Using data from the GPR and pavement condition results, develop deterioration curves for all types of pavements, in each climate, and truck loading, including the impacts of preservation and maintenance treatments.
- Implement a mechanistic empirical design procedures based on degradation curves.
- Investigate and implement creative opportunities that will reduce green house gas emissions, reuse aggregates and materials, improve product quality, and reduce costs.

*“... potential savings could be \$ 100,000,000 per year after fully implementing the Department’s pavement management initiative.”*

*Can you comment on some of the issues raised in the interview with Will Kempton? For example, is the timeline for implementing the pavement management system a reasonable one? What will be the role of the division in implementing proactive pavement preservation?*

Director Kempton raised a number of critical issues including the pavement management, proactive pavement preservation and recycling. With regard to pavement management, the Department submitted a funding request for procuring a commercial, off-the-shelf pavement management system. Approval is expected. We expect to complete this process by FY 11/12. As he stated, the Department and our new Division is committed to pavement preservation as its first line of defense in sustaining the State highway system. We also plan to develop deterioration curves and decision trees for various strategies and establish in-place recycling as a tool in the tool box for pavement preservation and rehabilitation.

*How do you see CP2 helping Caltrans in PMS (data collection) and pavement preservation activities?*

We feel the Center can help us in several areas including:

- Performing applied engineering research for the Division.
- Developing decision trees for the PMS.
- Developing deteriorations curves for pavement preservation techniques.
- Developing and delivering practical pavement training.
- Documenting and implementing innovations.

As the Division matures and the Center grows, we expect it to help in other ways as well. We feel the Center complements the UC Davis Pavement Research Center nicely.

*What is the Division’s plan to develop deterioration curves for pavement preservation and rehabilitation strategies?*

Deterioration curves need to be developed as soon as possible, and we cannot wait 5-10 years to develop them. We need to use historical information or the experience of others to establish initial curves and improve them as we gather pavement condition information over time.

*What are the Division’s goals for asphalt rubber products (wet process and terminal blends) used in thin overlays or in chip seals? Are the districts meeting your goals?*

The goals in Assembly Bill 338 have been met by the State and most districts, and we will continue to meet them. We also want to use terminal blends as well. The more tools we have, the more cost effective our project delivery will be.

*What are your plans for using recycling in both pavement preservation and rehabilitation?*

We will continue to use surface recycling for our roadways. We are pursuing a recycling initiative which will include both cold-in-place recycling (CIR) and hot-in-place recycling (HIR). However, we need to make sure that we meet emissions standards and achieve good performance. In addition, we are looking at standardizing full depth reclamation (FDR) for rehabilitation, using either cold foam, portland cement, or asphalt emulsions.

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## What are the challenges and/or barriers facing Caltrans in implementing the pavement vision and what steps are necessary to overcome them?

As with any public agency, we have a number of challenges. They include:

- Funding to do the things needed.
- Educating our staff and industry on all aspects of pavements.
- Accelerating the implementation of new technologies.

For example, the potential savings could be \$100,000,000 per year after fully implementing the Department's pavement management initiative.

## What are your retirement plans?

I will retire on December 29, 2008, as the Division has been set up and the Department's vision for pavements has inertia. What I plan to do in retirement is to enjoy the grandchildren, travel, complete my list of "honey do's", and help others.



## Pavement preservation in Los Angeles reaches a milestone

By: Nazario Saucedo, Assistant Director, Bureau of Street Services, City of Los Angeles

**O**n October, 27, 2008, the City of Los Angeles celebrated an important occasion in the history of its Pavement Preservation Program - the repair of the one millionth pothole since Mayor Antonio R. Villaraigosa took office in July of 2005.

While small asphalt repairs are just one of the many components of the City's Pavement Preservation Program, the event served to remind residents about the City's current commitment to preserve and maintain the largest and most congested municipal street network in the nation.

With a roadway system comprised of approximately 28,000 lane miles, the City fully relies on each one of the components of its Pavement Preservation Program to maintain it; that is, a state-of-the-art Pavement Management Program (MicroPAVER™), a

well-balanced maintenance program (small asphalt repairs, crack sealing, slurry sealing), and a solid rehabilitation program (asphalt overlays, resurfacing, recycling, and reconstruction). However, the road to pavement preservation was not always like this; as a matter of fact, it has been a little bumpy and laden with numerous potholes that have been the result of historical under-funding.

In addition to its remarkable magnitude and heavy congestion, the City of Los Angeles' street network is also one of the oldest in the country. A significant number of streets were originally constructed almost one hundred years ago and approximately fifty percent of the entire street network was built before World War II. For decades, both the resurfacing and maintenance programs were not properly funded which, as a result, created a street infrastructure that has deteriorated to the point where it now requires \$2.9 billion to improve it to an average Pavement Condition Index (PCI) of 80.

