



Alternate Pavement Bidding In Missouri

What we are doing right—and what we need to fix

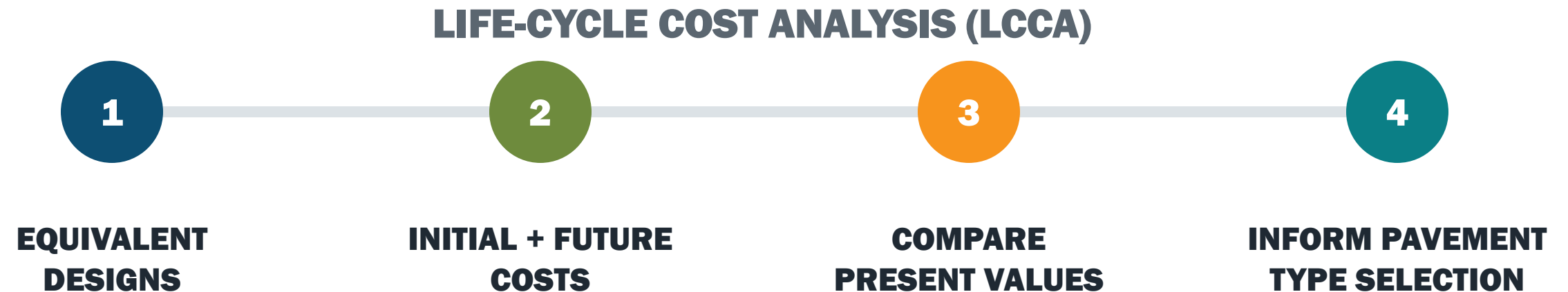
Dale A. Williams, PE

Missouri Asphalt Pavement Association

PARTNERSHIP * PLANNING * PARTICIPATION * PERFORMANCE



LCCA Informs Pavement Type Selection

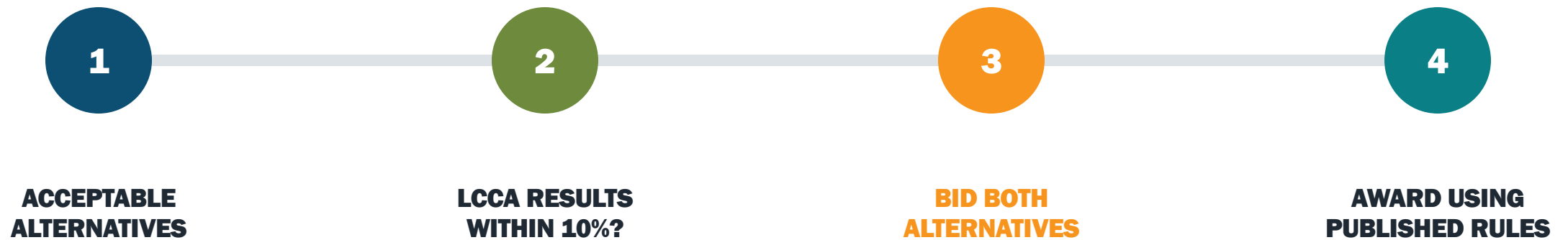


LCCA informs the choice; engineering and project constraints still matter.



Alternate Bidding Is A Procurement Choice

SURVEY: WITHIN 10% → HEAD-TO-HEAD BIDDING



The 10% screen is an eligibility test—not a 10% bid adjustment.

