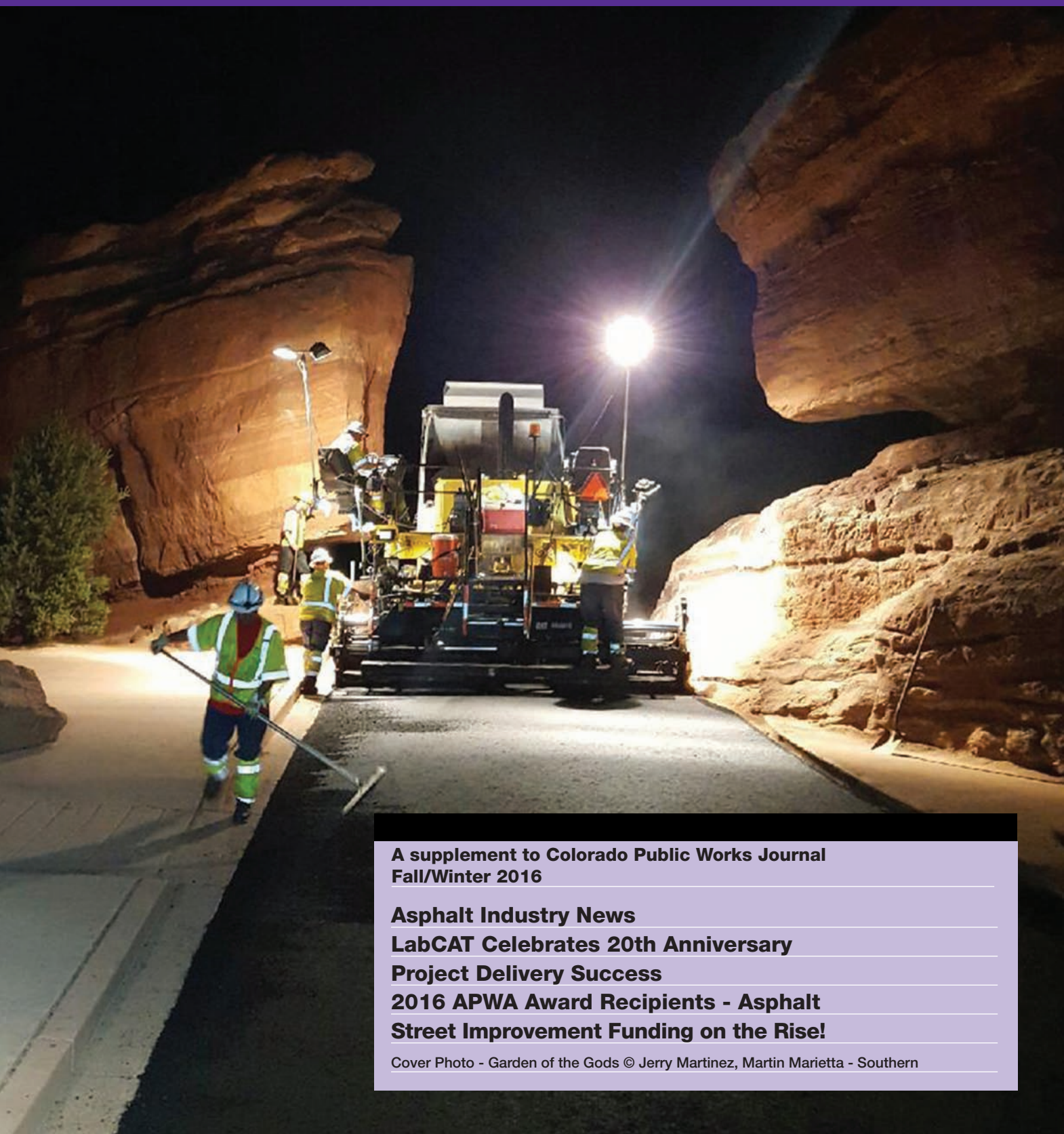
THE ROAD AHEAD

Colorado Asphalt Pavement Association

FALL 2016



A supplement to Colorado Public Works Journal
Fall/Winter 2016

Asphalt Industry News

LabCAT Celebrates 20th Anniversary

Project Delivery Success

2016 APWA Award Recipients - Asphalt

Street Improvement Funding on the Rise!

Cover Photo - Garden of the Gods © Jerry Martinez, Martin Marietta - Southern

Introduction

Tom Peterson

THE Road Ahead! - A focus on project delivery

Welcome to the Fall 2016 THE Road Ahead! This is CAPA's news magazine that is published twice per year (Spring & Fall) as an insert into the Colorado Public Works Journal. 2016 has been an exciting year for the asphalt industry of Colorado and we are proud to showcase a number of 2016 industry highlights.

A key function of CAPA is training and partnering with agencies across the state to advance the use and quality of asphalt pavements. A particular emphasis of this issue is project delivery and sharing case studies of best practices. We continue to make strides working with agencies to improve the long term pavement performance of asphalt pavements and we have included information on a number of successful projects. Congratulations go out to the 2016 APWA – Colorado Chapter Award Winners featured on pages 22-23. We highlighted those award winning projects that included asphalt street improvements.

CAPA hit the 250 member mark in November and we are the largest state asphalt pavement association in the country. Our membership includes 74 city, county, town and toll authority organizations. CAPA supports our members for the proper design, construction, and maintenance of asphalt pavements. As shown in this magazine, whether through training and education or the promotion of best practices, we are glad we can be of service to the end users of asphalt pavement in Colorado.

Let us know how we can be of assistance and support. Quality asphalt pavements is a team sport and we are here to help.

Thomas Peterson, P.E.
Executive Director
Colorado Asphalt Pavement Association
tompeterson@co-asphalt.com
(303) 741-6150 x152

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The CAPA Lunch & Learn Series

The CAPA Lunch & Learn Series is a "No Cost Service" 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. Review the list of topics we offer, contact us and and we will schedule your session. PDH/CEU's are available.

