

# California State University, Chico – Research Foundation

Agreement # 56A0211 with Caltrans

## Final Summary Report



**Report Number: CP2C- 2010 – 101**

**March 1 2010**



**California Pavement Preservation Center**

**25 Main Street, Suite 202**

**California State University**

**Chico, California 98929-0930**

**[www.cp2info.org/center](http://www.cp2info.org/center)**

**(530) 898-5981**



March 1, 2010

**Mr. Hector Romero, P.E.**

Senior Transportation Engineer  
California Department of Transportation  
Division of Pavement Management  
2389 Gateway Oaks Dr., Suite 200  
Sacramento, California 95833

**SUBJECT: Final Report (Jan 2007 - Feb 2010)  
California Pavement Preservation Center Contract 56A0211  
CSU, Chico Research Foundation Projects 72714-72719**

**Dear Hector:**

Attached is the updated final summary report on the accomplishments and recommendations of the California Pavement Preservation (CP<sup>2</sup>) Center at CSU, Chico. This report was developed with the assistance from Dr. Hicks and Dr. Stroup-Gardiner and includes comments from Caltrans staff. This report addresses the following:

- Accomplishments during the contract period
- Recommendations for the future work

If you have questions and/or comments, please call me at (530) 898-3845 or Dr. Ward at (530) 898-4888.

Sincerely,

*Ding Xin Cheng*

Dr. Ding Cheng  
Interim Director, CP2 Center

cc: Mike Ward (Dean of College of Engineering)  
cc: Haiping Zhou (Caltrans)

## EXECUTIVE SUMMARY

The California Department of Transportation (Caltrans) established the California Pavement Preservation Center (CP2 Center) at the California State University, Chico in July 2006. The California State University Chico Research Foundation agreed to provide a variety of services to Caltrans through CP2 Center. The Center worked closely with Caltrans to promote and improve pavement preservation practices through the following tasks:

- Task 1. Determine the cost benefits of performing pavement preservation in comparison to pavements that receive no pavement preservation until rehabilitation, reconstruction or replacement.
- Task 2. Provide training and education to Caltrans personnel. This task consisted of several efforts including the development and delivery of on-line training courses, Training on the MTAG, providing support for the annual and International conferences on pavement preservation, and delivering workshops on pavement preservation
- Task 3. Improve pavement preservation performance. This task included several topics including developing (in cooperation with MACTEC) the MTAGs for flexible and rigid pavements, working on the strategy selection process for flexible and rigid pavements , and assisting or developing specifications for pavement preservation treatments.
- Task 4. Encourage innovation and new technologies in pavement preservation. This task includes the development of the innovation database and the tracking of innovation projects constructed during the contract period.
- Task 5. Provide technical assistance on pavement preservation issues. This task consisted of provide technical support for the PPTG (both for meetings and assistance to the sub-groups), technical assistance (non PPTG related), failure investigations, and technical support to Caltrans on review of reports and development of presentations.
- Task 6. Promote effective pavement preservation practices. This task consisted of including all the Centers reports and papers on the website, development and delivery of newsletters, fact sheets and tech briefs, and promoting pavement preservation at conferences using the Centers booth.

This report summarizes the major accomplishments of the CP2 Center during the period of July 1, 2006 through February 28, 2010. It also provides the recommendations of future tasks for supporting and improving pavement preservation for Caltrans.

## Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>iii</b>
<b>ACCOMPLISHMENTS.....</b>	<b>1</b>
Task 1: Benefits of Pavement Preservation .....	1
Task 2: Education and Training .....	1
Task 3: Improving Pavement Performance.....	5
Task 4: Encourage Innovation and New Technologies .....	6
Task 5: Provide Technical Assistance .....	7
Task 6: Promotion of Pavement Preservation.....	21
<b>RECOMMENDATIONS.....</b>	<b>25</b>
Task 1: Benefits of Pavement Preservation .....	25
Task 2: Education and Training .....	25
Task 3: Improving Pavement Performance.....	25
Task 4: Encourage Innovation and New Technologies .....	26
Task 5: Provide Technical Assistance .....	26
Task 6: Promote Effective Pavement Preservation Practices .....	27

## ACCOMPLISHMENTS

This report summarizes the accomplishments made under the Center contract and that of MACTEC contract which was part of the \$1,800,000 over the period from July 1, 2006 through Feb 28, 2010. Following is a summary of the accomplishments and deliverables by task.

### ***Task 1: Benefits of Pavement Preservation***

This task dealt with identifying the economic benefits of pavement preservation. It included work by the Center staff as well as consultants to the Center including Jorge Sousa and George Way of Consulpav. The following represents the deliverables. Links to the reports are also provided.

- A. Sousa, J.B., and Way, G. Considerations for Estimating Pavement Treatment Lives and pavement Life Extension on Flexible Pavements. Consulpav report. Dec 20, 2007 (edited Jan 3, 2009 by G. Way). Posted to [http://www.ecst.csuchico.edu/\\_depts/cp2c/Library/Flexible\\_PP\\_Topics.html](http://www.ecst.csuchico.edu/_depts/cp2c/Library/Flexible_PP_Topics.html)
- B. Sousa, J.B., and Way, G. Models for Estimating Treatment Lives, Pavement Life Extension and the Cost Effectiveness of Treatments on Flexible Pavements, Vol. 2. Consulpav report. Dec 20, 2007 (edited Jan 3, 2009 by G. Way). Posted to [http://www.ecst.csuchico.edu/\\_depts/cp2c/Library/Flexible\\_PP\\_Topics.html](http://www.ecst.csuchico.edu/_depts/cp2c/Library/Flexible_PP_Topics.html)
- C. Hicks, R.G. Economic Benefits of Pavement Preservation. California Pavement Preservation Center White Paper. Sept. 23, 2008. It is currently posted on the Center website.
- D. ISAP Draft Paper. The title of the paper is “Pavement Preservation in the State of California – Protecting Our Investment”. Currently posted on the Center website.
- E. Hicks, R.G. Cost Effectiveness of Pavement Preservation. January 20, 2010, California Chip Seal Association. Currently posted on the Center Website

### ***Task 2: Education and Training***

This task consisted of several efforts including the development and delivery of on-line training courses, Training on the MTAG, providing support for the annual and International conferences on pavement preservation, and delivering workshops on pavement preservation, Following is a summary of all the deliverables.

