IN THIS ISSUE:

41st Annual Rocky Mt. Asphalt Conference Highlights

Warm Mix Asphalt Update

20th Annual “Best in Colorado: Asphalt Awards

2014 Colorado Asphalt Hall of Fame Inductees
The Colorado Asphalt Pavement “Best in Colorado” Quality Awards are presented annually to recognize the quality efforts of asphalt producers, contractors and agencies/owners in the State of Colorado. For the 20th Annual Awards Program, 42 projects were nominated for awards and 13 of them were recognized as “Best in Colorado” in a variety of categories. Nominations are judged on overall quality and smoothness. The awards dinner was held in conjunction with the 41st Annual Rocky Mountain Asphalt Conference and Equipment Show at the Crowne Plaza – DIA on February 19, 2014.

We would like to thank our Award Judges. Maintaining the integrity of our award selection process is critical for the success and credibility of our awards program. In addition to the award criteria, the selection of award judges is crucial. We had an excellent team of judges this year. We thank each you for your service, all the miles you traveled and your commitment to advancing the quality of asphalt pavements in Colorado.

Left to Right: Bill Caires - Cesare Inc., Ralph Mason—City of Cherry Hills Village, Masoud Ghaeli—CDOT Region 1, Paul Wells - SEH Inc, Jim Brady - E-470 Public Highway Authority
In 2002, CDOT began to monitor the quality of plant produced asphalt materials from each supplier. The goal with this effort is to identify and acknowledge the asphalt producer who most consistently meets specification requirements. There are two categories for the award. The first is for those producing less than 100,000 tons but greater than 20,000 tons. The second is for those producing more than 100,000 tons of asphalt for CDOT. In 2013, there was approximately 1.2 million tons of asphalt materials placed by contractors on state highways. 8 contractors were evaluated in the 20,000 tons to 100,000 tons category and 6 contractors were evaluated in the greater than 100,000 tons category.

CDOT evaluates project test results and rank all producers. Results are reviewed for the tests of percent asphalt binder, percent air voids, Voids in the Mineral Aggregate, Stability, and Lottman. Suppliers with the highest percentage of passing test results receive the highest rating.

**2013 BEST IN COLORADO**

**2013 CDOT QUALITY IN ASPHALT PRODUCTION AWARDS**

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**CATEGORY I – 20,000 TONS TO 100,000 TONS**

Left to Right: Dan Borata Schmidt Construction Co., Scott McDaniel CDOT, Rueben Roberts Schmidt Construction Co.

**CATEGORY II – GREATER THAN 100,000 TONS**

Left to Right: Alex Baca, Bill Whitaker Kiewit Infrastructure; Scott McDaniel, CDOT, Jeremy Havens, Dan Leone Kiewit Infrastructure

**CATEGORY I RUNNER UP**

**CATEGORY II RUNNER UP**
The “Best in Colorado” Smoothest Asphalt Paving Awards. In cooperation with CAPA, this award was restructured to recognize the smoothest paving in each of the three roadway smoothness specification categories. The awards are based on project measured roadway profile using the CDOT HRI specification requirements and all asphalt paving projects for CDOT were considered for the award.

**SMOKEHEST PAVEMENT CATEGORY I – URBAN RECONSTRUCTION**

**WINNER:** US 160 MONTE VISTA PASSING LANES  
**CONTRACTOR:** APC SOUTHERN CONSTRUCTION CO.  
**CDOT REGION 5**

There were 23 projects considered in this category.  

The Project consisted of roadway widening and paving of 4” of HMA. This project utilized approximately 39,000 tons of Grading SX material. This project had an average HRI of 39.5

**WINNER:** US 50 LA JUNTA  
**PAVING CONTRACTOR:** MARTIN MARIETTA MATERIALS SOUTHERN  
**CDOT REGION 3**

There were 14 projects considered in this category.  

This project consisted of 6.2 miles of 4 inch rotomilling and 4 inches of HMA. This project utilized approximately 50,000 tons of Grading SX material. This project had an average HRI of 36.1.

