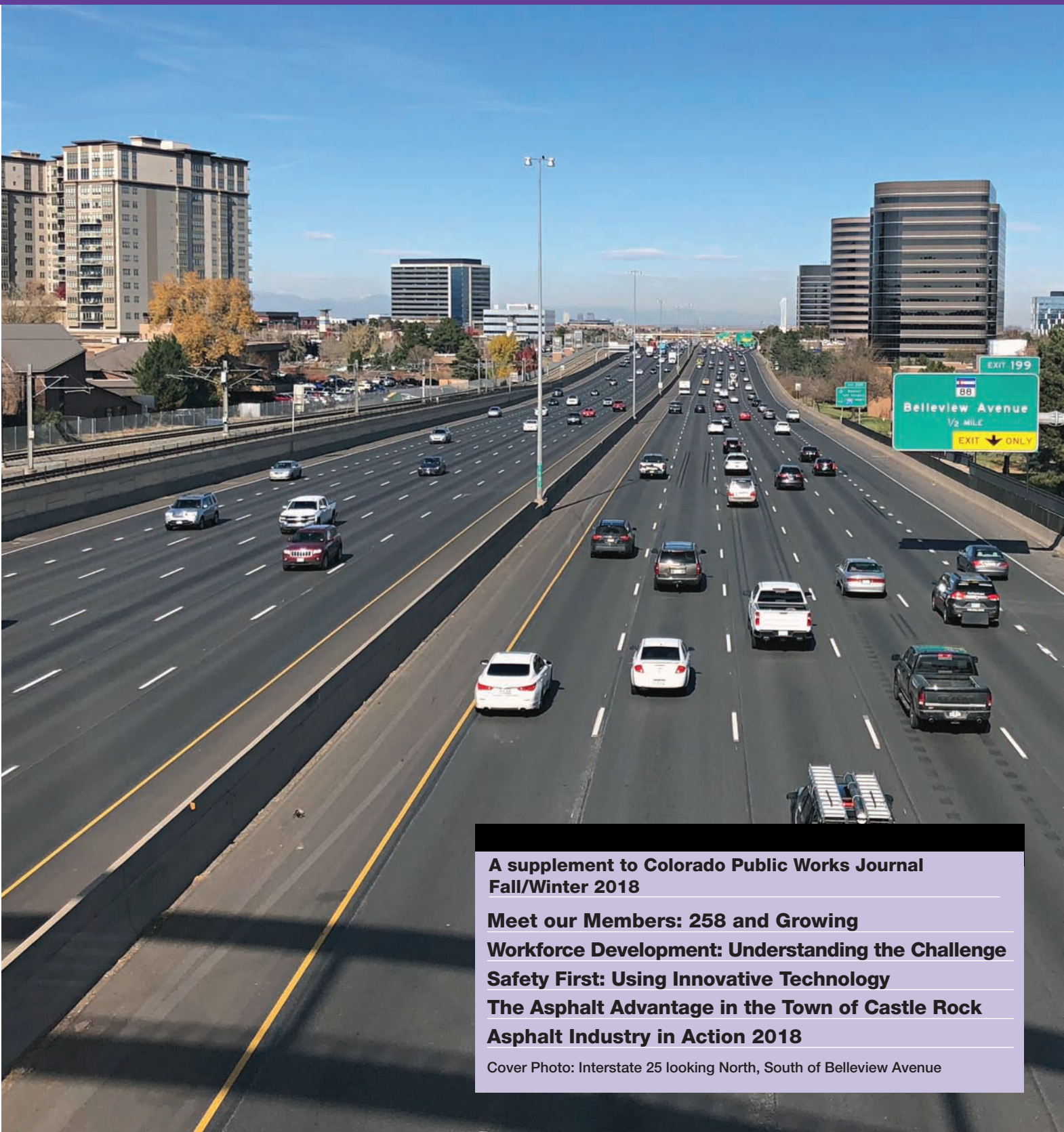


# THE ROAD AHEAD



Fall 2018



**A supplement to Colorado Public Works Journal  
Fall/Winter 2018**

**Meet our Members: 258 and Growing**

**Workforce Development: Understanding the Challenge**

**Safety First: Using Innovative Technology**

**The Asphalt Advantage in the Town of Castle Rock**

**Asphalt Industry in Action 2018**

Cover Photo: Interstate 25 looking North, South of Belleview Avenue



# Introduction



Tom Peterson

## Welcome to *THE Road Ahead!*

Welcome to the Fall 2018 issue of *THE Road Ahead* – CAPA’s news magazine that is published twice per year (Spring and Fall) as an insert into the Colorado Public Works Journal. As an industry, we are clearly disappointed with the failure of Proposition 110 - sales tax for transportation. It is clear that Colorado needs a sustainable funding source for transportation and the construction industry invested heavily into Proposition 110 through the Let’s Go Colorado Campaign. Our attitude was, “hope for the best but prepare for the worst.” With that in mind, win or lose, the mission of CAPA, TO ADVANCE THE USE AND QUALITY OF ASPHALT PAVEMENT IN COLORADO will remain, and we will continue to be a resource and partner to agencies throughout

Colorado. As 2018 comes to a close, we reflect back on some of the accomplishments and new developments of the year and look forward to the coming year.