Mayor Villaraigosa has changed the old trend by making pavement preservation a high priority line item in the City's budget. Even at a time when every level of government in the nation faces one of the toughest fiscal periods ever, Mayor Villaraigosa has pledged his support for better and safer roads by providing necessary funding that, for the first time in the history of this city, will not allow the average PCI of the street network to decrease but instead will allow it to improve.

Among the numerous pavement preservation highlights and initiatives that can be accredited to the current City administration are:

- The City of Los Angeles is the only large city in America with a "Next Business Day" response to pothole repair requests when reported to its 3-1-1 system. This program has a 99.5 percent achievement record.
- "Operation Pothole" was launched by the Mayor in August 2005 and "challenged" the



L to R: Councilwoman Wendy Greuel, (raking asphalt) Council member Tom La-Bonge, Mayor Antonio R. Villaraigosa (raking asphalt) and Cynthia Ruiz, Board of Public Works President (partially blocked by street services worker).

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Bureau of Street Services (BSS) to make 50,000 repairs within a 14-week period. At the end of this period over 80,000 repairs were completed, elevating the total repairs for the fiscal year to 246,480 and breaking the historical annual target of 200,000 for the first time.

- “Operation Pothole” for the 2006-2007 fiscal year brings a new challenge from the Mayor, “to complete 300,000 pothole repairs by the end of the fiscal year.” The challenge resulted in 307,767 repairs completed.
- Slurry Seal, a main component of the City’s Pavement Preservation Program, was increased by 200 miles to a historic high of 300 miles for the 2006-2007 fiscal year.
- “Operation Pothole” continues for fiscal year 2007-2008 with still another challenge from the Mayor to complete over 350,000 repairs. The Bureau of Street Services completed 369,326 repairs.

From the left: Gary Hicks, CP2 Center, Mike Burris, Ron Olive, Assistant Director, BSS, Bill Robertson, Director, BSS, and Nazario Saucedo, Assistant Director, BSS.



- For the 2007-2008 fiscal year, the Mayor increased funding for an additional 100 miles of Slurry Seal. This brings the program to an unprecedented 400 miles - a historic high that now allows the BSS to properly preserve and extend the life of those streets that are in “fair” to “good” condition.
- The 2008-2009 fiscal year brings a renewed commitment for Pavement Preservation as the Mayor funds a four-year plan which will improve the City’s street system for the first time since World War II. Funding is maintained for 100 miles of Crack Sealing, 400 miles of Slurry Seal, and the Resurfacing Program is increased from 175 miles to 235 miles. The Pavement Preservation Program now provides for the maintenance and rehabilitation of 735 center-line miles of streets annually.

Without a doubt, and with the support of the Mayor, the Department of Public Works, City of Los Angeles leads one of the country’s most recognizable pavement preservation programs and, certainly, one of the most successful.



For that reason, important dignitaries were present at the “Millionth Pothole” Pavement Preservation event. Among them, Councilwoman Wendy Greuel, Councilmember Tom LaBonge, Board of Public Works President Cynthia Ruiz, Dr. Gary Hicks, Technical Director of the California Pavement Preservation Center, BSS Director Bill Robertson, and BSS Assistant Directors Nazario Saucedo and Ron Olive.

The Mayor used this opportunity to thank all of the city family involved in this program, but most importantly, he took the time to recognize the arduous and hard work performed by city street workers day in and day out. “They are the ones that make it happen, they are the real heroes” stated the Mayor as he requested a round of applause for the city workers that surrounded him during the presentation.

Upon completing his speech to the media, the Mayor proceeded to repair the one millionth pothole at the intersection of Valley Spring Lane and Strohm Avenue in the Toluca Lake area of the City of Los Angeles.

At the end of the event there was a genuine sense of accomplishment and a high degree of optimism in the atmosphere, a feeling that persisted even after all the cameras and microphones had left.

October 27, 2008 was a beautiful day in Los Angeles with plenty of sun and a soft wind that reminded those attending the event that winter was around the corner; but most importantly, it was a great day for Pavement Preservation in the City of Angels.



The City of Angels rejoices over “Operation Pothole,” a program that will systematically attack the problem of potholes throughout the metropolis.

## Caltrans District 1 completes a thin warm mix project.

By Brandon Milar, PPTG co-chair, Education subgroup and Mike Stapleton, Caltrans D1 Materials Engineer

Caltrans District 1 improves and maintains the scenic highways of California's north coast. These highways provide the life-blood for commerce and tourism along this rugged coast. The District includes mountain passes and valley floors; around lakes and along the rugged coastline. The extreme environmental conditions and the remoteness of the highways challenge Caltrans District 1 during maintenance and construction of the hot mix asphalt (HMA) roads.