If you find yourself asking these or any other questions related to asphalt, the Colorado Asphalt Pavement Association has just what you and your organization need - CAPA's Lunch & Learn Series.

ASPHALT PAVEMENT TOPICS
- Design Considerations
- Mix Specs, Methods & Quality Control
- Maintenance and Pavement Preservation
- Inspection
- Warm-Mix Asphalt
- Thin Overlays
- Rubblization
- Porous Asphalt
- Life Cycle Cost Analysis
- Pavement Management
- Question/Answer Forum

Lunch & Learn

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 x151 or via e-mail at tomclayton@co-asphalt.com to schedule a session or to learn more information about this program. Personal Development Hours (PDHs) will be issued upon completion of seminar.

CAPA Member List

November 2016

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AFFILIATE AGENCY MEMBERS

CAPA has an Affiliate-Agency Member List that includes 74 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 2016

City of Manitou Springs, City of Sheridan, Town of Avon, Town of Georgetown, City of Englewood

ASPHALT PRODUCER & SUPPLIER MEMBERS

ACA Products
Kirkland Construction
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Suncor Energy
APC Southern
Kiewit
Brannan Sand and Gravel Co.
Kehn's Fort Collins
Everist Materials, LLC
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McATEE PAVING STERLING, COLORADO
Aggregate Industries
Asphalt Constructors, Inc. ACI
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ARY
McCormick Excavation & Paving Stratton, Colorado
Jebro Inc.
Four Corners Materials
Connell
Frontier Paving Inc. FPI New Castle, CO
Schmidt Construction Company
Grand River Construction Co.
United Companies
CASI
APC

Industry News

MGPEC Accepts PerRoad and PaveXpress Pavement Design Programs

The Metropolitan Government Pavement Engineers Council (MGPEC)have issued a Pavement Design Software Interim memo dated 9/8/2016 clarifying what pavement design software programs are acceptable for use. The list of programs that are accepted for asphalt pavement design include Per Road Xpress, PerRoad, and PaveXpress. The change will allow advanced pavement design programs to be used by MGPEC agencies and ensure the optimal asphalt design. Mike Skinner, CAPA Director of Pavement Engineering stated "The pavement design industry is constantly changing with updates in materials, methodology and evolving technology for software. In recognizing the use of asphalt industry leading software, MGPEC continues their commitment to the enhancement of the design of high quality asphalt pavement in Colorado."

Asphalt Parking Lot Design & Construction Guide Under Revision

The CAPA developed Guideline for the Design & Construction of Asphalt Parking Lots in Colorado is under revision. First developed in 2005 the guide is being revised to include new design and construction practices. Also, the guide will be expanded to include maintenance best practices and a reference to LEED Credit for asphalt parking plots. A Work Group is coordinating the revision and it is expected to be complete in early 2017. For more info, contact Mike Skinner at (303) 741-6150 x155 or at mikeskinner@co-asphalt.com

Theme Selected for 2017 Rocky Mt. Asphalt Conference & Equipment Show

Merging Talent with Technology to Improve Performance is the theme for the 44th Annual Rocky Mt. Asphalt Conference & Equipment Show that is planned for February 22 – 24, 2017 at the Crowne Plaza – Denver International Airport. The three day event includes a 60,000 square foot trade show, 24 breakout sessions on leadership, design, construction and maintenance of asphalt pavements and 21 educational sessions on fundamentals on quality.

A new feature this coming year is an Innovations Session with breakouts on innovations in equipment, maintenance, and technology. Registration is open for both attendees and exhibitors. www.rmaces.org

Ask Asphalt Man!!

A popular feature of the CAPA e-newsletter (In Front of the Paver) is a Q/A on asphalt 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

QUESTION: What is the proper thickness to place an Asphalt Mixtures based on Nominal Maximum Aggregate Size (NMAS)?

ANSWER: Lift thickness governs aggregate size. Minimum lift thickness should be at least 3 times the nominal max. aggregate size to ensure aggregate can align themselves during compaction to achieve required density and also to ensure mix is impermeable. The maximum lift thickness is dependent also upon the type of compaction equipment that is being used. When static steel-wheeled rollers are used, the maximum lift thickness that can be properly compacted is three (3) inches. When pneumatic or vibratory rollers are used, the maximum thickness of lift that can be compacted is almost unlimited. Generally, lift thicknesses are limited to 6 or 8 inches. Proper placement becomes a problem in lifts thicker than 8 or 8 inches. For open-graded mixes, compaction is not an issue since it is intended that these types of mixes remain very open. Therefore, the maximum size aggregate can be as much as 80 percent of the lift thickness.

ASPHALT
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Project Delivery Success: Best Value for Complex Projects

By Mike Skinner

The majority of asphalt paving projects are best suited for traditional low bid contracting. However, complex CIP projects may have additional components (e.g., scheduling, minimizing projects impacts, etc.) that lend themselves to Best Value contracting.

