



American Concrete Pavement Association

CONCRETE PAVEMENT PROGRESS

*Volume 41, Number 8
September 29, 2005*

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Highways Come Alive Highways for L.I.F.E. Enters New Era

The Federal Highway Administration's (FHWA) Highways for L.I.F.E. (1) program is gaining ground, in terms of both acceptance and participation by highway agencies, industry, and other stakeholders throughout the transportation industry.

As part of the current transportation program, the Highways for L.I.F.E. initiative will be funded with \$15 million in fiscal year 2006, and then \$20 million in successive years through 2009. Funding will assist qualifying states with innovative approaches to make highways safer, stronger, and faster.



U.S. Department
of Transportation

**Federal Highway
Administration**

Background

The Highways for L.I.F.E. Initiative is credited to Michael P. Jackson, former U.S. Department of Transportation Deputy Secretary.

"Change the way we build highways. We need to build them faster, have them last longer, have them be safer and at a lesser cost. Be bold and audacious in your thinking," Jackson is quoted as saying. The quote may be found on the FHWA's Highways for L.I.F.E. website.

"The mindset behind the program is, 'let's find the best examples of projects gone right, that have employed technologies and combined them in a way that improved the quality, speed, and safety of roads, and make them the rule — not the exception'" said Leif Wathne, P.E., ACPA Director of Highways. "The program aims to make extraordinary successes more common."

A New Era

FHWA is working proactively with stakeholders to gather input on the next step in implementation.

ACPA is committed to this initiative, as evidenced by an official endorsement approved by the Association's Board of Directors in July, as well as a similar resolution by the Association's Chapter Division in May.

ACPA staff will be meeting with the agency, along with other Highways for L.I.F.E. stakeholders to discuss ways state departments of transportation and industry can participate.

FHWA is encouraging states to begin projects that will sustain over time and reduce congestion. The federal share of this funding for projects that qualify may be up to 100%, although it's hoped that match requirements also will be determined soon.

To qualify for the funding, states must apply for the program, and the proposed projects must meet the following criteria:

- Construction, reconstruction, or rehabilitation of a route or connection on a Federal-aid highway section eligible for assistance under chapter 1 of [Title 23, United States Code](#);
- Projects must use innovative technologies, manufacturing processes, financing, or contracting methods that improve safety, reduce congestion due to construction, and improve quality; and
- Must meet additional criteria determined by the Secretary of the U.S. Department of Transportation (DOT).

States should prepare early to propose new projects because the available funding will not tie up the funds appropriated to them through SAFETEA-LU, Wathne said.

To educate and train the workforce responsible for using these innovations, Highways for L.I.F.E. involves technology transfer and partnerships in both public and private sectors. The federal share for technology partnerships may reach 80%.

Highways for L.I.F.E. and its supporters seek to build relationships between experts and state officials to create a vital, long-lasting infrastructure that will preserve the environment while supporting the livelihoods of the nation's population. With the future in mind, the program has initiated a look to the future, instead of immediate fixes, through innovation.

"Be bold and audacious in your thinking."

— *Michael P. Jackson,
former U.S.
Department of
Transportation
Deputy Secretary*

(1) *The abbreviation L.I.F.E. represents long lasting, innovative and fast construction of efficient and safe highways and bridges.*

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ACPA Offers Free Registration to Government Officials

ACPA is offering free registration for government officials at its 42nd annual annual convention, scheduled for Nov. 30 - Dec. 2, in Indian Wells, Calif.

"This free registration is our way of both welcoming and giving back something to our customers in the public sector," said Gerald F. Voigt, PE, ACPA President and CEO. "Federal, state, county, and city officials play a vital role in keeping our nation moving safely on highways, airports, and roadways."

In related news, ACPA will also honor the contributions of an outstanding government or public official with an Association Award on Wednesday, November 30 during the opening general session.



ACPA encourages government officials to attend the 2005 Annual Convention by offering free registration.

Participants will hear and see the latest developments in concrete pavement research and technology initiatives, pavement design, paving practices, materials, equipment, and more. In addition to the solid technical line-up, participants will hear presentations by top political leaders.

ACPA also has refined the convention program to allow time for networking, relaxation, golf, tennis, and enjoyment of the many amenities offered by the resort location. The convention will take place at the [Renaissance Esmeralda Resort and Spa](#) in Indian Wells.

ACPA urges participants to book their rooms now. Call 1-877-804-4070 and mention the "American Concrete Pavement Association" to receive a special discounted rate of \$159 per night plus tax. To reserve rooms online, click [here](#).