Caltrans District 1 made a decision to utilize Warm Mix Asphalt (WMA) technologies on a 2-lane highway project on CA 1 in Mendocino County from Point Arena to Manchester (PM 15.3 to 20.8). WMA utilizes materials and/or processes to produce and successfully place HMA at lower production, placement, and ambient temperatures. The maintenance project includes a thin lift overlay (0.1") of an open graded friction course (OGFC). The project also includes a section of dense graded asphalt (HMA). Caltrans specified a 1/2" OGFC with a PG 58-34 PM and a 1/2" HMA Type A with a PG 64-16. The project was bid with the requirement to use a WMA technology on both the OGFC and HMA.

North Bay Construction (NBC - Petaluma, CA) was awarded the project and acquired the OGFC and HMA from Syar Industries (Santa Rosa, CA). Syar utilized Evotherm as the WMA technologies for both mixes.

The major challenges facing NBC included the 3 1/2 hour HMA haul time and the cool paving temperatures (50°F to 60°F with fog/overcast skies). To address these challenges, NBC utilized a combination of transfer trucks and "Super" dump trucks (trucks that can haul 20 tons in a single box due to a trailing axle), tarped loads, a material transfer vehicle (MTV), and the Evotherm WMA technology.

The engineer, contractor, mix producer and evotherm WMA technology supplier worked together to determine appropriate mix production temperatures, lay down temperatures, and expectations. Current Caltrans' Standard Specification (revised Section 39) requires a minimum breakdown temperature of 240°F for OGFC with a polymer modified binder, as this project requires. The Evotherm representatives, from MeadWestvaco and Telfer Oil, were comfort-

able with an OGFC minimum pavement temperature behind the screed of 220°F. With this in mind, the group agreed to produce the OGFC at 320°F and monitor field temperatures. The first day of paving resulted in pavement temperatures behind the screed of 240°F. The group agreed that there was enough room to reduce the OGFC production temperature to 310°F. The mix production temperature was reduced on the second day of paving. The screed temperatures did not significantly change.

A section of the 2-lane highway went through several low-lying fields which typically flood in the winter time. As a result, Caltrans specified the use of HMA in this area, approximately 1000 tons. The group agreed to produce the first 4 loads of HMA at 325°F and the remainder at 295°F. Field personnel reported pavement temperatures behind the screed as low as 210°F but mostly in the 230°F range.

During construction, these observations were made:

- There were significantly fewer clumps in the mat on this project compared to previous long-haul OGFC projects. The reduction of clumps can be attributed to the use of an MTV, the restriction of dumping material on the surface in windrows, and the use of Evotherm. During the haul, a crust formed on the outer surface of the HMA. The temperature of the outer surface deviated by as much as 180°F from the core. In all cases Caltrans achieved good compaction of the mix temperature. The MTV broke apart the crust and thoroughly mixed the HMA, virtually eliminating temperature segregation. The Evotherm made the mix workable at the lower temperature.
- In the afternoon, the paving crew waited up to 45 minutes between loads. The crew would maintain a full paver hopper and a load of mix in the MTV to keep the equipment hot. This also helped minimize additional temperature loss to the pavement behind the screed and re-mixed the richer layer sometimes found in the bottom of the truck due to some draindown.
- The paving crew agreed that the material was fairly easy to work. The OGFC could be shoveled and raked down to 220°F without much effort. This was also observed in the dense graded mix. The mix was still somewhat tender at 160°F in normal traffic.

The group agreed that the project was successful. The pavement was constructed during the summer months on the coast under overcast skies with temperatures barely over 60°F. While production temperatures were typical for the mixes produced, the placement temperatures were well below the current specification limits. The District is pleased with the results and plans to continue to use WMA in future projects.

Figure 1: Paving operation.



Figure 2: Compaction.

## City of Williams stretches budget with double chip over fabric

Mary Stroup-Gardiner, CP2 Center, and Skip Brown, PPTG Co-Chair

The City of Williams originally planned and budgeted for a 2-inch hot mix asphalt overlay over fabric, with key cut grind at gutters for a 33,000 square yard project. The existing pavement was a 2-inch, old, highly distressed pavement over a soft and unstable clay subgrade, with a water table depth of 2 to 3 feet. After reviewing the site conditions, Skip Brown of Delta Construction Co., Inc., advised the City Engineer that the existing pavement would have problems supporting construction equipment at its current thickness. Reducing the thickness by milling would cause even further support problems.