- A. On-line Pavement Preservation classes:
  - 1. Introduction to Pavement Preservation (delivered Spring 2008, Fall 2009)
  - 2. Flexible Pavement Preservation (delivered in Fall 2009)
  - 3. Developed:
    - a) Rigid Pavement Preservation (Fall 2009)
    - b) Pavement Management for Pavement Preservation (Fall 2009)

- B. Classroom classes
  - 1. Transportation Pavement Design-Fall 2007
  - 2. Transportation Pavement Preservation-Spring 2009
  - 3. Asphalt Paving Materials-Spring 2010
- C. Planned and delivered Annual Pavement Preservation conferences:
  - 1. 1<sup>st</sup> Annual Meeting, 2006, Diamond Bar
  - 2. 2<sup>nd</sup> Annual Meeting, 2007, Union City
  - 3. 3<sup>rd</sup> Annual Meeting, April 9-10, 2008 Newport Beach, California
  - 4. 4<sup>th</sup> Annual Meeting, April 8-9, 2009 Oakland, California
- D. Planned the First International Conference on Pavement Preservation scheduled for April 13-15, 2010:
  - 1. Support committee development:
    - a) Honorary Committee (Hicks)
      - (1) Invited key participants for marketing, support and conference co-sponsoring
      - (2) Some of the honorary committee will be speakers and/or moderators at the conference
    - b) Organizing Committee (Hicks)
      - (1) Monthly coordination of conference development
      - (2) Marketing
      - (3) Fundraising
      - (4) Hotel, conference rooms, and exhibit organization and registration
      - (5) Developing and finalizing the conference proceedings
    - c) Technical Committee (Stroup-Gardiner)
      - (1) Solicitation and collection of abstracts
      - (2) Abstract reviewer identification and assignments (90 abstracts x 3 reviews=270 reviews)
      - (3) Review and accept/decline decisions for abstracts  
Development of author guidelines
      - (4) Requests for papers
      - (5) Formatting checks; reviews of revisions to assure reviewers comments addressed (36 papers plus invited presentations for check and review)
      - (6) Organize and develop program agenda
      - (7) Develop guidelines for presentations for authors
      - (8) Maintain continual contact with authors for questions, additional updates and conference agenda adjustments

## E. Summary of Educational workshops and training presentations and workshops

Conference/Organization	Date	Location	Title	Presenter(s)
AASHTO Standing Committee on Materials (SCOM) Meeting	July 16, 2008	Monterey, CA	California Pavement Preservation Center Update	Gardiner
Asphalt Recycling and Reclaiming Association (ARRA)	March 2009	Desert Palms, CA	NCHRP 40-13 Update for In-Place Recycling of Asphalt Pavements	Gardiner
American Public Works Association (APWA)	Sept. 9, 2009	San Ramon, CA	Pavement Preservation	Hicks
	April 30, 2009	Novato, CA	Asphalt Pavement Maintenance 101	Hicks
			Concrete Pavement Maintenance 101	Hicks
	April 24, 2009	Chico, CA	Hosted workshop	Hicks, Dmytrow
	Oct. 17, 2008	Berkeley, CA	Economics of Pavement Preservation	Gardiner
	Sept 3-4, 2008	San Ramon, CA	Center update	Ferrara
	July 10, 2008,	Antioch, CA	HMA Construction	Gardiner
	July 11 – 13, 2007	Lake Almanor	Center update	Ferrara
	May 2, 2007	Butte County	Center update	Hicks, Cheng, Ferrara
	March 19, 2007	Berkeley CA	Center Update	Ferrara
	March 19, 2007	Berkeley, CA	Center Update	Ferrara
	Aug. 5 ,2008	Rohnert Park	Rubberized Asphalt Concrete	Cheng
CalAPA	Jan. 22, 2009		Innovations and Agency Resources in California	Hicks, Gardiner
California Chip Seal Association (CSSA)	Jan 2009	Monterey, CA	Cost effectiveness of pavement preservation	Hicks
	Jan 2008	Ontario, CA	Resources for pavement preservation	Hicks
	January 2007	Sacramento CA	Center Update	Hicks
Caltrans	October 21-23, 2008	District 7, Los Angeles, CA	MTAG training	Hicks, Cheng, Gardiner
	April 9, 2008	Newport Beach, CA	Treatment Selection for Flexible Pavements	Hicks

Conference/Organization	Date	Location	Title	Presenter(s)
	April 9, 2008	Newport Beach, CA	Joint Resealing and Crack Sealing	Gardiner
	March 17-21, 2008	Lodi, CA	MTAG training	Hicks, Cheng, Gardiner
	April, 2008	Sacramento, CA	California Pavement Preservation Center	Hicks
	Sept. 9, 2009	San Ramon, CA	Politics and Finances of Maintaining Roads and Streets	Hicks, Dmytrow
	Nov. 5, 2008	Sacramento, CA	Innovation Database Update	Cheng
	Nov. 5, 2008	Sacramento, CA	Center Update	Gardiner
	April 11, 2008	Union City	Strategy Selection	Hicks
	July 18, 2007	Sacramento	Benefits of Pavement Preservation	Hicks
League of Cities	Aug. 2008		Crumb Rubber Asphalt in the Class Room	Cheng
PPTG	June 17, 2008	Lodi, CA	Caltrans Innovation Database,, Strategy Selection	Cheng, Hicks
	May, 17, 2008	Morro Bay	PPTG-Concept, Accomplishments, and Success Stories	Gardiner
	Oct 2008	Arroyo Grande, CA	Selection of Pavement Preservation Treatments	Gardiner
	Aug. 27, 2008	La Jolla, CA	Rubberized Asphalt Concrete	Hicks
	Jan 2008	Ventura, CA	Benefits of Pavement Preservation	Hicks
	Dec 7, 2007	City of Industry	RAC-O-HB projects update and Center's accomplishments	Stroup-Gardiner, Hicks
Maintenance Supervisors Association (MSA)	April 6, 2009	Oakland, CA	Pavement Preservation Treatments	Gardiner
	Feb 3,2010	Overland Park, Missouri	In-place Asphalt Recycling Update	Gardiner
	Jan. 26, 2010	Toronto, Ontario	In-place Asphalt Recycling Update	Gardiner
	Aug. 12, 2009	Bloomington, MN	In-place Asphalt Recycling Update	Gardiner
Rubber Producers Group	May 7-8, 2009	Akron, OH	Life Cycle Costs for Asphalt Rubber Paving Materials	Hicks, Cheng
North Center Asphalt User Producer Group	Jan. 2009	Washington, DC	Economics of Pavement Preservation	Gardiner