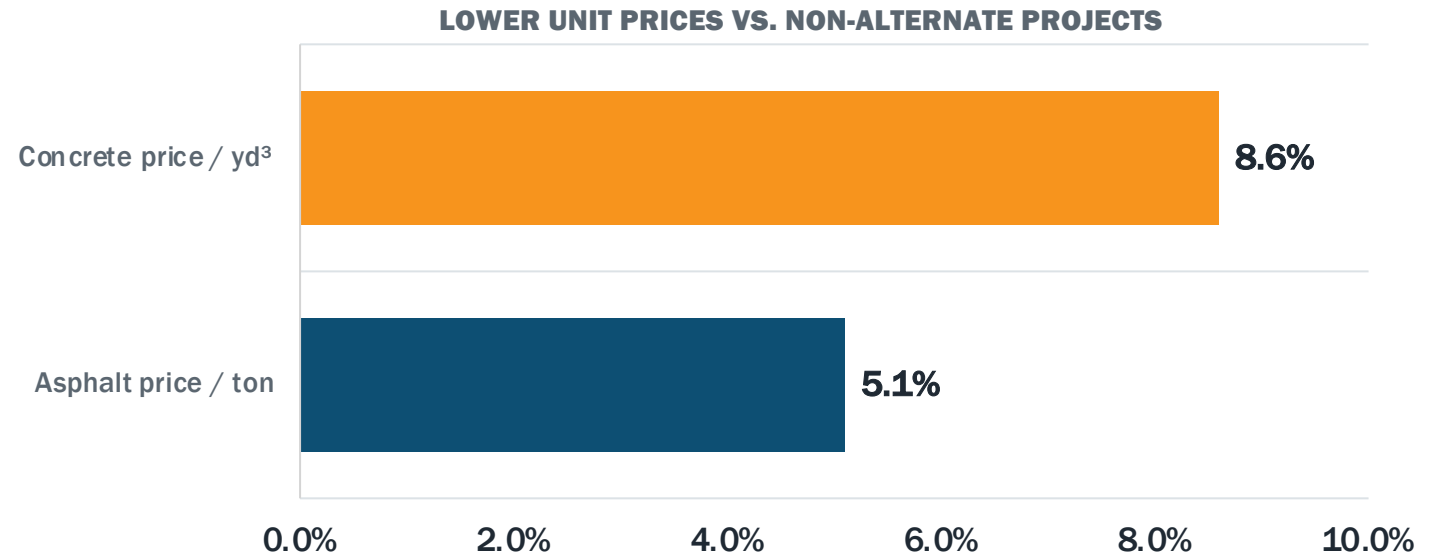


Competition Delivered Measurable Value

\$44.7M

reported savings
2007–2018

5.5 average bidders



Protect competition while testing the adjustment's assumptions.

LCCA Discounts Each Future Treatment Cost

$$\text{LCCA} = \text{INITIAL COST} + \sum \frac{\text{FUTURE COST}_n}{(1 + r)^n}$$

r = Real Discount Rate

n = Year Of Each Treatment

Future Cost = Quantity $\times$ Normalized Unit Price



Use constant-dollar costs with a real discount rate.



FHWA Says To Use The Long View

“

Discount rates employed in LCCA should reflect historical trends over long periods of time. Although long-term trends for real discount rates hover around 4 percent, 3 to 5 percent is an acceptable range and is consistent with values historically reported in Appendix A of OMB Circular A-94.