Brown suggested changing the project from a traditional grind and overlay to double chip over fabric. The change would provide fewer problems supporting construction equipment and stretch the size of the project from 33,000 to 56,000 square yards for the same budget, and the problem of achieving desired density of asphalt concrete over unstable subgrade conditions would be minimized. Furthermore, the chip seal over fabric would provide a more flexible surfacing to help preclude reflective cracking under loading conditions. As construction progressed, the City Engineer, supported by public response, was pleased enough with the outcome to increase the area treated to 75,000 square yards.

The project started by placing a thin, leveling course (856 tons) over the most severely distressed areas (Figure 1). Distressed areas with a fair ride quality were not treated. The fabric was placed into

PG70-10 binder applied at a rate of 0.30 to 0.33 gallons per square yard using a distributor truck fitted with the fabric roll and a stiff transverse broom. Three crew members (driver and two working the fabric) are needed to

properly place the fabric by keeping it flat, worked into the tack coat and trimming the edges as the fabric is placed (Figure 2). The fabric is then immediately

rolled using pneumatic rollers to embed it completely into the binder.



Figure 3. Sanded fabric (right) and construction of second chip seal.

As the day warmed up, the tack coat began to saturate the fabric, important for good adhesion (Figure 3). The tacky surface was sanded by mid-day to prevent local traffic from tracking the binder or pulling up the fabric. Limited local traffic helps work the fabric into the underlying cracks. The sand then works into the depressions over the cracks.



Figure 4. Finished surface.

The double chip used was  $\frac{3}{8}$ -inch by No. 6 California

state specification for the chips. The emulsion used was PMCRS-2H, applied at 0.32 g/sy for the first application and 0.38g/sy for the second. Chips were applied at 22 lb/sy for the first application and 25 lb/sy for the second. Sweeping the final lift began after 7 days of use by local city traffic. The overall result is a smooth, finished surface after the double chip seal is placed. (Figure 4).

Figure 2. Crew placing fabric over tack coat followed by pneumatic tire roller to seat the fabric.

Figure 1. Limited areas of sheet patching and distressed pavement before fabric placement.



## District 2 receives new award

**D**istrict 2 is the first recipient of a new 2008 Annual Stewardship and Excellence for Delivery Award for the most efficient delivery of the Highway Maintenance (HM) program within a District. The award was presented to District 2, by Ed Lamkin the District Deputy Director with Will Kempton in attendance. The award is based on the Districts' ability to deliver a project with the least amount of design and construction resources.

District 2 is located in Northern California and includes Tehama, Shasta, Trinity, Lassen, Plumas, Siskiyou, and Modoc Counties. The District 2 maintenance engineering team is expected to maintain over 4000 lane-miles of roadways, over 600 bridges, roadside facilities and drainage, traffic guidance and all maintenance facilities. In the 2007/2008 fiscal year District 2 capitalized on the program by being ready and waiting for funding, then delivering for contract almost \$35,000,000 in needed maintenance work. This work included 450 lane-miles of roadway preservation at \$27,000,000, the preservation of 44 bridges at a cost of \$6,000,000 and \$2,000,000 in other needed maintenance work.

*The winning D2 roadway/bridge maintenance engineering team from left to right standing: Jeff Steffan, Mike Conner, Lance Brown; Sitting, Matt Gow-an, Karlie Smith (with award), Kurt Schneider, Brandon Fraser, Roy Cahill.*



The Stewardship and Excellence for Delivery Award is aimed at opportunistic districts that efficiently deliver allocated resources and "greedily" deliver additional projects as funding becomes available (aka "Pig Award"). The pig is a small piggy bank for saving dollars that should be recognized as a fun way to create competition among the districts. The District Maintenance Engineer Lance Brown says "I am honored to receive the award for my team, and we are only the first to receive it, because many districts were close to our heels and also excel in delivery."

The District 2 accomplishments are making a difference in Northern California and the team has high hopes of achieving similar accomplishments in the 2008/2009 fiscal year.

## Patrons meeting held in Chico

**T**he first patrons meeting was held at the Center offices in Chico on October 2-3, 2008. The patrons board consists of industry members who have made major contributions to support the Center. Current members of the CP2 Center's patrons group include:

- Petrochemical Manufacturing, Inc.
- Telfer Oil
- Colas
- Mead Westvaco
- Pavement Recycling, Inc.
- Paramount Petroleum
- SEM Materials
- Granite Rock



*Doug Guerrero offered ideas for expanding the patrons group at the October meeting.*

The first day was devoted to providing an update on the accomplishments of the Center and identifying some of the needs of the Center for the next year. The second day was devoted to organizing the patrons group. Doug Guerrero, formerly an executive of the cement company CEMEX, and now the chair of the patrons group for the Concrete Industry Management (CIM) program, led the discussion. He walked through the process he used to grow the CIM patrons group from fewer than 10 to more than 50. A proposed organization for the patrons group was recommended, as well as a charter for the group.