When evaluating a project for best value, an owner agency should investigate, judge and weigh the following criteria when making decisions:

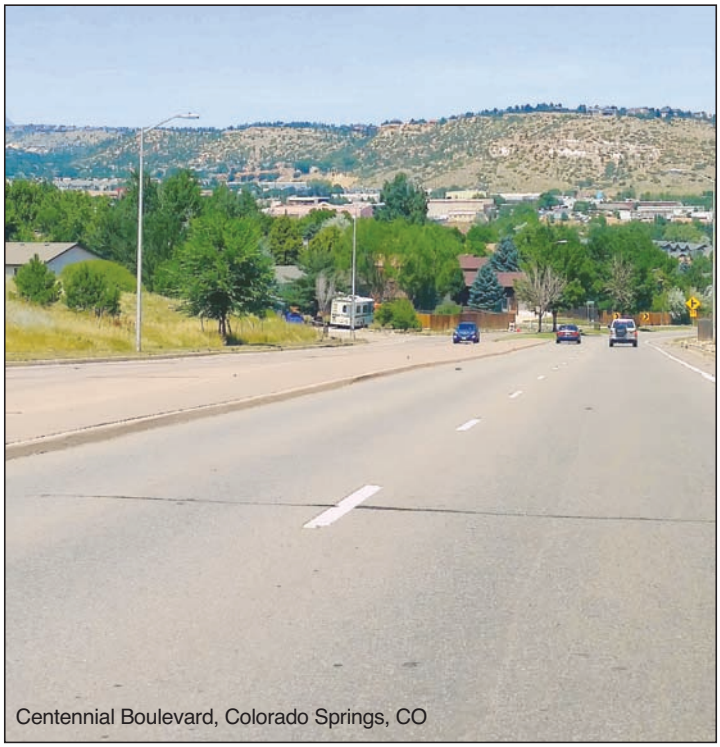
- Construction delay, impact and ability to open the road sooner to traffic
- Ease of maintenance and repair over the lifetime of the asset
- Pavement noise and smoothness
- Ability to reduce snow and ice build up
- Reducing vehicle splash and spray
- Pavement service life (overall performance, drivability and condition over time)

The use of asphalt pavement for capital improvement projects compares very favorably when considering each of these criteria. One of the most overlooked issues of the best value discussion is the condition over the life of the pavement. With periodic maintenance and rehabilitation, asphalt pavements can be maintained at a higher level of service (more time in good condition).

Value engineering is another successful tool to help achieve best value on a project. A successful project includes partnering and teamwork between the contractor, the owner and the designer early on during the project to identify risks and capitalize on the team's collective expertise and experience. An item for consideration in value engineering a project is the use of Stone Matrix Asphalt (SMA) as the surfacing material. Replacing the surface lift with SMA can extend the service life to first rehabilitation and increase the best project value.

Over 2.5 million tons of SMA have been placed in Colorado for local Agencies and state highways since 2000 and is now the surface material of choice for local Agency arterial roadways. In 2001 the City of Aurora implemented an SMA overlay program for all of their arterial roadways with a planned 15-year service life. In 2012 the City of Lakewood also implemented an annual SMA overlay program for their arterial network.

The City of Colorado Springs is currently working with a contractor and design engineer in the phased reconstruction of Centennial Boulevard (between Garden of the Gods Road and Fillmore Street). The original planned pavement design section for the reconstruction Phase I portion of the project consisted of 9 inches of asphalt pavement (7" of Grade S in the lower



Centennial Boulevard, Colorado Springs, CO

lifts and 2" of Grade SX as the surface lift). The City Utilities department informed the project team of significant subsurface conflicts, so the team value engineered a new asphalt pavement section over mechanically stabilized subgrade to address the conflicts and provide resolution for construction. The City of Commerce City utilized a different tool to achieve best value for their current widening of Tower Road asphalt pavement project (between Peña Boulevard and 104th Ave.)

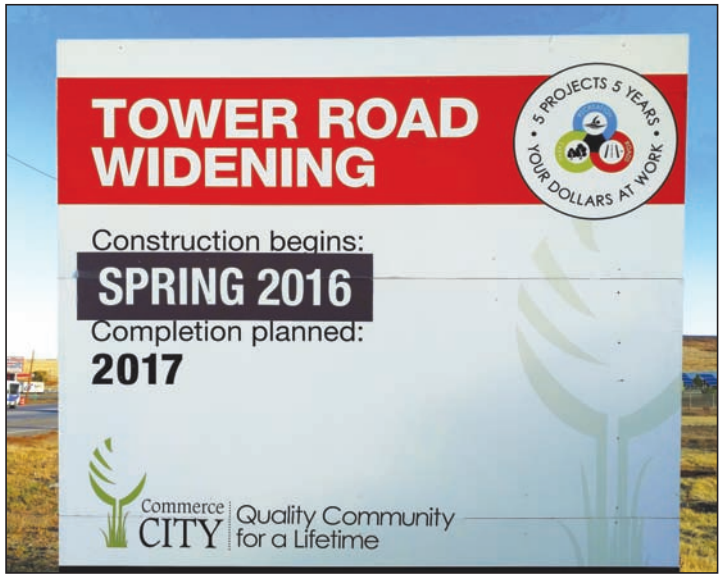
Mike Skinner, PE is the Director of Pavement Engineering for the Colorado Asphalt Pavement Association (CAPA). He can be reached at mikeskinner@co-asphalt.com

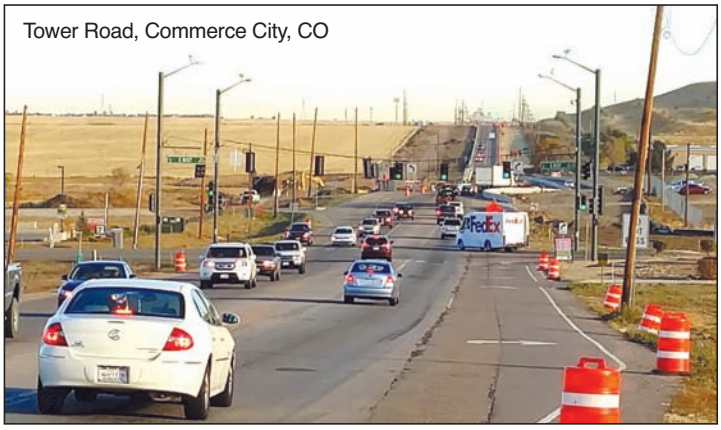

Tower Road, Commerce City, CO

The project was evaluated using an alternative bid process, put in place to:

- Ensure the decision for pavement type is in alignment with the goals of the project
- Provide for the opportunity for industry input
- Ensure consistency in the decision making process and accountability to elected officials and City Council
- Formalize the decision process of the pavement type to create transparency and accountability
- Improve credibility of the decision by following a documented process and clearly communicating the reasons for the decision

In support of the project, CAPA worked with the Tower Road project team (represented by city staff and the design engineer) and facilitated a successful constructability review prior to the project being advertised. With direct interaction between the city, designer and the infrastructure and paving industries, the constructability review identified alternative value engineered pavement sections that resulted in cost savings, alternative recommendations to streamline utilities and box culvert construction and phasing/staging recommendations.




