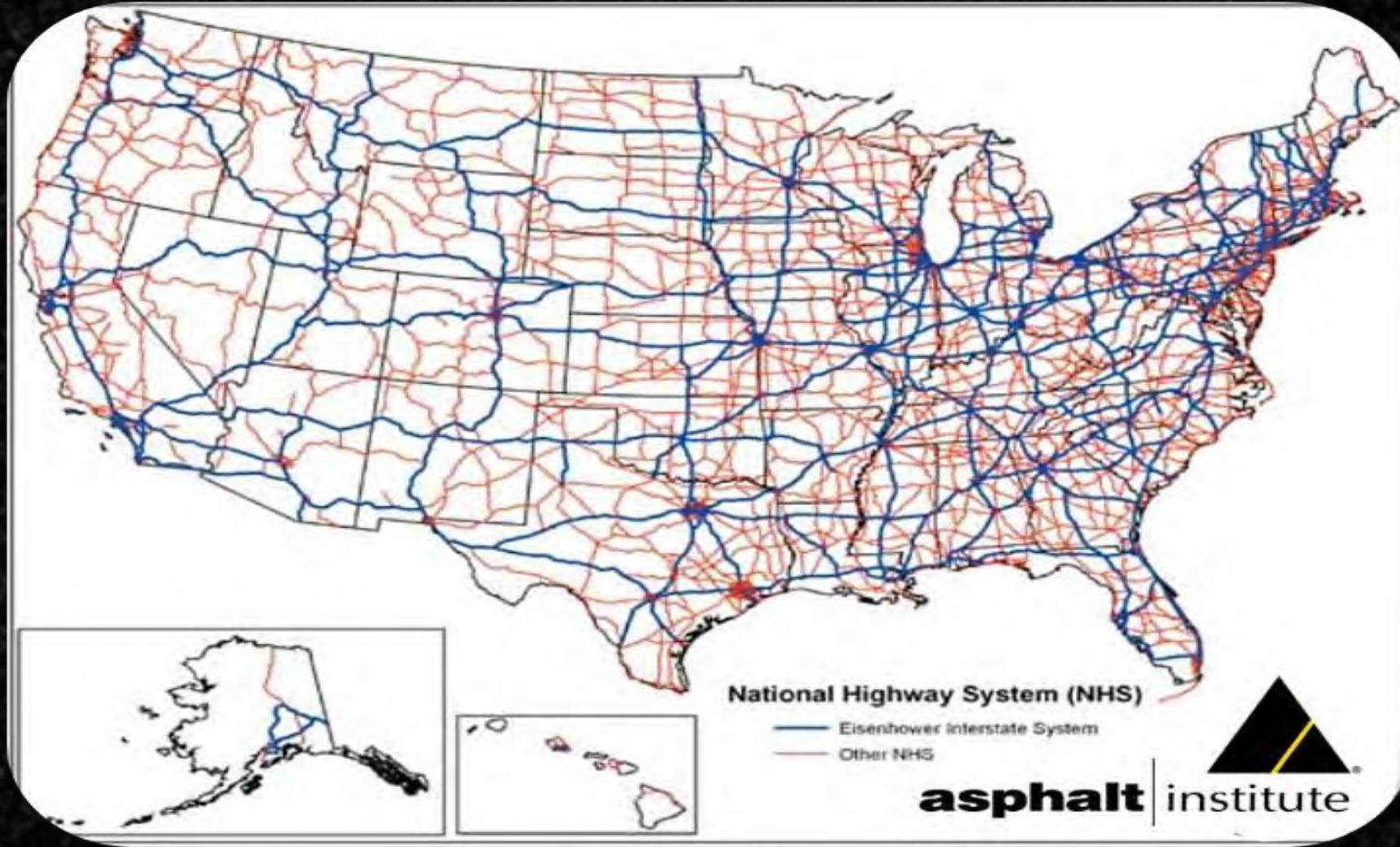


66<sup>th</sup> Annual Conference

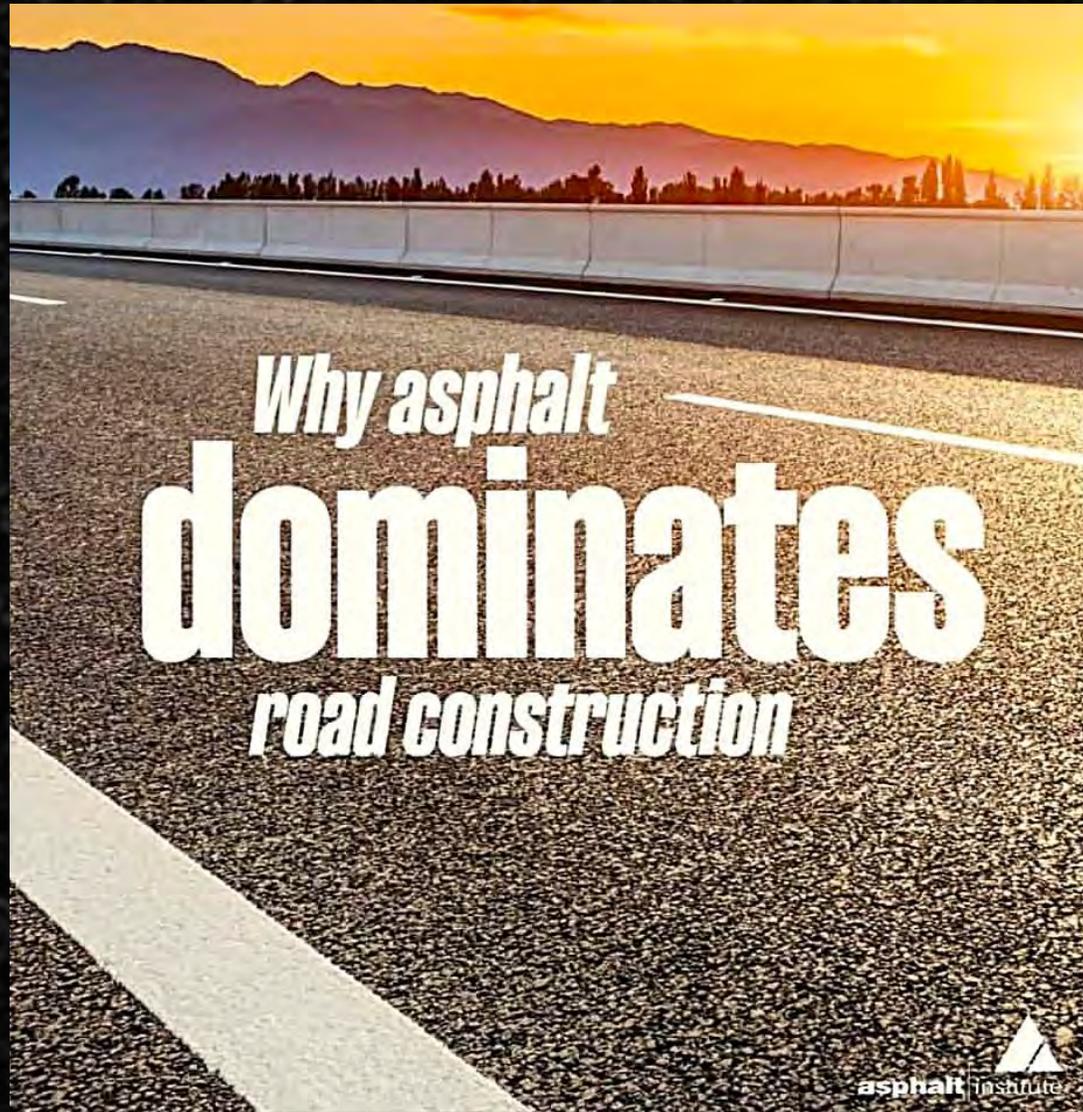
# Situational Awareness for the Asphalt Pavement Industry

# 4 Million Miles of Roads



**94%**  
Paved  
with Asphalt





## Trends ...

- Initial cost of construction
- Streamline Specifications
- Materials Innovation
- Industry Consolidation leading to Diversification
- Concrete Maintenance Inflection at 25yrs