The next patrons meeting will be in the early spring 2009. For more information on how to participate, please contact R. Gary Hicks at [rghicks@csuchico.edu](mailto:rghicks@csuchico.edu).



### WANTED:

*CP2 Center is looking for issues or case histories on pavement preservation*

**T**he Center is looking for ideas for issues related to pavement preservation that you would like to see covered in future issues of the newsletter. Also, if you have case histories on success stories related to pavement preservation for our March 2009 newsletter, the articles should be received by February 15, 2009. Please submit them to Linda Farrell at [lfarrell@csuchico.edu](mailto:lfarrell@csuchico.edu). We are here to help promote pavement preservation with state and local agencies.



## MTAG training held in Los Angeles



Craig Hennings and Larry Rouen

Nearly 100 people participated in the MTAG training at the Caltrans District 7 offices on October 21-23, 2008. Training for the flexible pavements MTAG was covered on October 21-22 while that for rigid pavements was covered on October 23. Speakers included representatives from Caltrans, the CP2 Center, and industry. Photos of some of the speakers are shown below. Attendees at the training sessions included Caltrans as well as local agency personnel. Based on the evaluations from the training, attendees generally were very positive about the MTAG training. The overall average ranking of the workshop was 4.2 on a 0 to 5 scale, with 5 representing the best. Some attendees expressed that the



Kristen Stahl

training provided good information on method, materials, and techniques on pavement preservation, and excellent photos. Others stated that the training clearly presented "hands on" information and that it was a good comprehensive training for both rigid and flexible pavements.

For more information on future workshops, please contact Larry Rouen at [larry.rouen@dot.ca.gov](mailto:larry.rouen@dot.ca.gov).



## First International Conference on Pavement Preservation (ICPP)

Deadline for abstracts extended to February 1, 2009



The First International Conference on Pavement Preservation will be held during the week of April 12-16, 2009, in Newport Beach, California. Its aim is to bring together researchers and practitioners working in the field to exchange ideas and discuss critical issues and concerns related to pavement preservation. This conference is co-organized by the California Department of Transportation (Caltrans), Federal Highway Administration (FHWA), and the Foundation for Pavement Preservation (FP2). A website for the conference has been established by the National Center for Pavement Preservation at [www.pavementpreservation.org/icpp/](http://www.pavementpreservation.org/icpp/). The co-chairs of the conference include Dr. Shakir Shatnawi of Caltrans, James Sorenson of FHWA and Bill O'Leary of FP2.

The main theme of the conference will be pavement preservation and sustainability. The conference will address an array of issues related to pavement preservation for both asphalt and concrete pavements. Authors are invited to submit abstracts that will be reviewed by the technical committee based on quality and relevance. The deadline for abstracts has been extended until February 1, 2009. Authors of selected ab-



stracts will be invited to submit full papers to be included in the conference proceedings. The timeline for submittal of the papers is also on the website. We are looking forward to an exciting conference that will bring international experts together for the first time to discuss the benefits of preserving pavements and to discuss innovations in pavement preservation.

The location of the Second International Conference, to be held in 2014, is still to be determined. We will be soliciting bids for the location of the second conference in 2009 and expect to announce the location at the first conference in Newport Beach in April, 2010.





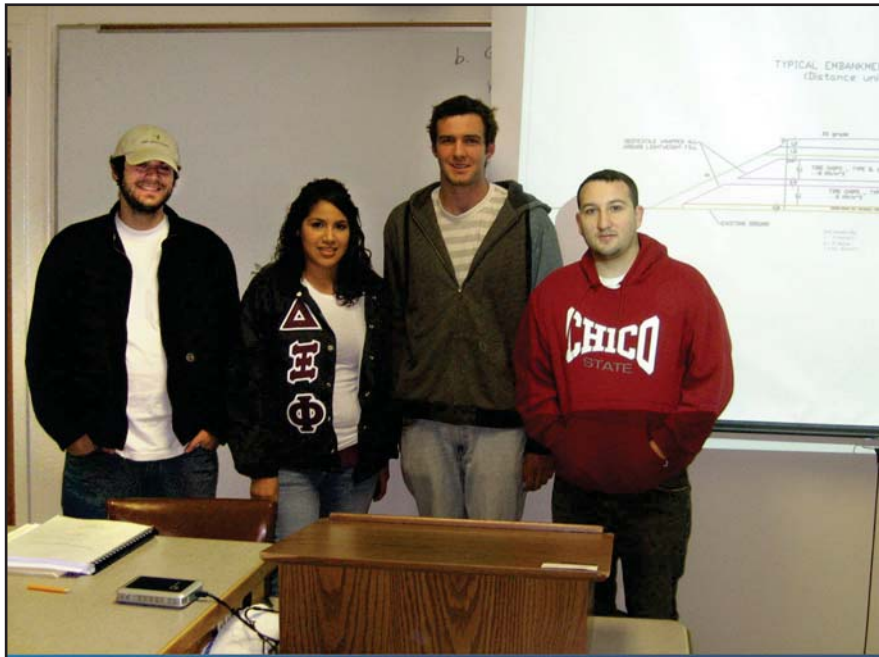
## Continuing education and University curricula for RAC and CE applications of waste tires — an educational project for CIWMB