Tower Road, Commerce City, CO

Using tools such as value engineering and constructability reviews can help an owner agency make more informed decisions about best value for infrastructure projects and maximize limited project funds. Please contact CAPA if your agency or project team would like help facilitating a constructability review for any of your future roadway infrastructure projects, we're here to help.

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WEIGHTS	
Operating Weight	74,580.0 lb
Transport Weight	66,140.0 lb
DIMENSIONS	
Operating Width	9.15 ft
Maximum Truck Clearance	15.95 ft
Operating Length, Conveyor Up	47.62 ft
Height to Canopy	13.29 ft
Transport Length	40.79 ft
Transport Width	8.83 ft
Transport Height	9.84 ft
Conveyor Swing	60 degrees from center
Minimum Left Cutting Radius	6.56 ft
Minimum Right Cutting Radius	5.91 ft

POWERTRAIN	
Engine	Cat C18 ACERT
Rated Power	630.0 hp
Global Emissions	Tier 4 Final/Stage IV
Maximum Milling Speed	328.0 ft/min
Maximum Travel Speed	3.7 mph
CUTTING SYSTEM	
Milling Width	88.0 in
Maximum Milling Depth	13.0 in
Number of Bits	193
Rotor Speeds	100/109/118 rpm
SERVICE REFILL CAPACITIES	
Fuel Tank	288.1 gal
Diesel Exhaust Fluid (DEF) Tank	12.2 gal
Cooling System	22.1 gal
Engine Oil	16.9 gal
Hydraulic Tank	29.4 gal
Water Spray System Tank	898.0 gal

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Street Funding on the Rise
Municipal Tax Measures Passing with Success

by Mike Skinner

Colorado Local Agencies are feeling the pressure to maintain the millions of dollars of existing in-place street infrastructure that they own and manage. However, a few agencies have found great success in increasing their annual Street Improvement budgets by presenting a sales tax initiative to local voters. A useful tool to help develop a better understanding of a local government's annual budget process is by using a systems approach to management. This approach recognizes the interdependence of all major activities within an organization, especially public ones like Local Agencies. A public organization is viewed as an open system that includes five basic subsystems which are highlighted and explained as they relate to the annual budget process in Local Agencies.

Input. This includes available revenues to finance public services for the coming fiscal year. A local government's revenues typically include non-restricted funds, restricted funds, and other possible funding sources as allocated and approved by its elected officials.

The services provided by a public organization are based on the available revenues from all sources as approved in its annual budget, which is a result of the annual budget development process explained below.

Preparation. The budget preparation process includes four typical steps followed by public officials, both elected and appointed. These steps include administrative preparation, legislative approval, financial implementation, and annual year-end accounting and financial reporting, which is usually performed by an independent outside auditor.

This process is in the best interest of everyone—residents, their elected officials, as well as the employees of a public organization.

Output. The output of the budget process is determined based on the available revenues and approved allocation of these revenues to pay for projected departmental services for the coming fiscal year. Available funds are allocated to finance the public services provided by the departments in a local government, as well as its approved capital projects, for the coming fiscal year.

The common types of public budgets include line-item budgets, program budgets, performance budgets, zero-based budgets, and other evolving budget formats. Most local government budgets use a line-item format, with possible program performance measurements, where they have been developed.

Feedback. The financial feedback on the adopted budget is provided to both elected officials and administrators, based on an annual audit that is typically conducted by an outside independent auditor.

This is usually required by a city's charter approved by its voters. This financially objective feedback is provided to the organization's major stakeholders for both the operating and capital budgets, including its elected officials, management staff, and residents.

It is typically placed online on a local government's public website and copies are also placed in the public library to accommodate those residents who wish to review a hard copy of this annual report.

Operating Environment. The annual budget process is influenced by several factors that are composed of a public organization's operating, or organizational, environment. These factors include its political environment, its economic environment, its social environment, and its legal environment.

All of these factors are interrelated and greatly influence all phases of the organization's annual budget process. While elected officials and their administrators have an influence on their internal environment, they have little control over their external environment.

The Future. Elected officials typically create the political orientation of their organization, its political environment. While some local governments are liberal and others are conservative, many represent both political perspectives. Yet others change their political perspective over time.

Many aspects of a local government's environment are influenced by higher levels of government too, primarily their state government and the federal government. Local public officials, both elected and appointed, generally have little influence over these levels of government and usually only react and adapt to their respective mandates, available grants, and legal requirements.

To address the annual shortfall of funding dedicated to Public Works infrastructure, Local Agencies are taking the issue directly to the voters and asking for their support. In the last twelve months Colorado has seen almost $65 million generated by sales tax revenues being funneled back to local streets programs at two successful agencies. Their model of success is being implemented in other Local Agencies in hopes of passing their own initiatives for infrastructure in November 2016.

City of Colorado Springs – 2015 Initiative Passed

In November 2015, the citizens of Colorado Springs passed Measure 2C, a sales tax measure which generates approximately $50 Million dollars annually where those funds are solely dedicated to street improvement. Prior to the vote, the overall pavement condition of the City's arterial roadway network was 62 (on a scale of 0 to 100) and the residents had had enough. They formed a Citizen's Group to support Measure 2C and got the word out. The campaign was successful and the citizens of Colorado Springs passed the sales tax, but with a 5 year sunset clause. In response to the vote passing, the City Public Works Department fast tracked an accountable and transparent program to begin putting the tax revenue to work fixing the streets.