**WINNER:** I-70 EAGLE TO WOLCOTT  
**PAVING CONTRACTOR:** UNITED COMPANIES OF MESA COUNTY  
**CDOT REGION 2**

This Project was located between Eagle and Wolcott on I-70.  

This project utilized approximately 47,000 tons of Grading SX material. This project had an average HRI of 43.0.
This project was constructed within the limits of the state park and impressed the judges with its near-perfect longitudinal and transverse joints as well as its excellent ride quality and appearance. Challenges were presented by changing-radius curves, lack of access, and bicycle traffic best described as “un-cooperative” kept the construction team on their toes, but they still managed to complete paving operations on this project that included resurfacing, road realignment, and the addition of bike lanes constructed with over 7000 tons of asphalt materials in 11 days.

Rocky Mountain Materials and Asphalt worked seven days a week and paved through several nights in order to complete this fast-track project the day before the airport’s first snowfall. Taxi lane paving was performed in Echelon in order to minimize the number of saw-cut joints while maintaining exacting elevation tolerances. This project consisted of 32,000 sq yds of roto milling and asphalt overlay of the west edge taxi lane and 15,000 of base course and asphalt for the east side fuel service road. A total of 17,000 tons of asphalt was placed on this project. The judges gave this project very, very high marks in every category, but they agreed its ride quality deserved a perfect “10”.
This night paving project was completed in four phases over 27 months and was reliant on the bridge construction to replace the “Bronco” Bridge. The paving had to be scheduled around Broncos, Avalanche, Nuggets and Rockies games as well as many other events at the Pepsi Center, Coors field and Sports Authority Field at Mile High. Another challenge was maintaining a two inch or less variance in pavement depth between lanes during construction. They placed leveling courses which varied in thickness from ½ inch to one foot. Martin Marietta Materials had the road way profiled, and milled prior to placing the top lift in an attempt to meet the stringent smoothness standards were met without having to mill the SMA top lift.

This project consisted of 40,329 sy or 5.0 lane miles of edge milling to bring the paving surface to top of curb elevations and 360,000 SY or 51 lane miles of sealing, patching, sweeping, and cape-sealing residential streets in the Highlands Ranch and Roxborough Village Subdivisions. The judges noted that this project benefited from very uniform placement and aggregate distribution, almost no overspray, and neat, straight longitudinal joints, making this project the best Preventive Maintenance Surface Seal Treatment in Colorado this year.

**CATEGORY: PREVENTIVE MAINTENANCE SURFACE TREATMENT**

**PROJECT: JILL AVENUE SURFACE TREATMENT PROJECT**

**CONTRACTOR: FOOTHILLS PAVING AND MAINTENANCE**

**OWNER/AGENCY: DOUGLAS COUNTY**

Left to Right: Pete George, Brian Schultz, Douglas County, Jim Horn, Oscar Cortez, Heath Russo, Foothills Paving and Maintenance
Bus Rapid Transit was a major factor in the design of this project, which will soon handle over 100 busses a day. These 15% overweight behemoths will be carried by a Vance Brothers-installed glassgrid system which allowed a thinner, more economical pavement section. Martin Marietta Materials, Northern achieved the highest score possible – a perfect 10 – for the exemplary longitudinal joints on this nearly perfect project.
This project consisted of heater scarification of 1" with a 1 ½" overlay in a continuous process on a 2 mile section of minor collector. The project received excellent scores for joint quality, ride, segregation, and appearance. Cutler was the in-place recycling contractor and the asphalt material was produced by Brannan Sand & Gravel.

HONORABLE MENTION
POWERS BOULEVARD OVERLAY, PROBY PARKWAY TO WOODMAN ROAD
CONTRACTOR: ROCKY MT. MATERIALS & ASPHALT
OWNER/AGENCY: CDOT REGION 2

ASPHALT FACTS

PERPETUAL PAVEMENTS
Only asphalt can be the Perpetual Pavement, A Pavement that lasts indefinitely.

RECYCLING COST EFFECTIVENESS
American taxpayers save over $1.5 Billion per year by recycling asphalt. The asphalt industry is the country’s number one recycler.