Let us know how we can be of assistance and support.



Thomas Peterson, P.E.  
Executive Director, Colorado Asphalt Pavement Association  
tompeter@co-asphalt.com  
(303) 741-6150 x 152

## Asphalt Lunch & Learns: A Great Way to Prepare for 2019

The CAPA Asphalt Lunch & Learn training is a “No Cost” service provided to member companies and affiliate agencies that provides training on the latest information, technology, and applications for asphalt pavements.

Presentations are tailored to meet your needs. Generally, sessions last 1 to 1.5 hours depending on the information requested. Sessions can take place at any time of day – whatever is convenient for you and your colleagues. These sessions are typically at your place of business or at a designated location of your choice, or we can host the session in our training center. Presenters can include Mike Skinner, P.E., CAPA Director of Engineering and / or Tom Clayton, SET, CAPA Director of Training.

Review the list of topics we offer, contact us and we will schedule your session. PDH/GEU’s are available. If you find yourself asking these or any other questions related to asphalt, we have just what you and your organization need - CAPA’s Lunch & Learn Series.

Topic for consideration may include any of these or topics you have come up with for discussion.

### ASPHALT PAVEMENT TOPICS

- Design Considerations
- Mix Specs, Methods & Quality Control
- Maintenance – pothole patch, infrared repairs
- Inspection
- Warm-Mix Asphalt
- Thin Overlays
- Pavement Forensics



- Porous Asphalt
- Life Cycle Cost Analysis
- Pavement Management and preservation
- Question/Answer Forum

### KEEPING UP WITH ASPHALT PAVEMENTS

- What is Warm Mix Asphalt?
- What ‘best practices’ should be followed for contracting and bid document requirements?
- Is there information on the performance of asphalt?
- What specs should I use?
- What’s new in asphalt technology?
- What are the current rehabilitation options?

Contact Tom Clayton, CAPA Director of Training at (303) 741-6150 ext 151 or via e-mail at tomclayton@co-asphalt.com to schedule a session or to learn more information about this program. A letter of education may be issued upon completion of seminar at the request of the attendees who need PDH or CEU documentation.



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## AFFILIATE AGENCY MEMBERS

CAPA has an Affiliate-Agency Member List that includes 78 city, county, town and other government agencies (including the E-470 Public Highway Authority and the Northwest Parkway Public Highway Authority) that have joined to benefit from training and education, technical assistance, and specification development.

## NEW AGENCY MEMBERS IN 2018

Town of Mead, City of La Junta, City of Gunnison

## ASPHALT PRODUCER & SUPPLIER MEMBERS



## INDUSTRY NEWS

### 2019 Rocky Mountain Asphalt Conference & Equipment Show February 27- March 1, 2019



**“Asphalt A,B, C’s: Education, Technology, Leadership”** is the theme of the 46th Annual Rocky Mt. Asphalt Conference & Equipment Show planned for February 27 – March 1, 2019 at the Crowne Plaza DIA. The three day event includes a 60,000 square foot trade show, 24 breakout sessions on engineering, materials, construction, maintenance, and leadership of asphalt pavements and 21 educational sessions on the fundamentals of materials, maintenance, and equipment operation. An expanded feature for 2019 will be a focus on Innovations in Technology with an emphasis on paving and rolling equipment, maintenance operations, and materials testing. There is something for everyone! Registration is open for attendees and exhibitors at [www.rmaces.org](http://www.rmaces.org)

**Don’t Miss the Women in Asphalt breakout session, planned for Wednesday, February 27, from 3:30pm – 4:45pm.**



Join us on Friday, March 1, 2019 for “Bring Your Kids to Work Day.” The day is geared to bring that future asphalt industry professional to the conference to learn more about the industry and career opportunities.



**“THE SMOOTHER THE PAVEMENT, THE LOWER A VEHICLE’S FUEL CONSUMPTION.”**

### Asphalt Fact #25:

A study by the FHWA found that smoother pavements can reduce fuel consumption by trucks by up to 4.5%. For more information, visit [www.asphaltroads.com](http://www.asphaltroads.com)

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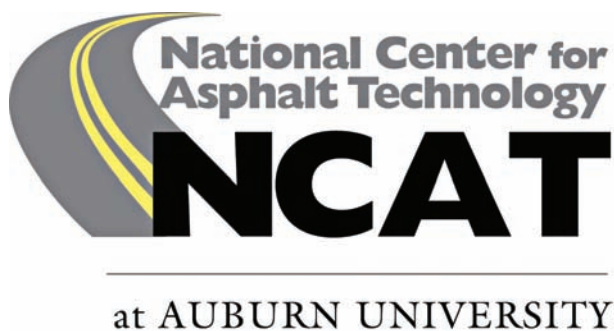
## Materials & Geotechnical Engineering



## INDUSTRY NEWS

# CAPA President Added to National Task Force on Workforce Development - Strategic Plan to be Developed

Dave Lemesany, Vice President – Asphalt & Paving, Martin Marietta and the 2018 – 2019 President of the CAPA Board of Directors, has been added by the National Asphalt Pavement Association (NAPA) to an industry Task Force to develop a Workforce Development Strategic Plan. A meeting of industry leaders from across the country is being planned for later this year in Washington D.C. “Finding and retaining our work force for the future is critical for our industry – both in Colorado and nationally. Sharing best practices and developing an industry plan will help our members and CAPA is committed to supporting NAPA in developing national guidance,” Lemesany stated. It is expected that a plan will be developed and available in mid-2019.



