



WISCONSIN
**CONCRETE
PAVEMENT**
ASSOCIATION

Moving forward with concrete results





HIPERPAV
WISCONSIN

Event and Date



Background

- HIPERPAV helps engineers and contractors:



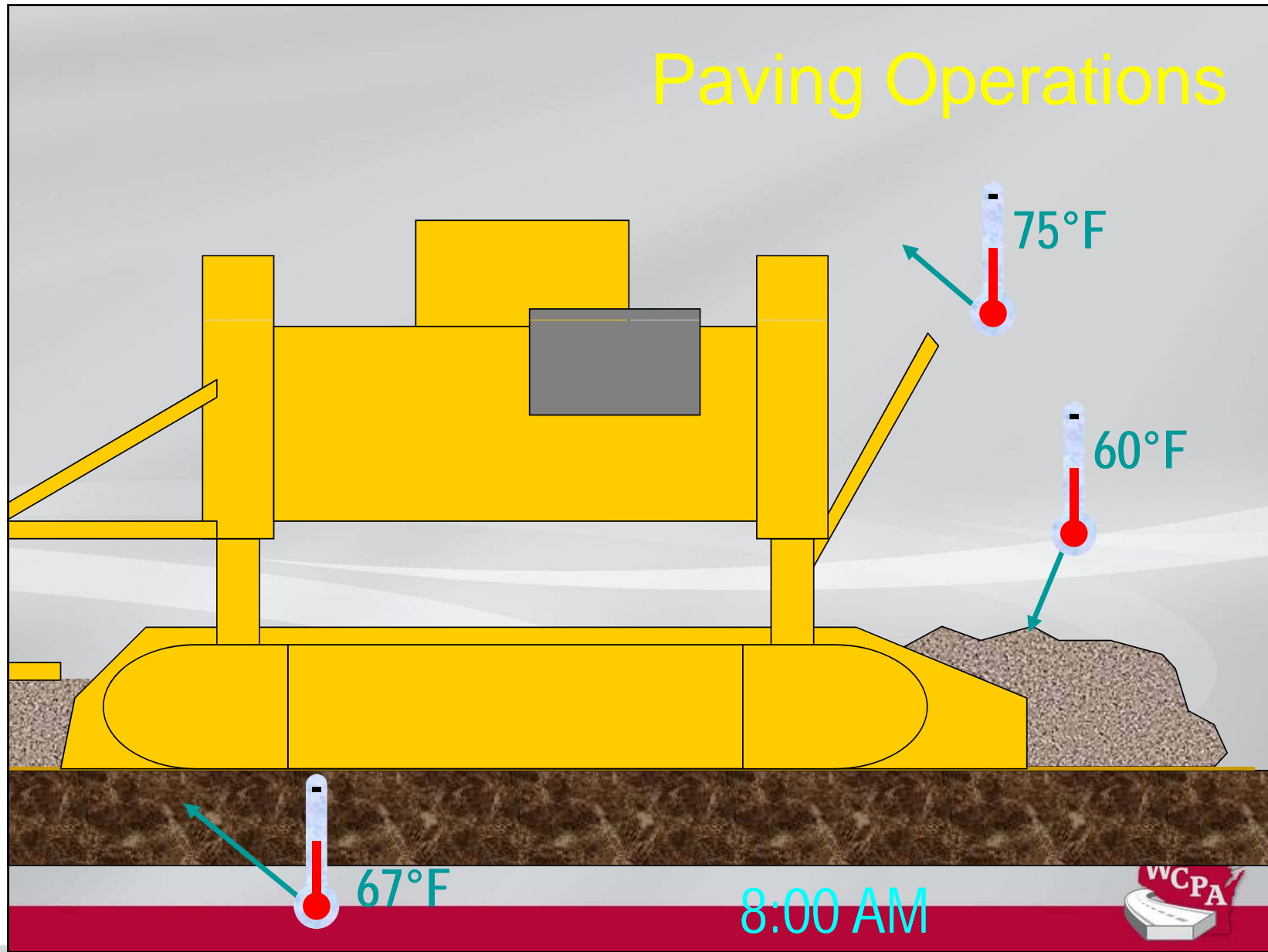
Understand 72-hour
