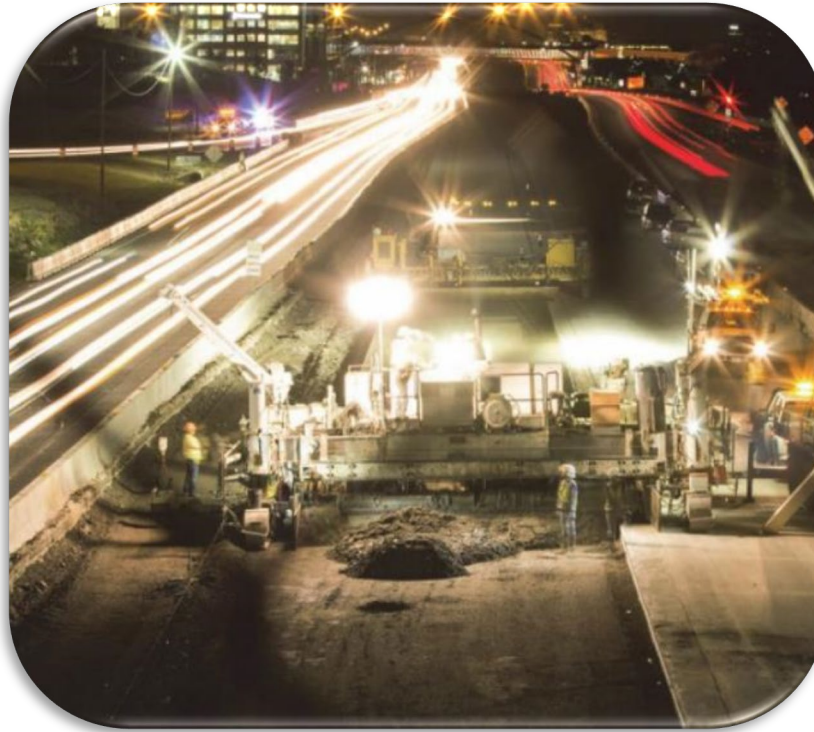


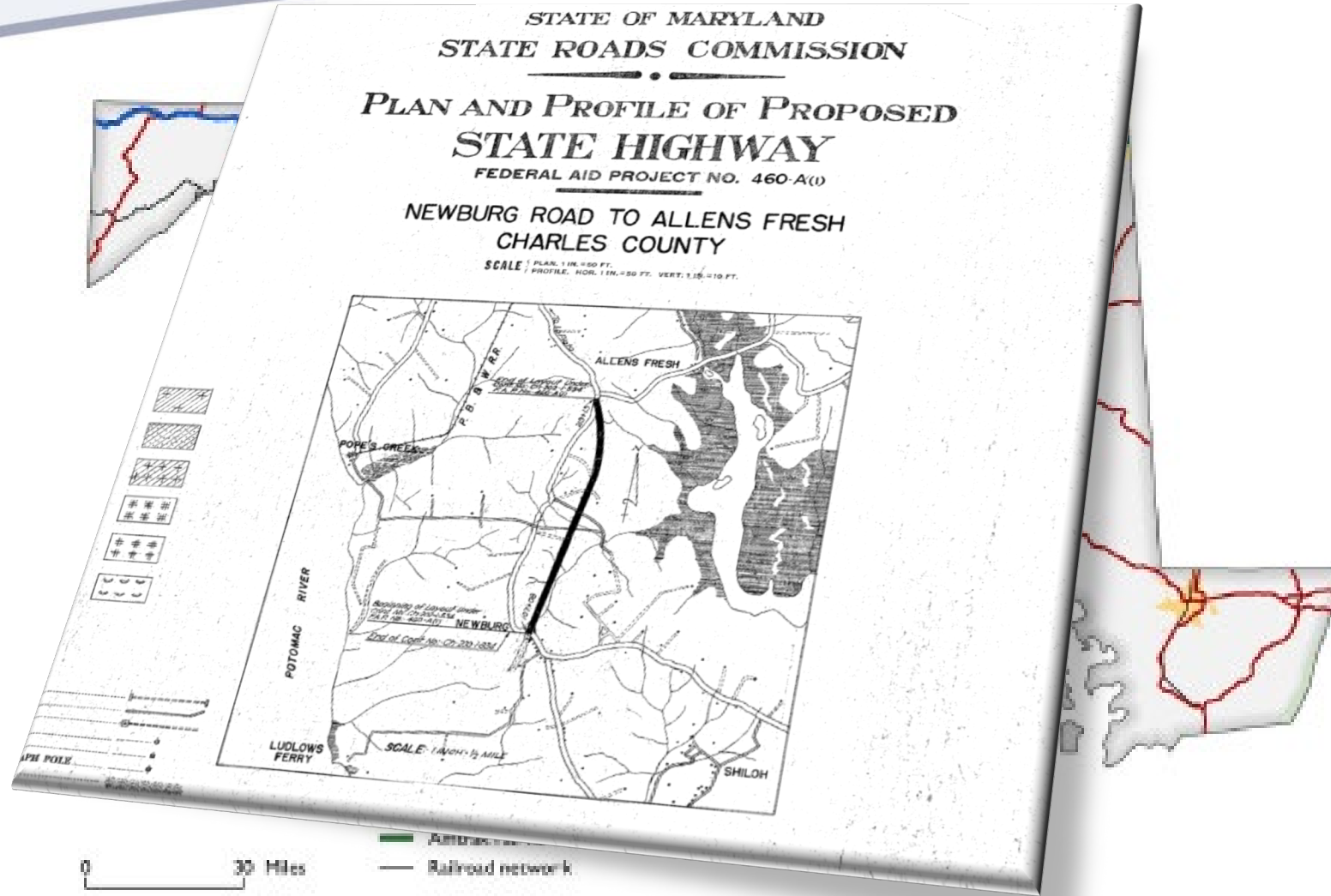
# Concrete Pavement Industry Update



**AASHTO COMP | Baltimore, MD | August 6, 2019**

*Leif G. Wathne, P.E. American Concrete Pavement Association*

# Maryland Road Test ONE-MD



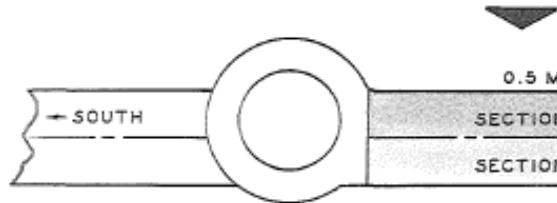
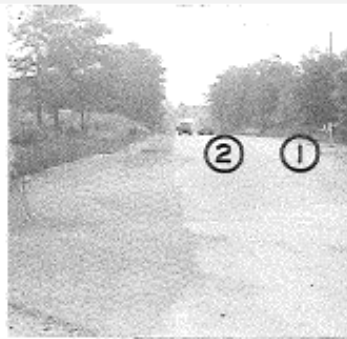
- Where, When, What, Why..?





Typical vehicle used on Sections 5-6.

Test Road:  
1.1 miles,  
9-7-9,  
12' lane,  
120' joint spacing  
(40'), mesh,  
 $\frac{3}{4}$ " dowels



Trucks:  
18 and 22.4 kip  
single axle  
32 and 44.8 kip  
double axle



- ❑ Organizational
  - ❑ Focus, market, etc.
- ❑ Vision2040
  - ❑ Future of Paving
- ❑ Technical Efforts
  - ❑ PavementDesigner.org
  - ❑ Training, Resources
  - ❑ PEM...

# Organizational Focus...

- Effective and valued technical leadership/support and advocacy
- Good stewardship - sound engineering and economic decision-making: ME Design, LCCA, COMPETITION...
- Life cycle thinking – design, economics, AM, environment...