SMOOTH ROADS
When trucks travel on smoother roads, they use 4.5% less fuel. Imagine how much fuel the USA could save if all the roads were smooth, durable asphalt.
Clear Creek County’s decision to change five miles of this project from the original design to full depth reclamation showed their commitment to a quality project; ESCO Construction did the grading and prep work and ARS did the full depth reclamation, and Martin Marietta Materials the paving. They carried that commitment to quality through the end of this project which the judges complimented for its overall appearance, ride quality, and excellent joints. This project consisted of nearly 30,000 tons of asphalt materials: 5 miles of full depth reclamation with a 3” Grading S lower mat and a 2” Grading SX top mat … and 2 miles of 1” Grading SX leveling and 2” Grading SX overlay.

Good smooth tie-ins, excellent transverse joints, no segregation, and an excellent overall appearance characterized this project that consisted of pulverizing existing Chipseal, 6” of aggregate base, adjustment to the vertical alignment, culverts and inlets, and 6” of new asphalt and shouldering. Approximately 8,000 tons total. Schmidt Construction should be exceptionally proud of the high quality marks given by the Award Judges.
20TH ANNUAL “BEST IN COLORADO” AWARDS DINNER & PROGRAM

CAPA President Gregg Rippy of Grand River Construction Co.

Left to right, CDOT Acting Chief Engineer Scott McDaniel; Regional Transportation Directors – Johnny Olson – Region 4; Myron Hora – Region 4 (Interim); Tony DeVito – Region 1; Kerrie Neet – Region 5; Dave Eller – Region 3.

Left to right, Darren Gebhart – McAtee Construction; Ed Wells – Con nell Resources; Randy West – NCAT; Scott Shuler – Colorado State University.

CAPA dinner guests with music from our band.

Award Winner Bob Tews of Martin Marietta Materials.

Left to right, Duaine Covert – Roadtrac Inc.; Roger Sandberg – Maxam Equipment; Tom Peterson – CAPA.
1st Past President Jimmy Marvel (right) is recognized by Gregg Rippy for his service to CAPA.
Coulson Excavating Company Inc. was founded in 1948 by Bill and Ramona Coulson in Loveland, Colorado. They began Coulson Excavating as a land leveling contractor. When Coulson Excavating was founded, Dick was a mere 11 years old. Dick was privileged to be an early employee of Coulson Excavating. The company grew rapidly over the first few years and became a full service earth moving and utility contractor. Dick became a full time employee in the spring of 1955 after graduating from high school.

Early in his career he was as a laborer and operator. As with most operators he had a favorite piece of equipment. Dick was partial to the motor grader.

In 1974 the company expanded one more time adding an asphalt division to the company’s scope of operations. Dick was the first asphalt plant operator. The office operations of estimating and financial management brought Dick inside in 1975. After many years in the construction industry and working his way through many if not all of the jobs within the company, Dick eventually became President. Dick was part of the founding members and was instrumental in the formation of CAPA.

Even though he was running the business on a day to day basis he never lost the love of being out on the job. To this day, in partial retirement, you can find Dick driving around to every job to check in with the guys and to check on the projects.

Since their inception Coulson Excavating has been involved in many notable projects around Northern Colorado. This includes rebuilding the Big Thompson Canyon, not only the most recent rebuilding in 2013, but was also instrumental in the re-construction after the flooding in 1976. Coulson Excavating has received numerous “Quality in Construction” awards.
In the late 1940’s John H. Keller came to Colorado to work as a subcontractor on the Big Thompson project. He met a local man who was selling his gravel and a small asphalt plant business. John bought the company and started building roads and parking lots.

In 1955, he started Asphalt Paving Co. The company consisted of about fifteen employees and took on small, local paving jobs. John’s son, Bill was involved in the business from 1958 on.

In 1968 Bill struck out on his own, creating Keller Construction Co., which focused on structures, curbs, gutter and sidewalks. Bill’s new company operated independently but often subcontracted Asphalt Paving Co. as needed.