behavior

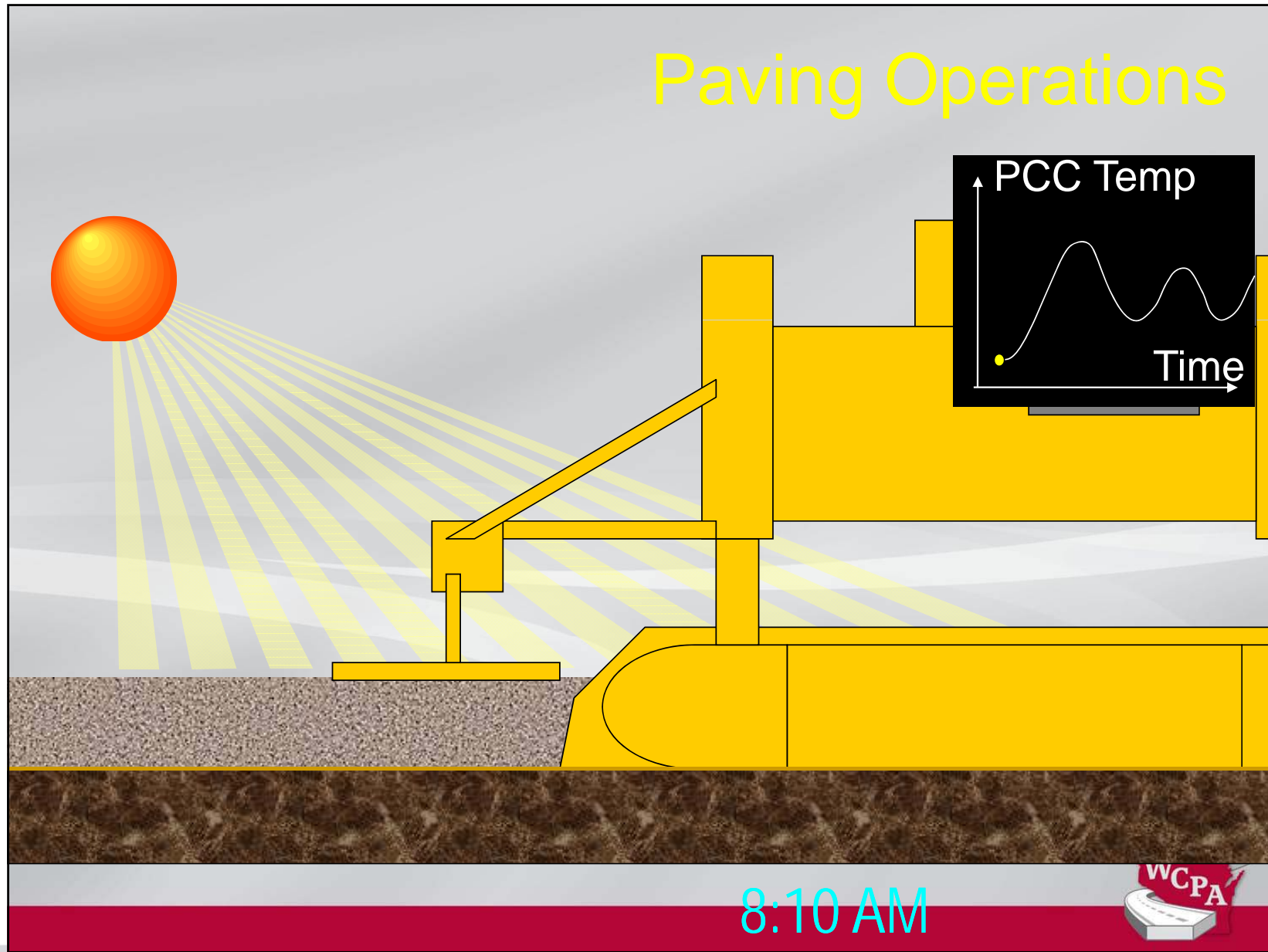


Predict 72-hour behavior
of concrete pavements

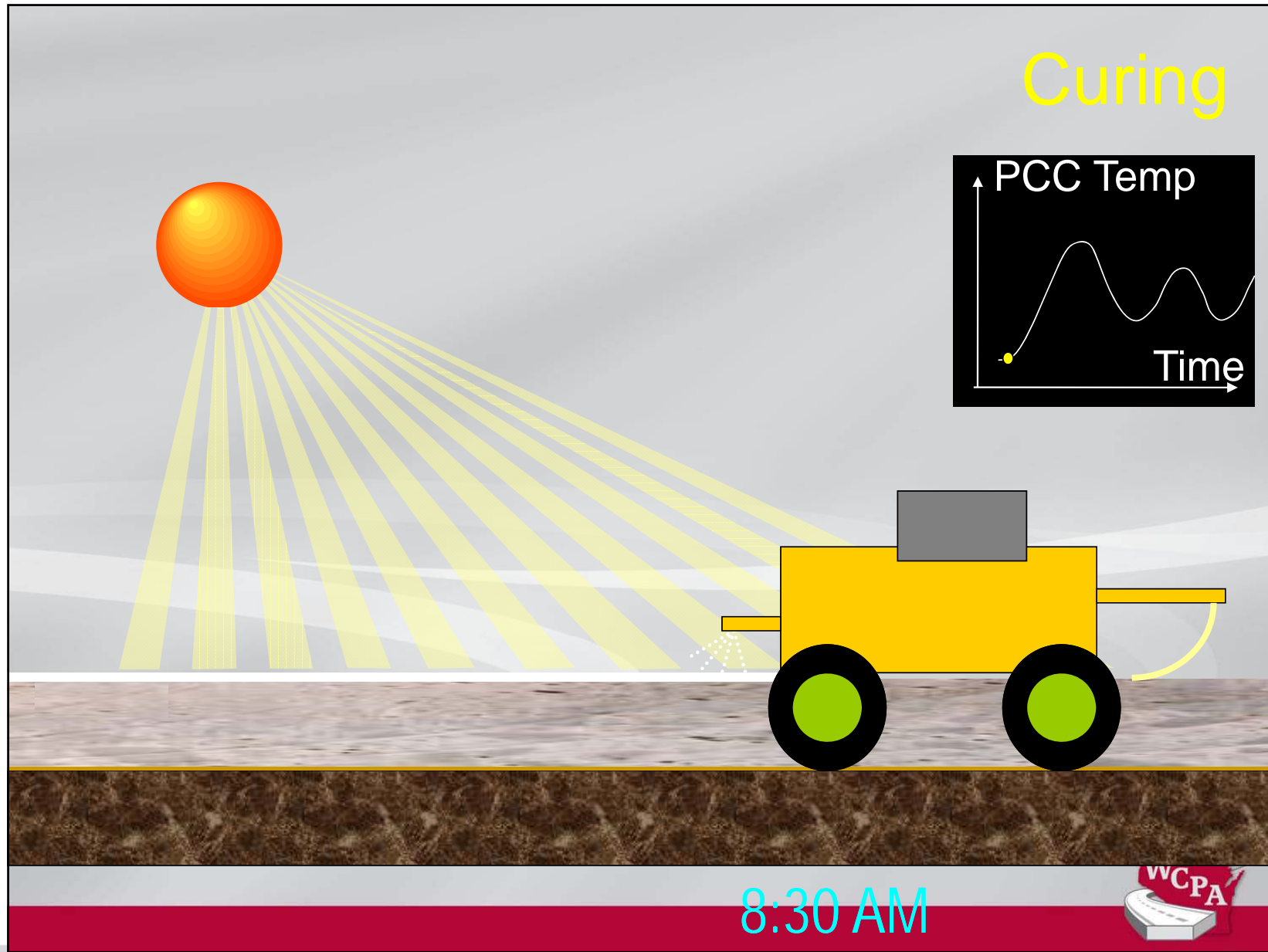


Paving Operations

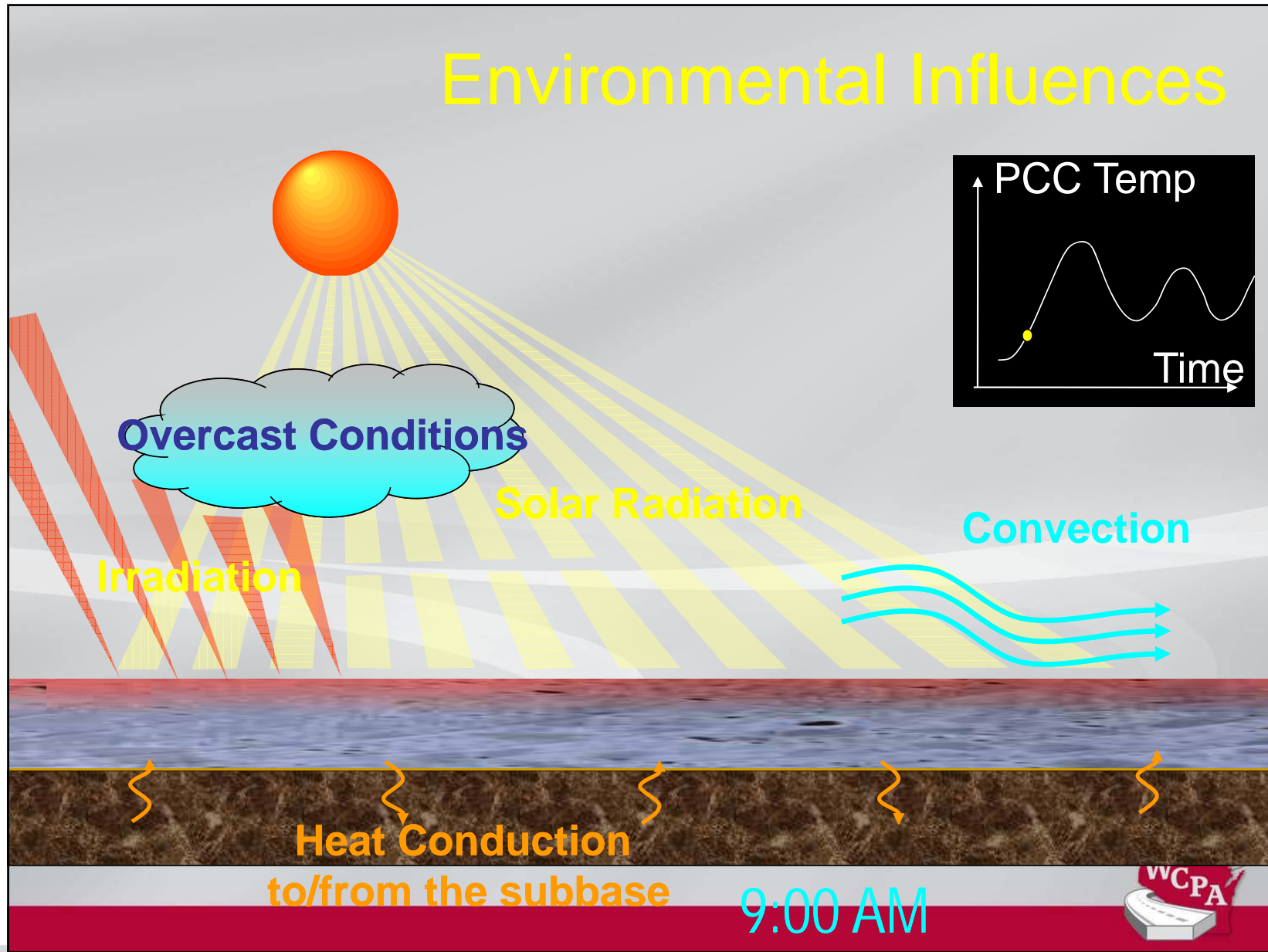




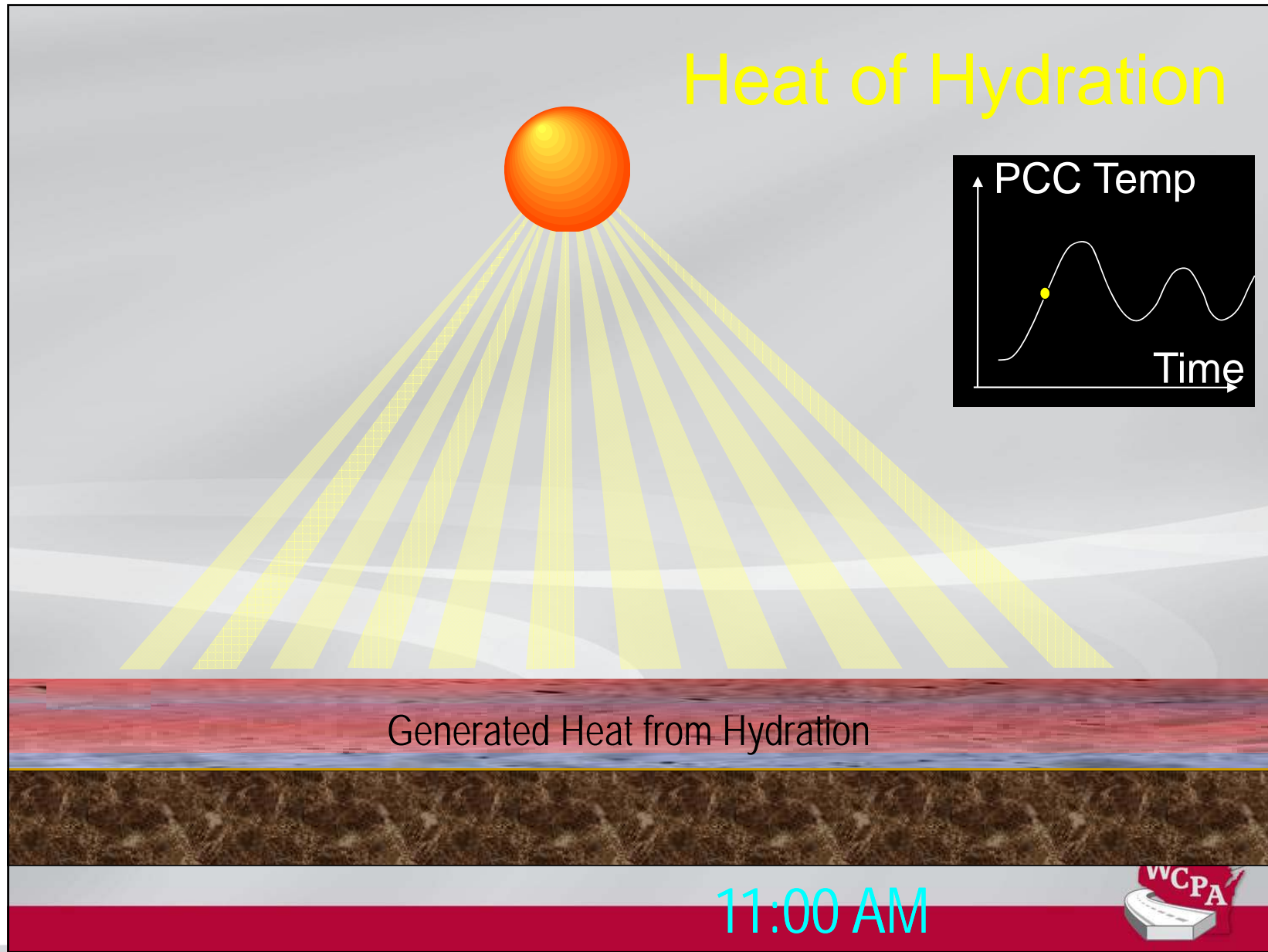