# Initial Cost of Construction

EUAC Summary						2024
I-94 Reconstruction						
Alternative	PV Initial Construction Cost	PV Initial User Cost	PV Maintenance Cost	PV Remaining Life Value	n	EUAC
#1: HMA Recon	\$1,029,276	\$365,049	\$137,455	-\$18,563	36	\$50,260
#2: JPCP Recon	\$1,125,281	\$337,962	\$144,895	\$0	36	\$53,413



Reconstruct M-3: From Beaubien St to the Dequindre Cut		2025	
<b>Alternative #1: Reconstruct with Hot Mix Asphalt Pavement (Mainline &amp; Shoulders)</b>		<b>Alternative #2: Reconstruct with Jointed Plain Concrete Pavement</b>	
<ul style="list-style-type: none"> <li>ME pavement design at MDOT minimum thickness</li> </ul>		<ul style="list-style-type: none"> <li>ME pavement design at MDOT minimum thickness</li> </ul>	
Present Value Initial Construction Cost	\$622,890/lane-mile	Present Value Initial Construction Cost	\$692,204/lane-mile
Present Value Initial User Cost	\$100,145/lane-mile	Present Value Initial User Cost	\$218,452/lane-mile
Present Value Maintenance Cost	\$126,245/lane-mile	Present Value Maintenance Cost	\$130,418/lane-mile
Present Value Remaining Life Value	-\$12,996/lane-mile		
Equivalent Uniform Annual Cost (EUAC) \$32,079/lane-mile		Equivalent Uniform Annual Cost (EUAC) \$37,014/lane-mile	





## Trends...

State DOT Funding Models

Program Delivery **DOWN**

**“We’re not in pavement preservation,  
we’re in pavement life support.”**

Flagstaff Division



# State Funding Struggles

INDOT Anticipated Funding Levels by Funding Category, 2018-2045, in Future Year Dollars

STIP FUNDING CATEGORY	CURRENT STIP				PROJECTION YEARS			
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025-2045*
State Federal-aid FHWA funds	\$786,700,000	\$799,300,000	\$813,500,000	\$808,300,000	\$808,300,000	\$808,300,000	\$808,300,000	\$808,300,000
Earmarks State	\$800,000	\$169,281	\$0	\$0	\$242,320	\$242,320	\$242,320	\$242,320
Local Federal-aid FHWA funds	\$246,900,000	\$252,500,000	\$276,633,333	\$252,500,000	\$252,500,000	\$252,500,000	\$252,500,000	\$252,500,000
Local Federal-aid FHWA Earmarks	\$10,788,764	\$1,862,263	\$2,205,934	\$7,557	\$0	\$0	\$0	\$0
Subtotal of Federal-aid FHWA funds =	\$1,045,188,764	\$1,053,831,544	\$1,092,339,267	\$1,060,807,557	\$1,061,042,320	\$1,061,042,320	\$1,061,042,320	\$1,061,042,320
Subtotal of Federal-aid FTA funds =	\$22,750,000	\$22,750,000	\$22,750,000	\$22,750,000	\$22,750,000	\$22,750,000	\$22,750,000	\$22,750,000

**IDOT: Long Range Transportation Plan 2018 - 2045**

# Funding Metrics

## Lane Mile by District, Sub District and Unit

District, Sub District, Unit	Mainline		Ramp	
	Centerline	Lane Miles	Centerline	Lane Miles
<b>Grand Total</b>	<b>10979.295</b>	<b>28421.742</b>	<b>645.678</b>	<b>718.275</b>



