



HOT-MIX ASPHALT



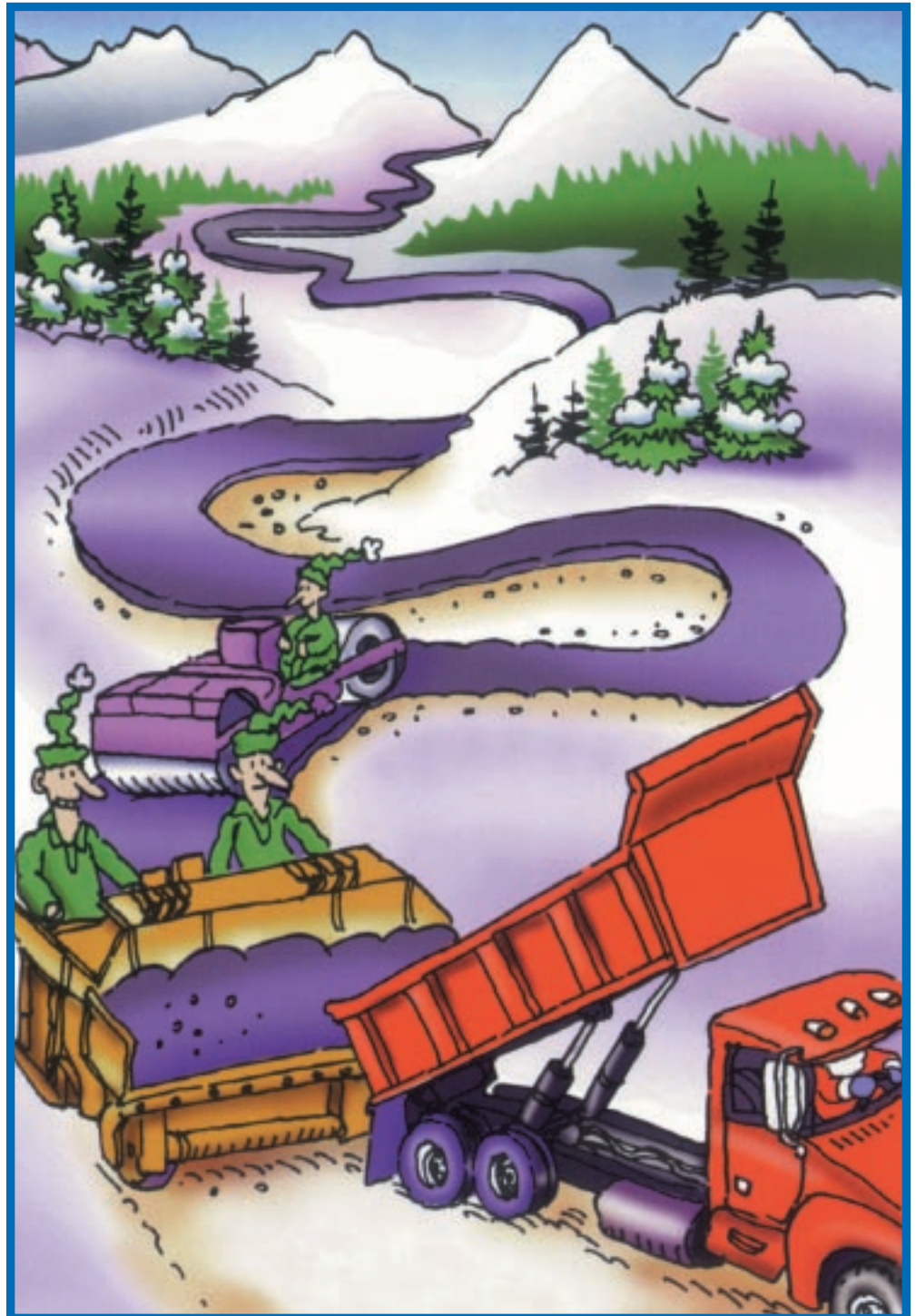
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CURRENT NEWS

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IS IT TOO COLD TO PAVE?