2010 WCPA Concrete Pavement Workshop



Environmental Influences



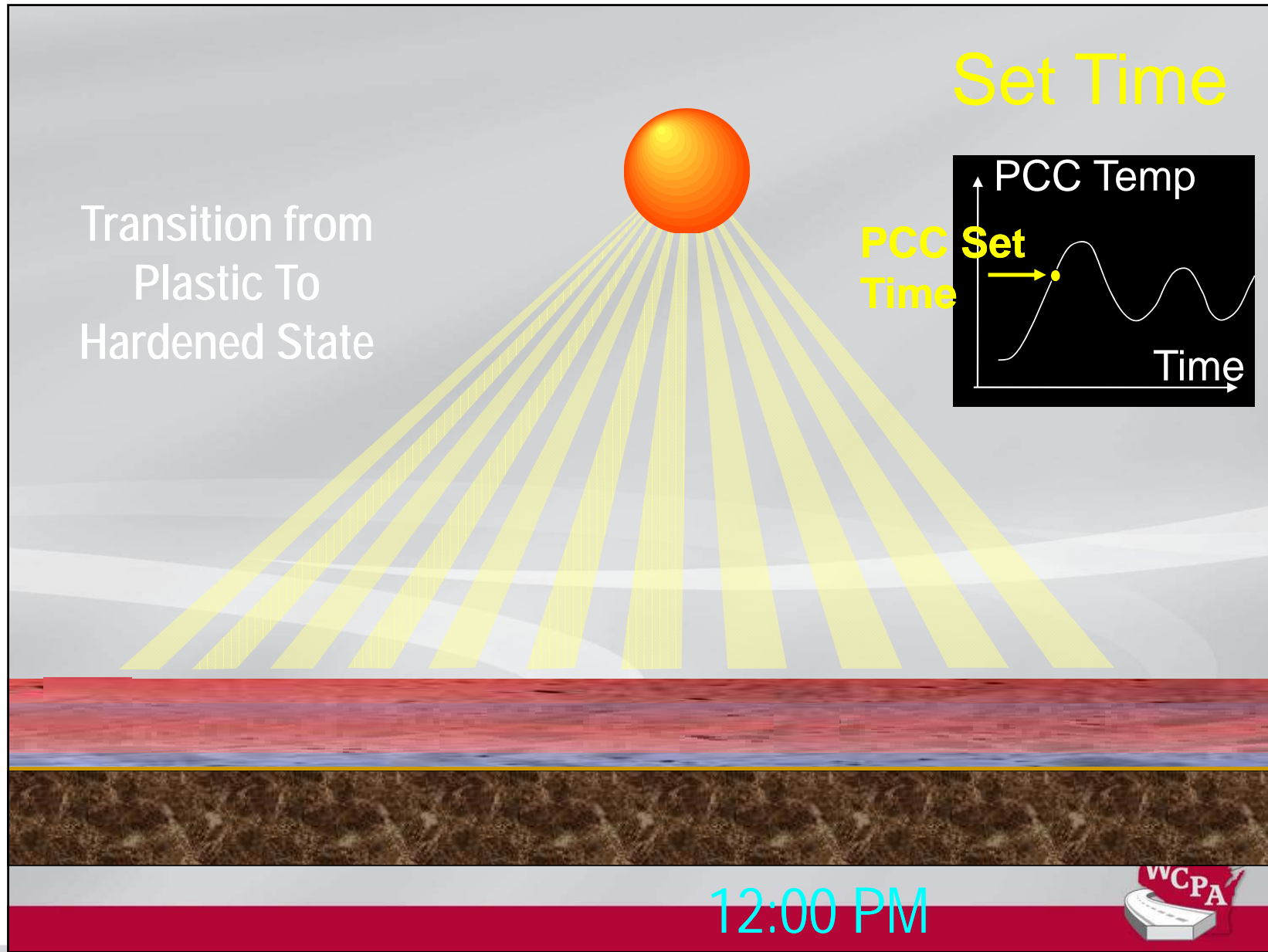
Heat of Hydration



Generated Heat from Hydration

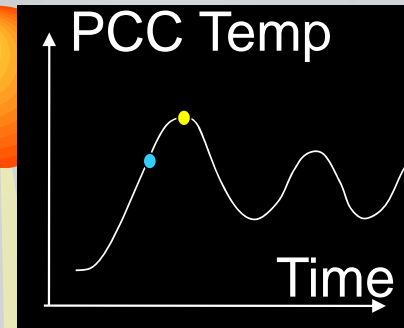
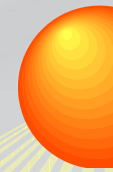
11:00 AM





