



Asphalt Pavement EXchange

A TxDOT Quality Initiative for Asphalt Pavements

January 2025 Update

What is APEX?

- A dedicated, coordinated, continuously improved asphalt pavement knowledge-sharing program for TxDOT and Industry.

TXAPA has the multi-year contract with TxDOT to develop and deliver this program.



Asphalt Pavement Exchange (APEX)

APEX Task Force

- Overseas Working Groups

8 Working Groups

- 7 Working Groups:
 - Communication, Construction & Inspection, Pavement Design, Essentials, Materials & Mix Type, Safety, Ride Quality.
 - Brainstorm Ideas and help APEX Staff develop the “Products”
- 1 Working Group – *Asphalt Pavement Specialists*
 - Works in District to communicate, coach, & disseminate information

APEX Staff (4 full time + Consultants)

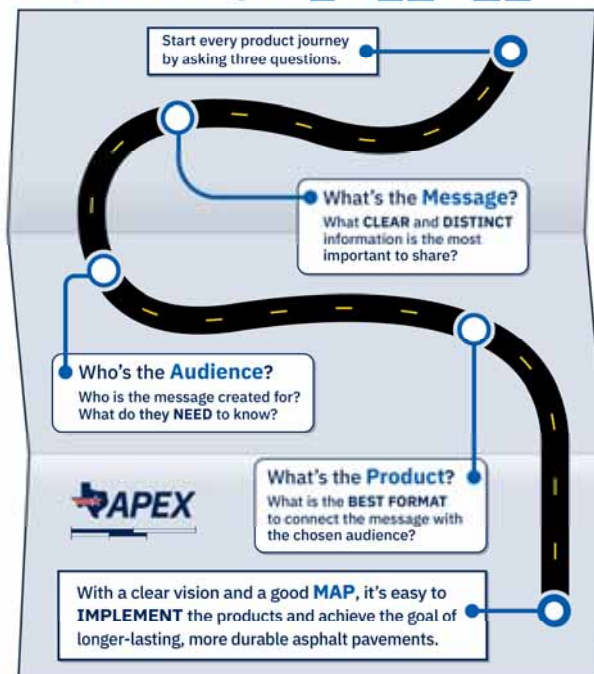
- Manages and coordinates program, develops & delivers “Products”











How We Do It

Creating impactful
APEX products is as
easy as following a

MAP



APEX PRODUCT TYPE LIST

	Brief Introduction to a Larger Topic <i>Introduces and fosters engagement with a topic.</i>	Scope ●○○○ 1-2 Pages	A one- to two-page document created to give a thorough introduction to a single topic . They work best when the goal is to build interest in a topic.
	Infographic Visualization of a "Big Idea" <i>Reduces complex concepts into simpler terms and images.</i>	Scope ●○○○	A graphic created to simplify and organize a larger concept into an accessible visual. They work best when they boil abstract or highly complex concepts down to a personal level that is applicable and memorable .
	Poster Promotion and Reference for a Common Space <i>Promotes and communicates throughout the day.</i>	Scope ●○○○	A printed item (available in multiple sizes) created to promote products or to provide easily referenceable information needed to perform one's duties safely and accurately.
	Quick Reference Reference Material for the Individual <i>Reminds of information, processes, or safety procedures.</i>	Scope ●○○○ 1-2 Pages	A one- to two-page document created to provide easily referenceable information needed to perform one's duties safely and accurately. They work best when they put the most important information right at the individual's fingertips for on-the-job use .
	Short-Form Video Pre-recorded "Bite-sized" Education <i>Educates/Reinforces small amounts of information.</i>	Scope ●○○○ 1-10 Minutes	A short-form video created to communicate quick-to-absorb information with brevity. They work best when they demonstrate processes that align with industry standard practices .
	How-to Guide Instructional Guide of a Process <i>Educates/Reinforces the proper steps of a process.</i>	Scope ●●○○	An in-depth illustrated guide created to explain the step-by-step instructions of a process.
	Podcast Episode Include topic in the "Everyday Asphalt" Podcast <i>Explores facets of a topic through conversation.</i>	Scope ●●○○	Suggesting a topic to be covered as part of the "Everyday Asphalt" monthly podcast. They work best when a subject has room to be explored conversationally by a group of industry professionals .
	Presentation Carefully Guided Expansion of a Concept <i>Educates/Reinforces through non-interactive learning.</i>	Scope ●●○○	An in-depth PowerPoint expanding on a concept . They work best when they are used to lead a viewer through material that benefits from being presented in a particular sequential order .
	Technical Document In-Depth Technical Exploration <i>Explores multiple points of a concept or process.</i>	Scope ●●○○	A long-form document explaining in extensive detail aspects of a concept or process. They are the most in-depth and technical format that we offer.
	LMS Module Online Self-Paced Exploration <i>Educates and engages at the participant's pace.</i>	Scope ●●●○	An in-depth self-paced course built in our Learning Management System. They work best when educating a participant through a concept or process with a mixture of text, images, video lectures, and short activities .
	Long-Form Video Pre-recorded Guided Exploration <i>Educates/Reinforces through non-interactive learning.</i>	Scope ●●●○ 10+ Minutes	A long-form video guiding the viewer through a concept . They offer high levels of depth where hands-on engagement is not necessary. They work best when dense material benefits from pacing and guidance .
	Workshop Live Guided Exploration <i>Educates/Reinforces through interactive learning.</i>	Scope ●●●○ Hours/Days	An in-person or live streaming scheduled event guiding participants through a concept . They offer high levels of depth and opportunities for hands-on engagement. They work best when dense material benefits from guidance and interaction .



