



## ***ACPA Technical Services Briefing Report for 2023 Q3***

ACPA's engineering staff delivers consultation, specification interpretation, education, and other technical services to ACPA members, State and Federal Agencies and Chapter/State Partners. These services translate to millions of dollars annually in industry savings or profit/revenue potential. The summary provided below is a snapshot of some of the work performed during CY2023 Q3, compiled for the purposes of conveying a clearer understanding of the value provided by ACPA's technical services staff. Additional work of the staff in areas of market development or advocacy has been omitted for relative brevity.



### ***Airport Market***

ACPA assistance to contractors and airports resulted in **potential member cost savings/opportunities of more than \$350k in Q3!**



### ***Direct Agency Assistance***

- Reviewed and recommended changes for the current FAA Advisory Circular 150/5370-10H.
- Served on a research oversight panel for a curling-and-warping study.
- Assisted agencies in:
  - Assessing the accuracy and variability of testing and materials properties.
  - Assisted agency in guiding construction processes to ensure quality construction.
  - Developing concrete preservation specifications.
  - Providing extensive correspondence and guidance for more modern design of a parkway.



### ***Highway/SLR Market***

ACPA's assistance provided the potential for significant contractor savings, including advocacy efforts at the Federal and State agency levels, which created and preserves additional market opportunities for the industry.



### ***Direct Chapter/Affiliate Support***

ACPA staff provided extensive technical assistance and training/education sessions to Chapter/State partners.

## **Airport Market**

ACPA's efforts during Q3 focused largely on assisting contractors and providing guidance to airport sponsors, their design engineers, and agencies. The benefits are often difficult to quantify immediately (e.g., when policies are changed, alternate materials are approved, or construction schedules are expedited), but the value of potential member cost savings/opportunities developed or realized in the current quarter totals more than \$350k. New support offered in Q3 included:

- Recommending changes to joint types and jointing details to improve constructability, resulting in avoided potential future problems during construction and cost savings to owner by avoiding nonstandard materials.
- Helping with specification interpretation to get dowel bars approved for use on several projects
- Assisting with interpretation and intent of the P-501 fly ash specification, which is leading to a specification change that will eliminate the current onerous arbitrary requirement for the fly ash specification.
- Assisting multiple contractors in major disputes concerning the need to remove and replace large amounts of pavement.
- Helping to resolve poor jointing pattern and a bad grade by strategic grinding and the replacement of a few panels.