Project update By Ding Cheng

A paper was accepted for presentation at the 88th Transportation Research Board Meeting in Washington D.C. in January 2009. This paper discusses the teaching modules for educating undergraduate students on waste tire applications in civil engineering.

To overcome the challenges and to promote the sustainable usage of waste tires in civil and transportation engineering, teaching materials were developed to educate the undergraduate students who are the future engineers. To make the education program more effective and to teach more students, a series of lecture materials were developed

Students presented a tire-derived aggregates project in the Soil Mechanics class (from left: Philip Roper, Monica Acosta, Julian Storelli, Alfonso Velazquez)



for ten different courses, instead of one elective waste management class. These lectures cover topics from freshman level courses, such as introduction to civil engineering design, through the junior level courses, such as strength of materials, materials testing, and finally to senior level classes such as soil mechanics, foundations, environmental, concrete, pavement materials and transportation. Each lecture developed has been taught in a real class environment at California State University, Chico. The outcome has shown that the lectures greatly enhanced the students' knowledge of using waste tires in civil engineering applications and transportation.

During fall 2008, we are also working on developing teaching landfill applications of waste tires in the Solid Waste Management class at CSU, Chico. To help disseminate the knowledge to the university students, the teaching materials are stored at a CSU, Chico website: [www.ecst.csuchico.edu/cp2c/dx-cheng/Curricula/CIWMBEducation.php](http://www.ecst.csuchico.edu/cp2c/dx-cheng/Curricula/CIWMBEducation.php)

People can email the Center to obtain a username and password to log in the website, or they can login as a guest to view the presentations.

A Professor Training Workshop is scheduled to be held on December 19, 2008 at the Clarion Hotel, 700 Sixteenth Street, in Sacramento, CA. The invitations have been sent out to various universities in Northern California. People can access the workshop information through the following website: [www.ecst.csuchico.edu/cp2c/ciwmb/ProfessorTraining-Workshop.htm](http://www.ecst.csuchico.edu/cp2c/ciwmb/ProfessorTraining-Workshop.htm)

Another professor training workshop is planned to be held in Southern California on January 5, 2009.



## Recent PPTG meeting activities

by Larry Rouen, Caltrans and Ding Cheng and Mary Stroup-Gardiner, CP2 Center

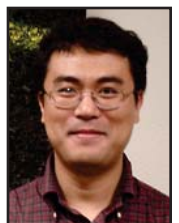
### PPTG All Members Meeting, June 17, 2008

The purposes of the PPTG meeting in Lodi California were to review the work plans for the various subtask groups, review the responsibilities of the co-chairs, and to discuss the innovations process. Following are the highlights of the meeting:

Work plans for each of the 22 subtask groups were discussed. Copies of the work plans can be found on the PPTG website at [www.cp2info.org/taskgroup](http://www.cp2info.org/taskgroup). Other accomplishments of the PPTG will be posted on this website as well.

The innovations process was reviewed by the PPTG co-chairs. Innovations can now be submitted to the Center website: [www.ecst.csuchico.edu/cp2c/innovation\\_database/](http://www.ecst.csuchico.edu/cp2c/innovation_database/)

Professor Ding Cheng, CP2 Center, presented an overview of the innovation database which can be used to store the innovation proposals and comments from reviewers, and approval from PPTG Chair. New proposals include REAS, Chip Seals over fabrics, and Concrete quiet pavements.



Ding Cheng

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**Local agencies' reports** from both the Southern and Northern California co-chairs were given. The key points raised included the following:

- Be involved and promote the PPTG.
- Recognize that 50 % of conference attendees are from the local agencies.
- Local agencies need to work together to promote the PPTG.

**MTAG training** - Larry Rouen reported the following training schedule:

- Initial training was completed in March 2008. Plans are for another session in Southern California on October 21-23, 2008 (see story on page 8). The full training was reduced from five days to three days. The MTAG is now on the Caltrans website at [www.dot.ca.gov/hq/maint/roadway.htm](http://www.dot.ca.gov/hq/maint/roadway.htm). It needs to be modified to incorporate the review comments from the March training.
- A four-hour MTAG overview will be delivered in the districts in FY 2008-09.