City of Greeley – 2015 Initiative Passed

In November 2015, the City of Greeley had similar success and the voters passed Measure 2A, a sales tax measure which generates approximately $12-14 Million dollars annually where those funds are solely dedicated to street improvement. The residents of Greeley also formed a Citizen's Group (Keep Greeley Moving) to support the initiative and inform the voters that the overall pavement condition of the City's roadway network was 61. The voters responded favorably and passed the sales tax, but with a seven-year sunset clause.

This November, two more Local Agencies have new sales tax initiatives on their ballots dedicated to fund their Public Works Street Improvement Programs. They are hoping to have the same success as Colorado Springs and Greeley and are using those agencies as a template to implement a successful framework to pass a tax initiative for infrastructure.

City of Arvada – 2016 Initiative on the Ballot

According to Mark Devan (City Manager for Arvada) "We are not meeting our needs and need to increase our current investment of $6M to $7M annually in our Streets Program to approximately $16M annually. Even if we dedicated 100% of our annual CIP budget to streets, we would still have a shortfall of $1.5M annually, or $13M shortfall over the next ten years." The City of Arvada is proposing a half cent increase in sales use tax used exclusively for street improvements to address their overall network Pavement Condition score of 64. Anticipated revenues would be approximately $9 Million annually, increasing the budget to around $16 Million.

City of Cañon City – 2016 Initiative on the Ballot

In November 2015, The City of Cañon City tried to pass their street funding ballot initiative 2C, but was unsuccessful and failed by 108 votes. The City has elected to put the measure back on the ballot for this November. Their proposal includes a 1% sales tax rate increase dedicated to street repair/maintenance/construction and is expected to generate approximately $3.5M annually. As requested by the City, CAPA has been working with the City Engineer providing technical resources for their renewed effort. Additionally, in May 2016 a Street Improvement Funding Stakeholders Luncheon was held in Cañon City to provide a framework for success with their new effort. As part of the luncheon, the Assistant City Manager from the City of Greeley gave a presentation on how the Greeley ballot issue was passed. The luncheon was well attended by elected officials, city staff, economic development, the supporting citizen's group (Fix Our Streets) and industry.

Asphalt Industry in Action 2016

Asphalt Industry in Action 2016

Warm-Mix Asphalt – A Colorado Update

In 2016, the use of Warm Mix Asphalt (WMA) continues to grow in Colorado. It is estimated that 35 to 40% of asphalt materials produced in Colorado are using a warm mix asphalt technology.

In 2014 we provided information about the use of Warm Mix Asphalt in Colorado. In that article we discussed properly constructed asphalt pavements will provide a smooth, quiet ride, and are a sustainable paving option. With this said we talked about the newest process for producing Asphalt Paving Materials (APM) energy-saving warm-mix asphalt (WMA).

WMA technologies are rapidly becoming the accepted norm for the production and placement of APM. The National Asphalt Pavement Association reported in 2015 that, "Total tonnage of WMA was estimated at 113.8 million tons during 2014. This is nearly a 7 percent increase over 2013 WMA tonnage (106.4 million tons). As of 2014, WMA is now about one-third of the total asphalt mixture market. Plant foaming is used most often in producing WMA, with more than 84 percent of the market; additives accounted for about 16 percent of the market."

CDOT has approved several technologies for use with some having no restrictions on the total number of tons per project, some are restricted to 10,000 tons or less and still some 5,000 tons or less. Many cities and counties have allowed limited or open use of WMA technologies. The CDOT project originally constructed on Interstate 70 in summit county, eastbound, west of Eisenhower Tunnel will be ten years old next year. This section of I-70 previously had to be overlaid on a five-year cycle due to the heavy traffic and harsh weather conditions. Although the roadway has shown some signs of aging, the sections where the WMA was placed are still performing very well.

Some other areas where WMA has been placed which were constructed with a need to reduce the temperatures during the overlay are Highway 9 Hartsell South. Although the reflective cracking has reappeared in this road built some 50 years earlier, the overlay is performing better than expected. Other examples where the use of WMA technologies paid dividends are part of the flood recovery reconstruction on U.S. 36 north of Lyons. This section of roadway is heavily traveled and goes through extreme temperature changes even in a single day. The roadway appears as good now, with some minor aging, as it did when paved back in the fall of 2014.

The asphalt materials for this project were produced at a plant near Broomfield, Colorado. They were trucked, placed, compacted and tested with minimal if any difficulties. A WMA additive, Evotherm 3g, was added to the binder. The asphalt was produced 20-30 degrees (F) below the standard mixing temperature, when it arrived on site it had lost approximately 10 degrees (F) and was placed between 260 and 290 (F). Recently on several CDOT projects the contractor has introduced WMA technologies in the paving process. These projects are all around Colorado, in varying weather and elevation conditions.

Around the state, cities and counties are either requiring or allowing the use of WMA. Many contractors have stated when they first began placing the materials the temperature at production was decreased from the traditional Superpave

temperature of 290º to 310º, to near 280º (F). After evaluating the placement and compaction processes, the temperatures were then gradually lowered to 270º (F) or less. The remarks from contractors indicate the biggest hurdle was dealing with the learning curve associated with the placement of WMA was the materials being produced 30 degrees (or more) lower than they had been used to with traditional mixtures.

Once the stigma is out of their heads, using WMA is easier, and in many cases more production is possible in a normal work shift. End result users don't see any difference in the materials as they are being placed, however they report the asphalt remains in the dark black state longer, meaning the weathering and oxidation has been slowed significantly.