Conference/Organization	Date	Location	Title	Presenter(s)
(NCAUPG)				
Pavement Preservation and Rehabilitation Workshop	Jan. 2009	Washington, DC	Promoting Sustainability through Educating Undergraduate Students on Applications of Waste Tire Products in Civil Engineering and Transportation.	Cheng
TRB	Jan. 2010	Washington, DC	Improving Pavement Preservation Treatment Strategy Selection using Expert System Approach	Cheng
				Gardiner
WASHTO	April 2007	San Diego	Center update	Hicks

- F. Memorandum of Understanding (Ward)
1. Feb. 17, 2009, Long Beach, CA: CSU College of Engineering Deans from Long Beach and Pomona signed an MOU with Chico to facilitate joint teaching and research efforts in the area of pavement preservation.
  2. Plans are underway to expand the MOU to include Cal Poly-SLO

### **Task 3: Improving Pavement Performance**

This task included several topics including developing with MACTEC the MTAG's for flexible and rigid pavements, working on the strategy selection process for flexible and rigid pavements , and assisting or developing specifications for pavement preservation treatments. The deliverables included the following;

- A. MTAG Chapters and presentations
  - o Updated the MTAG for Flexible Pavements-included on the Center website
  - o Updated the MTAG for Rigid pavements-included on the Center website
  - o Developed training modules, written documents, and presentations for both-included on the Center website
- B. Strategy Selection
  - o Updated the strategy selection process
  - o Developed estimates of treatment life
  - o Developed analytical estimates of life extension
  - o Initiated a data base for pavement preservation treatments to assist with estimating treatment life-included on the Center website
  - o Developed software for the flexible pavement strategy selection process-included on the Center website
- C. Specification Development Assistance:
  - o Assisted in the conversion of NSSP's to SSP's
  - o Assisted in the development of the 2010 Specifications

#### ***Task 4: Encourage Innovation and New Technologies***

This task includes the development of the innovation database and the tracking of innovation projects constructed during the contract period.

- A. Developed and populated the Innovation Data Base (Cheng)-included on the Center website
- B. Assisted Caltrans in the monitoring and documentation of the following projects

<b>Project</b>	<b>Work Completed</b>	<b>Delivered</b>
Innovation Database	Develop innovation database to support innovation submission and approval procedure with Caltrans	The innovation database is online at the CP2 Center website
RAC-O-HB Statewide	Summary report developed for each of the individual project reports	Individual and summary report posted to web
Interlayers – D2	Documented project and wrote report for project up through construction.	Project report posted to web
Terminal blend Chip Seals – D11	1-year follow up field evaluation completed	Report update under development
Cold In-Place Recycling - D3	Documented project and wrote report for project up through construction.	Project report posted to web
Verglimit – D3	Documented project and wrote report for project up through construction.	Project report posted to web
European Quiet Pavement – D7	Documented project and wrote report for project up through construction.	Project report posted to web
Fog and Rejuvenating Seals –D1, 2, and 9	Documented project and wrote report for project up through construction.	Initial report in final review stage
Hitone (Hot in place transformation) – D2, 8	Documented project and wrote report for project up through construction.	Project posted to the Center website
Warm mix-Morro Bay – D5	Draft final construction report done	In progress
Terminal Blend Chip Seal-D11	Two-year performance review completed Feb. 2, 2010	In progress
Quiet Pavements for PCC – D11	Scheduled for construction in D11 in 2010	Summer 2010
Double Chip over Fabric – D6	Scheduled for construction in D6 in 2010	Summer 2010
REAS, D7 and 11	Scheduled for construction in D7, 11 in 2010	Summer 2010

- C. Developed Pavement Preservation Treatment Data Base (PPTDB) (Cheng) included on the Center website.

### **Task 5: Provide Technical Assistance**

This task consisted of provide technical support for the PPTG (both for meetings and assistance to the sub-groups), technical assistance (no PPTG related), failure investigations, and technical support to Caltrans on review of reports and development of presentations. Following is a summary of the accomplishments.

- a) PPTG Meetings
- b) Co-Chairs meeting:
  - 1) Lodi, CA: Oct. 10, 2007
  - 2) Newport Beach, CA, 2008
  - 3) Sacramento, CA, 2009
- c) All Members meeting
  - 1) City of Industry, CA, Dec. 4, 2007
  - 2) Los Angeles, CA, Dec, 5, 2008
  - 3) Sacramento, CA Dec. 7, 2009

### **B. PPTG Assistance**

<b>Item</b>	<b>Date</b>	<b>Notes or comments</b>
All members meeting	Dec. 7, 2009	• Sacramento, Caltrans
Co-Chairs meeting	May 27, 2009	• Sacramento, ARA
Binders	Dec. 7, 2009	• Presented tabulated voting results for Industry Co-chair
	Dec. 5, 2009	• Classified ballots for member voting status
	Nov. 15, 2009	• Prepared and sent out ballots for each Task Group
	Nov. 1, 2009	• Sent out request for nominations for industry Co-Chairs
	Oct. 20, 2009	• Binder task group discussions about PG-TR specification
	Oct. 15, 2009	• Sent out request for Co-Chair to review current membership
	August 13, 2009	• Monitored identification of PG 64-28TR jobs
	August 10, 2009	• Working with Jim Ryan; Industry co-chair nomination questions for Oct. ballot
	July 02, 2009	• Assisted Co-Chair with membership issues

	June 1, 2009	<ul style="list-style-type: none"> <li>Added NSSP for PG 76-22 PM and TR to both PPTG subtask group section and NSSP section of web site</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting</li> </ul>
	May 6, 2009	<ul style="list-style-type: none"> <li>Took notes for Industry for meeting at TransLab on PG76-22 TR spec discussions</li> </ul>
	Circa March 2009	<ul style="list-style-type: none"> <li>Draft AR Chip Seal SSP 37-030 requirements for AR binder properties and use</li> </ul>
Chip Seals	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	June 24, 2009	<ul style="list-style-type: none"> <li>Assisted subtask group with verification of membership and voting request for Co-chairs</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	March 23, 2009	<ul style="list-style-type: none"> <li>E-mailed co chairs for update</li> </ul>