**Pavement preservation conferences** - Gary Hicks and Laura Melendy reported that:

- The 2008 conference was planned and executed. The presentations are on the conference website at [www.cp2infor.org/conference](http://www.cp2infor.org/conference)
- The 2009 conference is being planned for the Bay Area on April 7-9, 2009. A meeting was held on September 16, 2008 to finalize the program and the speakers. Will Kempton, Director of Caltrans, will be the keynote speaker for the conference.
- The 2010 conference will be the First International Conference on Pavement Preservation in Newport Beach in April 2010. The website for the conference is [www.pavementpreservation.org/icpp](http://www.pavementpreservation.org/icpp)

#### **PPTG co-chairs meeting, November 5, 2008**

This meeting, held in Sacramento, was to update the Center advisory group (the PPTG co-chairs and backup co-chairs) on the activities of the Center and to review the sub-group work plans for FY 08/09. The highlights are as follows:

#### **Accomplishments:**

- 2008 Pavement Preservation Conference was held April 9 and 10 in Newport Beach.
- MTAG training seminars were held in Lodi in March and Los Angeles in October.
- HITONE recycling pilot projects in District 8. In the D8 project, the HITONE was placed along with HIR and a mill and fill section as part of a test section.



*Will Kempton, Caltrans Director, will be keynote speaker for the 2009 pavement preservation conference.*

#### **Work Plans/Scoping Documents:**

- Work plans were discussed and need to be finalized for the Rock Products meeting on November 13, 2008.
- Scoping documents for new SSPs for Microsurfacing, Polymer Modified Asphalt Rubber Chip Seals and Crack Treatment were submitted to Rock Products and approved.
- Another scoping document was submitted for the 2010 revision to the Standard Specifications.

#### **California Pavement Preservation Center update:**

- Center Accomplishments were reviewed. Please go to the Center website for the current list of accomplishments.
- Innovation Process - The Center now has a web based database for submission and tracking of innovation projects. Dr. Shakir Shatnawi encouraged people to submit proposals through the innovation database. Funding is available to support innovation projects.



#### **PPTG Local Agency Meeting, Nov. 18, 2008**

Erik Updyke and Greg Kelley, both of Los Angeles County, organized and conducted a meeting of local agencies in Southern California to enlist their support to join the sub-group on local agencies. Shakir Shatnawi discussed the background of the PPTG while Gary Hicks discussed the role of the Center and its relationship to the PPTG. The outcome of the meeting was that the local agencies saw



*Erik Updyke, Greg Kelley.*

the benefit of joining the PPTG to share experiences with different pavement preservation strategies. The next meeting of this group will be scheduled sometime in February 2009.



*Shakir Shatnawi*

## Upcoming pavement preservation events



Transportation Research Board Meeting, January 11-15, 2009, Washington D.C. [www.trb.org](http://www.trb.org)

NAPA Annual Meeting, January 18-21-2009, San Diego, CA [www.hotmix.org](http://www.hotmix.org)

California Chip Seal Association (CCSA), January 21-22, 2009, Ontario, CA [www.chipseal.org](http://www.chipseal.org)

AEMA-ARRA-ISSA Annual Meeting, February 18-21, 2009, Palm Springs, CA [www.slurry.org](http://www.slurry.org)

California Pavement Preservation Conference, April 8-9, 2009, Oakland, CA [www.cp2info.org](http://www.cp2info.org)

National Conference on Preservation, Repair, and Rehabilitation of Concrete Pavements, April 22-24, 2009 St. Louis, MO [www.fhwa.dot.gov/pavement/concrete/2009CPTP.cfm](http://www.fhwa.dot.gov/pavement/concrete/2009CPTP.cfm)

Fourth Rubber Modified Asphalt Conference, May 8-9, 2009, Akron, OH [www.rubberdivision.org/meetings/rmac.htm](http://www.rubberdivision.org/meetings/rmac.htm)

Asphalt Rubber 2009, November 2009, Nanjing, China <http://consulpav.com/ar2009/>

First International Conference on Pavement Preservation, April 12-16, 2010, Newport Beach, CA, [www.pavementpreservation.org/icpp](http://www.pavementpreservation.org/icpp)

## Center News

### Center offices

Effective July 1, 2008 the California Pavement Preservation Center at CSU, Chico moved to a new location! The suite of offices is now located at:

New office building,  
25 Main St.