Mat Thickness Has Most Impact

Is it too cold to Pave? This question comes up every autumn. We all know what the ODOT specifications say: “Place asphalt concrete only if the surface is dry and if weather conditions are such that proper handling, finishing and compaction can be accomplished” (401.06, 2002CMS). ODOT further prescribes the following minimum surface temperatures: (table 401.06-1)

Course thickness	Min. surface temperature
3 in. (975mm) and over	36 degrees F (2 degrees C)
1.5 to 2.9 in. (38 to 74mm)	40 degrees F (5 degrees C)
1.0 to 1.4 in. (25 to 37mm)	50 degrees F (10 degrees C)
Less than 1 in. (25mm)	60 degrees F (16 degrees C)
Variable intermediate 0 to 3 in. (0 to 75mm)	40 degrees F (5 degrees C)

And, if that isn't clear enough, the CMS goes on to say that no surface course shall be placed below 40 degrees F, no polymer modified asphalt concrete below 50 degrees F and no polymer modified asphalt concrete after November 1.

What is it about this that we don't understand? Well, stuff happens. Projects encounter delays for all sorts of reasons and circumstances sometimes dictate that the asphalt must be placed no matter what. What should an owner and a contractor do?

We know what usually happens. The contractor balks, the owner waives the specifications and the material gets placed regardless of the weather. Sometimes it starts coming back up soon thereafter. Are there better alternatives? Almost certainly.

Of course, it would be best to avoid having to pave in cold weather. Placing asphalt concrete in cold weather is, at best, going to cost more money to do correctly. At the worst it is not going to be compacted correctly and durability will suffer. What are some of the alternatives to be considered? Can traffic be carried on an intermediate or base

course over the winter until favorable weather returns? Changes to the course thickness and/or mix type might be necessary. Would it be better to place a temporary surface of conventional materials that can be later removed and replaced with the specified (perhaps polymer modified) materials? Alternatives to placing the final surface course in adverse weather should be considered before deciding to proceed with cold weather paving.

Well, it just has to be paved. What can be done to achieve a good performing surface in spite of the weather conditions? First, the surface needs to be dry and the tack coat set before paving. We've seen where contractors have rented racetrack jet dryers to get the paving surface dry. Second and most importantly, durability of a pavement surface is a direct function of the density achieved during compaction. Compaction depends upon having enough time and enough rollers to obtain adequate density while the temperature of the mix being placed is still within the compaction temperature range, 275 to 175 degrees F.

What factors affect the time it takes for the mix to cool below 175 degrees F? All weather factors affect this time: air temperature, wind speed and the presence or absence of sunlight. The temperature of the surface on which the mix is to be placed is a factor too. But, the two most important factors are the temperature of the mix and the thickness of the course being placed. It is generally accepted that, if conditions do not permit 10 minutes of time for compaction, adequate density can probably not be achieved.

It is easy to determine this time for any set of conditions. Dickson and Corlew published cooling curves in 1970 from which you can read the time available for compaction for any given set of ambient and mix conditions. Examples of these charts are shown in the Hot Mix Asphalt Paving

Too Cold, *continued on page 3*

*This was placed in February 1994,
with 1-inch of snow on the ground
and is still in service today.*



Handbook, available from the NAPA or FPO. This task became even easier with the development of the PaveCool software by the Minnesota DOT. (download PaveCool at www.mrr.dot.state.mn.us/research/mnroad_project/restools/cooltool.asp)

With their software one can quickly determine the time available for compaction for any set of conditions and quickly compare the effects of changes in course thickness and mix temperature. Example: for the following conditions, 30 degrees air and base temperature, 5 mph wind, clear and dry, mid afternoon, mid-December, Columbus, OH. Mix temperature 275 degrees F. Course thickness 1.25 inches. The time available for compaction is 7 minutes, too short to realistically achieve density. If the mix temperature is raised to 315 degrees F and all others factors are the same, the time available for compaction is 12 minutes. Now you have a chance of getting it compacted before it cools. If the mix temperature is held at 275 degrees F, but the course thickness is increased to 2 inches, the time available for compaction is 17 minutes. It can be readily demonstrated using PaveCool that for any cold weather temperature there is a combination of mix temperature and course thickness that will permit adequate time for compaction. It's a matter of time and money.