Crack and Joint Resealing	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	June 10, 2009	<ul style="list-style-type: none"> <li>Reviewed scoping document prepared by Larry Rouen</li> </ul>
	May 27, 2009:	<ul style="list-style-type: none"> <li>PPTG co chairs meeting</li> </ul>
	May 20, 2009	<ul style="list-style-type: none"> <li>Loaded latest research documents on crack sealing material specification changes to CP2 web site</li> </ul>
	March 23, 2009	<ul style="list-style-type: none"> <li>Working on SSP 37-400 for crack treatment; Larry Rouen will send resolutions to members; once approved it will move to Rock Products</li> </ul>
DBR	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	March 27, 2009	<ul style="list-style-type: none"> <li>Richard Stubstad circulated Draft DBR Fact Sheet for review</li> </ul>
	March 23, 2009	<ul style="list-style-type: none"> <li>E-mailed co chairs for update</li> </ul>
Diamond Grinding	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	May 20, 2009	<ul style="list-style-type: none"> <li>Posted diamond grinding literature to CP2 web page</li> </ul>
	March 27, 2009	<ul style="list-style-type: none"> <li>Richard Stubstad circulated Draft Diamond Grinding Fact Sheet for review</li> </ul>
	March 23, 2009	<ul style="list-style-type: none"> <li>E-mailed co chairs for update</li> </ul>

Education	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	April 3, 2009	<ul style="list-style-type: none"> <li>Requested information from RCE about how to give CEU and PDH's for workshops (Mary)</li> </ul>
	Dec. 17 2009 (TG meeting)	<ul style="list-style-type: none"> <li>Updates to Chapters, one per month, led by CP2 Center (Mary)</li> <li>Identify fact sheet, tech brief topic identifications (Mary)</li> <li>Develop list of currently available training videos from industry (Mary)</li> <li>Pull out Manager's Overviews from PPTG training presentations</li> <li>Schedule video conference in Spring (Larry)</li> </ul>
Fog and Rejuvenator Seals	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	March 23, 2009	<ul style="list-style-type: none"> <li>E-mailed co chairs for update</li> <li>John Fox planning on April 1 meeting for planning of spring/summer test sections</li> </ul>
	Feb. 23, 2009 (email string)	<ul style="list-style-type: none"> <li>Working on updates to NSSP 37-050 to allow SS1h in addition to CSS1h and CQS1h</li> <li>D2 working on draft specification based on findings from Innovation project.</li> </ul>
April 1, 2009 (Test Section planning meeting)	<ul style="list-style-type: none"> <li>Planning more fog and rejuvenator seal test sections for 2009</li> <li>Work on developing improvements to test protocol</li> </ul>	

Innovation	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	August 24, 2009	<ul style="list-style-type: none"> <li>Assisted with locating an alternative test site for the chip over fabric Innovation projects</li> </ul>
	June 30, 2009	<ul style="list-style-type: none"> <li>Monitoring request from Caltrans for Innovation Project Proposals</li> </ul>
	June 22, 2009	<ul style="list-style-type: none"> <li>Dr. Cheng submitted draft of PPTDB for tracking non-Innovation projects by CP2</li> </ul>
Interlayers	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	June 25, 2009	<ul style="list-style-type: none"> <li>Inquired if subtask group had meeting-none scheduled at this time</li> </ul>
	June 16, 2009	<ul style="list-style-type: none"> <li>Assisted Interlayer members with locating Interlayer chapter on web site</li> </ul>
	June 4, 2009	<ul style="list-style-type: none"> <li>Posted a number of reference documents for Interlayer performance to Library section of web site</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	May 18, 2009	<ul style="list-style-type: none"> <li>Fielded questions on final comments for chapter</li> </ul>
	May 14, 2009	<ul style="list-style-type: none"> <li>Request for final comments on chapter goes out</li> </ul>
	May 7, 2009	<ul style="list-style-type: none"> <li>Emailed Scott about status of Interlayer chapter</li> </ul>
	April 22, 2009	<ul style="list-style-type: none"> <li>Meeting with Scott Dmytrow, Osama and Mary to resolve comments on Interlayer chapter</li> </ul>
	Feb. 27, 2009	<ul style="list-style-type: none"> <li>Osama sent out Interlayer chapter for agency review process</li> </ul>
	Feb. 4, 2009 (working group)	<ul style="list-style-type: none"> <li>Changes per TG comments incorporated into Interlayer Chapter and submitted to Caltrans for review</li> </ul>

Local Agencies	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 16, 2009	<ul style="list-style-type: none"> <li>PPTG meeting in LA County Headquarters (G. Hicks attended)-Dragos and Shadi invited</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	April 20, 2009	<ul style="list-style-type: none"> <li>Still need NorCal co-chair. Mary to discuss with Erik Updike.</li> </ul>
	April 5, 2009	<ul style="list-style-type: none"> <li>Action items scheduled for another meeting in 3 months (Erik Updike) and for Gary Hicks to talk to group about strategy selection; difficulty in meeting due to stimulus package work overloads</li> </ul>
	March 23, 2009	<ul style="list-style-type: none"> <li>E-mailed co chairs for update</li> </ul>
	Nov. 18, 2008 (TG So Cal meeting)	<ul style="list-style-type: none"> <li>PP discussed and agreement to set up another meeting; Gary Hicks to give presentation on strategy selection</li> <li>Meeting scheduling delayed due to overload with Stimulus Package work</li> </ul>
Partial and Full Depth Repairs	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	March 23, 2009	<ul style="list-style-type: none"> <li>E-mailed co chairs for update</li> </ul>

Patching	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	Need to activate	<ul style="list-style-type: none"> <li>Mary to meet with Milt Apple</li> </ul>
Pavement Management	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	August 25, 2009	Assisted with PMS workshop announcements and registration
	August 17, 2009	Assisted with PMS workshop announcements and registration
	August 14, 2009	Assisted with PMS workshop announcements and registration
	August 3, 2009	<ul style="list-style-type: none"> <li>Assisted with PMS workshop announcements and registration</li> </ul>
	July 14, 2009	<ul style="list-style-type: none"> <li>Dr. Cheng updated software for PMS workshop registration</li> </ul>
	July 14, 2009	<ul style="list-style-type: none"> <li>Dr. Cheng worked on review of Caltrans APCA manual</li> </ul>
	June 1, 19, and 22, 2009	<ul style="list-style-type: none"> <li>Updated PMS workshop meeting schedules and registration section of web site</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	May 21, 2009	<ul style="list-style-type: none"> <li>Coordinating work with ETG on Pavement Management (Ding)</li> </ul>
	May 7, 2009	<ul style="list-style-type: none"> <li>Added more info on upcoming workshops for Sui</li> </ul>
	April 20, 2009	<ul style="list-style-type: none"> <li>T2 advertising PMS workshop and CP2 website registration link</li> </ul>
	April 5, 2009	<ul style="list-style-type: none"> <li>On-line PMS Workshop registration developed for PPTG and placed on CP2 website (Ding/Mary)</li> </ul>
March 23, 2009	<ul style="list-style-type: none"> <li>Workshops scheduled for: April 29, 2009; June 24, 2009; Sept. 15, 2009; Dec. 2, 2009 (sui Tan)</li> <li>Goals to develop ½ day workshop on benefits of PMS and success stories</li> <li>CP2 Center helping with flyer and registration</li> </ul>	