Peak Concrete Temperature

Slab Tends to Expand from Set Time up to the Maximum PCC Temperature

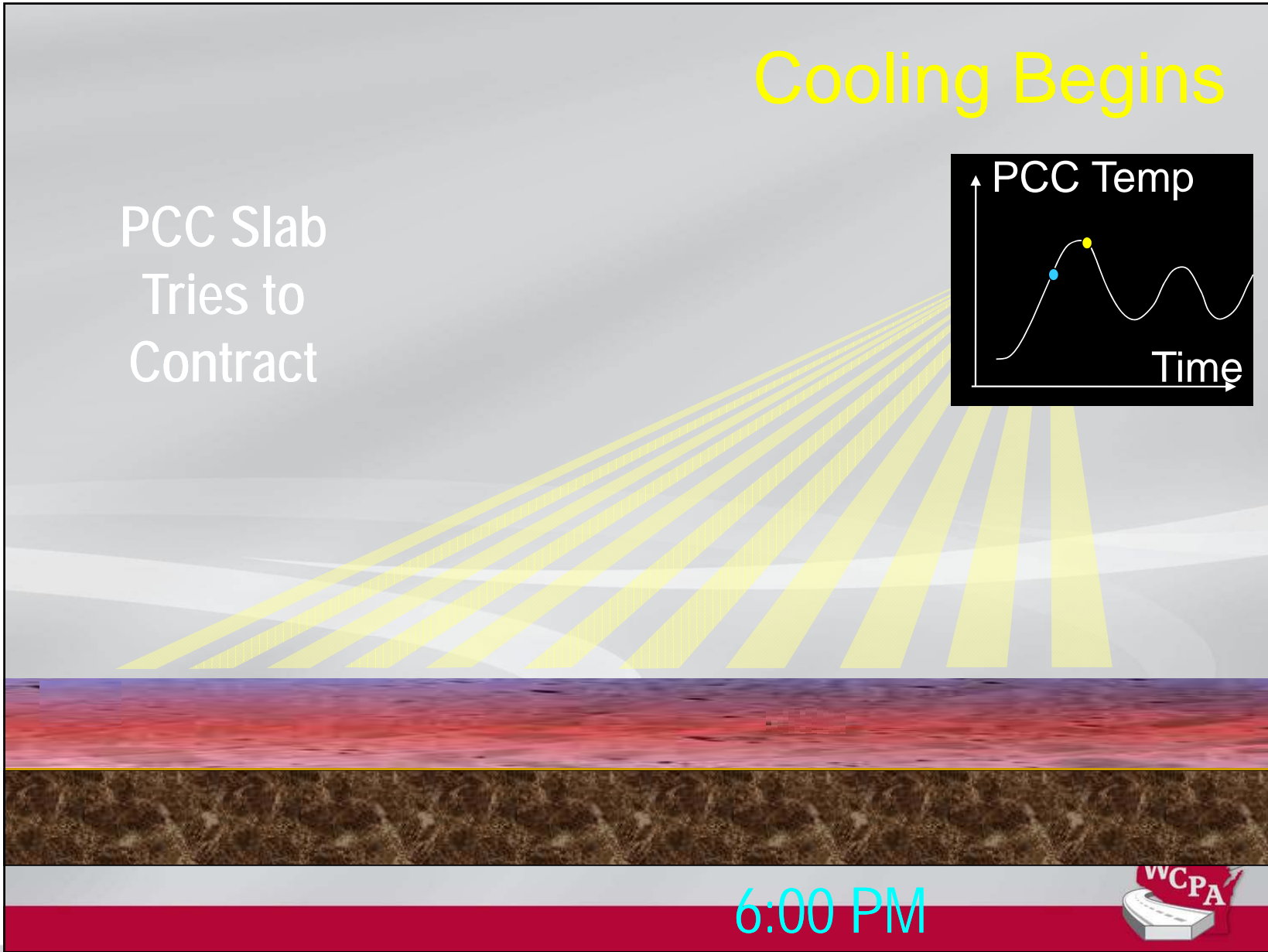
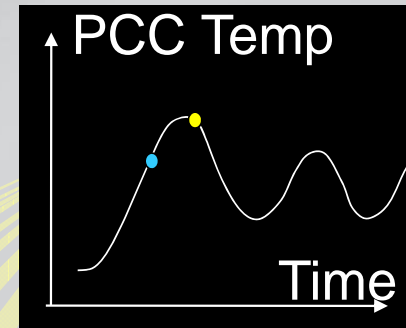