Local Agencies have found the technology to be very easy to adapt to their current specification requirements by adding a simple specification change statement which states "Warm mix asphalt (WMA) is allowed as an alternate to hot mix asphalt (HMA) provided that all material requirements and specification standards are met and as approved by the Agency."

What is the future of Warm Mix Asphalt (WMA)? Only time will tell for sure. NOW it presents a win-win-win. A win for the contractor, the agency, and the environment. For more information or to learn more about the benefits for WMA and how to specify its use, contact Tom Clayton, Director of Training and Member Services, CAPA, tomclayton@co-asphalt.com or at (303) 741-6150 x151.

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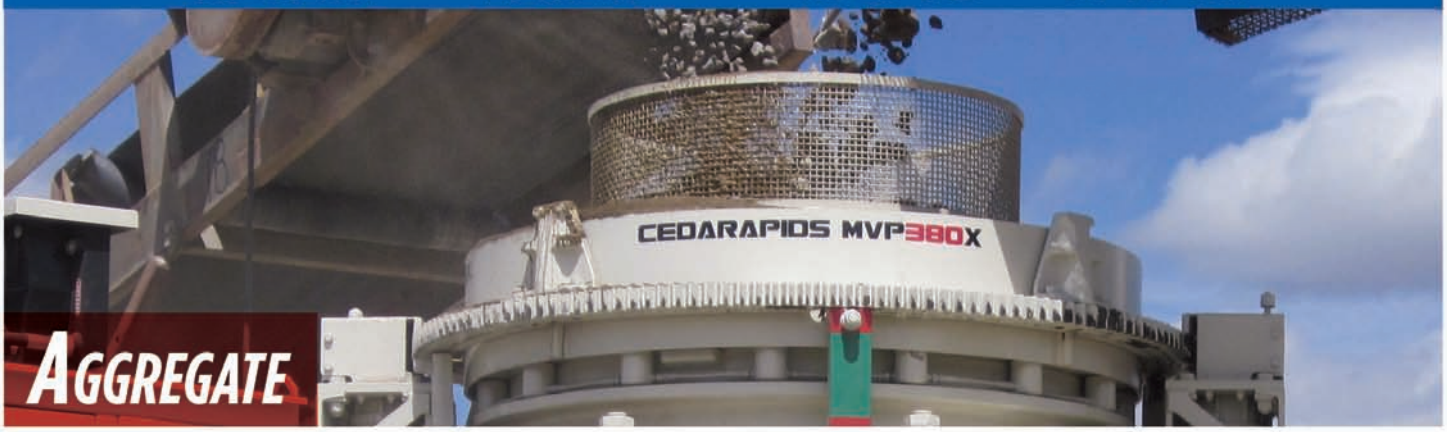

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APWA AWARD UPDATE

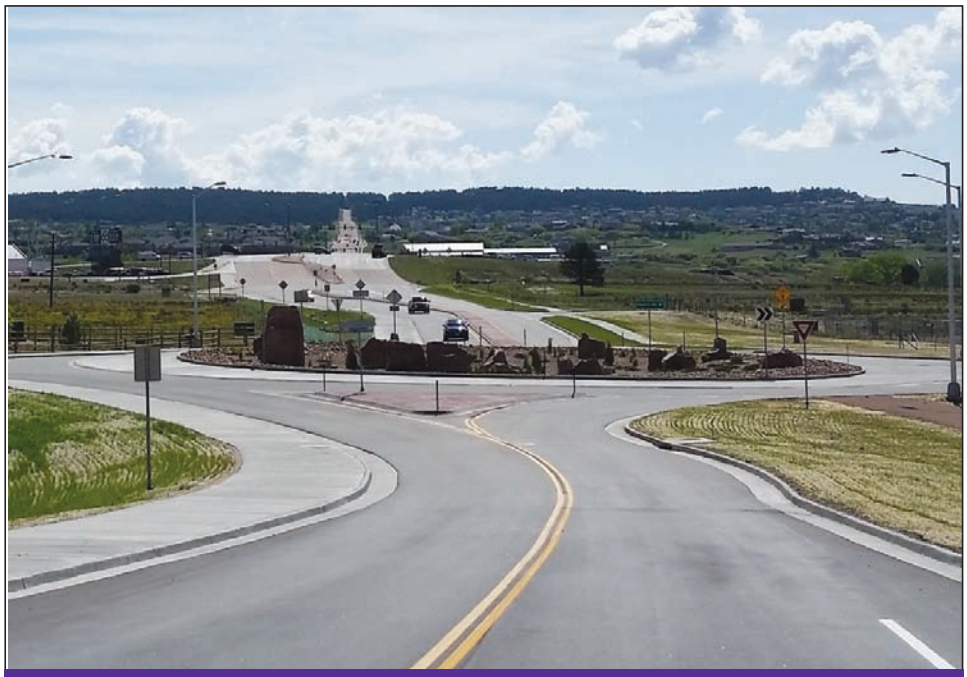
CAPA Congratulates the 2016 APWA Award Recipients

The recipients of the 2016 Colorado APWA Awards were announced at the APWA Annual Conference in Arvada on November 7. All award recipients are highlighted in the Fall 2016 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.