## What is World of Asphalt?

Indianapolis, Indiana welcomes the World of Asphalt Show & Conference and co-located AGG1 Aggregates Academy & Expo February 12-14, 2019. Over 450 of the industry's leading manufacturers and service providers in the aggregate, asphalt, pavement maintenance, and traffic safety industry sectors come together at World of Asphalt to showcase their latest products and technologies. National Asphalt Pavement Association's People, Plants & Paving Conference takes place at the show making it the ideal spot to train your team.

World of Asphalt is recognized as a 'Fastest 50' trade show for demonstrating the greatest percentage of growth show-to-show. World of Asphalt 2016 won for record gains in both attendance and exhibit space.

### AGG1 Co-Location

We are proud to partner with the AGG1 Aggregates Academy & Expo, which is the aggregate industry's leading exposition and educational resource for the 2019 World of Asphalt Show. AGG1 Aggregates Academy & Expo provides our attendees with signature learning programs such as the AGG1 Academy.



## ASPHALT Webinars 2019

Asphalt 2019 Webinars are being developed. The selection of training and information opportunities will be diverse and robust. We will hold one or more session each month.

The webinars will begin with CAPA Executive Director, Tom Peterson providing an industry outlook and Association preview for 2019 and beyond. Other topics to be included will be Placement and compaction of APM, Wide crack repair, Asset Management and Maintenance treatments. Look for a final list of webinars in December 2018



## INDUSTRY NEWS

# Safety First Using Innovative Technology

We are all aware that working on our local roads or on the Interstate highways has become more dangerous than ever. There are too many distractions which cause drivers to lose focus, especially in a work zone. One problem which is becoming ever more evident is when driver get in a slow down in a work zone, many feel it is time to check in on their social media, read and answer text messages or e-mails. The reality is those drivers should be paying o more attention to the changing conditions in a work zone and are paying less attention.

There are several efforts underway currently to increase the work zone safety. One of those is a product which will tell drivers they are approaching a work zone and it will give them alternate routes around the work taking place. This is a new system called "iCone work zone management system". The iCone system is currently being implemented by the Colorado Department of Transportation through the "Ways" system. How does it work? The iCone System can quickly provide information about your work zone. Reports are immediately available that provide, for example, the location of the end of the queue, travel time through the work zone, speeds at the taper, or speeds at another location where worker or motorist safety may be a concern. The iCone system is pre-programmed to collect these and other metrics.

More information is available from Colorado Barricade Co. (<https://coloradobarricade.com/>) or at iCone Products <http://iconeproducts.com/>.



Flagger manning the AWARE System, on Highway 133 near Paonia, for United Companies.

Another innovative safety system is the AWARE System. This is a product being developed by CHR group companies. IN Colorado the CRHG Group companies in roadway construction are United Companies and Four Corners Materials. This is a system designed to work with and protect persons working a construction work zone. It's an unfortunate fact that vehicle intrusions are one of the leading causes of death in the road construction industry, resulting in tens of thousands of work zone crashes and hundreds of fatalities each year. The National Highway Transportation and Safety Administration estimates that 80 percent of all accidents are due to distracted drivers, looking away from the road to check a text (4.6 seconds), change the radio station (2 seconds) or search for a dropped cell phone (10+ seconds). All while their vehicles travel the length of a football field every 3.7 seconds. It takes 6 seconds for a worker to run five lane widths—more than enough to avoid an oncoming vehicle. The AWARE system, which stands for Advanced Warning And Risk Evasion, tracks traffic and crew members within a work zone and sounds alarms and alerts both to drivers and to workers at risk of a collision.



# INDUSTRY NEWS

The system has been under development since 2013 and is based on military technology in detecting an intrusion into a work zone. There have been several evolutions of the product with the current system being a self-contained flagger station and sensors on each piece of equipment designated and warning alarms on each employee in the work zone.

The system has many components, the system includes one or more sensors, a GPS-based alert unit for the worker, several threat deterrents, and a base station app for iPhone and iPad.

The sensors use radar to track the position and trajectory of vehicles within a range of up to 600 feet. When a vehicle is about to enter the workzone—when the sensor detects it as a threat—the sensor triggers audio and visual warnings for the driving public and individual alerts for workers who might be in harm’s way via their GPS-based units. The system will also begin recording video with an onboard camera for use in accident investigations, if necessary.