For more information on the Annual Convention, contact [Maryann Beckman](#) at 847-972-2272.

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Highway Officials Announce New Leadership



Georgia Department of Transportation Commissioner Harold E. Linnenkohl was named the 96th President of the [American Association of State and Highway Transportation Officials](#) at its annual meeting on September 19.

Linnenkohl has been with the Georgia DOT for 37 years and has been the agency's commissioner for the past two years.

The AASHTO board also named North Dakota Department of Transportation Director David Sprynczynatyk as Vice President.

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Anti-Icing Overlay Helps Prepare Highways for Winter Precipitation



Fall brings a welcome respite from sweltering hot summer days, but it is also a season of preparation. In many regions of the country, highway and transportation officials must prepare for the ice and snow that winter brings.

Researchers at the Keweenaw Research Center, the research institute at Michigan Tech University, have developed technology to impede the treacherous effects of ice formation on highways and bridges.

Russ Alger, a researcher at the center, invented an anti-icing epoxy pavement overlay to prevent motorists from sliding on ice.

The anti-icing pavement overlay is a sheet of epoxy covered with an aggregate to create a sponge-like surface that soaks in a certain amount of ice-melting chemicals that crews deposit on roadways. By keeping them there — instead of allowing them to be pushed off by snow plows or otherwise being prematurely removed from road surfaces — the product is said to help prevent ice build-up.

A new anti-icing overlay is said to prevent ice from reforming prematurely on highways and bridges.

Use of the overlay on several notoriously treacherous roadways in Wisconsin proved successful in preventing accidents, according to test results from Wisconsin Department of Transportation.

Alger and others involved with the overlay are refining the marketing of the product with the goal of pricing that is comparable to other overlays, but with the additional anti-icing capability.

The fact that the anti-icing measure is an epoxy overlay not only can prevent accidents during winter, but also preserves pavements from corrosion, Alger said. **(Source: Michigan Tech ONLINE LODE)**

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Illinois to Create Transportation Research Center



The Illinois Department of Transportation (IDOT) and University of Illinois at Urbana-Champaign announced recently a joint effort to create a new transportation research center that will explore solutions to congested highways and transportation pollution.

IDOT initially will spend \$6.6 million in federal research money on the new Illinois Center for Transportation (ICT — pronounced "ice-tea"), and the university will contribute \$2.2 million, organizers said.

Illinois Department of Transportation officials and other representatives receive a briefing at the grand opening of the Illinois Center for Transportation.

Organizers plan to focus the center's research on applying technology to build safer, more durable roads and other transportation facilities, which will involve concrete pavement.

Concerns over the financial and societal affects from the increased demand on the national transportation system necessitated the need for an "active research program on 'intelligent' renewal of our transportation infrastructure, improving the safety, and reducing the impact on the environment," Al-Qadi told CONCRETE PAVEMENT PROGRESS.

The center will be headquartered at the Advanced Transportation Research and Engineering Laboratory in Rantoul, Ill., part of UI's Civil and Engineering Department. The UI lab already conducts research in conjunction with the Federal Highway Administration and Federal Aviation Administration, among other organizations.

ICT also plans for periodic training programs for qualified students who express an interest in the transportation industry, as well as courses and training for IDOT officials and other industry

members, Al-Qadi said.

Al-Qadi estimates the new center could save Illinois more than \$100 million within the next few years; Al Qadi says studies have documented that for every dollar spent on transportation, \$7 is saved in tax money. **(Source: ASSOCIATED PRESS and independent reports by ON THE GRADE.)**

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Software Weighs Costs, Benefits of Municipal, County Pavement Design

The release of a new software program will help engineers, contractors, consultants, officials and others in the transportation industry design cost-effective pavements for municipal and county roads

StreetPave is a comprehensive software program that allows users to make decisions based on objective criteria, including thickness and cost analyses.

A walk-through wizard and other tools take users through the design process with cost and specification considerations in mind, such as pavement bases, estimated timeframe for fatigue, erosion, and concrete strength.

StreetPave provides an asphalt cross-section for cost/benefit and durability analyses and comparison. For example, users can choose design criteria, and the software will provide a time estimate for rehabilitation for both concrete and asphalt pavements.