John retired in 1970, at which point Bill purchased some of the company’s assets as well as the company name, becoming President of the new Asphalt Paving Co. By 1974 Bill had invested heavily in the business, buying a larger asphalt plant. Upgrading the company’s existing equipment and rebuilding their fleet of trucks.

Over the next 30 years, the company flourished under Bill’s vision and leadership. The business depended on its resources. In 1975 Bill successfully started a new aggregate quarry located just north of Golden. The addition of the quarry truly put Asphalt Paving Co. on the map.

In 1979 the company added its first portable asphalt plant. Bill Keller and Asphalt Paving Company were instrumental in the formation of the Colorado Asphalt Pavement Association. As a relatively small, three-generation business, the company has always thought of its staff as family. By using the best materials and maintaining the highest standards of workmanship, the company has become a nationally recognized quality award winner.

Asphalt Paving Co. has received numerous local and national awards for its dedication to quality work, workforce development, compliance to stringent safety standards, integrity and innovation. Still, Jeff Keller considers the company lucky. “We’ve been very fortunate that we have the people, the resources and the equipment to compete on small jobs as well as extremely large ones.” That kind of diversity keeps the company thriving year after year. What he is truly thankful for, though, is the dedication and dedication of his father, Bill, without whom, Asphalt Paving Co. would not be what it is today.

Though the technologies and specifications may change, Jeff Keller sees Asphalt Paving Co. continuing on in the future much the same way it was shaped by his father: with an ongoing dedication to quality, safety and productivity.
Paul was born in New Castle, Colorado, in 1926. He spent his childhood years on the family ranch on Garfield Creek. As a young boy he spent his summers operating his father Elzie’s combine on neighboring ranches.

Paul finished High School in New Castle at the age of 16, then went to New Mexico Military Institute to get enough years under his belt to go to college. He then attended Arizona State Teachers College (now Northern Arizona University) in Flagstaff as part of the Navy’s V-12 training program. He finished his higher education at Colorado State University.

Following his discharge from the Navy he returned to New Castle where his father was just beginning a construction company, E.J. Rippy & Sons. Paul took over most the office and estimating duties for the growing company.

In 1948 he married Marilyn Jo Adriance and they remained married until her death in 2013.

The company grew using Army surplus equipment and completed many significant projects in Colorado as well as Utah and New Mexico. Projects included Lizard Head Pass, DeBeque Canyon and Redstone Canyon.

He incorporated his training and passion for flying with the business and flew weekly to the far flung projects. In 1963, Elzie decided to retire and the company disbanded. Paul’s brother, Adair, formed Rippy Construction and continued in Heavy Highway construction, while Paul founded Grand River Construction in Glenwood Springs as a small Utility Contractor.

In 1967 Paul bought a paving operation from GMCO and focused mainly on asphalt paving. Grand River took on paving projects from Douglass Pass to Gunnison to Camp Hale and Leadville. As the Glenwood Canyon construction started in the late 70’s, Grand River performed the asphalt paving for a majority of the multiple projects it took to finish the Canyon.

His sons Gregg and John grew up in the paving business and when he decided to retire in 1996, they bought the company from him and continue it today. Grand River Construction was the first western slope producer member of CAPA.
Warm mix asphalt (WMA) provides a means to reduce the carbon footprint of both highway agencies and the asphalt industry. WMA refers to a group of technologies that allows asphalt mixtures to be produced and placed at lower temperatures. Through the application of chemical and/or mechanical means, liquid asphalt is made more workable at reduced temperatures. This reduces the amount of fuel used to produce the mixtures as well as the emissions originating from production and placement.

According to the January/February 2012 Asphalt Pavement Magazine, 47 state departments of transportation (DOTs) and all Federal Land offices have specifications or contract language in place allowing the use of WMA. Twenty states have actually set targets for WMA implementation. In 2010, contractors produced 47 million tons of WMA which resulted in an estimated fuel savings of 30 million gallons worth about $80 million.