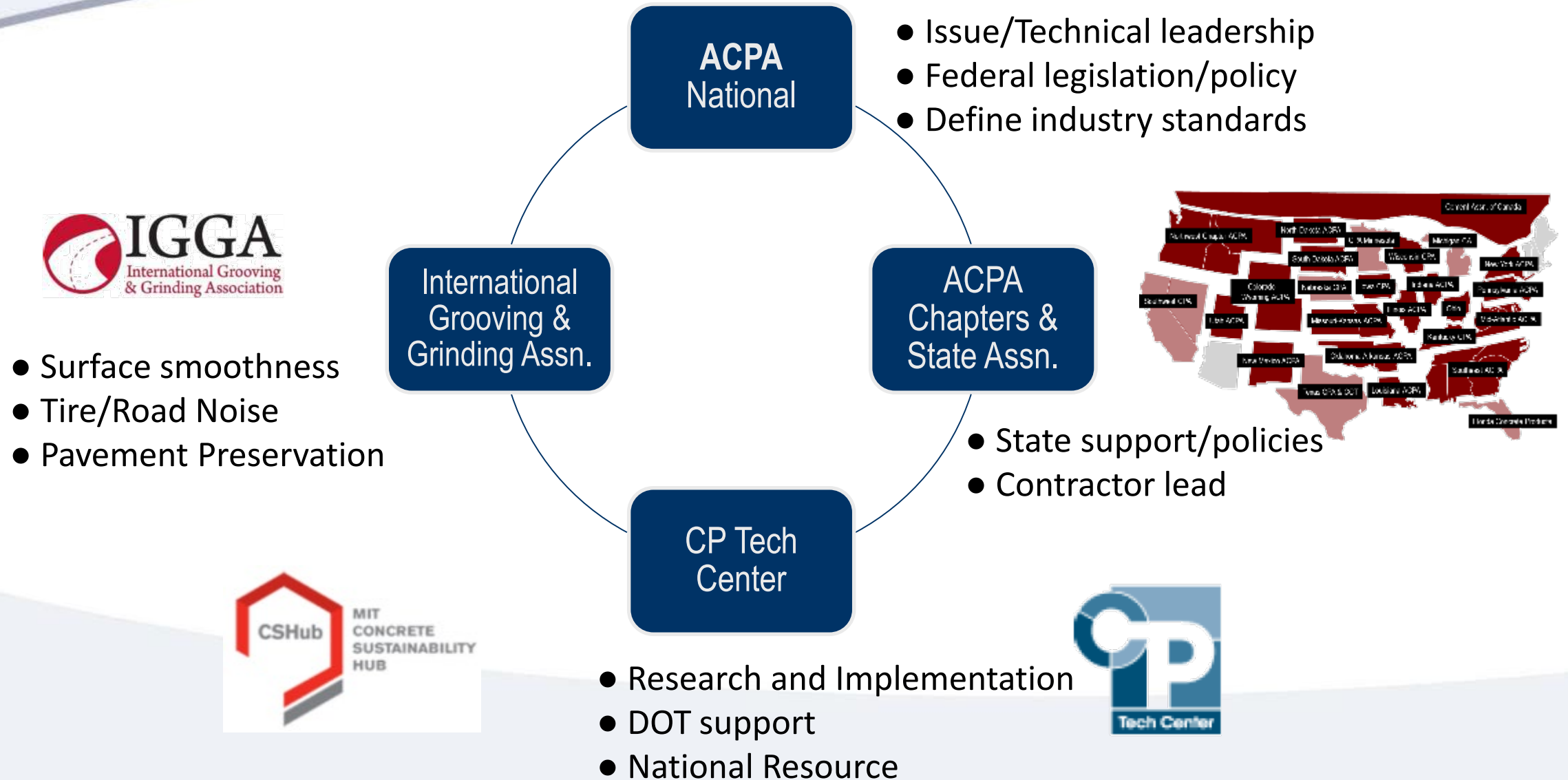
# Leveraging **COMPETING** industries...



- This is the **RIGHT MESSAGE!**
- Resonating with owners...  
and other stakeholders.
- About stewardship, NOT about one  
being better than another
- Leveraging the free market in support of  
better quality, performance and  
purchasing power
- Hinges on design equivalency