Quiet Pavements	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	May 13, 2009	<ul style="list-style-type: none"> <li>Reviewed Quieter Pavement Draft Policy Bulletin</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	March 23, 2009	<ul style="list-style-type: none"> <li>E-mailed co chairs for update</li> </ul>
Recycling	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	May 28, 2009	<ul style="list-style-type: none"> <li>Worked with members to get reference documents to post to web site</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	March 20, 2009	<ul style="list-style-type: none"> <li>HIR meeting in Indian Wells at ARRA conference</li> </ul>
	March 11, 2009	<ul style="list-style-type: none"> <li>Group needs further conference call</li> </ul>
	March 9, 2009	<ul style="list-style-type: none"> <li>Continuing discussions about lab procedures and mix design criteria; raveling, saturated Marshall stability</li> </ul>
	March 6, 2009	<ul style="list-style-type: none"> <li>3 hr conference call: CIR Specification development discussions and action items for committee</li> <li>Major discussion on CIR mix sampling and CIR mix design</li> </ul>
	Feb. 24, 2009 (HIR meeting)	<ul style="list-style-type: none"> <li>Contractors and industry discussed development of important HIR considerations for specification development</li> </ul>

Research	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	April 5, 2009	<ul style="list-style-type: none"> <li>Inquiry by John Harvey about combining Innovation and Research Task Groups; Joe Holland opposed; Mary thinks groups have different focus</li> </ul>
	April 3, 2009	<ul style="list-style-type: none"> <li>Try to get meeting with John, his PPTG and Mary; looks like it will be at least mid May before this is possible.</li> </ul>
	March 23, 2009	<ul style="list-style-type: none"> <li>E-mailed co chairs for update</li> </ul>
Rigid Pavement	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	June 18, 2009	<ul style="list-style-type: none"> <li>Reviewed and commented on METS Directive 08.REV1.5.18.09</li> </ul>
	June 1, 2009	<ul style="list-style-type: none"> <li>Worked with John Roberts to post both presentations and papers for St. Louis conference to CP2 website</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	April 15, 2009	<ul style="list-style-type: none"> <li>27 rigid pavement documents posted to CP2 Center website</li> </ul>
	April 3, 2009	<ul style="list-style-type: none"> <li>FHWA Conference on PRR of Concrete Pavements: Shiraz wants papers posted to CP2 website; he will check with authors to see if OK to post presentations</li> </ul>
	April 2, 2009	<ul style="list-style-type: none"> <li>Request from John Roberts to load Rigid Pavement FHWA ETG documents to CP2 Library (sending on CD)</li> </ul>
	March 25 2009	<ul style="list-style-type: none"> <li>PPTG had meeting March 17; reviewed new suite of special provisions for RSC.</li> </ul>
	March 23, 2009	<ul style="list-style-type: none"> <li>E-mailed co chairs for update</li> </ul>
	March 18, 2009	<ul style="list-style-type: none"> <li>Reviewed new suite of RSC special provisions with the goal of moving these SP's towards standardization over the next few years</li> </ul>

Slurry and Microsurfacing	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	May 20, 2009	<ul style="list-style-type: none"> <li>Discussion with Roger Hayner and Larry Rouen about use of continuous vs. truck mount slurry and microsurfacing equipment in New Orleans; Larry has meeting with Caltrans folks next week to discuss issues</li> </ul>
	May 8, 2009	<ul style="list-style-type: none"> <li>Passed on info on MnDOT microsurfacing specs with regards to continuous equipment</li> </ul>
	April 29, 2009	<ul style="list-style-type: none"> <li>Discussed changes in slurry seal spec with regards to continuous operation requirement. Larry suggested it might be a good research topic.</li> </ul>
	March 23, 2009	<ul style="list-style-type: none"> <li>E-mailed co chairs for update</li> </ul>
Strategy Selection	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	Sept. 15, 2009	<ul style="list-style-type: none"> <li>Software development for PPTDB</li> </ul>
	August 25, 2009	<ul style="list-style-type: none"> <li>Dr. Cheng drafted meeting agenda</li> </ul>
	July 6, 2009	<ul style="list-style-type: none"> <li>Dr. Cheng developed Delphi strategy for treatment selection draft</li> </ul>
	July 6, 2009	<ul style="list-style-type: none"> <li>Dr. Cheng developed Google survey for obtaining strategy selection criteria</li> </ul>
	June 25, 2009	<ul style="list-style-type: none"> <li>Dr. Cheng provided assistance to Peter Vacura on pavement preservation treatment database</li> </ul>
	June 15, 2009	<ul style="list-style-type: none"> <li>Reviewed and tested beta version of web based program for strategy selection</li> </ul>
	May 30, 2009	<ul style="list-style-type: none"> <li>Developed beta version of strategy selection software for use by agencies and industry</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	May 25, 2009	<ul style="list-style-type: none"> <li>Request for updating membership list (Ding)</li> </ul>
	May 4, 2009	<ul style="list-style-type: none"> <li>Passed on Sousa reports to John Roberts</li> </ul>
	March 5, 2009	<ul style="list-style-type: none"> <li>Comments from Task Group members added to work plan (Ding)</li> </ul>