4:00 PM

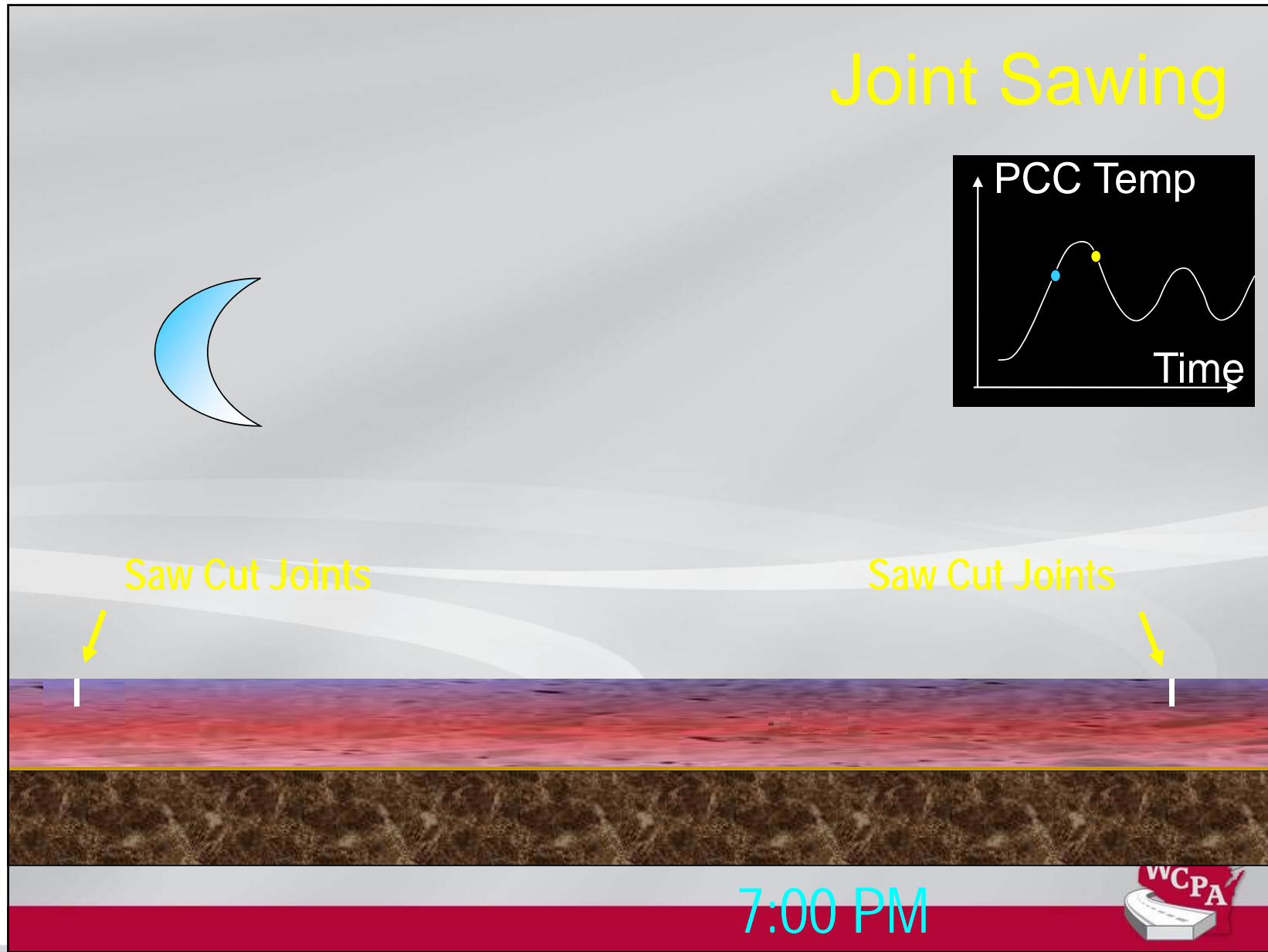


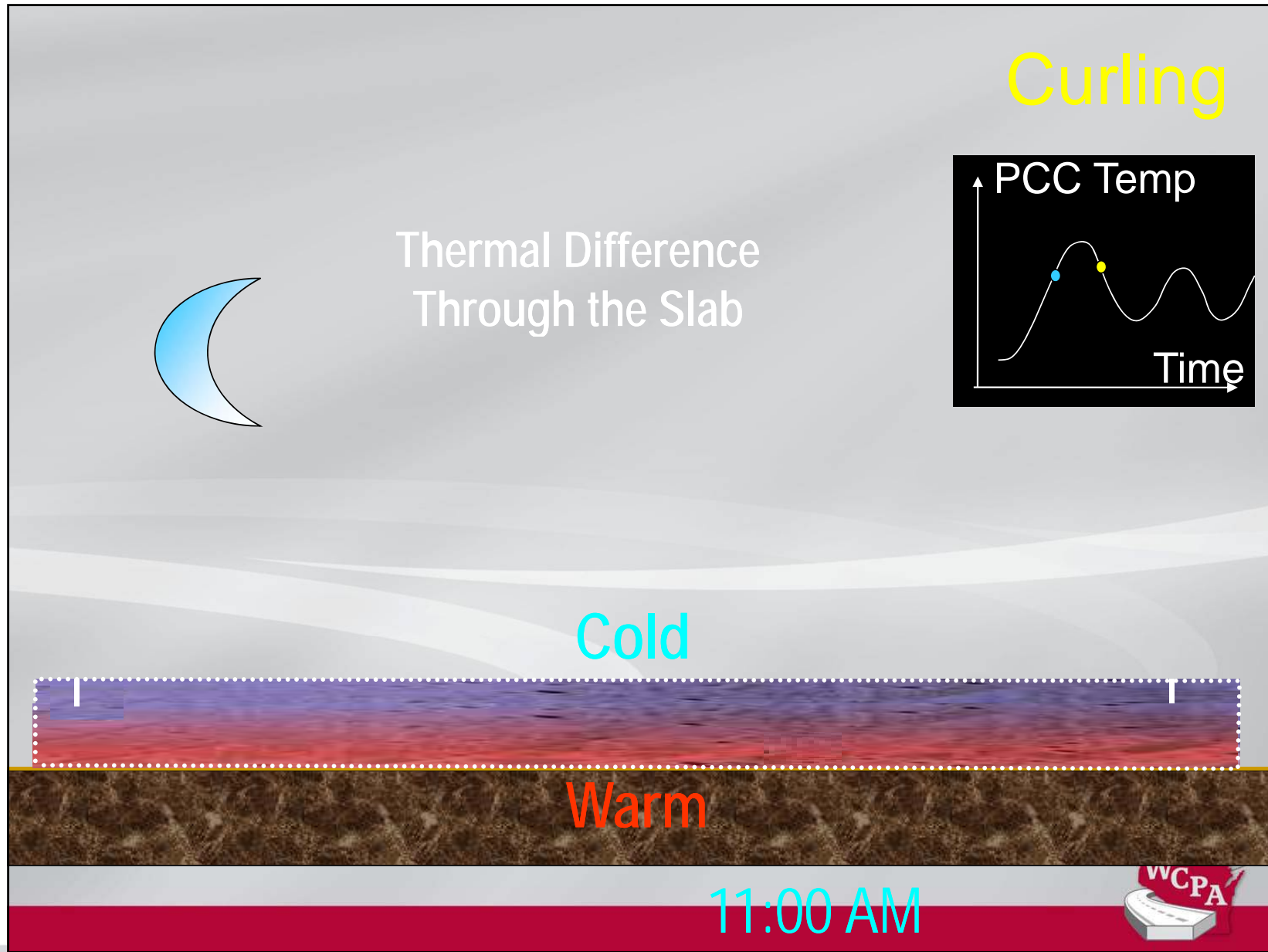
Cooling Begins

PCC Slab
Tries to
Contract



Joint Sawing





Curling

Bottom Expands
Top Contracts: Slab
Tends to Curl

PCC Temp

Time

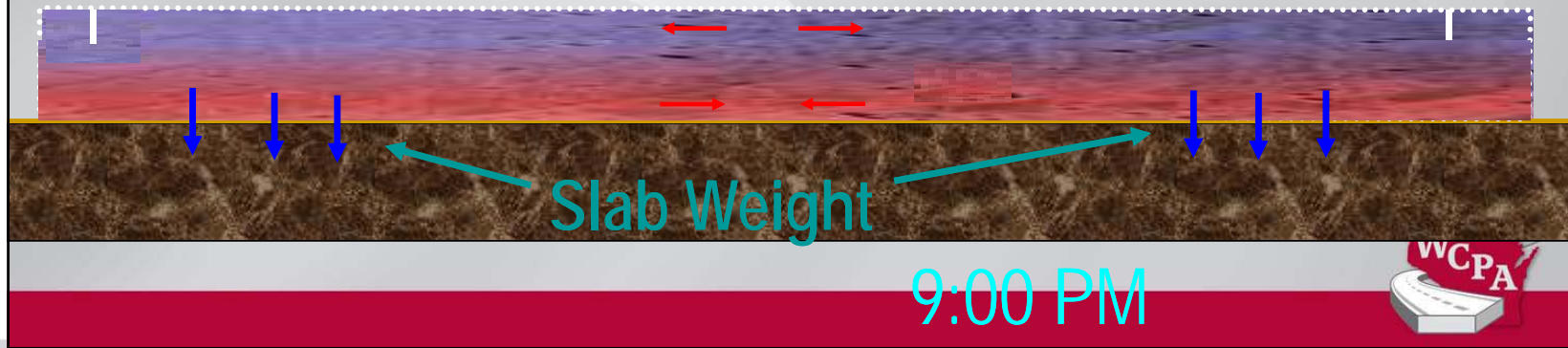
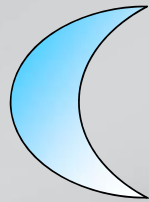
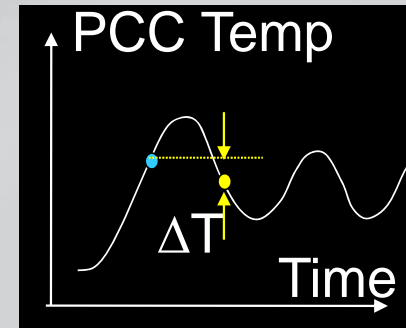
Cold

Warm

9:00 PM

Curling

Slab Weight
Restrains Vertical
Movement

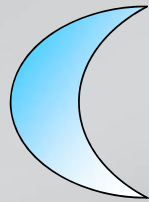


Slab Weight

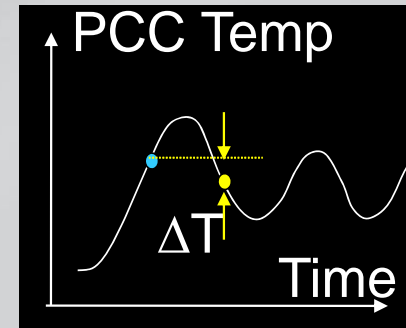
9:00 PM



Subbase Restraint

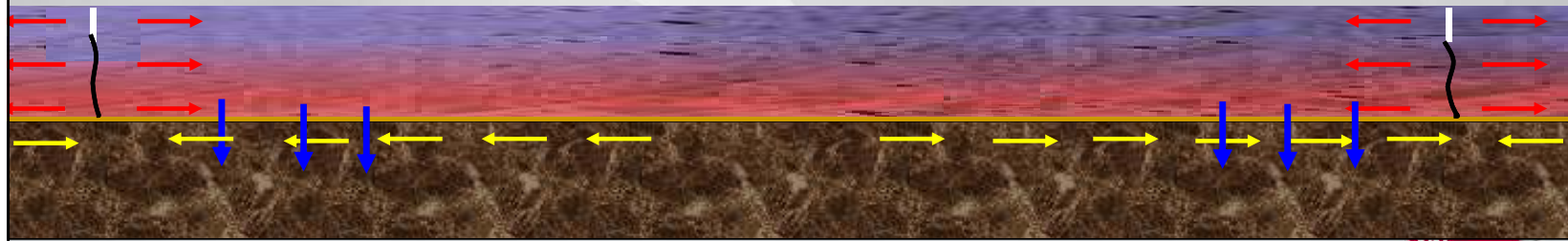


Axial and Curling
Restraint Lead to
Crack Formation
at Joints



Formation of
Cracks at Joints

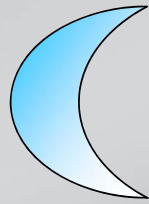
Formation of
Cracks at Joints



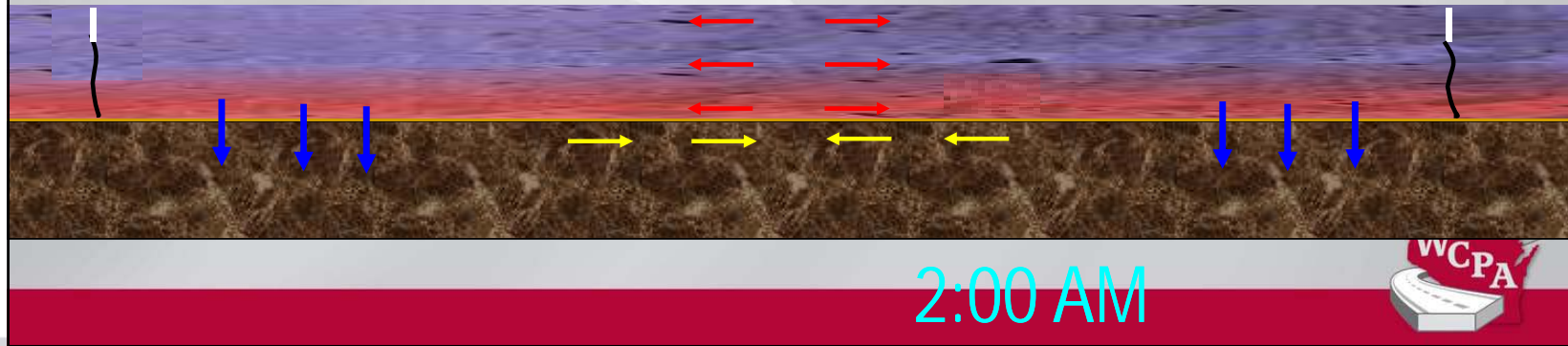
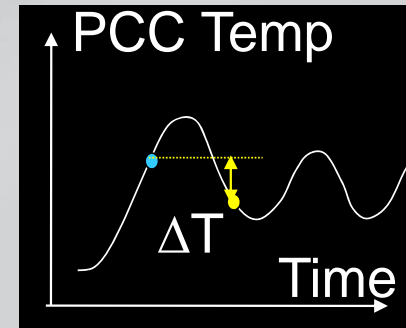
12:00 AM