Today, there are two different types of solutions within the AWARE system. One is a freestanding cart to set up by the flagger and the other is dedicated to safety in the work zone.

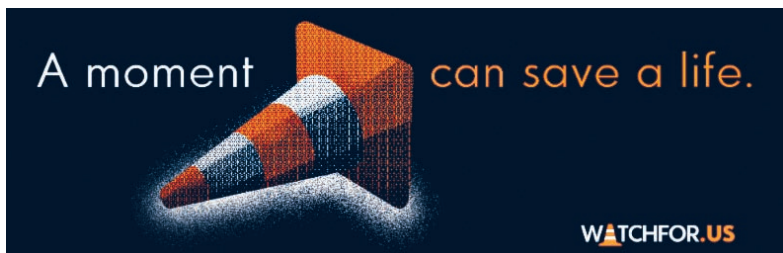
The system can be used for several applications, from line striping and traffic control setup, to multi-lane construction, flagger safety or lone-worker scenarios like road maintenance and sign placement.

During the 2018 construction season, CAPA Member and CRH group company United Companies based in Grand Junction had the system on 2 projects. There were no incidents in the work zone on either project as the system worked as designed.

Currently this AWARE system is only available to CRH Group companies, it is reported they plan on sharing the technology throughout the industry in 2019 and beyond.



A traffic control person in the work zone with the 'AWARE' notification device on his safety vest. This works with the flagger station on either end of the project.





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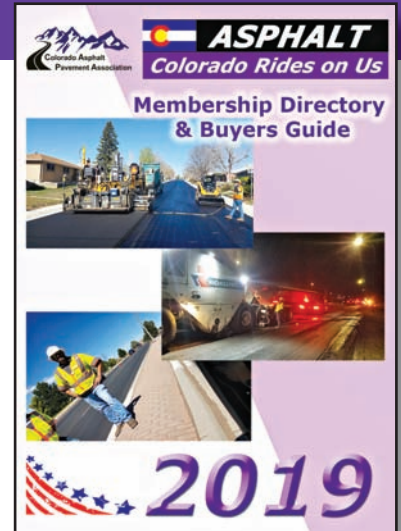
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## Ask Asphalt Man!!

A popular feature of the CAPA e-newsletter (In Front of the Paver) is a Q/A on related issues with ASPHALT MAN!! If Asphalt Man doesn't know the answer to your question, he will find out.

Check out the resource section of the CAPA website for a complete library of Q/A with ASPHALT MAN. To ask your question, e-mail to: [info@co-asphalt.com](mailto:info@co-asphalt.com)



### QUESTION: Which application is the best for Wide Crack Repairs?

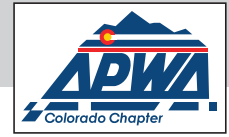
**ANSWER:** One of the first things which needs to be discovered is what is the definition of a wide crack. The purpose of crack sealing and crack repair is to prevent the intrusion of water to the base. Crack Sealing shall be applicable for cracks  $\frac{1}{2}$  inch to 1 inch. Crack Repair not crack sealing shall be considered for any cracks over 1 inch wide that may or may not exhibit edge deterioration. Areas where "alligator" cracking has occurred SHOULD be repaired rather than crack seal placed. There is much debate as to what procedure is best for repairing a wide crack in an asphalt pavement. If you ask 5 different people, it is likely you will get 5 different answers for what is the best process. There are many different processes available to use when considering repairing a wide crack. They can be as simple as using an appropriate mastic material to more intricate methods involving additional workmanship and materials. No matter what process is ultimately chosen, it is important to use "Best" construction practices when preparing or executing the plan.

**Materials:** Materials used for crack sealing shall meet ASTM or AASHTO specifications and be suitable for local climatic and elevations.

**Equipment:** All equipment shall be in good working order, free of leaks and appropriate for the material being utilized (IE: direct fire, or standard hot pour). Cold Pour materials MAY be effective, however hot pour materials will potentially provide a longer life for the crack seal materials. Hot pour materials will provide superior longevity based on environmental conditions, traffic patterns and design.

**Application of the sealant or repair material shall take place only when the pavement temperature is 45 degrees F and rising and the pavement is free of moisture. If sealing is scheduled during or near the end of winter months, the contractor should make all attempts to assure the cracks to be sealed are free of magnesium chloride or other related snow reduction chemicals.**

# APWA AWARD UPDATE



## CAPA Congratulates the 2018 APWA Award Recipients

The recipients of the 2018 Colorado APWA Awards were announced at the APWA Annual Conference in Arvada on 26th of October. All award recipients are highlighted in the Fall 2018 issue of the Colorado Public Works Journal. We would like to congratulate all of the nominees and we're especially proud of the numerous projects involving asphalt pavement, a few of which we have shown here.

Other projects receiving APWA Awards included: Town of Ridgeway, CO 62 and Downtown Ridgeway Enhancements; City of Colorado Springs, Centennial Boulevard Reconstruction Garden of the God to Fillmore; and Boulder County Transportation Department – 2017 Overlay Program Recycle in place.