Reducing the production temperature of asphalt mixtures was originally proposed in Germany in the late 1990s as a way of reducing fumes generated from asphalt mix production. The National Asphalt Pavement Association (NAPA) became aware of European efforts and sponsored a scanning tour for U.S. asphalt mixture producers in 2002. By 2004, contractors demonstrated the first domestic production of WMA at a paving demonstration at the World of Asphalt trade show in Nashville, TN. In 2005, the National Center for Asphalt Technology (NCAT) initiated research into warm mix asphalt technologies in partnership with FHWA, NAPA, and three warm mix technology providers operating in the U.S.

Thirty different processes and products to manufacture WMA in the U.S. are roughly divided into three categories:

- Chemical additives
- Plant foaming devices
- Material foaming processes

Chemical additives can be divided into two classes: organic (long-chain waxes) and surfactants. Long-chain waxes lower the viscosity of the asphalt binder at working temperatures and then harden at service temperatures. While some of these materials have been employed as compaction aids for hot mix asphalt, they are also effective at lowering temperatures and enabling an energy savings in production. Surfactants lower the surface tension of the liquid binder, improving its ability to coat and compact at lower temperatures. Production and placement temperatures may be lowered by as much as 80°F. Although chemical additives do not require large capital investments in general, the unit material costs are increased when using chemical additives.

Plant foaming devices are systems that can be mounted on batch and continuous plants. These devices inject a small amount of water (1 to 3 percent by weight) into the asphalt binder before it is introduced to the aggregate. These technologies are the most popular warm mix technologies. As water comes into contact with the hot asphalt binder in an expansion chamber, it vaporizes and expands to about 1,700 times its liquid volume, causing the binder to expand by five to ten percent. This increase in volume reduces the viscosity of the liquid binder and allows more thorough coating of the aggregate particles. Production temperatures for mechanical foaming systems range from 250 to 275°F, though contractors have benefitted from using foaming systems at higher temperatures. The financial benefit of plant foaming systems to other WMA technologies is that they are a one-time capital cost to the plant owner.

Material foaming processes use either moist sand or zeolite, a water-bearing mineral, to foam the asphalt binder as it is mixed. These processes use the same principle of volume expansion that plant foaming systems use. In this process, hot asphalt and coarse aggregate are combined before a sand fraction containing a carefully controlled amount of moisture is added, causing expansion of the binder. A coating additive is employed in the wet sand method. For zeolite, the mineral itself contains a small amount of water in its crystalline structure that is released at high temperatures. For these technologies, temperature reductions are on the order of 40 to 60°F. The wet sand method requires plant modifications as well as the use of an additive, while the zeolite method requires plant modifications to introduce the material and zeolite.

While these approaches have additional costs associated with them, contractors and agencies have identified a number of advantages in using them. According to NAPA publication QIP 125, Warm Mix Asphalt: Best Practices, these advantages include:

Adoption of WMA is occurring at a rate that will soon make it the standard way of producing asphalt mixtures.

By David E. Newcomb, P.E., Ph.D.
1. Compaction aid
2. Cold-weather paving
3. Longer haul distances
4. Extended construction season
5. Use of higher percentages of reclaimed asphalt pavement (RAP)
6. More paving in emissions non-attainment areas
7. Specific plant concerns
8. Specific pavement rehabilitations
9. Reduced fuel usage
10. Reduced emissions
11. Improved occupational health conditions

The first three advantages are interrelated in that they result from the improved workability of the asphalt mix at lower temperatures. Contractors report that they have an easier time achieving density with WMA than regular hot mix asphalt. In addition, contractors are able to achieve a more consistent density. Consistent density is important when statistically-based construction specifications are used because the contractor is paid based on the mean density and also based on the density variability. Because the mixture does not cool as rapidly, the mix can be placed at colder temperatures or transported over a longer distance before it is placed. In some cases, haul distances of 60 to 80 miles have been reported with no problems in placement or compaction. Improved flexibility in selecting working conditions or site locations provides contractors with a competitive advantage.