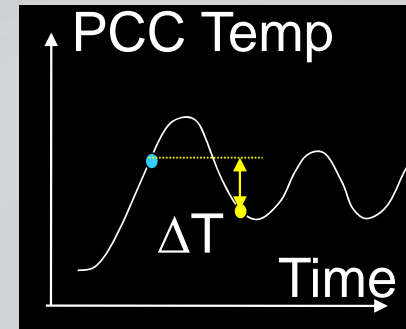
Excessive Restraint



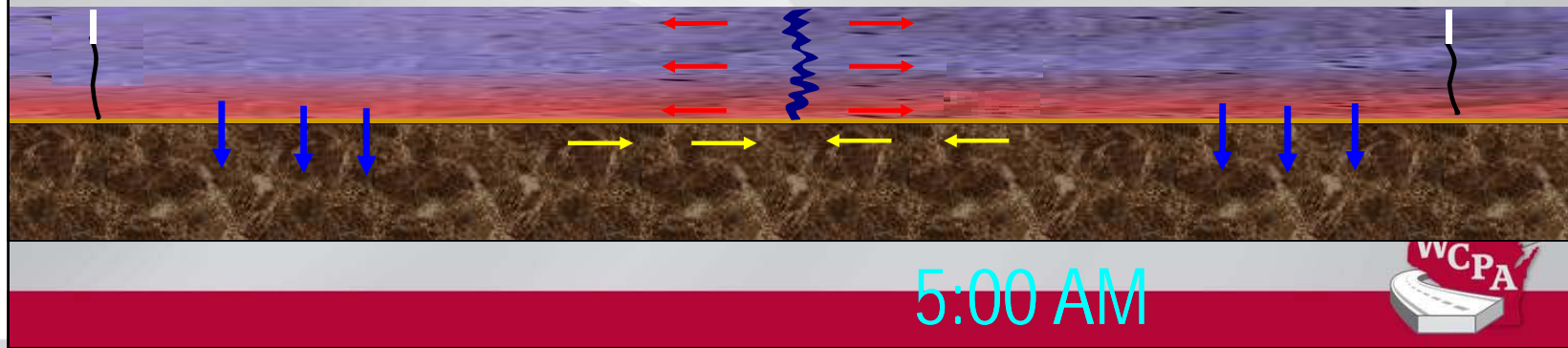
As Temperature
Decreases,
PCC Contraction
Continues...



Early-Age Failure



Mid Panel
Thermal
Crack Occurs



Guidelines

- Complexity Galore
 - Paper guidelines – very limited use
 - What about computerized modeling?
 - Thus, was born

HIPERPAV

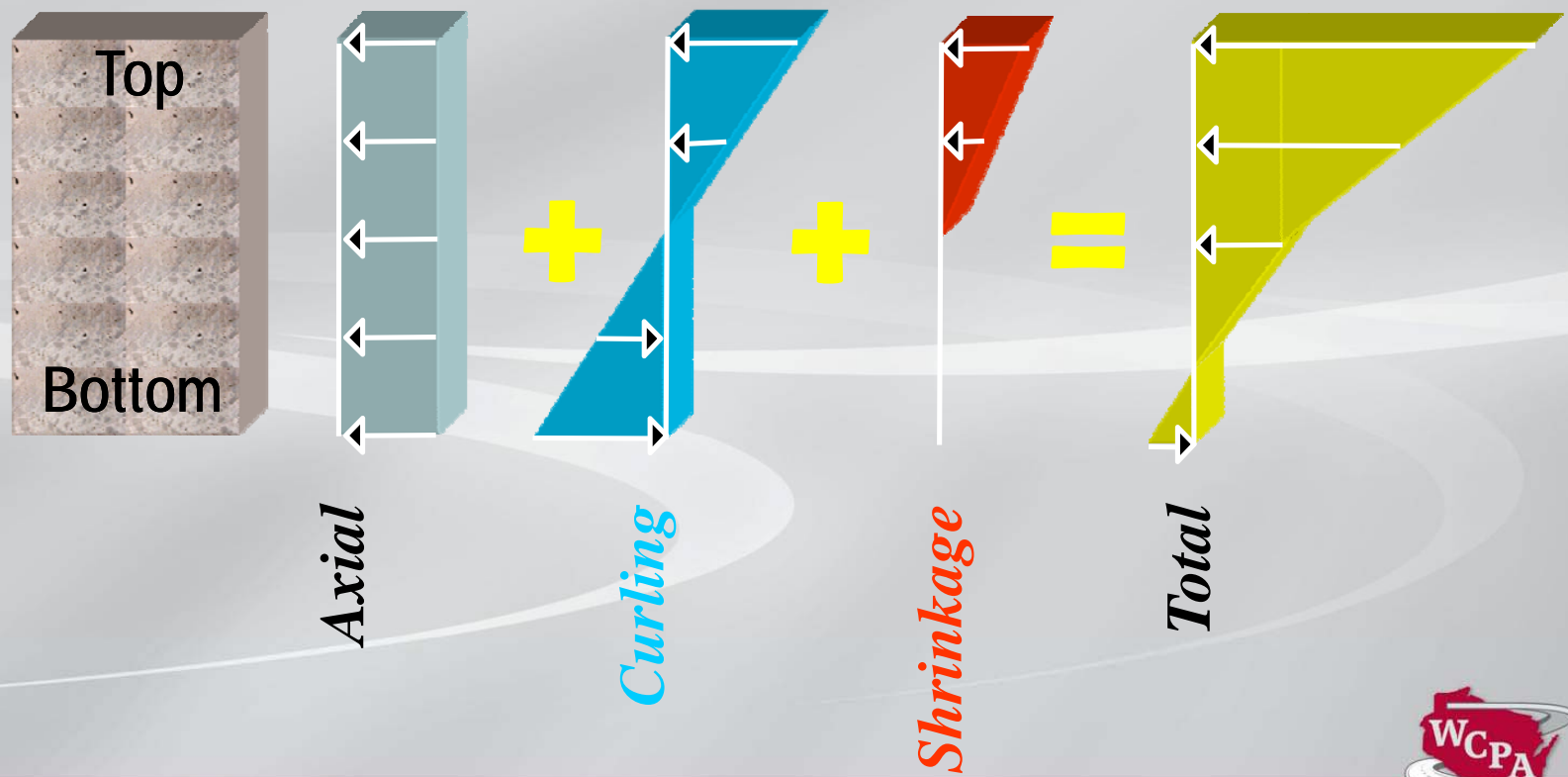


Systems approach

- In the past, many individual models have been developed to address pavement behavior
- HIPERPAV uses the Systems approach to unify all the models into one useful tool
- The Systems approach integrates:
 - Design parameters
 - Material properties
 - Environmental conditions
 - Construction activities