Yes, Money. It costs a lot of extra fuel to make the mix hotter in cold weather. It may be necessary to shorten the haul and/or tarp and insulate truck beds to reduce heat loss in transit. Renting and fueling a jet dryer will cost you extra. Using a rapid-curing liquid asphalt instead of a slow-setting

emulsion for tack coat costs more, if you can get it. It will take extra rollers to compact the mix in a hurry. And, of course, making the course thicker may require extra material. Is it worth it? Well, it usually costs a lot less to do the job right the first time than it does to do it over. Research out of Washington State has indicated that even a few percentage points less density results in double-digit percentage losses in durability (life of the pavement). So, if you're the owner, it probably makes sense to invest the extra cost to get adequate density, if you absolutely have to have the work completed in cold weather.

How do you handle the extra cost and payment for this extra effort? The usual way is by change order, but scarce, suitable working days can be lost while such things are negotiated and processed. If an owner anticipated that such a situation might occur on his project, it might be worth while to set up an alternate bid item for the extra cost of cold weather paving, in order to establish in advance a price for the extra work needed to adequately place and compact HMA in cold weather. Issues such as course thickness and mix type would have to be addressed and some measure for verifying density, such as a test strip, would have to be established to ensure that the contractor's cold weather procedures are adequate to obtain a minimum acceptable density.

When you know the price to do the job right perhaps you can answer the question—*Is it too cold to pave?*

CONGRESSIONAL APPOINTMENTS BODE WELL FOR OHIO

Correction of Donor State Penalty A Possibility

Our first reaction to the shift in the majority from Democrat to Republican in the U.S. Senate this past November was one of trepidation. After all, it had been the Democratic controlled Senate that had voted highway funding at the \$31 billion mark while the Republican House favored a lower \$26 billion level. However, recent Senate Committee appointments are shedding a different light on things.

Ohio's major focus for the new highway act to replace TEA-21 has been twofold—ethanol and equity. Equity relates to relief from the donor state penalty. Presently Ohio receives 91¢ in return for every dollar of federal gas tax collected in the state making it a “donor” state. Conversely, other states receive more than they contribute making them

Congressional Appointments, continued on page 4

“donee” states. For example, neighboring states West Virginia receives \$1.89 and Pennsylvania receives \$1.14 for every dollar collected. If Ohio’s share was increased to 95¢ from the current 91¢ level it would mean \$140 million more in federal funds. So, what does all of this have to do with which party controls the Senate? Well, now that the Republicans are the majority party, they get to appoint the committee chairman and the new committee chairman of the Environment and Public Works Committee is Senator Jim Inhofe from Oklahoma, which just happens to be a donor state also. It is the EPW Committee that has oversight of the new transportation bill. The bill will be written by the subcommittee of Transportation, Infrastructure and Nuclear Safety who’s new chairman is Senator Christopher “Kit” Bond from Missouri, which is also a donor state. Outgoing Chairman Jim Jefords (I-VT), Ranking Member Bob Smith (R-NH), and Subcommittee Chairman Harry Reid (D-NV) were all from donee states. As such we can expect changes to be proposed to the federal allocation formula used to divide federal funds among

the states. In addition to the EPW Committee, Senator Bond has influence on two other committees that will be key in the provisions of the new transportation bill; the Budget Committee and the Appropriations Committee.

The other major focus for ODOT is the ethanol credit on the gas tax. Currently gasoline mixed with ethanol is taxed at 13¢ per gallon, a reduction of 5.4¢ from the 18.4¢ federal tax on gasoline. Additionally 2.5¢ of the 13¢ tax is redirected to the general fund from the highway trust fund. This 7.9¢ reduction means \$160 million less for Ohio annually. Currently the 2.5¢ diversion is addressed in the energy bill, which has been stalled in Congress. If it would now move forward it would mean an additional \$50 million for Ohio.

The \$190 million combination of easing of the donor state penalty (\$140 million) and redirecting of the 2.5¢ ethanol tax (\$50 million) would mean more to Ohio than the difference between the Senate and House Appropriation proposals. While it’s still a lot of “ifs”, it brings it a lot closer to reality than it was before the election.