## **Beneficiaries of ACPA Efforts During Q3**



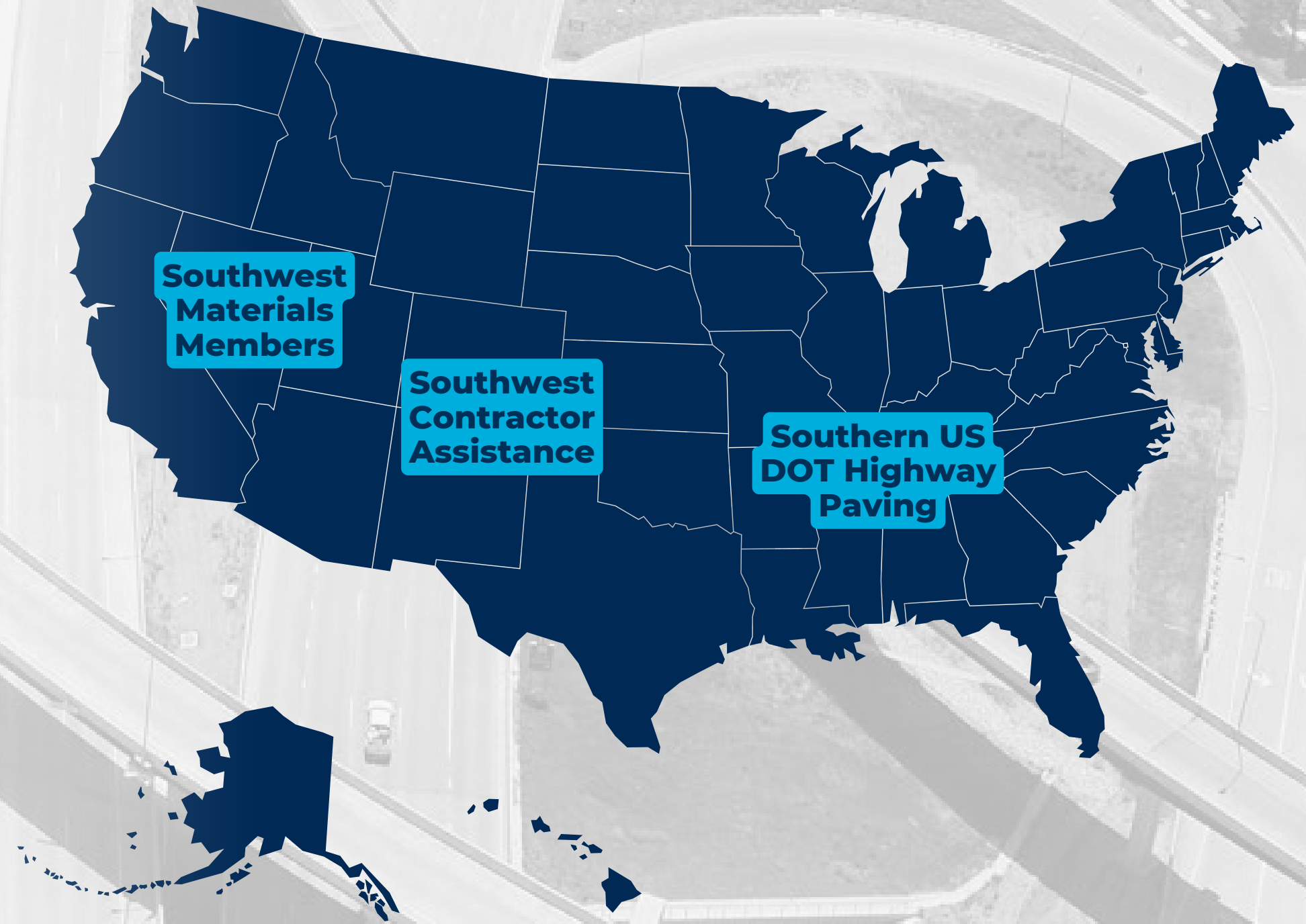
## **Highway/SLR/ Non-Traditional Markets**

In Q3, ACPA provided the potential for significant contractor savings. This portion of the report does not include advocacy efforts at the Federal and State agency levels, which created and preserves additional market opportunities for the industry.

New support efforts included:

- Helping ensure successful construction of concrete pavement in a traditionally asphalt state, including assisting in developing an optimized mixture design.
- Conducting a field demonstration to evaluate the pavement temperatures associated with elastomeric repair materials.
- Providing technical resources concerning CTB (cement-treated base) and LCB so that the contractor could better select appropriate material for projects.

## **Beneficiaries of ACPA Efforts During Q3**





## **Direct Agency Assistance**

**Direct Agency Assistance** benefits:

1) agencies/owners (by addressing their concerns before they become problems and, therefore, making it easier to choose concrete);

2) contractors and suppliers (by advocating for constructible designs and improved specifications); and

3) the concrete paving industry in general (by helping to ensure that concrete paving construction goes smoothly and pavements perform to expectations, which facilitates market growth).

# **Beneficiaries of ACPA Efforts During Q3**

*The following list is representative of the many aspects of direct agency assistance provided by ACPA's staff in CY2023 Q3.*

### **FAA Headquarters (update from 2023Q2)**

At the request of the FAA, ACPA reviewed and recommended changes to the current airport construction specifications (AC 150/5370-10H).

FAA Headquarters engineers will discuss proposed changes to the specifications and solicit further input from ACPA members.

### **New England Region FAA Airport**

ACPA assisted EoR and a local concrete and aggregate association executive in correcting the efforts of an inexperienced contractor trying to pump (rather than place) concrete.

ACPA aims to secure future bidding opportunities for NE member contractors and gain new chapter affiliation with local associations.

### **Western-Pacific Region FAA Airport**

Engineer of record (EoR) contacted ACPA concerning a drainage layer that did not meet specifications because it had 93.9% density rather than 94%. ACPA staff pointed out the accuracy/variability of testing and materials properties, showing that the material met specifications.

### **Southern Region FAA Airport**

Met with airport engineers to discuss use of dowels in longitudinal joints (standard) and transverse joints (not typical) on new project and evaluated agency investigative reports on another runway at same airport with cracking after only 8 years.

# ***Beneficiaries of ACPA Efforts During Q3***

*The following list is representative of the many aspects of direct agency assistance provided by ACPA's staff in CY2023 Q3.*

## **Southern Region FAA Airport**

ACPA recommended replacing P304 cement-treated base with added thickness of P501 to meet FAA stabilized base requirements.