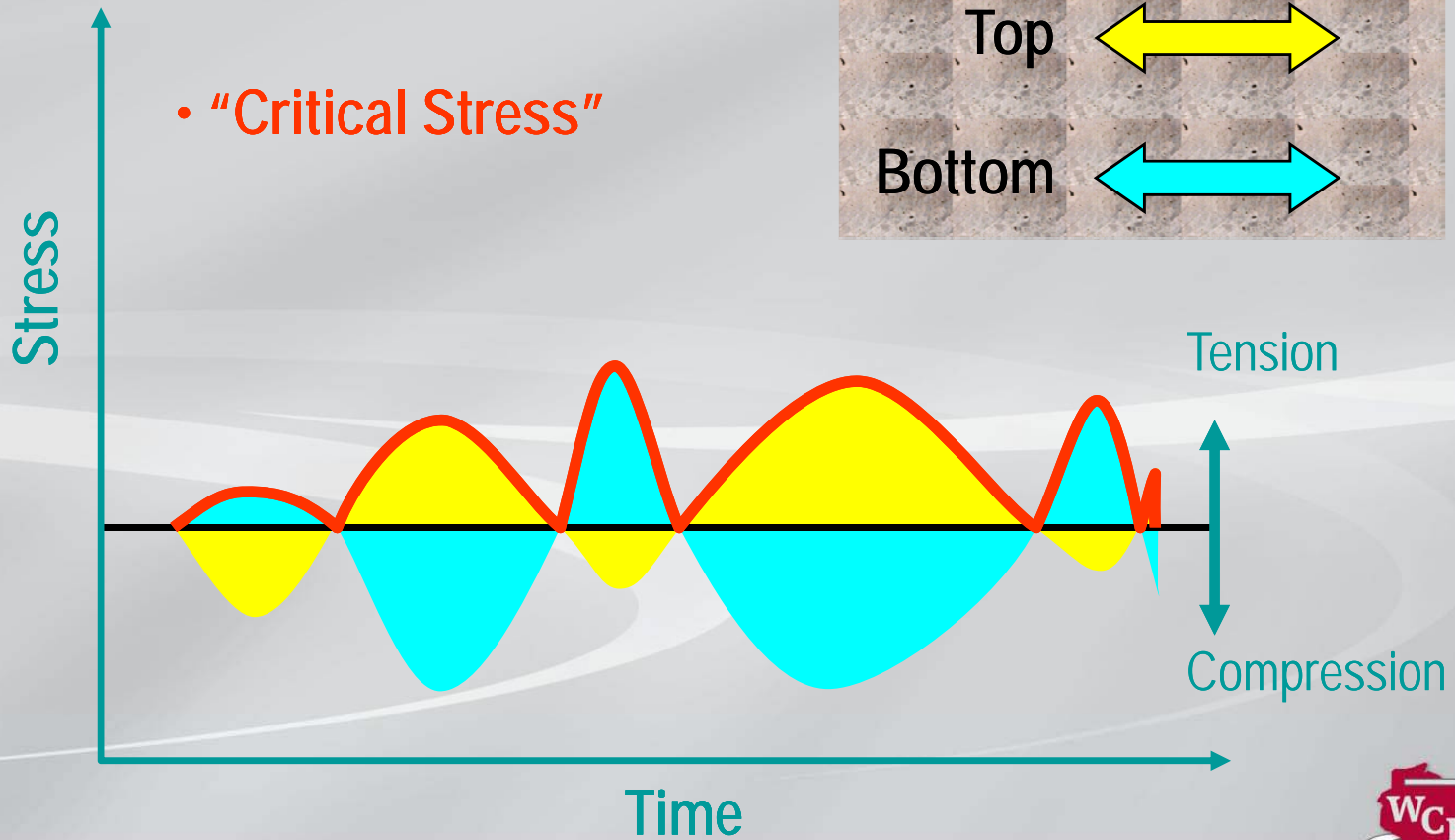
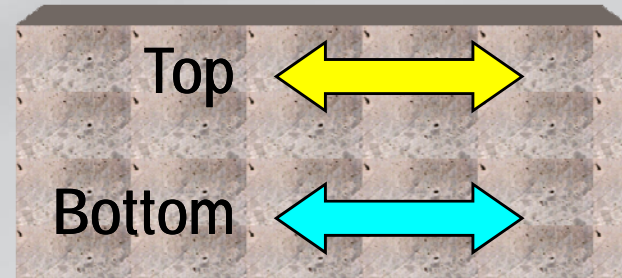


Superposition of Stresses

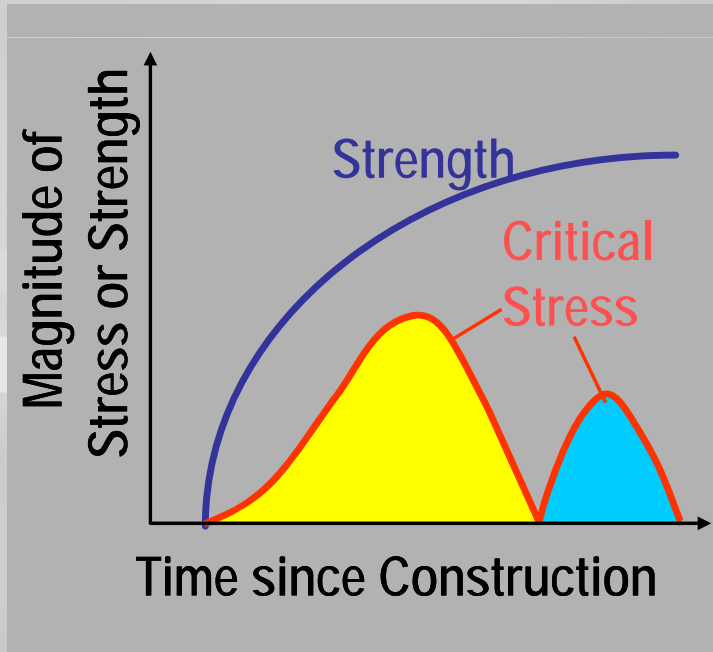


Critical Stress

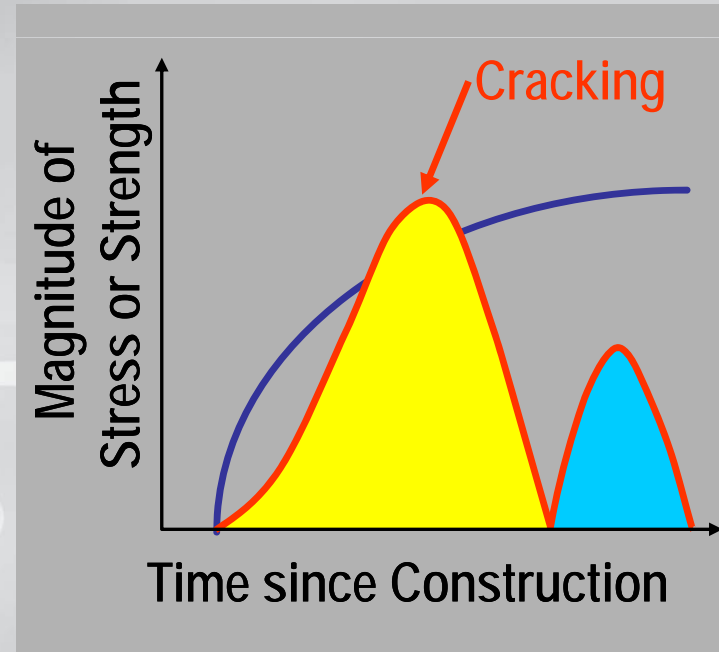
- "Critical Stress"