U.S. DOT, FHWA WORK ON STREAMLINING ENVIRONMENT REVIEWS FOR HIGHWAY PROJECTS

Specific Goals Set

In 2001 the median time to process an Environmental Impact Statement (EIS) for a highway project was 4¹/₂ years. Section 1309 of the Transportation Equity Act for the 21st Century (TEA-21) mandated streamlining and shortening this process but still comply with all the provisions of the National Environmental Policy Act. In implementing the President’s Executive Order regarding this issue, Secretary Mineta recently said that the U.S. Department of Transportation will develop a list of specific streamlining projects “to tackle immediately.” Secretary Mineta asked for project nominations from governors and other transportation leaders.

“Working with state and federal agencies, we expect to help cut through red tape and promote effective strategies for taking time out of the decision making process,” Secretary Mineta said.

Based on its experience in accelerating review of the initial list of high priority projects, the De-

partment in the future will develop a series of “best practices” for streamlining the decision making process on all transportation infrastructure projects and for enhancing environmental stewardship.

A total of 6 highway projects will be selected nationally as high priority projects. ODOT has submitted 4 projects for consideration. They are: the U.S. 24 fort to port highway, the Jeremiah Morrow I-71 bridge replacement, the I-70/I-71 split in downtown Columbus and the Portsmouth bypass.

The Federal Highway Administration (FHWA) has set specific goals for processing environmental documents using these “best practices” once they are developed. First they will establish time frames for processing Environmental Assessments (EA) and EISs and meet those schedules for 90% of the projects by September 30, 2007. Secondly is to decrease the median time it takes to complete an

U.S. DOT, FHWA WORK, *continued on page 11*

NIGHT WORK ON I-74 DRAWS COMPLIMENTS

Facilitating Traffic and Quality Both Commended

Barrett Paving recently completed the resurfacing of I-74, in Cincinnati and Hamilton County, west of I-75, approximately 8 miles, to Harrison Pike. The project is notable both for the favorable public comment that it has received and the quality of work that was achieved.

The project, ODOT project number 284-02, was bid June 19, 2002 for completion by November 15, 2002. Barrett Paving Materials, Inc. was the successful bidder on the project at \$3,235,081.58 against the engineer's estimate of \$3,355,000. The project included planing 491,656 square yards of the existing surface (at a unit price of \$0.60/sy) and placing 27,267 cubic yards of item 858, asphalt concrete surface, 12.5mm, type A (446) (unit price \$71.00/cy). In other words this was a 2-inch mill and fill with type A Superpave mix, placed under density acceptance.

Paving was specified to be done at night between the hours of 9 pm and 5:30 am so as to minimize work zone traffic congestion. Mike Thompson, regional manager for Barrett, reports that the work went well and that they were able to conform to the specified working hours. In fact, he said that they had to get off by 5:30am because traffic picked up so much. Mike sent us a copy of a newspaper letter

to the editor complimenting the way the work on I-74 was being done, the improvement in ride and the fact that the work was done at night to avoid inconveniencing commuters.

Mike Thompson was even more pleased with the quality results obtained. Even though this project was just a one-course mill and fill, Barrett achieved bonus density, 104% pay, on about three-fourths of the lots on the project. ODOT resident engineer, Dennis Stemler, and Project supervisor, Ron Young, both expressed satisfaction with how well the project went and with the quality results achieved. Stemler remarked that he received several e-mails from the public complimenting the Department on how the work was being done. Dennis said "that rarely happens—we don't know how to react when we get a favorable comment".

Once again nighttime "stealth" paving has drawn compliments from the ultimate customers, the road users. Nighttime paving is a unique attribute of Hot Mix Asphalt that allows a road to be renewed without the traffic congestion that draws the ire of motorists. This project also shows that high quality workmanship can be achieved while paving at night.

*High Quality Superpave
placed on I-74.*



Member Spotlight

BURTON SCOT CONTRACTORS ROLL INTO THE PAVING BUSINESS

Dependability. Integrity. Value. That's how Burton Scot sums up its recipe for success. "We do what it takes to make the customer happy," said David Paulitsch, the company's president and founder.