25 Main Street, Suite 202  
California State University, Chico  
Chico, CA 95929-0603

### Changes in center staff

Effective December 1, 2008, Dean Mike Ward will be the new Center Director while Dr. Mary Stroup-Gardiner will assume the role as the Technical Director. Dr. Ferrara is now chairing the Civil Engineering Department and Dr. Hicks will continue to assist the Center in marketing and working on a number of the new projects obtained by the Center. Other Center staff include: Dr. Ding Cheng, Professor Dennis Gier, Office Manager, Linda Farrell, and student assistants, Casey Arthur, Abdelmonaim Remani,



Scott Dmytrow gets a tour of the new offices from Mary Stroup-Gardiner and Tom Ferrara.

facilitated by Gerry Eller (retired Executive Director of the Foundation) and organized by Jim Moulthrop (Interim Director of the Foundation). Based on the results of the meeting, a new direction will be proposed for the Foundation.

### New contracts for the Center

In addition to the Caltrans contract, several new contracts have been secured by the Center from a variety of sources. They include the following:

- CIWMB – Terminal blends and warm mixes (Dr. Stroup-Gardiner).
- NCHRP 40-01 – Recycled materials and byproducts in highway applications (Drs. Stroup-Gardiner, CP2 and Tanya Komar, Director, Concrete Industry Management Program).

Nauman Malik and Sean Swanson.

### Foundation for Pavement Preservation (FP2) strategic planning

Drs. Hicks and Shakir Shatnawi participated in a strategic planning meeting on the future of the FP2 on October 15-16, 2008, in Atlanta, Georgia. The attendees at the meeting consisted of representatives of industry, FHWA, state and local agencies, and academia. The meeting was



Gerry Eller



Attendees at the planning session

- NCHRP 40-13 – Recycling and reclamation of asphalt pavements using in-place methods (Drs. Stroup-Gardiner and Gary Hicks, CP2).
- FHWA – Performance monitoring and emulsion course (Drs. Stroup-Gardiner and Hicks).

- SHRP-2 – Preservation on high volume roads (Dr. Hicks).

### Vision of the laboratory facilities at CSU, Chico

Dean Mike Ward, College of Engineering, Computer Science, and Construction Management at California State University, Chico, is in the process of establishing a permanent location for our new laboratory facility. The vision of the Dean is to forge a strong interdisciplinary connection through strategic positioning of each program's laboratory facilities so that teaching and research needs can share, rather than duplicate, equipment resources. While the various programs have their own specific teaching and research needs, all the programs have a number of similar equipment needs. We are working with our patrons and others to obtain the needed funding for this effort.

### Certificate program and on-line classes

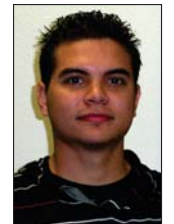
The Center's certificate program on pavement preservation is now well underway. We offer four 3-hour on-line courses to students interested in pur-

suating graduate training in pavement preservation. Currently, we are offering an introduction to pavement preservation and a class on asphalt pavement preservation. In the spring 2009 term, we will offer a class on pavement preservation for concrete pavements. For more information, please contact the Center.

### Integrating the Center and the civil engineering department

The Department of Civil Engineering and College of Engineering Computer Science and Construction Management have approved the Graduate Certificate Program in Pavement Preservation. The graduate level web-based certificate courses are offered off-campus through the Office of Regional and Continuing Education and through the Civil Engineering Department. The civil engineering offerings allow enrolled CSU, Chico, students to take the courses as part of their normal course load.

The Center is also sponsoring in part the Transportation Pavements course, CIVL 581, in spring 2009. The course will be taught from 6:30 p.m. to 9:20 p.m. on Thursday evenings beginning January 29. Local engineers and others interested in pavement preservation are invited to enroll through the Open University program. For local professionals, the cost to enroll is \$525. Questions can be directed by phone to Tom Ferrara at 530-898-5329 or by e-mail, [tferrara@csuchico.edu](mailto:tferrara@csuchico.edu). We wish to thank SEM Materials for providing a donation to sponsor education and scholarships. Three of the CP2 scholars are shown above.



Scholarship winners, from top: Madelyn Giles, Guy Hopes, Shane Salvadore

Edgart Hitti, Rick Madison, Bob Koleas, Mary Stroup-Gardiner, Gary Hicks, Denny Gier, Tanya Komar, Ding Cheng, Mike Burris, Hans Ho, Tom Ferrara, Bryan Burris.



### Partnerships with other CSU universities

As part of the Center's growth plan, a formalized partnership is being forged between CSU, Chico, CSU, Long Beach and Cal Poly, Pomona. The growth plan establishes satellite offices for the Center in Southern California as well as a field office in Sacramento. Drs. Shadi Saadeh (CSU, Long Beach) and Dragos Andrei (Cal Poly, Pomona) will be joining the Center staff as technical directors of their satellite offices. The headquarters of the Center will remain at CSU, Chico, and the overall Director will be Dean Mike Ward.