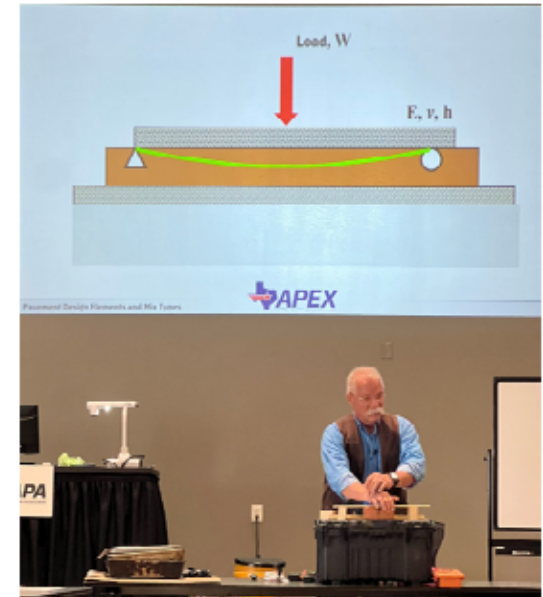
Silos

- Doesn't foster collaboration, cooperation, or innovation.
- Slows down knowledge transfer.
- We need to speed up knowledge sharing and gain of experience.



2025: APEX by the Numbers

- ✓ Setup office & organization, hired staff, established P&P, logos, branding, products list.
- ✓ 18 Working Group Meetings
- ✓ 1 Asphalt Pavement Specialist APS workshop
- ✓ 7 APS Educational Development programs
- ✓ 5 APEX Insider Newsletters
- ✓ 459 Mailing List signups
- ✓ 5 Briefs
- ✓ 5 APEX/Everyday Asphalt podcasts (with record attendance)
 - ✓ 660 Actual Broadcast Views (63% attendance rate vs 40-50% industry average)
 - ✓ 765 YouTube Views
 - ✓ >1050 Apple Podcast/Spotify/other views
- ✓ 34 Infographics
- ✓ 2 Pop-up Banners
- ✓ 1 Poster
- ✓ 1 Essentials Workshop Pilot Workshop Program
- ✓ Numerous APEX presentations
- ✓ Animations, graphics, video clips
- ✓ Website-Landing page
- ✓ And....



Asphalt Pavement EXchange

A TxDOT Quality Initiative for Asphalt Pavements

TxDOT's APES program is a free knowledge sharing and performance monitoring program for asphalt pavement professionals across the state. Together we can ensure the quality, safety, and longevity of Texas roads by providing high quality, shop specific asphalt pavements.

JOIN US

APES

Asphalt Pavement EXchange
A TxDOT Quality Initiative for Asphalt Pavements

Introduction
Asphalt pavement is a complex, multi-layered system that requires a high level of expertise and coordination to ensure long-term performance. The APES program provides a platform for asphalt pavement professionals to share knowledge, resources, and best practices.

Background
The APES program was established in 2010 as a result of a TxDOT initiative to improve the quality and longevity of asphalt pavements. The program is a free, online platform that allows asphalt pavement professionals to share knowledge, resources, and best practices.

How it works
The APES program is a free, online platform that allows asphalt pavement professionals to share knowledge, resources, and best practices. It is a collaborative effort between TxDOT and the asphalt pavement industry.