$\$252,500,000 / 28,421 = \mathbf{\$8,884}$  per lane mile

$\$255,000,000 / 23,000 = \mathbf{\$11,086}$  per lane mile

$\$1,500,000,000 / 46,000 = \mathbf{\$32,608}$  per lane mile



	STATE	IRI: <95 PSR: >3.4	IRI: 95-170 PSR: 2.6-3.4	IRI: >170 PSR: <2.6	TOTAL REPORTED	% Poor
1	Indiana	6,810	2,015	237	9,063	2.62%
2	South Dakota	11,384	2,992	497	14,872	3.34%
3	Kansas	10,263	2,838	519	13,619	3.81%
4	Wyoming	4,489	1,459	321	6,268	5.12%
5	Vermont	614	134	41	788	5.15%
6	Nebraska	9,179	2,921	755	12,855	5.88%
7	Tennessee	3,698	992	296	4,986	5.93%
8	Idaho	3,534	1,073	306	4,914	6.23%
9	Georgia	17,244	10,959	1,964	30,166	6.51%
10	North Dakota	9,854	3,535	953	14,343	6.65%
11	New Jersey	5,520	4,525	811	10,856	7.47%
12	West Virginia	1,575	1,380	266	3,220	8.25%
13	Alabama	13,065	6,853	1,828	21,746	8.40%
14	Iowa	2,894	1,765	447	5,106	8.76%
15	Kentucky	6,238	6,143	1,242	13,623	9.12%
16	Oregon	11,193	4,590	1,599	17,383	9.20%
17	Minnesota	18,611	11,162	3,112	32,885	9.46%
18	Montana	7,211	4,215	1,383	12,810	10.80%
19	Utah	3,748	2,548	804	7,100	11.32%
20	North Carolina	8,339	11,985	2,871	23,194	12.38%
21	Florida	14,498	9,585	3,523	27,606	12.76%
22	Ohio	15,784	9,767	4,285	29,836	14.36%
23	Nevada	3,679	2,736	1,107	7,523	14.72%
24	Delaware	720	608	249	1,577	15.78%
25	Maine	3,160	2,103	1,050	6,313	16.63%
26	New Hampshire	1,851	1,157	616	3,625	17.00%
27	Virginia	5,855	9,033	3,109	17,998	17.28%
28	South Carolina	6,946	8,748	3,802	19,497	19.50%

## Federal-Aid Length 2023 Miles by Measured Roughness / PSR

29	Illinois	14,620	10,600	6,143	31,363	19.59%
30	Arkansas	9,409	8,241	4,545	22,195	20.48%
31	Michigan	15,839	9,982	6,788	32,609	20.82%
32	Alaska	1,570	1,270	822	3,662	22.46%
33	Texas	30,136	38,053	20,630	88,820	23.23%
34	Colorado	5,623	6,691	3,875	16,189	23.94%
35	Missouri	9,174	14,113	7,550	30,837	24.48%
36	New York	10,556	9,972	6,689	27,217	24.58%
37	Wisconsin	10,837	7,600	6,107	24,543	24.88%
38	Massachusetts	1,841	1,870	1,286	4,997	25.73%
39	Arizona	5,014	7,285	4,266	16,565	25.75%
40	Louisiana	4,781	5,999	3,803	14,584	26.08%
41	Oklahoma	8,892	9,079	6,606	24,577	26.88%
42	Pennsylvania	8,712	11,013	7,432	27,157	27.37%
43	California	9,290	9,443	7,303	26,036	28.05%
44	Maryland	3,105	2,718	2,348	8,171	28.74%
45	Washington	4,651	9,307	5,879	19,837	29.64%
46	Mississippi	6,188	9,068	6,493	21,750	29.85%
47	Connecticut	1,535	2,945	1,916	6,396	29.95%
48	New Mexico	3,714	4,334	3,959	12,007	32.97%
49	Hawaii	353	596	613	1,562	39.22%
50	Rhode Island	309	643	771	1,723	44.74%
51	District of Columbia	3	33	396	433	91.52%

TRANSPORTATION PERFORMANCE REPORT  
**SCORECARD 2025**



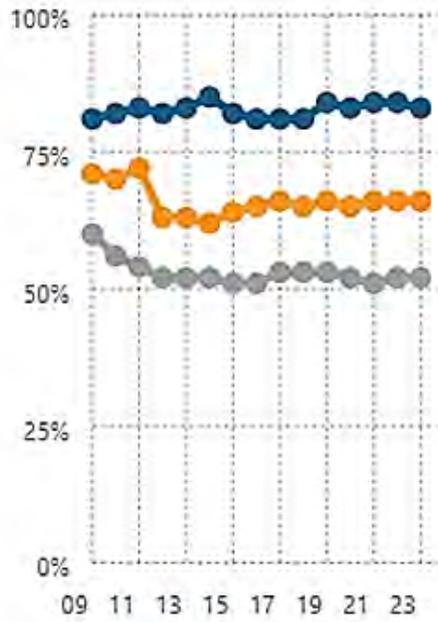
# Preservation

## Maintaining Transportation Assets

Performance Measure	Description	Performance Rating	Trend
Pavement Conditions	Pavement miles in Excellent or Good condition continue to comprise over half of all pavements in Pennsylvania; however, it is steadily declining as a share of total pavement miles. This trend is expected to continue through 2028, based on existing programs.		Declining