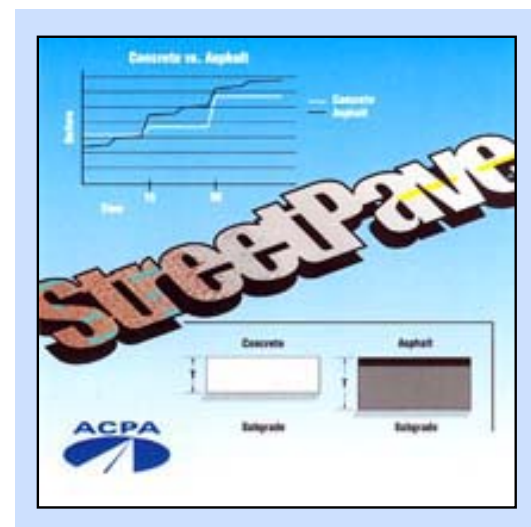
"StreetPave was developed over the past year and a half as a direct response to the need for new technology to clarify the cost and strength relationship between concrete pavement and asphalt," said Scott Haislip, ACPA's Director of Streets and Local Roads.

StreetPave is available only through ACPA, or its affiliated chapters and state paving associations.

The Association is offering members the software at the discounted price of \$25; the non-member price is \$100 per copy. For chapter and state affiliate contact information, click [here](#).

For more information or to order online, click [here](#).

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StreetPave was developed in direct response to the needs of the streets and local roads market.

Feds Seek Senior Research Civil Engineer

The Federal Highway Administration is seeking a senior research civil engineer to work in the Office of Infrastructure Research and Development, as a member of the Pavement Design and Performance Modeling Team.

The position is located in McLean, Va. The position's responsibilities include formulating and conducting in-house research on pavement response and performance modeling and analysis; a full description and application instructions can be found [here](#) under announcement number FHWA.HRT-2005-0021.

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Ready Mixed Concrete Association Calls for Papers on Pervious Concrete



The [National Ready Mixed Concrete Association](#) announced a call for papers and abstracts for its 2006 Concrete Technology Forum. The forum will focus on pervious concrete.

The association encourages researchers, civil and environmental engineers, contractors, concrete producers, public works officials, material suppliers, and other interested parties to submit papers by Friday, Nov. 18.

Contributors can submit papers/presentations, as well as presentation abstracts online by clicking [here](#).

The forum is scheduled for May 24 - 25 in Nashville, Tenn. The aim of the forum is to bring researchers and industry members together to discuss the latest in technical knowledge, tools, and solutions.

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RESOURCES

Highway Bill Conformity Provisions Fact Sheet Available

The Federal Highway Administration's Office of Planning, Environment, and Realty released a fact sheet outlining the transportation conformity provisions of the highway bill signed into law recently.

Click [here](#) to read the provisions ensuring conformity to air quality standards detailed in the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU).

Feds Release Updated Fiscal Year Report

An updated version of the U.S. Department of Transportation's fiscal year 2004 financial report provides information on the achievement of DOT Goals set by its six agencies that receive funding from the Highway Trust Fund:

- Federal Highway Administration (FHWA);
- Federal Transit Administration (FTA);
- Federal Motor Carrier Safety Administration (FMCSA);
- National Highway Transportation Safety Administration (NHTSA);
- Federal Railroad Administration (FRA); and
- the Bureau of Transportation Statistics (BTS).

Click [here](#) to read the revised version.

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PRODUCTS & SERVICES SPOTLIGHT

Concrete Curing Blankets Designed for Cold Weather Applications

Powerblankets™ are revolutionary new concrete curing blankets designed for use for all cold weather applications.

Powerblankets™ will thaw frozen ground and allow concrete to be placed in freezing temperatures. They also are designed to be used to cover fresh concrete to ensure optimal curing temperatures.

Powerblankets™ actually speed up the curing process allowing contractors, highway construction companies, home builders, and remodelers to stay on schedule, meet code, and eliminate environmental concerns.

They produce no noxious fumes; use no flammable or toxic liquids; and don't require the use of awkward and expensive equipment.

Powerblankets are the least expensive, easiest, and most cost effective way to thaw ground, and cure concrete in cold weather!

Powerblankets™ use an extremely efficient and effective heating system and are simply plugged into a 110V outlet. The heat discharged from the blankets will thaw frozen ground, and speed up the curing process. The simple design makes them quick and easy to use and operate.

Two blankets can be plugged in together allowing 550 sq. ft of coverage. Powerblankets can easily be designed for custom applications giving up to 2,000 sq. ft+ of coverage. The applications are limitless.

No matter what the weather, Powerblanket™ Concrete Curing Blankets help projects stay on time and on budget; produce optimal curing temperatures; ensure a strong, durable slab; and avoid costly delays and potential penalties.