Paulitsch started Burton Scot as a rental and service company—a side project while he worked for Cleveland Trinidad Paving in the mid-eighties. In 1993 he began working full time for his young company, headquartered in Burton, Ohio. The second half of its name was inspired by Paulitsch's son, Scot.

"I think that was his hook to make sure I came to work with him," said Scot Paulitsch, who is now vice president of Burton Scot. "I consider myself lucky to work with my dad. I've seen father-son partnerships not work as well in other companies, but it works great for us. It's very rewarding to work with him."

Scot joined his dad in 1996 after graduating from Bowling Green State University. He brought with him a background in engineering, having done co-ops with ODOT, Gerken Paving and S.E. Johnson. His arrival was the perfect compliment to his father's paving background and set the stage for the company's transition into paving. Prior to that Burton Scot was primarily doing site work, sub-contracting the paving work on its projects.

"When we started paving we grew the company very quickly," said Scot. "At first we were growing at a rate of about 100 percent a year. Today our growth rate has stabilized at about twenty percent a year."

Having installed 100,000 plus tons of asphalt with \$10 million in revenue in the past year, the company hopes to continue growing at about that pace. It currently operates with five crews and about thirty employees during construction season.

Now the majority of the company's business comes from paving, or paving-related services.

Burton Scot is also a full-service site development company, with capabilities including general contracting of site and highway improvements.

The Burton Scot team also includes David Paulitsch's daughter Stephanie who has become chief estimator for the company. "She initially joined us part time on what was going to be a temporary basis," David Paulitsch said of his daughter. "But I think she really liked it and has become very good at it. The other day she was at a pre-bid meeting with twenty-seven men. She was the only woman in the room. I think she likes the challenge of being in a non-traditional role for a female."

Scot echoed his father's sentiments. "We didn't get along very well when we were younger," he said. "But we both grew up a lot and she's really picked the job up well. She makes it very easy for us to finalize bids. I really like working with her now."

Burton Scot views its business target as the middle market. "We've found a place where we can compete without owning an asphalt plant," said David. He describes half of the company's customer base as general contractors, including commercial and industrial work. The rest of the company's business comes from counties, cities and some from the state.

"We're fortunate in that we have a handful of people who have been with us for a long time," said David. "These people have an expertise and dedication to quality that sets us apart from other contractors. We've spent a lot of time and money focusing on doing quality work. We try to accommodate customers sometimes to a fault—going way beyond what is expected in hopes that we can become a preferred contractor. If you make an investment like that it will come back in the future."

So far it seems to be working. David says most of his business is coming through word of mouth.

"The future is bright," agrees Scot.



KOKOSING SCORES SLAM DUNK

Basketball Court Donated

Earlier this year, Flexible Pavements received an inquiry from the PTO at Pleasant View Middle School in Grove City. Their 100-foot by 60-foot outdoor basketball court was badly deteriorated and needed repaved however the school lacked the funds for the work. The PTO was wondering if one of our members would be willing to donate a 2-inch topping on the court.

FPO circulated the request to its Columbus area members to see if anyone was interested. Kokosing Construction Company, Inc. came off the bench to score the winning shot. Wayne Brassell of Kokosing indicated that they had the contract for the resurfacing of Grove City's streets and would be willing to do the work since they were in the area, provided the PTO would do the prep work needed. The existing court was badly cracked with grass rooted in the cracks and some areas needed

patched. The PTO members removed the grass, sealed the cracks and installed repair patches this past summer so that the only thing Bill Mullen's prep crew had to do when arriving at the site on October 7th was scrape back the edges with a backhoe and clean the surface a bit. Mike Harris' paving crew then went into the line up placing 98.74 tons of 404 mix in about 2 hours. Because the existing court was in pretty rough shape and needed leveled, that was about 30 tons more than a 2-inch mat would call for. The project was set up and coordinated by Robert VanGorder and Ted Mohan of Kokosing and was worth about \$4,000.