TRANSPORTATION  
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**City of Commerce City Public Works Department - Commerce City 112th Avenue and Second Creek**



Disaster or emergency construction  
**MEDIUM COMMUNITY**

**CDOT Region 4 - US 34 Flood Recovery Project**



TRANSPORTATION  
**MEDIUM COMMUNITY**

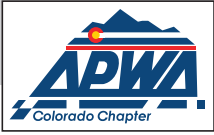
**Town of Castle Rock Public Works Department - Castle Rock 3rd & Perry Mini Roundabout Design**



TRANSPORTATION  
**LARGE COMMUNITY**

**City of Colorado Springs Engineering Department - Woodmen Road Corridor Improvement Project Phase 2**





## CAPA Congratulates the 2018 APWA Award Recipients

TRANSPORTATION  
**LARGE COMMUNITY**

**Boulder County Transportation Department - 95th Street Intersections**



TRANSPORTATION  
**Large COMMUNITY**

**Arapahoe County Public Works and Partners - I-25 and Arapahoe Road Interchange**



TRANSPORTATION  
**LARGE COMMUNITY**

**E-470 Public Highway Authority - E-470 Widening Project - Parker Road to Quincy Ave.**



TRANSPORTATION  
**LARGE COMMUNITY**

**Boulder County Transportation Department - 95th Street Intersections**



## INDUSTRY NEWS

# The Asphalt Advantage Success with Local Agency Capital Projects

**Mike Skinner, PE is the Director of Pavement Engineering for the Colorado Asphalt Pavement Association and recently sat down with Veronica Cid, PE, Public Works CIP Project Manager with the Town of Castle Rock to discuss the Town's successful 2018 Meadows Parkway Reconstruction project.**

### ***How did you end up with the Town of Castle Rock Public Works Engineering Division and what is your role as a CIP Project Manager?***

Before joining the Town of Castle Rock, I was a Public Works Project Engineer for ten years with Bernalillo County in Albuquerque, New Mexico. Prior to that, I was a consultant in Hawaii. When I came onboard in February 2018, my first project with the Town was Meadows Parkway (which started construction three months later). My role as a Public Works CIP Project Manager includes oversight of consultant or in-house design and oversight of construction.

### ***How extensive was the concrete pavement maintenance history for Meadows Parkway and how did that influence the Town's decision to reconstruct with asphalt?***

The existing concrete along Meadows Parkway was about 30 years old, was exhibiting distresses and poor ride quality and had reached the end of its design life. The Town evaluated reconstruction with concrete or asphalt and selected the

asphalt option for two reasons. First, the asphalt option was cheaper to construct and easier to maintain, we can simply mill the asphalt surface in the future and have practically a new road again. Second, the project was on a tight construction schedule and asphalt was more timely based on the phasing of the project. The asphalt is also much smoother than concrete.

### ***During development of the project, the Town of Castle Rock reached out to CAPA for Industry input with a Constructability Review. How helpful is that process in developing the scope of work?***

Industry input from contractors is very valuable, they can share a different perspective based on their experiences and expertise. It is a very useful process.

### ***What was the scope of the reconstruction project?***

Meadows Parkway is a four-lane divided major arterial roadway and serves as a primary route into The Meadows (one of the Town's largest neighborhoods). This \$2.2M project involved removal of over half mile of existing concrete and reconstructing with 11 inches of asphalt pavement. The contractor was required that one lane of traffic had to be maintained in each direction at all times. The project could not begin until after schools were out for the summer and had to be completed by August 11th which created a tight construction window.





## INDUSTRY NEWS

We did run into a few project hiccups during construction. First, we found very soft wet subgrade in select areas which required 5% CTS chemical stabilization. We also had a very wet summer and it rained almost every other day, requiring the contractor to phase the work so not all the subgrade would be exposed. However, ultimately the project was completed on budget and opened to full traffic on August 10th (one day ahead of schedule).

***What were the takeaways from this successful project that the Town can use for future CIP projects?***

The Town, the contractor and the subcontractor all worked very well together to maintain the schedule and traffic, keeping the drivers moving and opening the project on-time...which was very satisfying.



**“ The Town received positive comments from residents and drivers via our Facebook page and thumb’s up from drivers... in general the public loves the new asphalt that replaced the old concrete. ”**