# Strength through Partnerships



# What is the Outlook?

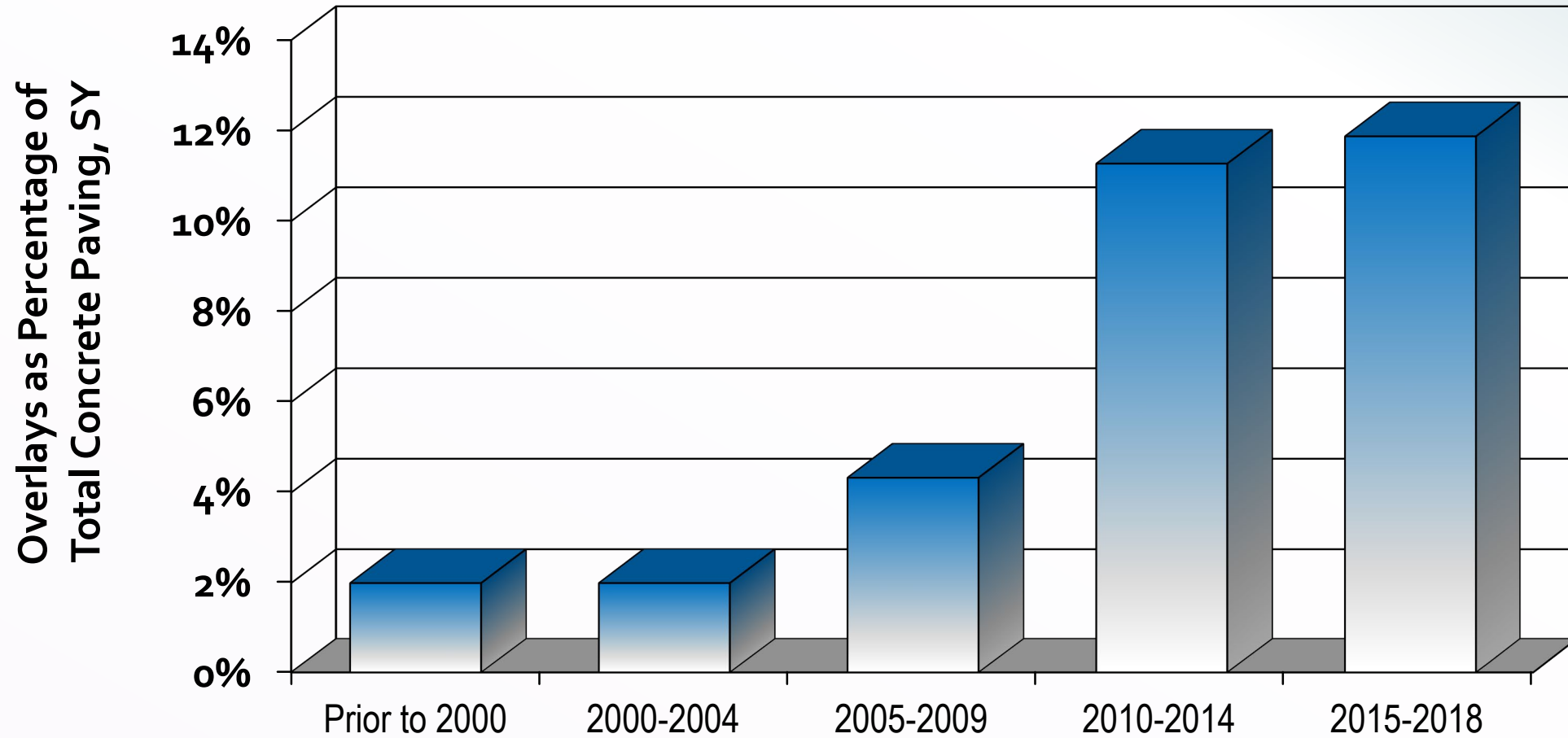


## Much to be Optimistic About...

- Contractor membership – at all-time high
- Overall membership growing
- Adding engineers/promoters
- 2019 projection strong!
  - 57M SY - 8yr high
  - Market share growing ~19%
  - Concrete Overlays ~12%



# Nationwide Concrete Overlay Usage



Appreciate the federal partnership!