Benefits
The APES program provides a number of benefits to asphalt pavement professionals, including access to a wealth of knowledge, resources, and best practices. It also provides a platform for asphalt pavement professionals to share their own knowledge and experiences.

Page 1

ASPHALT MIX TYPES

Hot Rolled Asphalt
This is the most common type of asphalt mix used in Texas. It is made by heating the aggregate and binder to high temperatures, typically between 300°F and 350°F, before mixing them together.

Warm Mix Asphalt
This type of asphalt mix is made by using a modified binder that allows the aggregate and binder to be mixed at lower temperatures, typically between 250°F and 300°F.

Cold Mix Asphalt
This type of asphalt mix is made by using a modified binder that allows the aggregate and binder to be mixed at ambient temperatures, typically between 60°F and 80°F.

WHAT DOES AN ASPHALT PLANT DO?

Replicate the Job Mix Formula (JMF) Developed by Level 2 Mix Designer
The asphalt plant's primary function is to replicate the Job Mix Formula (JMF) developed by the Level 2 Mix Designer. This involves weighing and mixing the aggregate and binder to create the final asphalt mix.



From Quarry to Stockpiles
The process begins with the quarrying of aggregate materials, which are then transported to the asphalt plant and stored in large stockpiles.

Aggregates
The process starts with the storage of various aggregate materials in large silos.

Cold Feed Bins
The aggregates are then fed into cold feed bins, where they are weighed and mixed.

Propagating Aggregate Blend
The mixed aggregate is then moved to a propagating aggregate blend, where it is further processed.

Screen Deck
The aggregate blend is then passed through a screen deck to remove any oversized material.

Conveyor and Weigh Bridge Scale
The screened aggregate is then transported by a conveyor system to a weigh bridge scale, where it is weighed.

Drying and Mixing Drum
The weighed aggregate is then moved to a drying and mixing drum, where it is heated and mixed with the binder.

Baghouse
The mixed asphalt is then passed through a baghouse to remove any dust or fines.

Storage Silos
The final asphalt mix is then stored in large storage silos, ready for transport to the paving site.

Load out and Ticketing
The asphalt is then loaded out of the silos and ticketed for the paving crew.

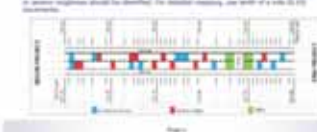
New Asphalt Paving
The final step is the paving of the new asphalt surface.

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Subgrade
The process begins with the preparation of the subgrade, which is the foundation for the pavement structure.

Base Layer
The first layer of the pavement is the base layer, which is made of a mixture of aggregate and binder.

Superpave (Item 344)
The Superpave (Item 344) is a three-layer system that includes the base layer, a middle layer, and a surface layer.

Surface Layer
The final layer of the pavement is the surface layer, which is made of a mixture of aggregate and binder.

Construction
The final step is the construction of the pavement, which involves the paving and compaction of the layers.



ANATOMY OF A PAVEMENT
This diagram shows the various layers of a pavement structure, from the subgrade at the bottom to the surface at the top. The layers are labeled as follows:

- Subgrade**: The foundation for the pavement.
- Base Layer**: The first layer of the pavement.
- Bottom Asphalt Layer**: The second layer of the pavement.
- Superpave**: The third layer of the pavement.
- SPA**: The top layer of the pavement.

JOIN US AND LEARN MORE AT WWW.APEXTX.ORG

PG BINDERS

Superpave Asphalt Binder Specification
The diagram shows the various tests used to evaluate the binder, including the Ring and Ball test, the Rotational Viscosity test, and the Dynamic Time Temperature Superposition test.

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APES

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Essentials Workshop 12/9-10/25

- Target 50: Mix of APEX WG and Target Audience
- 2 days – 12 hours of content
 - Introduction – 0.5 hour
 - Pavement Doctor – 0.75 Hour
 - Materials – 3 hours
 - Design – 2 hours
 - Construction – 4 hours
 - Maintenance – 1 hour
 - Summary – 0.75 hour
- And the results??



4.49
Average Rating

★★★★☆



Speed: Was the pace of this section...?