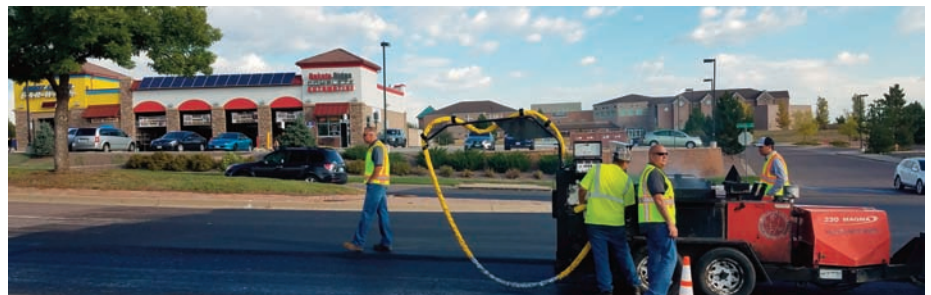


# ASPHALT INDUSTRY IN ACTION 2018





# ASPHALT INDUSTRY IN ACTION 2018





# Setting the Record Straight Competing Pavement Design Software Programs

## PaveXpress

Some years ago, the American Association of State and Transportation Officials began transition of roadway design from the 1993 AASHTO Guide for Design of Pavement Structures, a design methodology based on empirical observations from a road test in Illinois that began in the 1950s, to the Mechanistic Empirical Pavement Design Guide (MEPDG). MEPDG allows for design inferences that are harder to justify from the limited data obtained during the AASHTO road test. However, use of MEPDG is costly for agencies to implement and much more complicated due to the many variables and inputs. With AASHTO's move to MEPDG and the sunset of the AASHTO Guide, the need arose for a software that would continue the empirical calculations thus the creation of PAVEXpress ([www.PAVEXpressDesign.com](http://www.PAVEXpressDesign.com)).

Local streets and roads make up approximately 80% of the roadway system. Many owners (counties/municipalities) and engineers still find the empirical guidance useful for determining adequate thicknesses and often as an additional calibration.



As of April, 2018 there have almost 30,000 registered users of PAVEexpress. Approximately 30% are repeat users and all around the world. Since PAVEexpress was originally created, in 2014, the program has been expanded to include Life Cycle Cost Analysis (LCCA), porous pavement design, layered elastic analysis, and design of asphalt overlays.

## PAVEInstruct

PAVEInstruct ([www.PAVEInstruct.com](http://www.PAVEInstruct.com)) was created as a supplementary tool to PAVEexpress. PAVEInstruct delves into the individual modules within PAVEexpress and teaches the appropriate design process and essential design information for both flexible and rigid pavements. Each module is presented by an industry expert and offers the option of watching "lectettes" — a few minutes on a specific topic — or longer webinars. PAVEInstruct also allows the user to self-navigate through the modules and provides the opportunity to receive a certificate of completion.



A rigid pavement program underwritten by NRMCA, PCA, RCC Council and ACPA. This program, like PAVEexpress, is a free, web-based software that is purportedly based on AASHTO '98. The areas that are notably flawed include:

- Joint spacing locked at 7 feet
- Reliability is hidden and unable to be viewed or altered
- Pavement Designer has less input options than PAVEexpress
- Design values in Pavement Designer are not apparent
- Cannot view computed values in Pavement Designer

Pavement Designer is a concrete promotional tool. If an engineer wants to simulate AASHTO '93 and '98, then PAVEexpress is the only option.

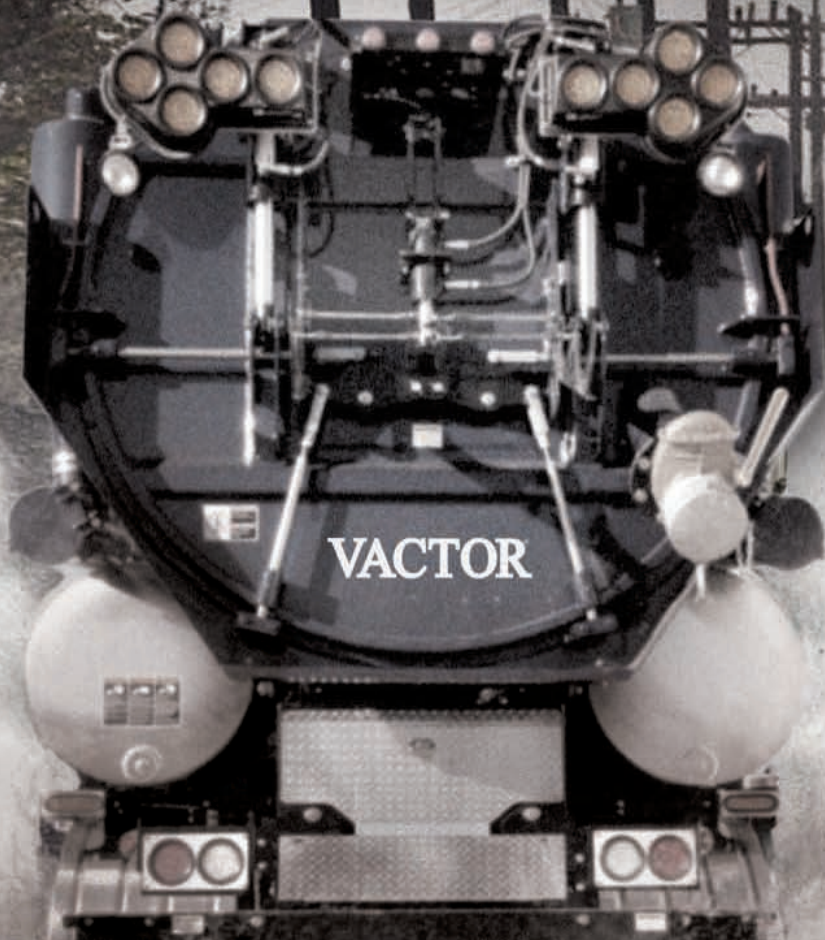
## StreetPave

A rigid and flexible design tool owned and sold by ACPA.