Individual Awards were given to:

Professional Manager of the Year, Adminstrative Management
Allen Peterson
Arapahoe County

Professional Manager of the Year, Transportation
Kurt Muehlemeyer
City of Westminster

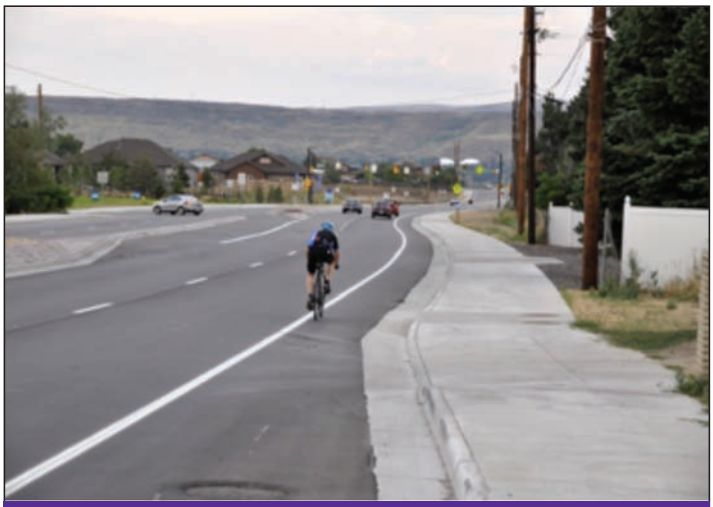


PROJECT OF THE YEAR

El Paso County, Department of Public Works, Engineering: Baptist Road West

TRANSPORTATION
LARGE COMMUNITY

South Brick Center Rd (CR129):
Quincy Avenue to North of Mexico Avenue, Arapahoe County



TRANSPORTATION
LARGE COMMUNITY

City of Arvada Public Works: McIntyre Street Phase 1
44th Avenue to 54th Avenue

CAPA Congratulates the 2016 APWA Award Recipients

TRANSPORTATION
MEDIUM COMMUNITY

City of Northglenn Public Works: Grant Street Improvements

TRANSPORTATION
SMALL COMMUNITY

Summit County, Town of Silverthorne, Copper Mountain Resort: Dillon Valley Resurfacing

TRANSPORTATION
MEDIUM COMMUNITY

City of Northglenn Public Works: East 112th Avenue Reconstruction Project

Laboratory for Certified Asphalt Technicians

LabCAT Welcomes New Board Members

The Laboratory for the Certification of Asphalt Technicians (LabCAT) has added 3 new board members.

Brenda Shuler
General Manager, Asphalt & Contracting, Aggregate Industries – WCR

Ed Wells
Asphalt Manager, Connell Resources

Jeremy Lucero
Regional Materials Engineer, CDOT Region 3

The LabCAT Board of Directors is comprised of representatives of CAPA, CDOT, FHWA, ACEC, and CAGE, and meets three times per year to provide direction and oversight to the asphalt technician program in Colorado.

2016-2017 LabCAT Board of Directors:

Tom Peterson
CAPA

Brenda Shuler
Aggregate Industries – WCR

Ed Wells
Connell Resources

Bill Schiebel
CDOT, Staff Materials

Gary DeWitt
CDOT Region 4 Materials

Jeremy Lucero
CDOT Region 3 Materials

Bill Caires
ACEC [Cesare Inc.]

Cary Jones
CAGE [Kumar & Associates]

LabCAT Hits 500th Attendee in 2016

This has been another banner year for attendance to the Laboratory for Certified Asphalt Technicians (LabCAT). We have once again hit our 500th attendee. This includes all levels of certification (Levels A, B, and C - 309; Level E Aggregates - 38, Level S Smoothness - 10, and Level I Inspector - 135). Congratulations to all involved including Instructor Cindy Rutkoski (at right) and Dallas Harmon of Ground Engineering who was the 500th technician in 2016.

Laboratory for Certified Asphalt Technicians

LabCAT Celebrates 20th Anniversary 1996-2016

June 3, 2016 was a special day for the asphalt industry of Colorado as we celebrated the 20th Anniversary of the LabCAT Program. A celebration luncheon was held at the Marriott Tech Center Hotel to honor those involved over the years and dating back since the inception of the program in 1996.

A brief program highlighted the joint CAPA/CDOT/FHWA partnership, critical program milestones, and the successes along the way. In 2015, over 95% of program attendees rated the program courses as either good or excellent in both benefit and quality. To help commemorate the event, Governor Hickenlooper issued a proclamation making June 3 Asphalt Pavement Day in Colorado.

State of Colorado

Proclamation

WHEREAS, in 1994, the Federal Highway Administration through a change in the Code of Federal Regulations, established a qualification requirement for those testing materials for acceptance on all federally funded highway projects; and

WHEREAS, in 1996, the asphalt industry of Colorado through the Colorado Asphalt Pavement Association (CAPA) entered into an agreement and partnership with the Colorado Department of Transportation (CDOT) to provide the required technician certification program; and

WHEREAS, the Laboratory for Certified Asphalt Technicians (LabCAT) was established to meet the FHWA requirement and to improve the quality of asphalt test results; and

WHEREAS, the program has now been operating for 20 years and is jointly governed by CAPA, CDOT, FHWA, and representatives of the Colorado Association of Geotechnical Engineers (CAGE), and the American Council of Consulting Engineering Companies of Colorado (ACEC); and

WHEREAS, technician feedback confirms that over 90% of program attendees rate the quality of the program and the benefit of certification as either good or excellent.

Therefore, I, John W. Hickenlooper, Governor of the entire State of Colorado, do hereby proclaim, forever after: June 1, 2016 as

Asphalt Pavement Day

in the State of Colorado.

GIVEN under my hand and the Executive Seal of the State of Colorado, this first of June, 2016

John W. Hickenlooper
Governor

Improving Life-Cycle Performance with Pavement Interlayers

by Mike Skinner

In an environment of limited and decreasing budgets in the private and public sectors, it is increasingly important that investments made in pavement infrastructure are maximized to their fullest potential. Pavement interlayers, also known as geosynthetics, can be integrated into asphalt mix overlay applications to limit the intrusion of water and reduce the reflective cracking, thereby promoting long-term pavement performance.