	March 3, 2009	<ul style="list-style-type: none"> <li>Developed work plan for Strategy Selection Task Group (Ding)</li> </ul>
	Feb. 27, 2009 (TG meeting)	<ul style="list-style-type: none"> <li>Update matrix for flexible and rigid pavements</li> <li>Develop questionnaire to Strategy Selection TG</li> <li>Identify existing PP databases (national)</li> <li>Develop PP strategy selection scenarios</li> <li>Rung scenarios through RealCost</li> <li>Review expert selection software developed by Ding Cheng</li> <li>Incorporate Jorge Sousa's work into estimates of life extension of PP treatments</li> </ul>
Surface Characteristics	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	March 23, 2009	<ul style="list-style-type: none"> <li>E-mailed co chairs for update</li> </ul>
Thin Overlays	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	March 23, 2009	<ul style="list-style-type: none"> <li>E-mailed co chairs for update</li> </ul>
Warranties	Dec. 7, 2009	<ul style="list-style-type: none"> <li>Presented tabulated voting results for Industry Co-chair</li> </ul>
	Dec. 5, 2009	<ul style="list-style-type: none"> <li>Classified ballots for member voting status</li> </ul>
	Nov. 15, 2009	<ul style="list-style-type: none"> <li>Prepared and sent out ballots for each Task Group</li> </ul>
	Nov. 1, 2009	<ul style="list-style-type: none"> <li>Sent out request for nominations for industry Co-Chairs</li> </ul>
	Oct. 15, 2009	<ul style="list-style-type: none"> <li>Sent out request for Co-Chair to review current membership</li> </ul>
	May 27, 2009	<ul style="list-style-type: none"> <li>PPTG co chairs meeting:</li> </ul>
	April 20, 2009	<ul style="list-style-type: none"> <li>Checked with Hans Ho on status of Industry Co-Chair (Mary)</li> </ul>
	March 27, 2009	<ul style="list-style-type: none"> <li>Need confirmation from Hans Ho if Jack Van Kirk moved up to Industry Co-Chair or is still back up; Nate was not aware of his nomination as Industry Co-Chair; waiting for Industry to select a Co-chair (Shawn Rizzutto)</li> </ul>
	March 23, 2009	<ul style="list-style-type: none"> <li>E-mailed co chairs for update</li> </ul>

## B. Technical Assistance – Non-PPTG Industry Assistance Activates

<b>Date Received</b>	<b>Agency</b>	<b>Contact</b>	<b>Phone</b>	<b>Items discussed or Information provided</b>
1-22-10	City of Roseville	Jerry Dankbar	916-774-5791	Cape seal projects in Roseville
1-12-10	Lake County	Brent Siemer	707-263-2345	Problems with Cape seal projects
1-5-10	City of Oakland	Randy Mack	510-238-7279	Follow-up on Bonding problem
12-21-09	Ergon	Carolyn Smith	601-933-3364	Need W-9 form to give to the Center
12-18-09	City of Oakland	Randy Mach	510-238-7279	Bonding in asphalt overlays
12-10-09	Lake County	Brent Siemer	707-263-2345	Visit to job sites
12-3-09	Lake County	Brent Siemer	707-263-2345	Problems with cape seal
12-2-09	Calaveras county	Steve Hollenbeck	209-754-6033	Overlays to minimize ice
11-20-09	Consultant	Lerose Lane	530-356-8315	Interested in helping with workshops
11-6-09	NAPA	Dave Newcomb		Pavement preservation issues
11-5-09	Eugene Berger Inc	Karen Brigg	530-745-9801	Slurry seals for apartment complexes
10-26-09	City of Menlo Park	Matt Oscamou	650-330-6742	Rubberized asphalt concrete stability
10-26-09	Crafco	Charley Grady	602-524-1334	Hot rubber sealants
10-17-09	FP2	Bill O'Leary	FP2 Inc	ICPP sponsors
10-6-09	Caltrans D1	Mike Stapleton	Caltrans, D1	Problems with Moss on pavements
8-13-09	Tensar	Kristen	ICPP conference	Wants to exhibit and sponsor

<b>Date Received</b>	<b>Agency</b>	<b>Contact</b>	<b>Phone</b>	<b>Items discussed or Information provided</b>
8-12-09	UCB	Larry Santucci	510-665-3428	Information on Terminal blends
8-11-09	Mill Creek HOA	Preston Dickinson	895-6088	Chip seal problems
8-3-09	LA County	Erik Updyke and Imelda Diaz	LA County	Help with September newsletter articles
7-28-09	Consultant in Colorado	Richard Taylor	303-444-1000 x231	Possible job opportunities
7-21-09	Consultant in Netherlands	Henk Dijkink	+31-347-357-343	Open graded cold mixes
7-20-09	CPM	Gordon Raynor	916-381-8033	Terminal blend slurry seals
7-13-09	Telfer	Hans Ho	925-228-1515 x1329	List of DME's for Caltrans
6-4-09	Sasobit	Larry Michael	NA	San Diego warm mix project
6-4-09	MWV	John Duval	NA	San Diego warm mix project
6-4-09	PQ corporation	Jeff Haley	719-433-8377	San Diego warm mix project
6-1-09	Kleinfelder	Kash Hadipour	949-289-2115	Teaming on CIWMB technical assistance contract
6-1-09	MACTEC	Andrew Brigg	916-332-5558	Teaming on CIWMB technical assistance contract
6-1-09	City of Watsonville	Patrice	831-768-3113	Latest specs for terminal blends
6-1-09	RPA	Doug Carlson	480-517-9944	Arrange for meeting on proposal for Ding
6-1-09	MWV	John Duval	NA	Warm mix projects in San Diego
5-26-09	Road Science	Gary Hildebrand		June newsletter
5-26-09	LA County	Imelda Dias	626-476-7767	Warrantees in California
5-15-09	MWV	Everett Crews		Presentation in China
5-15-09	ACPA	Nick Salata	626-353-4559	June newsletter
5-8-09	Telfer Oil	Brandon Milar		Warm mix project in Orland
5-8-09	ACPA	Tom Salata	949-222-9196	June newsletter

<b>Date Received</b>	<b>Agency</b>	<b>Contact</b>	<b>Phone</b>	<b>Items discussed or Information provided</b>
4-21-09	Contra Costa Co.	Henry Finch	hfinc@pw.cccounty.us	AR Chip seal failures
4-14-09	International	Farhan Javed	farhan@nus.edu.sg	Question about TRB presentation and economics of PP
4-3-09	John Birchall	VSS Macropaver	John.Birhall@Reed.net	Presentation information for Economics of PP
2-23-09	Butte Creek HMO	Tom Beckman	530-893-8539	Preservation strategies for HMOs
2-16-09	BASF	Peter Montenegro	860-794-7035	Information on becoming a patron
2-13-09	Lake Traffic solutions	Arthur lake	925-788-4606	ICPP
2-9-09	CPM	Gordon Raynor	916-997-5085	Information on becoming a patron
2-6-09	FHWA	Laura Lawny	202-366-3975	MTAG for concrete pavements
2-5-09	CPM	Gordon Raynor	916-997-5085	Terminal blends for slurry seals
2-5-09	Caltrans	Jennifer Wong	916-654-3633	Information for Will Kempton keynote speech
2-5-09	City of Santa Maria	Roger Olds	805-925-0951 x 481	Asphalt problems
2-3-09	Caltrans	Tehani Rodriques	916-654-4923	Final article for Richard Land
2-3-09	Consultant	Heidi Utterback	707-571-8005	Subgrade stabilization using fabrics
2-3-09	City of Rocklin	Lyle West	916-625-5521	MSA meeting Sept 30, 09
1-29-09	City of Fort Bragg	Nancy Atkinson	707-357-2651	Cape seal failure
1-15-09	CIWMB	Nate Gauff	916-425-7978	Terminal blends in chip seals and hot mix
1-9-09	Gillotti Bros	Dominic Nuccio	415-760-1988	Waves in HMA overlays