Being able to incorporate higher percentages of RAP allows the contractor to maintain better price stability when asphalt prices increase. The use of 10 percent RAP reduces costs by about eight percent. Field trials of WMA in the U.S. have used between 20 and 50 percent RAP in WMA. This is much higher than the 10 to 30 percent normally used hot mix asphalt. A lower production temperature allows the increased RAP percentage because the virgin asphalt binder has not aged as much and is therefore able to interact better with the RAP binder and soften it.

Certain parts of the U.S. (large cities, for example) are designated as non-attainment areas, meaning that the levels of certain air pollutants are above threshold limits set by the Environmental Protection Agency (EPA). Such areas often operate under EPA restrictions in which pollution during peak hours of the day must be reduced. By producing warm mix asphalt, it is possible for contractors to manufacture mix during more hours of the day because less energy is being consumed and less pollution is generated.

Contractors and agencies often experience problems when a new layer of asphalt mix is placed over a pavement that has been treated with crack sealant. When the hot mix asphalt contacts the crack sealant, it expands and causes a bump in the pavement. Experiences in the states of Missouri, Texas, and Wisconsin have all shown that when the asphalt mix temperature is lowered to a temperature of around 240°F, the number and severity of bumps is drastically lowered.

The last three items listed previously are also interrelated. Reduced fuel usage is a consequence of reduced production temperatures. In general, contractors report an energy savings of between 15 and 77 percent, with an average energy savings of about 23 percent. However, in order to take full advantage of warm mix, it is best to ensure that aggregate moisture content is minimized prior to mixing because each additional percentage of water in the aggregate will increase fuel consumption by about 10 percent. While reduced fuel consumption results in less air pollution, it is critical that the plant burner is properly tuned so that unburned fuel does not inadvertently increase the amount of volatile organic compounds released.

Reduced temperatures at the paving site will lower the generation of emissions behind the paver and reduce the air temperature around the workers.

To further emphasize the importance of WMA to both the industry and agencies, FHWA has identified it as one of the five technologies to be highlighted as a part of its Every Day Counts (EDC) initiative. EDC was a 2010 initiative put forward by Victor Mendez, FHWA Administrator, in order to reduce the carbon footprint of FHWA, accelerate deployment of innovative technology, and accelerate project delivery. With 47 state DOTs and all Federal Land offices developing specifications or contract language which allow the use of WMA and 20 states having set targets for WMA implementation, the need to establish the long-term field performance of the material is critical.

The Texas A&M Transportation Institute (TTI) is currently involved in three national research projects on WMA. Drs. Amy Epps Martin and Dave Newcomb are heading up projects to assess the potential for moisture sensitivity, aging characteristics, and water foaming techniques used in manufacturing warm mix. All these projects involve the construction of field trials across the U.S. and evaluating the material’s properties. One project will be wrapping up in 2013, and the other two will end in 2014.

Warm mix asphalt is the future of flexible pavements in this country. The reduction in emissions and fuel consumption, and the ability to incorporate more RAP make it a more sustainable approach to manufacturing asphalt mixtures. Longer haul distances, longer construction seasons and cool weather paving provide greater flexibility for construction and project delivery. Better working conditions for workers means better morale and possibly, higher production for contractors. The industry and agencies are embracing these advantages and adopting WMA at a rate that will soon make it the standard way of producing asphalt mixtures.
Denis Donnelly was recognized for his many years of service to the Conference – left to right: Doug Martin - Cobitco; Denis Donnelly - retired; Larry Schneider - City of Ft. Collins; Tom Peterson - CAPA.

Raffle Prize Drawing Winner Troy Dickerson (center) with (left to right), Rick Johnson, Sally Damage, Larry Schneider, Doug Martin

Randy West - NCAT Director (far left) and staff discussing warm mix asphalt with Jim Huddleston, Oregon Asphalt Pavement Association (far right).

left to right: Grant Crusetturner - Brannan Sand & Gravel; Nicki Upright - CDOT; Johnny Olson - CDOT; Chris Hudson - Town of Parker.
new report from Arizona State University (ASU), "Unintended Consequences: A Research Synthesis Examining the Use of Reflective Pavements to Mitigate the Urban Heat Island Effect," calls into question many common assumptions about the ability of reflective pavements to mitigate UHI. A copy of the report can be downloaded from the CAPA home-page www.co-asphalt.com.