Although there is no single solution that can prevent reflective cracking, pavements using interlayers have demonstrated significant savings on repeated maintenance costs over a pavement life cycle, weather for a new or for a rehabilitation construction project. Pavement interlayers extend the life of flexible asphalt pavements, delay and reduce the severity of cracking by reducing the pathway for water to enter pavements, and provide a moisture barrier that maintains the integrity and load-bearing capacity of the aggregate base.

Pavement interlayers are used in the construction of new roadways and rehabilitation of old pavements to protect the aggregate base, delay cracks and reduce their severity, and as reinforcement. The benefits include:

Aggregate Base Protection
Geosynthetics that form a moisture barrier when properly installed, protect the aggregate base from top-down moisture intrusion through the cracks, preserving the load bearing capacity of the aggregate base. Studies have shown that the life of a pavement can be extended up to 50 percent by preventing aggregate base saturation.

Crack Delay and Reduced Severity
Geosynthetics are designed to mitigate crack reflection and reduce the severity of cracks when they do return.

Reinforcement
Geosynthetics are used to add tensile strength to the pavement to delay cracks and distribute loads.

By first understanding the mechanisms of pavement distress deterioration (e.g. environmental vs. vehicular) and the modes of failures, you can then determine the correct interlayer to best aid the new overlay. Reflective crack mitigation occurs when the pavement interlayer adsorbs and/or disperses the crack stresses. The interlayer also provides reinforcement to distribute the load and add tensile strength to the bound layers, and reduces the stresses of thermal movement caused by daily and seasonal weather conditions.

Overlays are the most common rehabilitation option for extending the life of distressed pavements. Although modified asphalt mixes can be specified and thicker overlays do improve performance, a pavement interlayer can be placed over the distressed pavement prior to the overlay to create an economical, longer-lasting system.

There are five types of pavement interlayers, including the newest composite geosynthetics that combine different materials to provide the best attributes of each. The performance will vary depending on the various conditions of the site where it is used, the capabilities of the different interlayers and the quality of the installation.

Paving Fabrics
Fabrics, once saturated with asphalt, form a moisture barrier, protecting the aggregate base from top-down moisture.

Paving Mats
The high modulus of the paving mats adsorb stress and disperse crack energy, reducing reflective crack severity.

Paving Grids
Created with fibers, paving grids from a bi-axial system to adsorb crack energy.

Composite Paving Grids
Created by laminating several layers or grid together, composite grids provide multi-axial orientation.

Self-Adhesive Strip Crack Repair Membranes
A peel and stick field application to seal and waterproof cracks before installing a new overlay.

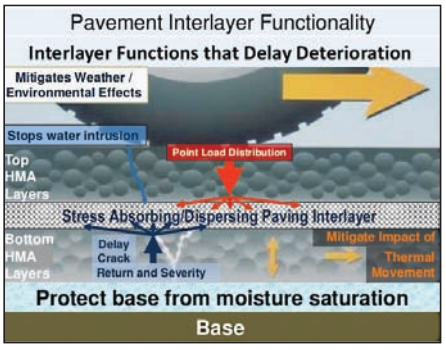
Pavement interlayers should be considered for rehabilitation design. Numerous studies have indicated successful performance results, as well as offer an equivalency factor to that of asphalt mix overlay thickness, not as a substitute, but as an added insurance against the reflective cracking that tends to accelerate pavement deterioration.

The rehabilitation of cracked pavements by simply overlaying is rarely a durable solution. The cracks under the overlay rapidly propagate through to the surface as reflective cracks.

Interlayer Composite Grid

Paving Mat Interlayer

Paving Fabric Interlayer



Pavement Interlayer Diagram

A general rule of thumb is that a crack will reflect vertically into a new overlay at a rate of 1-inch per year (e.g. a 2-inch overlay should expect to see the cracks back within two years). In Colorado, due to extreme temperature differentials, existing cracks typically reflect faster than that. Choosing the correct geosynthetic is key to extending the life-cycle of the pavement. Consult with the manufacturer's technical representative or review the technical support information on their website prior to making a final interlayer selection.

Practical requirements of incorporating interlayers into pavement management systems have been addressed and methods identified to properly assign a specific interlayer application to a distress type. Because rehabilitation, repair, and maintenance will likely receive most funding in the foreseeable future, using available technologies such as pavement interlayers can offer another tool in the toolbox. To mitigate distress and promote long-term pavement performance.

25th Annual Golf Tournament & Scholarship Fundraiser

Colorado Asphalt Pavement Association

Over $12,000 Raised For Our Scholarship Program

25th Annual CAPA Scholarship Fund Raiser Golf Tournament

CAPA and the APWA Colorado Chapter would like to thank more than 180 players and volunteers all who attended and supported the 25th Annual CAPA Scholarship Fund Raiser Golf Tournament. Through the support of our players, sponsors, and volunteers we were successful in raising funds to send recipients to the NCAT Technology Program at Auburn University in early in 2017.

The funds support other educational opportunities as well. 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 what makes this possible. In these times we congratulate you and acknowledge your sacrifice for continuing to contribute to this program.

Congratulations to the CAPA Cup Champions for 2016. Mike Horn, John Garcia, Renick Christopherson and Matt Osbourn from Foothills Paving and Maintenance who took home the CAPA Cup trophy

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Other Sponsors: Award and Sign Connection, Fox Hollow GC

25th Annual Golf Tournament & Scholarship Fundraiser

CAPA Golf Tournament

Fox Hollow Golf Club - Lakewood
September 16th

Title Sponsor: MOODY INSURANCE AGENCY

Getting ready for the day, a bit of warm-up on the range

Checking in for a great day of golf!

Tammy Buck and Sandy Gomke collecting money for the Scholarship Fund

Meeting up with old friends and new

Lunch was a great time to talk about your 'round'

John Cheever and Charlie Atherton

Mark Ewald admiring his prize winning 'Long Drive'!

Randy Ficklin, Jeremy Clayton, Scott Connor and Jerrett Welch