# Pavement Conditions

## "Excellent" or "Good"



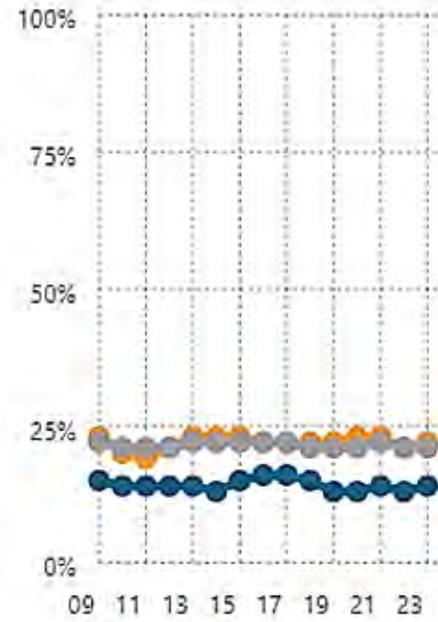
■ Interstate NHS

■ Non-Interstate NHS

■ Non-NHS Roads

Source: PennDOT Bureau of Operations

## "Fair"



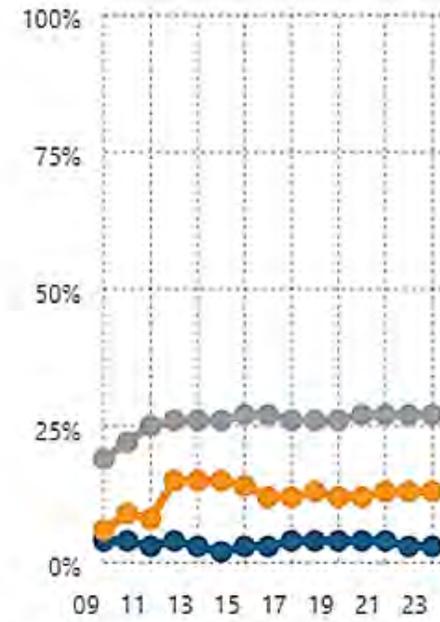
■ Interstate NHS

■ Non-Interstate NHS

■ Non-NHS Roads

Source: PennDOT Bureau of Operations

## "Poor"



■ Interstate NHS

■ Non-Interstate NHS

■ Non-NHS Roads

Source: PennDOT Bureau of Operations

# Preservation



**PennDOT has an extensive—and aging—multimodal transportation system to operate and maintain, with finite funding to carry out repairs.**

**There are 1,870 miles of Interstate in Pennsylvania. These highways comprise less than 2% of the statewide roadway network yet accommodate nearly a quarter of all travel.**



**Innovation isn't down the road  
it starts TODAY!**

# Expanding the use of RAP



40% RAP Standard Mixes

65% High RAP Mixes

Asphalt. AMERICA RIDES ON US



# Materials & Design Innovation



HiMod



# Allow Alternatives to Hydrated Lime



# 3D Asphalt Screed Plate System



**91% Density**  
behind the screed



Asphalt.

AMERICA RIDES ON US

## Why DOTs Move Slowly on Innovation

*DOTs are risk-managed organizations.* Public accountability drives conservative decision-making.

*Long project lifecycles* and *multi-year budgets* make innovation challenging.

## Barriers to Implementing New Technologies

***Specifications Lag:*** Outdated standards make it hard to approve new materials or mix designs.

***Procurement Restraints:*** Low-Bid systems discourage risk-taking.

***Fragmented Communication:*** Innovation often stays within small pilot projects, never scaling statewide.



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