Powerblankets will make your concrete jobs all run smoothly this winter! **A limited number of Powerblankets™ will be made available to contractors in November 2005 for testing.** For additional information, visit www.powerblanket.com; call 801-557-3722; or e-mail [Jonathan Hansen](mailto:Jonathan.Hansen@powerblanket.com).



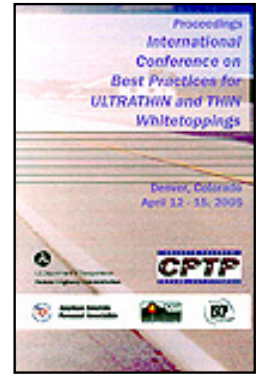
***Warm up ...** Concrete curing blankets are designed for cold-weather paving applications. A limited number are being offered for testing by the concrete paving industry.*

ACPA Offers Whitetopping Conference Proceedings

ACPA is offering its last book and CD-ROM copies of the best practices presented at the 2005 International Conference on Best Practices for Ultra-thin and Thin Whitetoppings.

The proceedings feature the newest technologies in whitetopping and overlays, including technical information from ACPA President and CEO Gerald F. Voigt, P. E., And ACPA Managing Director of Technical Services Steve Waalkes, P.E.

To order a package containing both items for \$30, contact [Gloria Hallman](#) at 847-966-2272.



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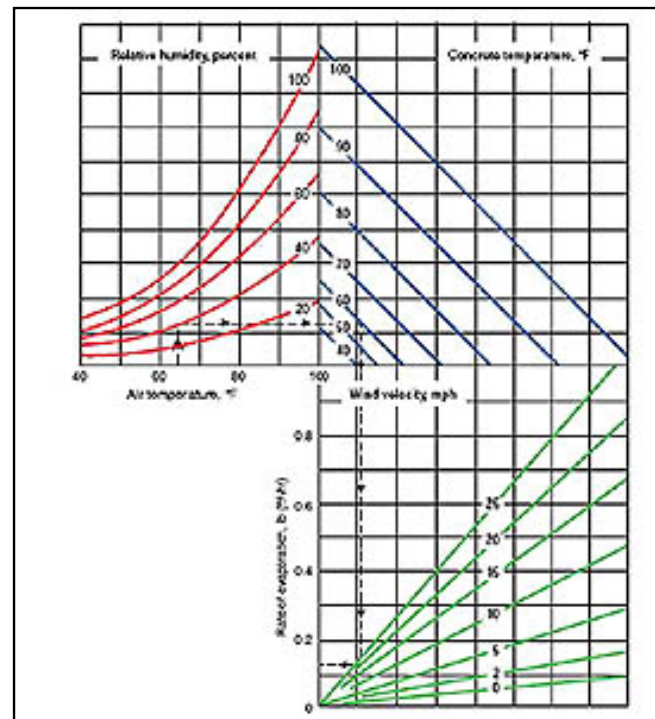
TECH CORNER

Feds to Release Brief on Curing Practices

The Federal Highway Administration is scheduled to release a new tech brief on Curing Practice for Slipformed Concrete Pavements this fall. The tech brief was produced as part of the Concrete Pavement Technology Program (CPTP).

The document discusses important concepts in pavement curing, describes the use of evaporation retarders and curing compounds, provides guidance on how to estimate both evaporation and bleeding rates, and highlights best practices for curing portland cement concrete pavements.

The soon-to-be released CPTP Tech Brief defines curing of concrete as the maintenance of adequate moisture and temperature conditions to allow for the development of the desired physical properties (strength, durability, etc.).



Poor curing practices can lead to a variety of pavement problems, such as excessive curling, cracking, surface deterioration, inadequate strength, and reduced durability.

The damage caused by inadequate curing is typically irreversible. Good curing practices essentially involve protecting the concrete to ensure that all the needed mixing water is retained for hydration, and preventing it from experiencing extreme temperatures — hot or cold.

In general, curing should be initiated as soon as possible after placing the concrete, to prevent excessive water loss and surface drying. This is typically accomplished with white pigmented curing compounds that seal the concrete surface and reduce the rate of moisture loss.

However, since rising bleed water can become trapped under and disrupt a curing membrane and cause lenses to form that result in delaminations and spalling, waiting until bleeding subsides is generally recommended in industry literature. Because most of today's paving concretes have low or no bleed rates, this delay in curing compound application is not generally required. In fact, for slipform paving concrete, the bleed rate (often considered to be 0.05 lb/sq. ft/hr) is typically lower than the evaporation rate under most paving conditions.