The principal of Pleasant View Middle School, Ms. Bev Peters, the PTO and especially the students are glad Kokosing was on their team and are thankful for their generosity. Everybody came out a winner.



Court prior to repaving by Kokosing All-Stars.



Heavily recruited paving crew foreman, Mike Harris, comes off the bench to lead the team to victory.



Kokosing's prep crew, captained by returning letterman Bill Mullen goes into action.



An All-Star finish by any standard.

ACRES OF DIAMONDS HERE IN OHIO

HMA Plants Receive Commendation

There's no need to go looking elsewhere. Right here in the Buckeye State diamonds are being discovered. Diamonds, that is, in the form of hot mix asphalt facilities that are operating in an environmentally exemplary manner. Now added to the numerous facilities in Ohio meeting the rigorous requirements of the National Asphalt Pavement Association's Diamond Achievement Program are three Barrett Paving Materials facilities.

The Diamond Achievement Commendation was developed by NAPA to encourage excellence in hot mix asphalt plant/site operations while fostering good community relations. The Program brings to light how important it is to the future viability of the hot mix asphalt industry that producers operate in a clean manner. All hot mix asphalt producers in the United States are eligible. To earn the Commendation, a producer's plant/site must achieve a passing score in each category of the application. Applicants are scored on compliance with the following vital aspects of plant/site operations:

- Appearance
- Operations
- Environmental Practices
- Safety
- Permitting and Regulatory Compliance
- Community Relations

The three Barrett facilities earning commendations are located in Newtown, Pleasant Run and Carthage. The Newtown plant is an ASTEC TURBO

400 DOUBLE BARREL drum plant equipped with a silenced Hauck Echostar burner. The plant is located in a highly developed area in the Village of Newtown. The entrance drive, plant area and partial stockpile areas are paved. Dust control is accomplished with a watering system and a water truck that regularly cleans the paved areas at all of Barrett's locations.

The facility at Pleasant Run is a 5-ton SIMPLICITY batch plant. It is equipped with an enclosed Gencor burner for quiet operation. The plant is located in a residential area in northern Hamilton County. The entrance drive and plant area are paved. The street-side of the facility is fenced with gates at the drives and attractively landscaped.

The third facility is located at Carthage. This facility is an ASTEC SIX PACK continuous single shaft mixer rated at 300 tons per hour. It is located in a combination residential/commercial area of the community in northern Cincinnati. Similar to the previous facilities, the entrance drive and operations area are paved and dust suppression techniques are utilized. Recently the facility has been painted and the office remodeled providing an even more appealing appearance.

Congratulations to Barrett Paving Materials and the numerous hot mix asphalt producers here in Ohio who have received Diamond Award Commendations. In addition to making quality Hot Mix Asphalt the material of choice for Ohio's motoring public, your environmental stewardship is setting the pace for others to follow.



Remodeled office at Barrett's Carthage facility.

Barrett's Newtown facility uses paved surfaces for dust control and a silenced burner.

OCAPE ANNOUNCES ITS WINTER SCHOOLS

The Ohio Center for Asphalt Pavement Education has announced its educational courses and schedule for Winter, 2002/3, as follows:

December 16-20, 2002	Operating Engineer's Local 18/FPO Paver School, Cygnet, OH
January 21, 2003	FPO, State of Asphalt Pavement Technology Columbus, OH
January 27-31, 2003	ODOT/FPO, Comprehensive Asphalt Mix Design Columbus, OH
February 5, 2003	ODOT/FPO, Ohio Asphalt Paving Conference Columbus, OH
February 18, 2003	OCAPE, Preventing Segregation in Hot Mix Asphalt Paving Columbus, OH
March 3-7, 2003	Operating Engineer's Local 18/FPO Paver School, Miamisburg, OH
March 4-5, 2003	FPO, Annual Meeting and Equipment Exhibition Columbus, OH
March 4-5, 2003	OCAPE, Basics of Hot Mix Asphalt Production Columbus, OH
March 4, 2003	OCAPE, Fundamentals of Hot Mix Asphalt Compaction Columbus, OH
March 4, 2003	OCAPE, Hot Mix Asphalt Mix Type Selection Columbus, OH
March 10-14, 2003	Operating Engineer's Local 18/FPO Paver School, Logan, OH
March 24-28, 2003	Operating Engineer's Local 18/FPO Paver School, Richfield, OH

Course announcements and registration forms for the individual courses are included with this newsletter and can be downloaded from the Flexible Pavements of Ohio website: www.flexiblepavements.org Monitor the website calendar for any changes or additions in course offerings.