- Streetpave's concrete design is based on the PCA Design Methodology. It focuses on jointed, plain concrete often on compacted subbase, using aggregate interlock.
- Utilizes a mechanistic design and evaluates both fatigue and erosion criteria.
- This software performs bonded and unbonded concrete overlay designs as well as LCCA. The LCCA can be conducted to compare a concrete and asphalt design.
- Streetpave's flexible design is allegedly based on the Asphalt Institute's full-depth methodology.

However, a major problem with Streetpave is it only allows the user to input one subgrade strength value that is reduced inappropriately prior to running the design. No such similar reduction is done for the concrete design. Also, Streetpave covertly applies an inappropriate safety of factor unbeknownst to the user, thus creating a thicker section than the Asphalt Institute's actual design.





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# WORKFORCE DEVELOPMENT: Understanding the Challenge



EXECUTIVE SUMMARY

## Employment challenges facing the asphalt and paving industry

The Colorado Asphalt Pavement Association (CAPA) partnered with Burns Marketing in summer 2017 to develop a better understanding of the hiring and retention challenges facing the asphalt and paving industry. As part of the engagement, Burns Marketing interviewed five CAPA members, reviewed industry marketing initiatives and tactics, and performed desktop research into opportunity spaces and similar industries.

This document highlights the key findings from Burns Marketing's research.

### What are the biggest challenges that CAPA members face in hiring?

- We receive many "un-employable" candidates.
  - People looking at these jobs often have a lot of baggage and cannot be hired after drug testing and background checks.
  - Potential employees are shocked that we drug test.
- Many people come to us as a last resort.
  - People don't feel like they will have a career in the asphalt industry.
  - They don't understand the growth they can achieve.
  - They don't see the breadth and depth of opportunities available.
- Society in general has a negative perception of the industry.
  - The work is hard, outdoors, and manual labor.
  - People see asphalt and paving as a job and not a career path.
  - The industry is highly seasonal (especially in Colorado) and therefore, it's plagued by layoffs.
  - A desk job is often seen as more desirable.
- There is a lack of qualified candidates.
  - The unemployment rate is low.
  - The workforce is aging.
  - Schools are encouraging all students to pursue college.
  - There are limited trades and training programs.
- The industry is fighting for the same people.
  - Competitors steal employees.
  - Employees are willing to jump to new jobs for small pay increases.

### What are the biggest objections CAPA members face when recruiting?

- Seasonality
- Hard, physical work
- Required travel or work based in remote location
- Little understanding of the industry and its opportunities
- Low unemployment / ability to be more selective
- Higher hourly wage over value of comprehensive benefit package

### A few words about millennials

The millennial generation (those born between 1981 and 1997) is the newest source of employees, so it's important that hiring managers understand what makes these younger workers tick.

According to Pew Research Center, 36% of the millennial generation lives in their parents' homes. The majority of them has been encouraged to attend college, and as a result, they're graduating with high amounts of debt. This reality often leads them to job hop often as they pursue short-term gains.



# WORKFORCE DEVELOPMENT: Understanding the Challenge



BEST PRACTICES

## Recruiting and retention best practices for the asphalt and paving industry

To help members of Colorado Asphalt Pavement Association, the organization has compiled a list of best practices for recruiting and retaining employees.

### Recommendations for attracting new employees

- Always be hiring. Don't limit your recruiting and hiring efforts to the busy season.
- Develop clear job descriptions that identify roles, responsibilities, and expectations.
- Define career paths and use these in recruiting efforts.
- Promote mentoring programs, apprenticeships, and training.
- Showcase reasons why someone would want to join your company. Focus on culture, advancement, benefits, community presence and responsibility, etc.
- Highlight your commitment to safety, as this gives additional context to the drug-free workplace requirement.
- Incentivize employees to refer friends, but only if those new workers stay on for a certain time period.
- Partner with trade schools, high schools, and colleges to develop programs or scholarships.
- Target college dropouts with a campaign that emphasizes job growth and opportunities.
- Consider advertising on Spanish-speaking radio stations.
- Broaden your reach to include neighboring states.

### Recommendations to improve retention

- Make employees feel like they're a part of the team right away.
- Develop an employee development program that helps them understand training opportunities and career paths.
- Develop a mentorship program.
- Establish cross-generational and management training.
- Offer soft skills training (i.e., money management, communication, leadership).
- Provide ongoing feedback and employee recognition.
- Guarantee raises or incentive bonuses for returning employees.
- Create a "vacation fund," where a bonus amount is added to employees' accounts and those accounts become available at the end of the season (or year).