### Other Caltrans Support

1. Reviews of non-CP2 reports and papers
  - a) Fuel Efficiency of Concrete Pavements for Bill Farnbach (Gardiner)
  - b) UCPRC-TM-2007-05 Performance of Pavement Preservation Treatments (1998-2003)
2. Development of Documentation

- a) Brazilian visit, Sept. 26, 2007
  - b) Rock Products meeting, Oct. 11, 2007
3. Development of Presentations for Others (Hicks)
- a) ARRA Presentation, Randy Iwasaki
  - b) CSSA Presentation, Steve Takigawa
  - c) Workshop for Turkey, Shakir Shatnawi
  - d) Importance of PP, Randy Iwasaki
  - e) Developing Strategies to Address Climate Change, Randy Iwasaki
  - f) Recycling Efforts in California, Shakir Shatnawi for India presentation
  - g) Vision of Pavements in California, Mike Miles

### **Task 6: Promotion of Pavement Preservation**

This task consisted of including all the Centers reports and papers on the website, development and delivery of newsletters, fact sheets and tech briefs, and promoting pavement preservation at conferences using the Centers booth.

#### A. Reports

Document No.	Document Type	Status	Title	Author(s)
CP2 - 2007 - 101	Report	Web site	Evaluation of RAC-O-HB Projects SAC 99-0.8/2.8	R.G. Hicks
CP2 - 2007 - 102	Report	Web site	Evaluation of RAC-O-HB Projects SBD 40-PM 73.4-89.5	G.B. WAY
CP2 - 2007 - 103	Report	Web site	Evaluation of RAC-O-HB Project FRE I-5-PM 0-38	G.B. WAY
CP2 - 2007 - 104	Report	Web site	Evaluation of RAC-O-HB Projects MONO 395-PM 76-84.5	G.B. WAY
CP2 - 2007 - 105	Report	Web site	Performance of Rubberized Asphalt Concrete Open Graded High Binder Content (RAC-O-HB) Surface Mixes in California	M. Stroup-Gardiner, R.G. Hicks
CP2 - 2007 - 106	White paper	Under review	Economic Benefits of Pavement Preservation-Center White Paper	R.G. Hicks
CP2 - 2008 - 101	Report	Web Site	Interlayers on Highway 36 near Chester, California	M. Stroup-Gardiner
CP2 - 2008 - 102	Report	Under Review	Fog Seals Innovation Projects	M. Stroup-Gardiner, D. Cheng, and R.G. Hicks
CP2 - 2008 - 103TB	Tech Brief	Web Site	Use of Verglimit Deicing Product on El Dorado County Highway 50 PM 38.6 to	M. Stroup-Gardiner

			39.7	
CP2 - 2008 - 104	Report	Web site	European Gap Graded Mix Project SR 19, City of El Monte, California	M. Stroup-Gardiner
CP2 - 2008 - 105	Report	Web Site	Innovation Project: Cold-In-Place Recycling on Highway 16	M. Stroup-Gardiner
CP2 - 2008 - 106	White Paper	Web Site	Viability of Hot In-Place Recycling as a Pavement Preservation Strategy	R. Terrel, and R.G. Hicks
CP2 - 2008 - 107TB	Tech Brief	Web site	Executive Summary of the Presentations at the 3rd Annual California Pavement Preservation Center Meeting	M. Stroup-Gardiner
CP2 - 2008 - 108	Report	Web Site	Hot In-Place Recycling Using the Hitone Process	M. Stroup-Gardiner
CP2 - 2009 - 109	Appendices	Web Site	Continuing Education and University Curricula of RAC and C E Applications of Waste Tires	Ding Cheng, R.G. Hicks, Joel. Arthur
CP2 - 2009 - 110	Report	In Progress	District 11 Chip Seal Project	M. Stroup-Gardiner
CP2 - 2009 - 114	Report	Draft Submitted	Warm Mix Asphalt Demonstration Project in Morro Bay, California	M. Stroup-Gardiner

### B. Papers on Pavement Preservation

Authors	Title	Publication Information	Date	Keywords
Shatnawi, S., L. Rouen, R.G. Hicks, D. Cheng	Pavement Preservation in the State of California-Protecting Our Investment	11th International Conference on Asphalt Pavements – in Review	Aug 2010	Pavement Preservation, Innovation Database
Cheng, D., S Tan, R.G. Hicks	Improving Pavement Management System by Adding Pavement Preservation Component	2010 GeoShanghai International Conference - Accepted	Jun 2010	Pavement Preservation, Pavement Management
Cheng, D., R.G. Hicks, A. Ochoa	Improving Pavement Preservation Treatment Strategy Selection using Expert System Approach	89 <sup>th</sup> Annual Meeting of Transportation Research Board	Jan 2010	Flexible Pavement Strategy Selection, Expert System
Cheng, D., R.G. Hicks, A.M. Johnson, S. Shatnawi	Promoting Asphalt Rubber Application through Education	2009 Asphalt Rubber Conference	Nov 2009	Education, Asphalt Rubber
Cheng, D., R.G. Hicks, M.S. Gardiner, H. Zhou	Incorporating Expert System Concept into Pavement Treatment Strategy Selection.	2009 GeoHunan International Conference	Aug 2009	Strategy Selection
Cheng, D., J. Arthur, A.M. Johnson	Curricula for Using Waste Tires in Civil Engineering	2009 ASEE PSW conference	March 2009	Education, Asphalt Rubber, Tire