The mixture specific bleed rate can be estimated using ASTM C 232. When the evaporation rate exceeds the bleed rate though, the concrete is susceptible to plastic shrinkage (shallow, early age surface cracks). The widely recognized evaporation rate nomograph first published by Lerch in 1957 (Figure 1) allows a user to estimate the evaporation rate based on environmental data and concrete surface temperatures. When the evaporation rate is high (generally > 0.2 LB/sq. ft/hr), preventive measure such as fogging or the application of an evaporation retarder may be needed, until final curing is initiated and the curing compound is applied.

Curing compounds used should meet ASTM C 309 or AASHTO M 148 material requirements. Different curing compounds provide different levels of protection from moisture loss and daylight reflectance. ACI 305 R recommends a maximum water retention limit of 0.08 LB/sq. ft for concrete placed in hot weather. Application rates should be between 100 and 200 sq. ft/gal, depending on the pavement texture. Curing compound should be applied with power driven spray equipment for large areas, to avoid uneven application. Under normal conditions, one smooth coat is sufficient, but sometimes a second coat is necessary to provide complete and uniform coverage.

Prior to pavement construction, it is useful to consider the following:

- Estimate the expected bleeding rates (ASTM C 232).
- Estimate drying conditions with the nomograph shown in [figure 1](#), using expected temperature, wind and humidity measurements from the paving site.
- Compare the bleed-rate estimates to the drying rate estimates to determine the likelihood of critical drying.

If critical drying is likely, consider using evaporation retarders; managing temperatures by using low heat materials and by cooling aggregate stockpiles (sprinklers); and applying additional curing compound.

It is important to monitor and compensate for conditions onsite as things change during the course of a paving job. Specific steps include:

Figure 1. *Nomograph of the evaporation rate of slipformed concrete pavement, based on environmental data and concrete surface temperatures. Contractors using the nomograph can determine whether preventive measures need to be taken to avoid plastic shrinkage.*

- Verify drying conditions onsite with the nomograph shown in figure 1, using actual temperature, wind and humidity measurements from the paving site.
- Reduce the evaporation rate if necessary (when evaporation rate greatly exceeds bleed rate) using evaporation retarders, fogging, wind screens etc.
- Apply curing compound as soon as possible after bleeding subsides.
- Ensure that the curing material is applied in the correct amounts (in two coats if necessary), and thoroughly along pavement edges and sides.

When curing compounds and evaporation retarders are used as recommended and the temperature is managed properly, curing may be assumed to be adequate.

For more information, contact [Leif Wathne](#), P.E., at 202-887-8290.

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TRANSPORTATION NEWS

North American Surface Trade on the Rise

U.S. surface trade with Canada and Mexico rose 7.2 percent in June 2005 from June 2004 to a total of \$59.4 billion, according to the Bureau of Transportation Statistics (BTS) of the U.S. Department of Transportation.

Almost 90% of U.S. trade by value with its North American Free Trade Agreement partners (Canada and Mexico) moves over land, largely over highways.

The surface trade of the United States with Canada and Mexico valued \$59,431 million, compared to \$55,422 million in June 2004.

Total surface transportation trade value was 87.1% higher than in June 1995, indicating the rise in the past decade.



U.S. Surface trade with Canada and Mexico increased in 2005 from the year-ago values.

Highway Fatalities Down in 2004

The number of U.S. highway fatalities declined incrementally to 42,636 in 2004, according to the U. S. Department of Transportation's National Highway Traffic Safety Administration. In 2003, 42,884 highway fatalities were reported.

Transportation Research Board Urges Early Registration



The Transportation Research Board 85th Annual Meeting will feature over 70 workshops on current topics in the industry, including Highways for L.I.F.E. (click [here](#) to see related story) and environmentally-friendly concrete in transportation infrastructure.

The workshops will be held in half-day formats throughout the annual meeting, which will take place January 22-26 in Washington, D.C. To attend a workshop, participants must register for at least one day of the annual meeting. Click [here](#) for a list of workshops.

TRB also invites international participants at the meeting to a reception on Jan. 22 from 6 p.m. to 8 p.m. International participants are urged to apply now for visas if they have not already done so.

Register by November 30 to take advantage of the reduced advance registration fees. Contact Rosa Allen at rallen@nas.edu for more information.

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ACPA Concrete Pavement Progress is published 12 times per year and covers current practices and case histories in the concrete pavement industry. **ACPA Concrete Pavement Progress** is distributed free of charge to public officials, ACPA members, executive committee, board of directors, and affiliated chapter/state paving associations.

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