Visit the CAPA website **CARRER CENTER** pages for job postings and workforce resources

<http://co-asphalt.com/career-center/>



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# INDUSTRY NEWS

## PAVEMENT DESIGN Simplified

## PAVE<sup>X</sup>press

PAVE<sup>X</sup>press, a free web-based AASHTO 93/98 pavement design tool for roadways and parking lots, makes designing the right pavement easy.



*PAVE<sup>X</sup>press is always up to date and can be accessed from any computer or mobile device.*

## PAVE<sup>X</sup>press PAVE<sup>I</sup>nstruct



A simplified pavement design tool for flexible and rigid pavements using AASHTO 93/98 for local engineers, consultants, and students. A tool to help scope projects more effectively. PaveXpress

includes access to resources such as design guides from state DOTs and industry associations so you can build formal designs from its simple recommendations.



- During the November 2018 election, the City of Littleton residents passed ballot measure 7B by a margin of 59% to 41%.

3.1 million Dollars of City funds will automatically be dedicated to street maintenance and improvements each year.





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## INDUSTRY NEWS

# Recycled Asphalt Pavement (RAP) – An Industry Update

## Asphalt Pavement Industry Survey on



## Recycled Materials and Warm-Mix Asphalt Usage 2017

### Information Series 138



The use of recycled asphalt pavement (RAP) continues to grow in Colorado and nationally. In Report 138, 2017, the National Asphalt Pavement Association reports that the asphalt industry remains the country's most diligent recycler with more than 99 percent of reclaimed asphalt pavement being put back to use. The average percentage of RAP used in asphalt mixtures has increased from 15.6 percent in 2009 to 20.1 percent in 2017. In 2017, the estimated RAP tonnage used in asphalt mixtures was 76.2 million tons. This represents more than 3.8 million tons (21.5 million barrels) of asphalt binder conserved, along with the replacement of more than 72 million tons of virgin aggregate. In Colorado, the Colorado DOT approved the use of RAP for all mixes and all lifts (except SMA) in June, 2008. Currently approximately 15% of all HMA is RAP - all mixes all lifts (except SMA). The specification was adjusted in 2013 to specify RAP to be based on the percent of binder replacement (23%). This equates to a % RAP based on weight of approximately 25%.

Here is the justification included in the CDOT approval of the CDT RAP specification. The CDOT Materials Advisory Committee (MAC) voted unanimously to make this change. Nationally, 20% RAP has long been allowed in the top lift of asphalt mats. CDOT previously allowed up to 15% RAP in the top lift while studies regarding binder aging of RAP were done. Studies have shown that 20% RAP can safely be used in the top mat without introducing thermal cracking. The RAP Task Force felt there were enough controls in place, enough study data, and enough experience with RAP that CDOT could increase the use of RAP to 20% in the top lift.

In Colorado, the availability of virgin aggregate is becoming very difficult. Agencies are implementing sustainability initiatives that promote recycling and sustainability practices, and agencies do not have any performance concerns when using RAP in the engineered approach with specification requirements on processing, stockpile management, and material quality.



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# 27<sup>th</sup> Annual Golf Tournament & Scholarship Fundraiser



## 27<sup>th</sup> Annual CAPA Scholarship Fund Raiser Golf Tournament

CAPA and the APWA Colorado Chapter would like to thank the 200 players and volunteers who attended and supported the 27th Annual CAPA Scholarship Fund Raiser Golf Tournament on a picture-perfect day on September 14. The golf courses at Fox Hollow in Lakewood were in great shape and gave the players a run for their money. The rough was long and the greens were fast.

Through the support of our players, sponsors, and volunteers we were successful in raising nearly \$12,000 to support our CAPA/APWA/NCAT Asphalt Technology Scholarship at Auburn University, Alabama. CAPA along with our partners from the APWA Colorado Chapter are excited and thankful to be able to continue to participate in helping promote increased knowledge in asphalt technologies. Your continued support is much appreciated, and we thank you!!



Congratulations to the CAPA Cup Champions for 2018. The Vance Brothers Team; Left to Right, Heath Russo, Drew Vance, Nick Allen and Cody Vance.

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# 27<sup>th</sup> Annual Golf Tournament & Scholarship Fundraiser

## CAPA Golf Tournament

Fox Hollow Golf Club - Lakewood  
September 14th

Title Sponsor:



Some of the great sponsors for the day! Thank you to all our Sponsors. Without you this doesn't happen

Some of the players getting ready to head out for their day of Golf(L to R Kurt Musgrave (Martin Marietta), Nick Ware, Larry Ware (Alpha Milling), Dan Mikkelson (New West Paving)



FAR RIGHT: Larry Ware (Alpha Milling) with Don Woodworth (Wagner Equipment CO.)



Some of the Golf Committee and volunteers for the day's event



Lunch is always included!



The carts are loaded and lined up to head out for the shotgun start



Tom Clayton (CAPA) Neomia Roach (Brannan Sand and Gravel) and Karen Unger (City of Aurora) discussing the money donated through the 50/50 raffle.





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