JCP Stress and Strength Development



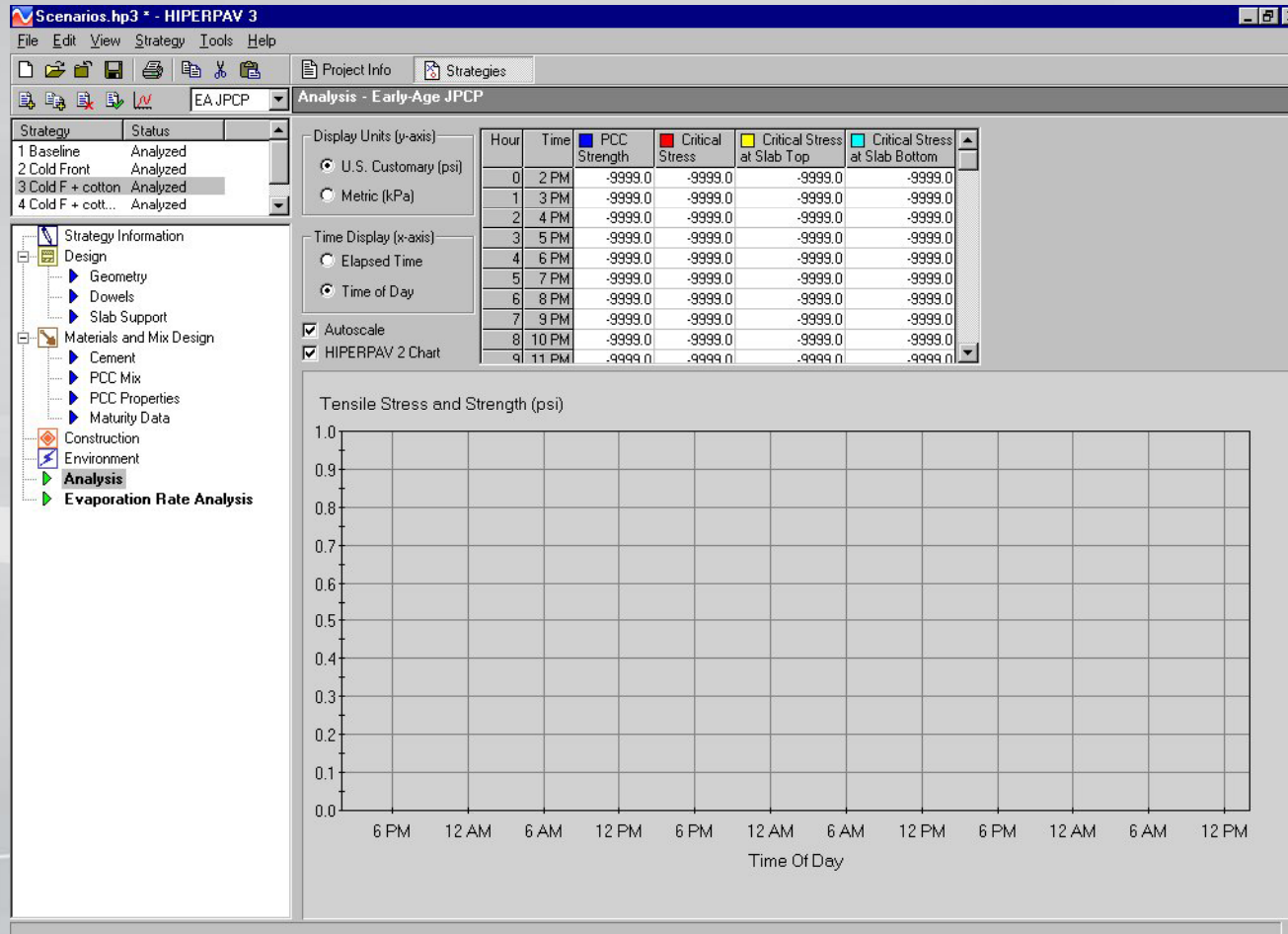
Scenario #1
Cracking should not occur



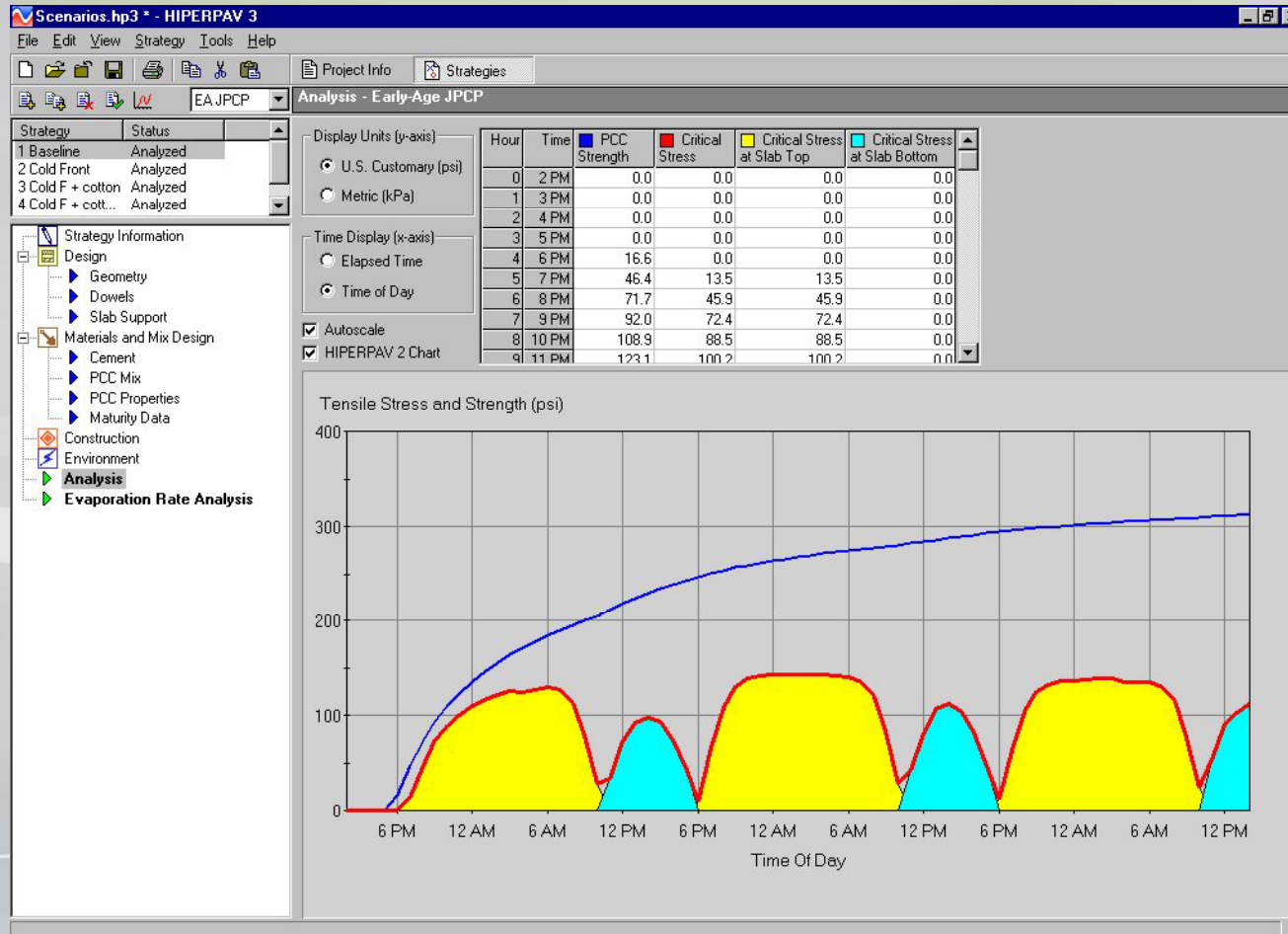
Scenario #2
Cracking may occur



Baseline Case



Baseline Case



2010 WCPA Concrete Pavement Workshop

Windows Internet Explorer
http://www.hiperpav.com/

File Edit View Favorites Tools Help

Dial Number Call Lines

TDS Services Anywhere CommPilot - In Office Search TDS managedIP

Favorites HIPERPAV

AVG Yahoo! SEARCH Limited Protection AVG Info Identity Guard

HIPERPAV
high performance paving software

Search

About Software Services Implementation Contact Us

Members and Trainers Area

Username: *

Password: *

Log in

- Request new password

Welcome to HIPERPAV Online!
Submitted by administrator on Thu, 05/21/2009 - 11:14am

The HIPERPAV® (High PERFORMANCE Concrete PAVING) software is used to analyze the early age behavior of jointed concrete pavements, continuously reinforced concrete pavements, and bonded concrete overlays.

What is HIPERPAV? Check out the About section, which introduces the aspects of HIPERPAV, including its evolution, theory, software functionality, applications, validation, software implementation and screenshots.

Webinars Now Available!
Submitted by administrator on Tue, 08/11/2009 - 3:47pm

Webinars are now available for HIPERPAV! Through this innovative web-based means of training, participants can learn about HIPERPAV in the convenience of your office in "real-time" - all you need is an internet connection and a phone!

Contact us for more information on how we can set up a webinar for you!

HIPERPAV III is here!
Submitted by administrator on Tue, 08/11/2009 - 10:21am

HIPERPAV III Release Candidate (RC) is now available! This RC is available for download in order to collect feedback from users before the final version of HP III is released this summer.

With an improved software interface and several modeling enhancements you can count on ease of use and improved accuracy of prediction for reduced premature cracking risk easier than ever. Below are some of the enhancements incorporated in HIPERPAV III:

HIPERPAV III
Download HIPERPAV III
Version 3.20.0006

Languages

- English
- Español

Internet 100%

Event and Date

2010 WCPA Concrete Pavement Workshop

The screenshot shows a Windows Internet Explorer browser window displaying the HIPERPAV Wisconsin website. The browser's address bar shows the URL <http://www.hiperpav.com/index.php?q=node/47>. The website features a blue and red header with the HIPERPAV logo and the tagline "high performance paving software". A navigation menu includes links for "About", "Software", "Services", "Implementation", and "Contact Us".

The main content area is divided into three columns:

- Members and Trainers Area:** Includes a login form with fields for "Username:" and "Password:", a "Log in" button, and a link for "Request new password".
- HIPERPAV Wisconsin:** A central section with the heading "HIPERPAV Wisconsin" and a sub-heading "HIPERPAV Wisconsin". The text describes the software's modification for Wisconsin conditions: "WisDOT modified the FHWA concrete pavement analysis software to use materials and conditions that are unique to Wisconsin, replacing the broad national inputs in the FHWA version of the software. WisDOT expects this new Wisconsin version of HIPERPAV to help DOT engineers and contractors design and build even higher quality concrete pavements throughout Wisconsin. The Wisconsin version of HIPERPAV includes new inputs and terms that better represent Wisconsin's concrete pavement industry. A new cement library allows users to choose different cement types from local cement manufacturing plants. Agency officials have already made the software available statewide, and implementation is now underway."
- HIPERPAV III:** Includes a "Download HIPERPAV III" link and the version number "Version 3.20.0006".

A "Languages" section on the right offers options for "English" and "Español". A footer navigation bar at the bottom of the page repeats the "About | Software | Services | Implementation | Contact Us" links. The browser's status bar at the bottom indicates "Internet" and "100%" zoom.

Event and Date



Moving forward with concrete results