<b>Authors</b>	<b>Title</b>	<b>Publication Information</b>	<b>Date</b>	<b>Keywords</b>
	Applications			Derived Aggregate
Cheng, D., R.G. Hicks, and A.M. Johnson	Promoting Sustainability through Educating Undergraduate Students on Applications of Waste Tire Products in Civil Engineering and Transportation.	88th Annual Meeting of Transportation Research Board	Jan 2009	Education
Bressette, Zhou, Stonex, and Hicks	Asphalt Rubber and its Potential Use in China	Proceedings, 7th International conference of Chinese Transportation Professionals	May 2007	Asphalt rubber, chip seals, thing HMA
Bressette, Zhou, Stonex, and Hicks	Asphalt Rubber and its Potential Use in China	Proceedings, 7th International Conference of Chinese Transportation Professionals	May 2007	Asphalt rubber, chip seals, thing HMA
Shatnawi, Zhou, and Hicks	Innovative Pavement Preservation Practices in California	Proceedings, AATT	May 2007	Pavement preservation, flexible preservation treatments
Bressette, Zhou, Seeds and Hicks	Structural Design Considerations for Rubberized Asphalt Mixes	Proceedings, AR 2006	Oct 2006	Asphalt rubber, hot mixes, thickness design
Cook, Bressette, Holikatti, Zhou and Hicks	Laboratory Evaluation of Asphalt Rubber Modified mixes	Proceedings, AR 2006	Oct 2006	Asphalt rubber, fatigue, rutting
Shatnawi, Stonex, and Hicks	An Update on Asphalt Rubber Pavement Preservation Strategies Used in California	Proceedings, AR 2006	Oct 2006	Asphalt rubber, chip seals, thing HMA overlays
Cook, Bressette, Holikatti, Zhou and Hicks	Full Scale Experiment on Asphalt Rubber Modified mixes in California	Proceedings, 11th international Conference on Asphalt Pavements	Aug 2006	Terminal blends, asphalt rubber, fatigue, rutting
Cook Bressette, Zhou and Hicks	Case Study on Lab Performance of Rubberized Asphalt concrete Mixes	TRB annual meeting	Jan 2006	Fatigue, rutting, Asphalt Rubber
Shatnawi, Marsh, Zhou, and Hicks	Pavement preservation Strategy Selection in California	AASHTO/TRB Maintenance management Conference	Dec 2005	Strategy selection

## C. Fact Sheets

<b>Document Location</b>	<b>Fact Sheet Title</b>
Website	Fog and Rejuvenating Seals
Website	MTAG Training
Website	Surface Recycling Fact Sheet
Website	Innovation Initiative Fact Sheet
Website	Dowel Bar Retrofit
Website	Diamond Grinding
Website	Terminal blends vs. asphalt Rubber

## D. Newsletters

<b>Document Location</b>	<b>Publication Date</b>
Website	March, 2010
Website	December, 2009
Website	September, 2009
Website	June, 2009
Website	March, 2009
Website	December 2008
Website	September 2008
Website	June 2008
Website	March 2008
Website	December 2007
Website	September 2007
Website	June 2007
Website	March 2007

## E. Booth Exhibitions at conferences

- a. California PP Conference, April 2007, 2008, April 2009
- b. California Chip Seal Association, Jan. 2007, Jan, 2008, Jan. 2009, Jan 2010
- c. League of Cities, Sept. 2009
- d. Maintenance Supervisors Association Several times
- e. American Public Works Association, Several times
- f. WASHTO twice

- g. AASHTO SCOM, July, 2008

## RECOMMENDATIONS

This part of the summary report includes the recommendations for the next contract. We feel the first contract was very successful in promoting preservation throughout the state. We have selected specific areas to continue our activities as summarized below.

### ***Task 1: Benefits of Pavement Preservation***

- A. Continue to identify and track the cost and performance of Caltrans pavement preservation strategies.
- B. Quantify pavement life extension as a result of using pavement preservation for both flexible and rigid pavement preservation strategies, including recycling.
- C. Continue to conduct life cycle cost analysis and appropriate cost evaluation to determine the cost benefits for various strategies and to identify the strategies that reduce the SHOPP costs by delaying the need for rehabilitation, reconstruction or replacement.

### ***Task 2: Education and Training***

- A. Continue to support the annual pavement preservation conference
- B. Update Caltrans Maintenance Technical Advisory Guide (MTAG) and associated training presentation materials and deliver two-day training courses for each of the volumes of the MTAG.
- C. Develop and deliver 1 day workshops on pavement preservation topics as requested by Caltrans.
- D. Provide education through development and delivery of annual conference, workshop, or seminars.
- E. Develop presentations, training sessions and workshops on pavement preservation for Caltrans managers and employees.

### ***Task 3: Improving Pavement Performance***

- A. Assist Caltrans in improving consistency of treatments through improved strategy selection, design and QC/QA.
- B. Develop performance curves for various effective pavement preservation treatments. Define performance expectations for these treatments and identify pay incentives for those meeting performance expectations and disincentives for those not meeting performance expectations.

- C. Continue to develop performance-related specifications and improved warranty specifications for each of the pavement preservation treatments.

**Task 4: Encourage Innovation and New Technologies**

- A. Continue to assist Caltrans in implementing innovations and new technologies using developed innovation database
- B. Assist Caltrans in evaluating, certifying new technologies, materials, and processes
- C. Continue to develop, evaluate new tests and technologies for pavement preservation
- D. Continue to assist Caltrans in the documentation of innovation projects as well as provide laboratory and field testing for research purposes as needed for the projects. Include this information in the pavement preservation database. The following is a current status of the innovation projects we have been tracking

Project	Work Completed	Delivered
Fog and Rejuvenating Seals	Documented project and wrote report for project up through construction.	Initial report in final review stage
Hitone (Hot in place transformation)	Documented project and wrote report for project up through construction.	Initial report in final review stage
Warm mix-Morro Bay	Draft final construction report completed	Draft submitted
Asphalt Rubber Terminal Blend Chip Seal-D11	Two-year performance review completed Feb. 2, 2010	Draft in progress
Quiet Pavements	Innovation at Pre-proposal draft stage. Project is postponed till 2010	Construction scheduled Summer 2010
Double Chip over Fabric	Under development	Construction scheduled Summer 2010
REAS	Innovation at Pre-proposal draft stage.	Construction schedule Summer 2010

**Task 5: Provide Technical Assistance**

- A. Continue to assist and participate in failure investigations of pavement preservation treatments
- B. Provide expert testimony to support Caltrans in case of litigation
- C. Continue to conduct pavement reviews on new pavement preservation products and processes
- D. Continue to provide technical consultation such as help desk on pavement preservation

**Task 6: Promote Effective Pavement Preservation Practices**

- A. Continue to transfer technology through newsletters, research notes, technical briefs, and fact sheets.
- B. Update the Center booth for Caltrans on pavement preservation for display at pavement conferences and workshops.
- C. Continue to promote effective pavement preservation practices using the various publications such as newsletters, reports, technical memo, briefs, and papers. Continue work with the Caltrans public relations group to promote the benefits of pavement preservation to the public.
- D. Update and maintain the Center website on pavement preservation.