**Research Finds Unintended Consequences of Reflective Pavements**

Addressing the urban heat island effect (UHI) is a growing concern for many municipalities, but a

Warm-Mix Asphalt Wins NOVA Award

The National Asphalt Pavement Association (NAPA) has received the prestigious 2013 NOVA Award from the Construction Innovation Forum (CIF) for its work to speed the deployment and uptake of warm-mix asphalt. "NAPA is proud to accept this award on behalf of the asphalt pavement industry, warm-mix technology developers, and our partners at the Federal Highway Administration (FHWA) and state departments of transportation nationwide. The success of warm mix is due to cooperation and a willingness to innovate from road owners and builders alike," said NAPA President Mike Acott. In selecting warm mix to win a 2013 NOVA Award, the investigators cited its ability to improve compaction, reduce fuel or energy use, improve worker comfort, and lengthen the paving season.

**Rocky Mountain Asphalt Conference & Equipment Show – A Success**

Asphalt Pavement - The Road to Quality was the theme of the 41st Annual Rocky Mt. Asphalt Conference & Equipment Show held on February 19-21 that attracted 850 paid attendees and a total of 1,300 persons (paid attendees, speakers, students, exhibitors). Here are some conference highlights.

- 54 attendees completed the Certificate of Training Program for either the materials track, maintenance track, or equipment operator track.
- The asphalt plant tour and CDOT Asphalt Lab tour were well received and attended.
- Approximately 600 attendees participated in both the opening general session and the closing general session.
- We are already making plans for next year. If you have any suggestions on what to include or how to make it better, contact Tom Peterson at (303) 229-6710.

**Conference Best Session - Understanding the Interactive Weather Radar**

One of the most well attended sessions and most liked was the one presented by Mike Nelson, 7News Chief Meteorologist, KMGH-TV / KZCO-LD at KMGH-TV (Channel 7). Mr. Nelson did a great job explaining to paving personnel meteorology and understanding weather patterns in Colorado. His presentation is available as a download from the conference website at www.rmaces.org.

**NAPA & NCAT Combine to Lead National Research Efforts on Asphalt Pavements**

One of the highlights of recent NAPA Annual Meeting was the unveiling of the industry’s new coordinated national research and customer focus efforts. The program builds on a wide range of scientific and engineering research, and a solid understanding of what drivers want from a pavement. The end focus is on the high performance attributes of asphalt pavements that ensure a consistent level of drivability. These research efforts including optimizing flexible pavement design, warm mix asphalt, speed of construction, thin lift overlays, were outlined in a booklet entitled Research Project Summary and distributed at the meeting. Copies of the report are available from the CAPA office by contacting office@co-asphalt.com.

**Full House (Lab!) for Asphalt Education at CSU – Construction Management**

The Spring, 2014, Asphalt class at CSU (CON 370) is full!! There are 22 students (17 construction management students and 5 civil engineering students) in the class taught by Dr. Scott Shuler with the lab taught in the CAPA Asphalt Lab taught by Kevin Jones. The class is a junior level course focused on asphalt materials and construction For more information, contact Dr. Scott Shuler at (720) 289-2153.

**Warm-Mix Asphalt Use Reaches New Heights**

The latest national survey of asphalt producers’ use of recycled materials and warm-mix asphalt finds nearly a quarter of all asphalt produced during the 2012 construction season was made using warm-mix asphalt technologies.

The survey, conducted by NAPA under contract to FHWA, found production totaled 86.7 million tons of WMA in 2012. This is a 26 percent increase since 2011 and a 416 percent increase in the use of warm mix since the survey was first conducted in 2009.

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**ASPHALT Q & A:**

*Do you have an asphalt related question? Ask Asphalt Man!*

Recent questions now posted on the CAPA website (Resources Section) www.co-asphalt.com