TECH BULLETIN ADDRESSES PRIME COAT USE

The Ohio Center for Asphalt Pavement Education (OCAPE) is pleased to announce a *Technical Bulletin* release. This *Bulletin* addresses an issue that has received much debate—prime coat use.

Some specifiers demand prime coats in asphalt pavement construction regardless of factors such as subsequent layer buildup or weather limitations. Others, not having a particular persuasion, specify prime because they've always done it that way. This *Tech Bulletin* provides basic information to assist

specifiers in making good judgements when considering the use of prime coats. It discusses prime coat composition, curing and other aspects needing consideration prior to specifying its use. *The Bulletin* also addresses some urban legends—like, prime coats add structural strength to the pavement. Lastly, the *Technical Bulletin* discusses some effective uses for prime coating.

Look for the Technical Bulletin in this issue of Flexible Pavement of Ohio's *Current News*.

LEGAL CORNER

Do You Have Enough Liability Insurance?

While jury verdicts in many areas of the country are still fairly modest, a recent Florida case involving a poorly designed construction zone emphasizes the risk of a huge verdict if there are catastrophic injuries. In March of 2001, a large contractor and a Florida county made a \$57 million settlement payment to a young family where a six year old daughter was killed and three year old twin brothers were paralyzed as a result of a car crash caused by a poorly designed construction zone. A later jury trial awarded the same family \$256 million in a verdict against a local police officer who plowed into the family while rushing to the accident scene.

The family sued several parties who allegedly contributed to the accident including the highway contractor who was in charge of road construction and maintaining a safe load of traffic through the intersection. The county had a significant risk of liability because it did not hire a contractor to

develop the traffic plan but developed it “in house.” Apparently the configuration of the temporary traffic lanes and barricades had been newly arranged on the day of the accident, but the timing of the traffic signals had not been adjusted to account for the increased turning time. In addition, the placement of barricades and construction equipment created blind spots and made it impossible for either driver to see the other until it was too late allegedly turning the intersection into a “death trap.”

While jury verdicts of this size are still unusual, it points out the risk associated with catastrophic injuries that can occur on construction sites, particularly those involving construction zones on road building projects. Even construction trades with presumably less risk, like ceilings and drywall, should be sensitive to the risk of large verdicts and consult with their insurance consultants to ensure adequate insurance limits are in place.

U.S. DOT, FHWA WORK, *continued from page 4*

EIS from its current 4^{1/2} years to 3 years by September 30, 2007. And lastly is to decrease the median time to complete an EA from its current 1^{1/2} years to 1 year, again by September 30, 2007. FHWA will measure its performance through their new Environmental Document Tracking System (EDTS).

The Ohio Department of Transportation is no stranger to trying to expedite environmental reviews. In order to get timely reviews by other agencies, ODOT funds two positions at the State Historic Preservation Office and one position at the Ohio Environmental Protection Agency. The sole duty of these employees at those agencies is to work on environmental review for ODOT projects. Ohio is currently covered by four Corps of Engineers districts. ODOT and the Corps are discussing an arrangement where Ohio would be consolidated

under one district so ODOT could fund one position at the Corps to concentrate on processing ODOT work. Much has also been done in recent years to facilitate concurrent reviews rather than the traditional one step at a time procedure. Emphasis has also been put on training to get environmental documents right the first time so they do not have to come back for revisions. Coordination also takes place with FHWA to ensure they are reviewing ODOT's top priorities rather than the traditional first in—first out scenario.

Any improvement in shortening the environmental review process will be welcome by all—except maybe for those who try to stop highway projects by throwing up environmental hoops for everyone to jump through.



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Barrett Paving Materials, Inc.
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