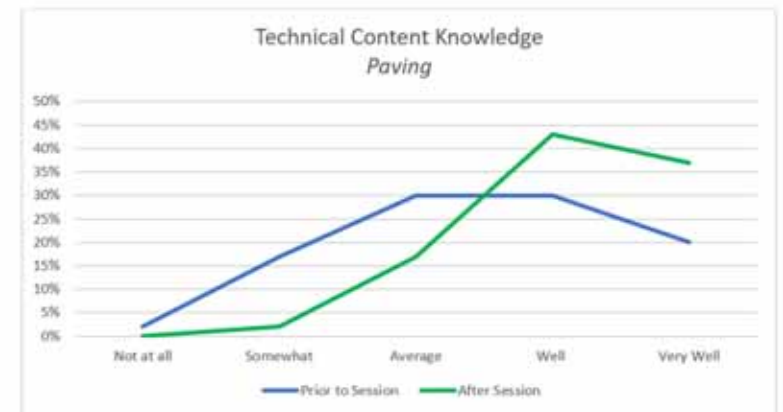
Speed	Percentage	Count
Too fast	0%	0
Just right	100%	43
Too slow	0%	0

Quantity: Was the amount of information presented in this section...?

Quantity	Percentage	Count
Too much	0%	0
Just right	98%	42
Too little	2%	1

Depth: Was the information presented in this section on-target for a foundational/essential workshop for a broad audience?

Depth	Percentage	Count
Too deep	0%	0
Just right	100%	43
Too shallow	0%	0



Knowledge of Technical Content

Level of Knowledge	Prior to Session	After Session	% Change
Not at all	2%	0%	-2%
Somewhat	17%	2%	-15%
Average	30%	17%	-13%
Well	30%	43%	+13%
Very Well	20%	37%	+17%

Learning Methods - Most Beneficial to Least Beneficial



	Agreed or Strongly Agreed
Can demonstrate foundational knowledge of the lifecycle of asphalt pavements	91.5%
Know how all individual areas interact and affect each other (design, materials, construction, and maintenance)	97.8%
Understand my role and responsibilities within the "circle of life"	93.4%
Understand the importance of collaboration and knowledge sharing in the asphalt industry	95.6%

"I'm impressed with the program so far. There's been a lot of great points brought up that even after many years in the industry that were new to me. Very educational, I found them helpful. I can only imagine how much this would have impacted my career had I been exposed to it in the early years of my career."

- Mark Dean, Longview Asphalt

"I think this program has been a tremendous help. I've been in the industry for about four years. I started on a paving crew and worked my way into the office into estimating. It's really cool to take a look at all four aspects when you're talking construction, maintenance, materials, and planning. It's really cool to hear from the experts in here talk about their side of the business and kind of relate it to my purpose and my industry and it makes me want to dive deep more into knowing everything and getting all the information I can."