# Investing in the Future

- Emerging Leaders Group
- Interns for the Future

EMERGING  
LEADERS  
GROUP





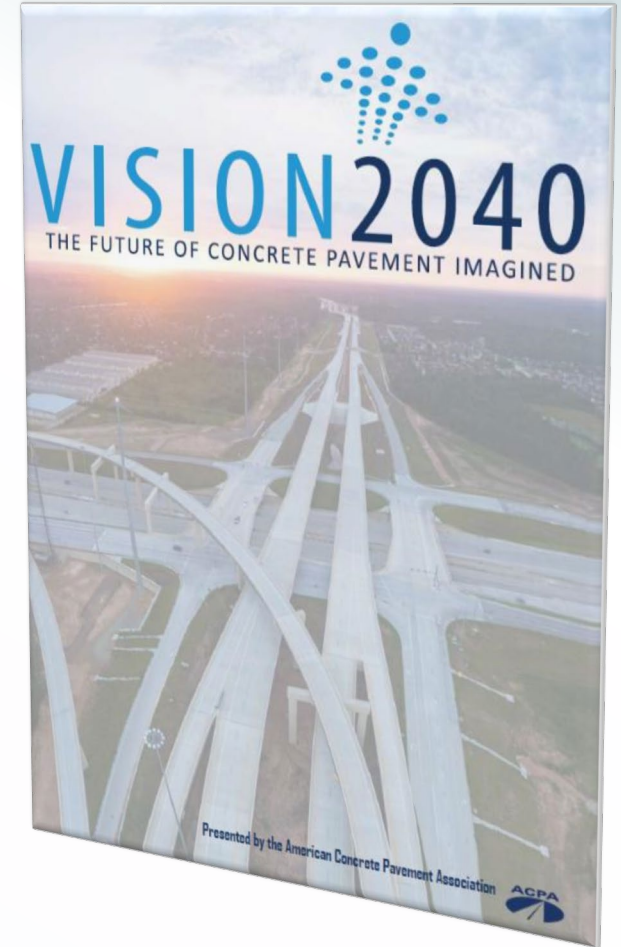
Concrete Pavement Industry Update

# **THE FUTURE OF CONCRETE PAVEMENT**



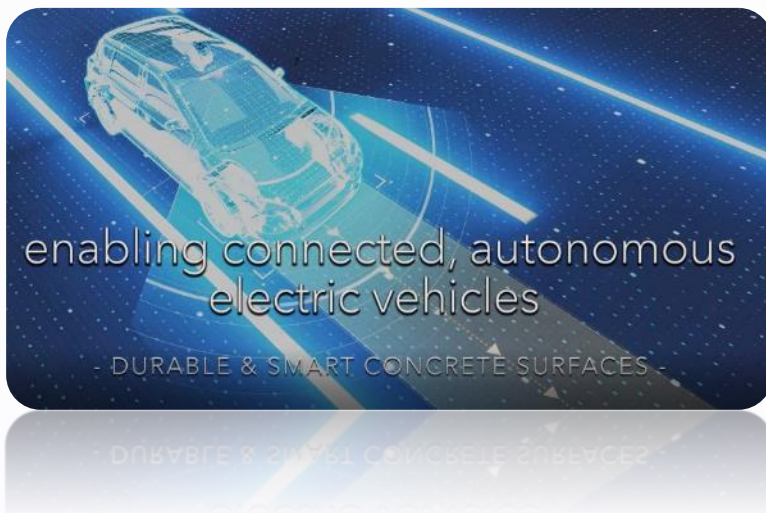
# Future of Transportation?

- ACPA assembled 25 experts to serve on a Blue Ribbon Panel and crafted a **VISION2040** report last year (copies available...)
- Amazing & interesting initial discussion... continued throughout last year.
- Challenged panelists to look ahead to 2040 – given broad latitude!
  - **What will transportation look like in the future?**
  - **What are public agencies' future needs for pavement solutions?**



# To cope with the enormous challenges of the future...

- Agencies will need **better, adaptable, resource efficient and resilient** pavements that have **reliable long-term performance**, accommodating variety of sensing and measurement technologies needed for connected vehicles of the future



# Leading Our Industry to Meet New Challenges

- ☒ Step 1: Convene a “Blue Ribbon” Panel
- ☒ Step 2: Conduct “Shape the Future” Workshop
- ☐ Step 3: Develop an Action Plan
- ☐ Step 4: Implement Vision 2040  
Materials, Mix, Design, Construction...