## **Northwest Highway Agency**

ACPA assisted the agency with value engineering effort to compare various pavement design strategies and construction operations for the reconstruction of a 57-year-old Interstate highway through the downtown of a major metropolitan area.

## **FHWA Eastern Federal Lands**

ACPA provided extensive correspondence and guidance for a better, more modern design for the design of a parkway.

## **Northwest Highway Agency**

ACPA served on a research oversight panel for a curling-and-warping study sponsored by the agency.

## **Southern Highway Agency**

Provided resources and consultation to the agency in planning a concrete overlay project.

## **Southwest Highway Agency**

Assisted the agency with the development of concrete preservation specifications.

## **Northwest Highway Agency**

ACPA offered guidance on accounting for geotextile fabric interlayer when using Pavement ME Design (PMED) for concrete overlay design.





## ***Direct Chapter/ Affiliate Support***

ACPA staff provided extensive technical assistance and training/education sessions to Chapter/State partners.

## ***New Technical Service Efforts for Q3:***

- Assisted a local chapter in promoting portland cement concrete (PCC) overlay at FAA airport with information to move forward and recommending starting work with a smaller airport first to establish better life-cycle cost analysis numbers.
- Helped a local chapter evaluate existing overlay design for four-lane highway, and they determined it was likely too thin. ACPA provided insight on design improvement to avoid construction and performance problems, and provided early opening strength info and dowel bar design alternatives to the same C/S.
- Provided resources on PMED implementation to assist in promoting local state implementation of PMED.
- Provided resources to C/S to discourage local use of jointed reinforced concrete pavement.
- Helped C/S staff assist the contractor who was being asked to construct pavement with joint design that violates industry aspect ratio standards.
- Helped C/S staff use PavementDesigner for pavement design evaluation.



## ***Other Industry/ Member Support***

ACPA staff routinely engage in activities that provide general but significant support and service to the concrete paving industry.

## ***Support in Q3 included:***

- Participation in NCHRP project review panels for topics related to concrete pavement research.
- Preparation of a dowel bar retrofit (DBR) specification for consideration by the TSP2 Concrete Task Force. When finalized, the spec will be submitted to AASHTO to be balloted for inclusion as an AASHTO specification.
- Coordination of testing of LTPP SPS-2 cores in Southwestern state.
- Review of papers for presentation and review at annual TRB meeting.
- Preparation of a manuscript on “Buried Treasure: Uncovering Concrete Pavement for Extended Performance and Enhanced Sustainability” for 2024 International Conference on Concrete Pavements.
- Advancement of the Concrete Pavement Finisher Certification through ACI.
- Completion of the development of specifications for testing and acceptance of dowels of all types for street and highway pavements – now available on ACPA website.
- Serving on an advisory panel for development of Streets and Roads Guide (FHWA project through CPTech).
- Having been extremely active in promoting sustainability initiatives for the concrete paving industry, including WAP sustainability, worked with the RC3 Group for FHWA sustainability-related funding, and working with NRMCA for EPD collection and low-carbon materials.
- Review of FHWA MCTC one-pager on accelerator admixtures.
- Reviewing and providing input to IGGA on development of sustainability calculators related to smooth pavements (diamond grinding).
- Supporting CPTech investigation of impacts of shrinkage by providing PMED design runs.
- Assisting ISCP with obtaining sponsorships for upcoming International Conference on Concrete Pavements.

# ***Workshops and Meetings Held During Current Reporting Period:***

- Annual Meeting of the National Center for Pavement Preservation – Conducted equipment demonstrations and made presentations.
- AASHTO Maintenance Committee – Delivered presentation on DBR spec development.
- CPTech Center – Participated in smoothness webinar.
- SWIFT and CAPTG – Made presentations on the ACPTP Research Program and Airfield Maintenance (including PCC Overlays).
- Kentucky Concrete Association, Florida PAVEWISE Conference, Highway USA Meeting (Dallas, TX), SWCPA Webinar – Made presentations on sustainability.
- AASHTO 5D Committee Meeting (CA) – Provided update on pavement design.
- PCA Virtual Sustainability Summit Meeting – Made presentation on paving sustainability.
- Attended AASHTO PMED User Group Meeting (WI).
- PCA Meeting – Provided paving market update.
- TCC pooled fund – Conducted workshops on roundabout design and construction in MN (2 locations).