- Bryce Naivar, Lonestar Paving

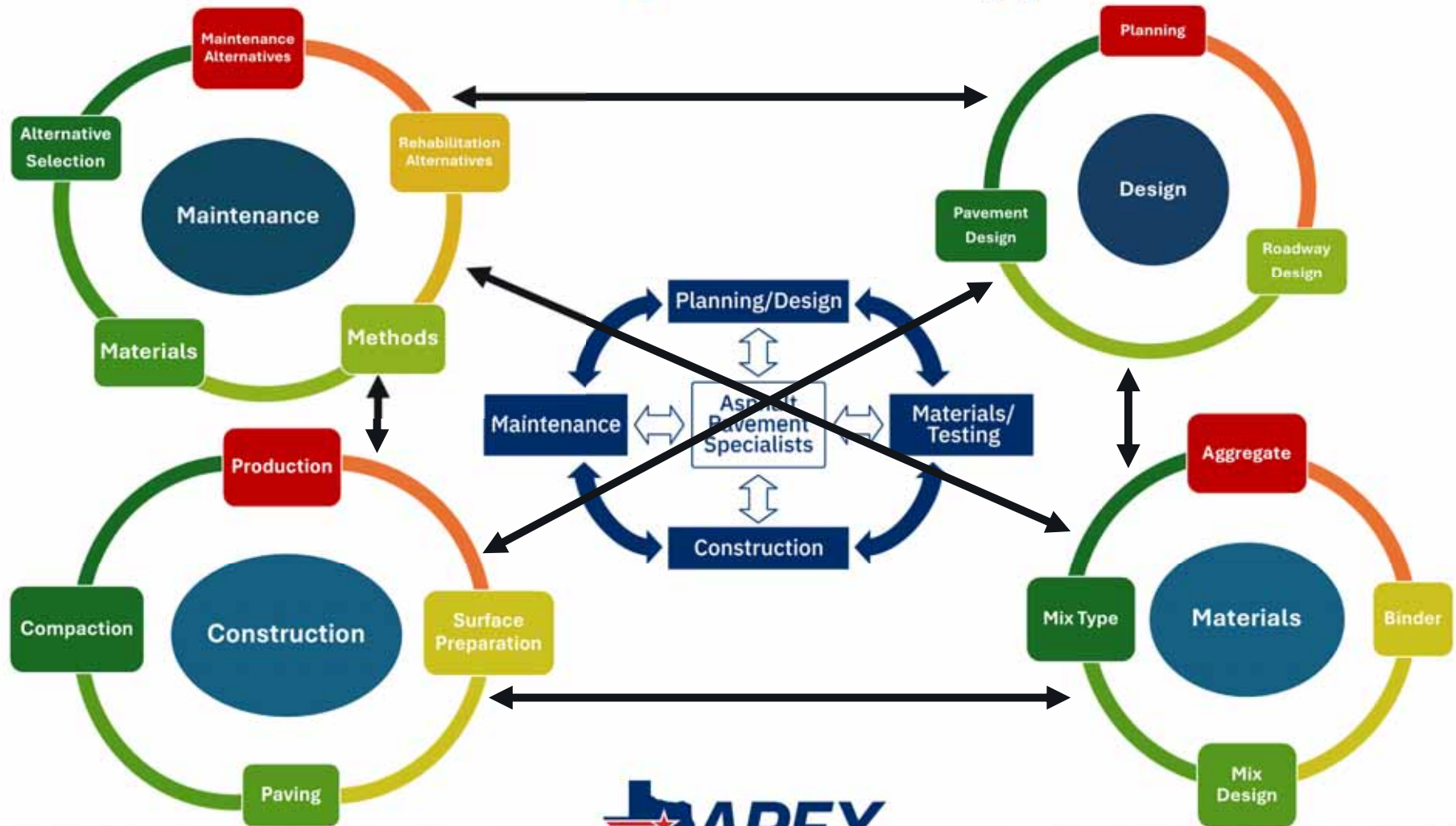


2026 Plans – Essentials Workshops

- Spring 2026 programs
 - ~~January 12th-13th, 2026 | Houston: Norris Meeting & Events Center COMPLETE~~
 - ~~January 14th-15th, 2026 | San Antonio: Norris Meeting & Events Center COMEplete~~
 - February 23rd-24th, 2026 | Dallas/Fort Worth: Plano Events Center
 - February 25th-26th, 2026 | San Angelo: Courtyard by Marriott San Angelo
 - March 23rd-24th, 2026 | Lubbock: Overton Hotel and Conference Center
 - March 25th-26th, 2026 | Buda: Texas Asphalt Pavement Association
- Tentative Fall 2026 locations: El Paso, Corpus/Laredo, Amarillo, Longview, Brownwood, plus repeat location(s) based on demand (HOU/DFW/SAT/AUS)



The Essentials Workshop: *How we approach it.*



APEX 2026

- ✓ **Working Groups progress:** TF approves priorities list of topics to develop "Products." Start release products beginning Q2/Q3.
- ✓ **Website Development:** Release Phase 1 of website Q1, additional releases in Q2/Q3.
- ✓ **PIQ's** and start offering additional APEX Mini-Educational sessions after meetings. Q2-Q4
- ✓ **Deeper Dive Workshops Development:** Develop deeper dive workshops list (ex. 2-4 hours) and begin development. Begin offering to Districts/others in Q3. Continue to build out menu.
- ✓ **APS Development:** Continue to work with Asphalt Pavement Specialists group to improve communication skills and technical knowledge on Asphalt. Ongoing Monthly
- ✓ **Develop additional instructors:** Q2/Q3 ongoing
- ✓ **Update Essentials Workshop:** Q3
- ✓ **Plan Q3/Q4 and Q1/Q2-27 Essentials Workshops:** open registration in Q2/Q3

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	Technical Document In-Depth Technical Exploration <i>Explores multiple points of a concept or process.</i>	Scope ●●○
	LMS Module Online Self-Paced Exploration <i>Educates and engages at the participant's pace.</i>	Scope ●●●
	Long-Form Video Pre-recorded Guided Exploration <i>Educates/Reinforces through non-interactive learning.</i>	Scope ●●● 10+ Minutes
	Workshop Live Guided Exploration <i>Educates/Reinforces through interactive learning.</i>	Scope ●●● Hours/Days



APEX – Industry Engagement Opportunities

- How can industry play a role here?
- What if we don't show up?
- Opportunities and Benefits:
 - To the Industry?
 - To your Company?
 - To your Staff?



Visit www.APEXTX.org
✓ check for updates
✓ *sign up for the mailing list!!!*



We're just getting started... it's going to be a great ride!

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