Concrete Pavement Industry Update

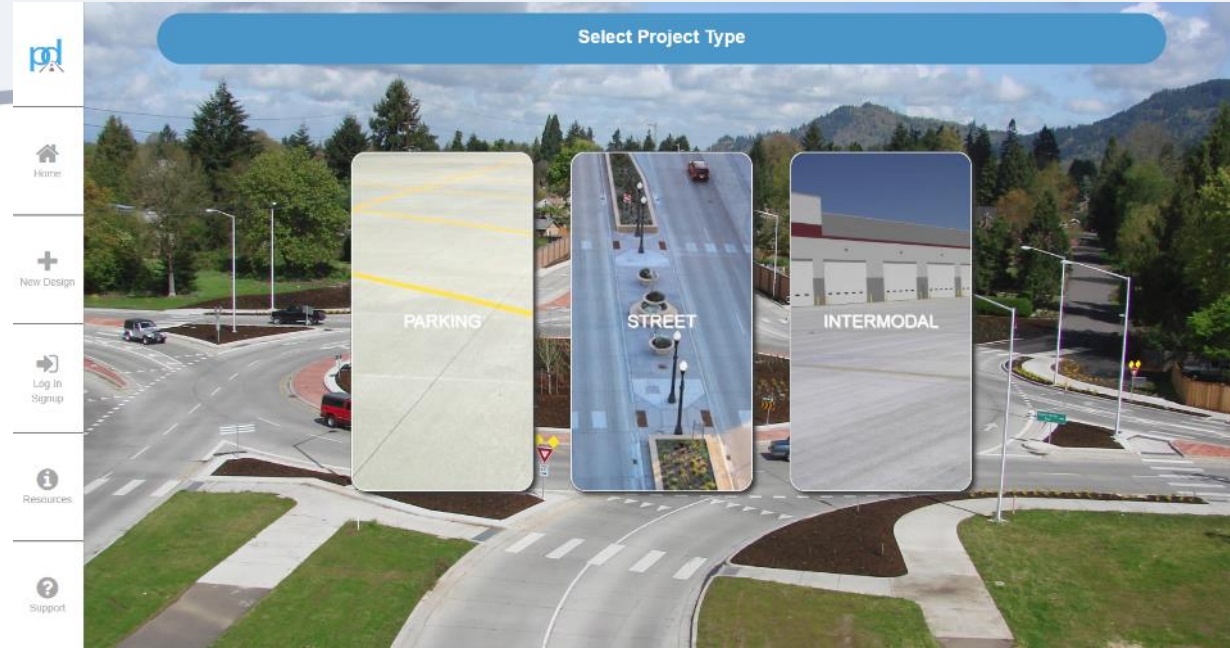
# **TECHNICAL EFFORTS**



***WikiPave.org***



# PavementDesigner.org



- Developed jointly with NRMCA, PCA, RCC Council
- Streets (JP, CRC, RCC, overlays, FDR), Parking, Industrial (StreetPave/PCA Pave, BCOA –ME, AASTO93, Layered Elastic)
- **Free**, web-based application

# Education and Training

Delivered demonstrations to 3,100+ since launch



## Webinars

Webinars delivered by ACPA and partners.

**Audience -> 360**

## Seminars

8 Seminars delivered by NRMCA (Killingsworth) in 14 states.

**Audience -> 1,037**

## Workshops

5 Workshops delivered by ACPA (Ferrebee) in 4 states.

**Audience -> 162**

**3,100+ Individuals Trained**

25 Presentations delivered by ACPA (Ferrebee) in 18 states.

**Audience -> 1,541**

**Live Demonstrations**

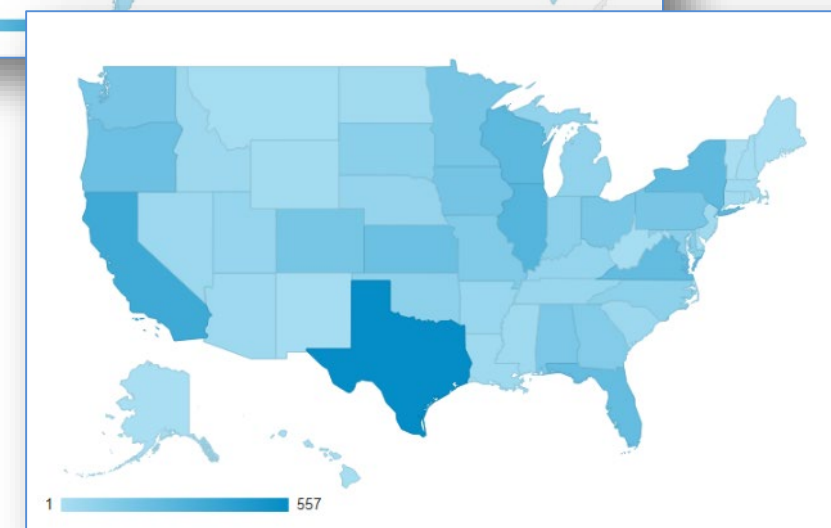
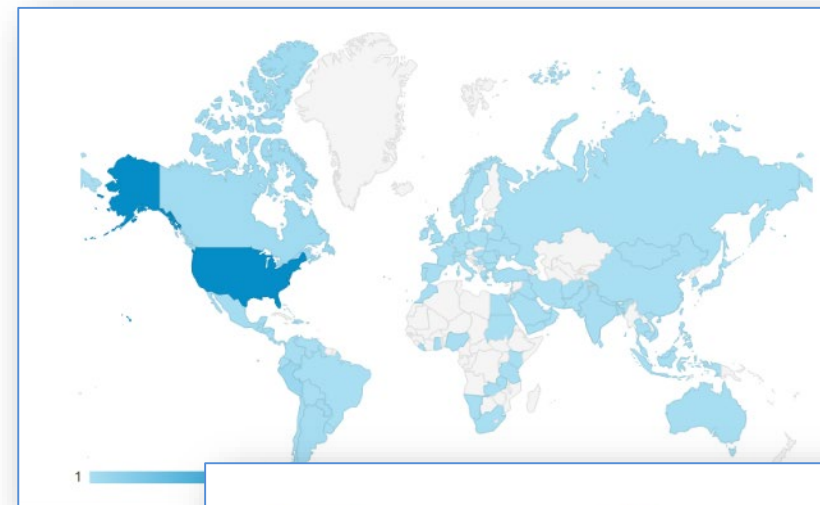


# Measurement



Region	Acquisition		
	Users	New Users	Sessions
	<b>5,388</b> % of Total: 65.99% (8,165)	<b>5,408</b> % of Total: 66.45% (8,139)	<b>10,388</b> % of Total: 67.84% (15,313)
1. Texas	<b>567</b> (9.98%)	558 (10.32%)	1,312 (12.63%)
2. California	<b>367</b> (6.46%)	354 (6.55%)	597 (5.75%)
3. Illinois	<b>297</b> (5.23%)	284 (5.25%)	571 (5.50%)
4. Wisconsin	<b>265</b> (4.67%)	260 (4.81%)	374 (3.60%)
5. New York	<b>253</b> (4.46%)	244 (4.51%)	277 (2.67%)
6. Florida	<b>249</b> (4.38%)	235 (4.35%)	555 (5.34%)
7. Virginia	<b>245</b> (4.31%)	235 (4.35%)	278 (2.68%)
8. Kansas	<b>217</b> (3.82%)	211 (3.90%)	361 (3.48%)
9. Oregon	<b>209</b> (3.68%)	207 (3.83%)	263 (2.53%)
10. Iowa	<b>183</b> (3.22%)	173 (3.20%)	319 (3.07%)

- Users are predominantly from the U.S (67%), but International use is widespread.



# Programming Update

## In-Progress

- Metric Implementation
- Update Traffic Spectrum Order and Guidance
- Rigid ESALs Calculation – Implement a new calculation for rigid ESALs and display results on project level page.
- Intermodal Design Enhancements – New calculations and front-end forms to design based on a user-defined stress ratio or thickness. Additionally, to ensure interdependency of calculated vehicle values for gross weight, contact area, and contact pressure.

## Upcoming

- Investigate newly available design models for incorporation into PD v2.0

# Technical Resources

- Resource Center – 1,400+ pubs
- Recent ACPA Specifications



## Smoothness Specs

- Guidelines for all markets



## Dowel Alignment Spec

- Guideline for how to evaluate DBI
- Revisions from field experiences



## RCC Spec

- Guideline for bare-surface RCC
- Fully commented



## Sponsor 3<sup>rd</sup> Edition Overlay Guide

- CP Tech Author

- Fabric Interlayer Spec in progress...



# Technical Resources



- New Technical Bulletins
- Web Explorers
  - Concrete Overlays  
***overlays.acpa.org*** (~1250)
  - RCC  
***rcc.acpa.org*** (~300)
  - Historical  
***explorer.acpa.org*** (<20)

# New Training Courses – Preservation of PCCP

- FHWA sponsored work with CPTech Center
- 5 courses...
- Practitioner focused
- Interactive content
- Spanish translations



*Available through NHI online learning management system*

# Thank you!




[apps.acpa.org](https://apps.acpa.org) | ACPA Application Library  
[local.acpa.org](https://local.acpa.org) | ACPA-affiliated Chapter/States  
[resources.acpa.org](https://resources.acpa.org) | Resource Center  
[wikipave.org](https://wikipave.org) | ACPA's paving wiki

A vibrant nighttime photograph of a city street, likely New Orleans, with illuminated buildings, streetlights, and festive decorations.

**Save the Date**

**New Orleans Marriott**

The ACPA logo, featuring the letters "ACPA" in white above a stylized white graphic of a road or path.

**ACPA 56<sup>th</sup>**  
**ANNUAL MEETING**  
**December 3-5, 2019**