3–5%

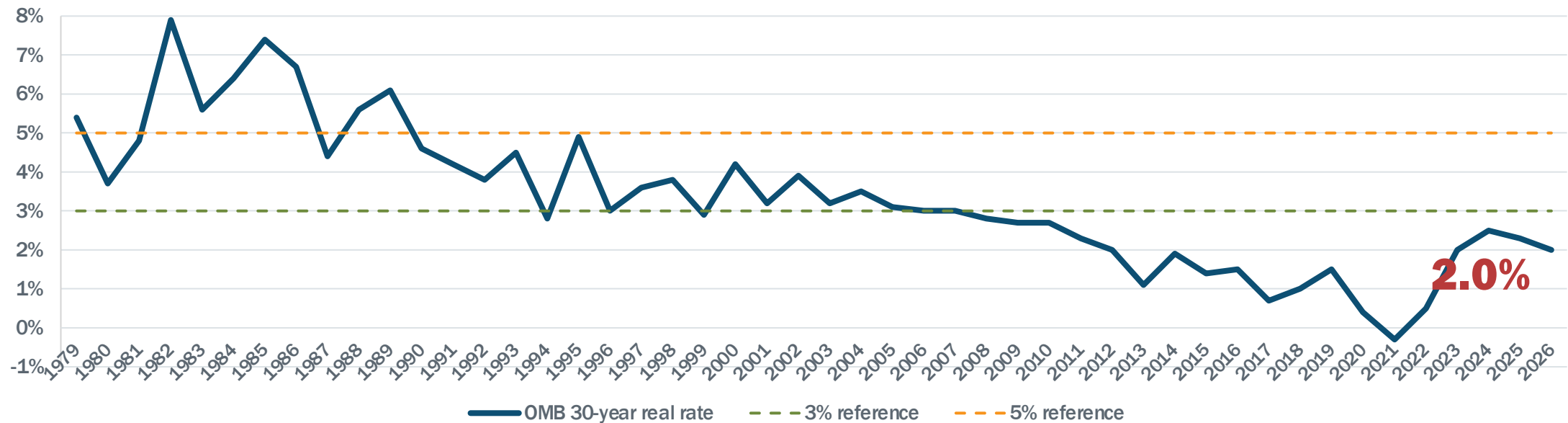
1998 Guidance

FHWA • Life-Cycle Cost Analysis in Pavement Design • 1998

A 45-year decision needs a defensible long-run real rate.



OMB No Longer Hovers Near 4%

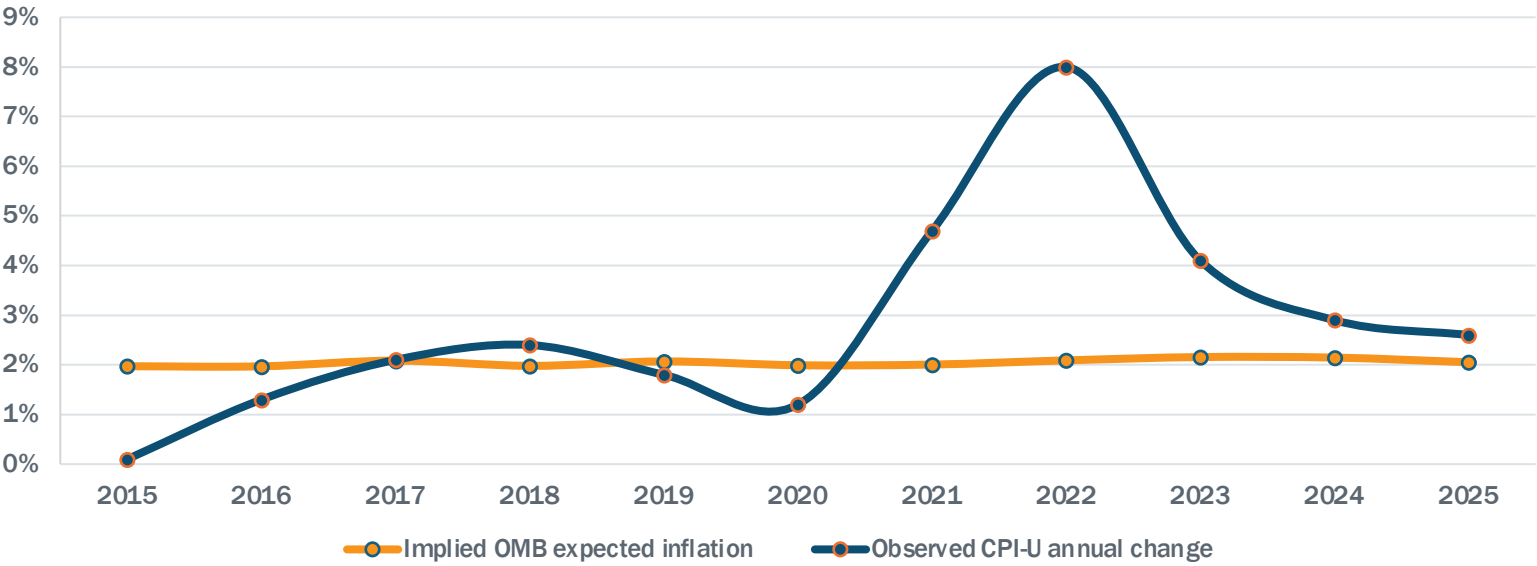


The 2026 OMB rate is 2.0%; the 3–5% band is historical context.



Administration Forecast: About 2%

IMPLIED 30-YEAR OMB EXPECTATION VS. OBSERVED CPI-U



≈ **2%**

implied OMB expectation
2015–2025

0.1–8.0%

observed annual CPI-U

A long-run inflation assumption does not track annual price shocks.

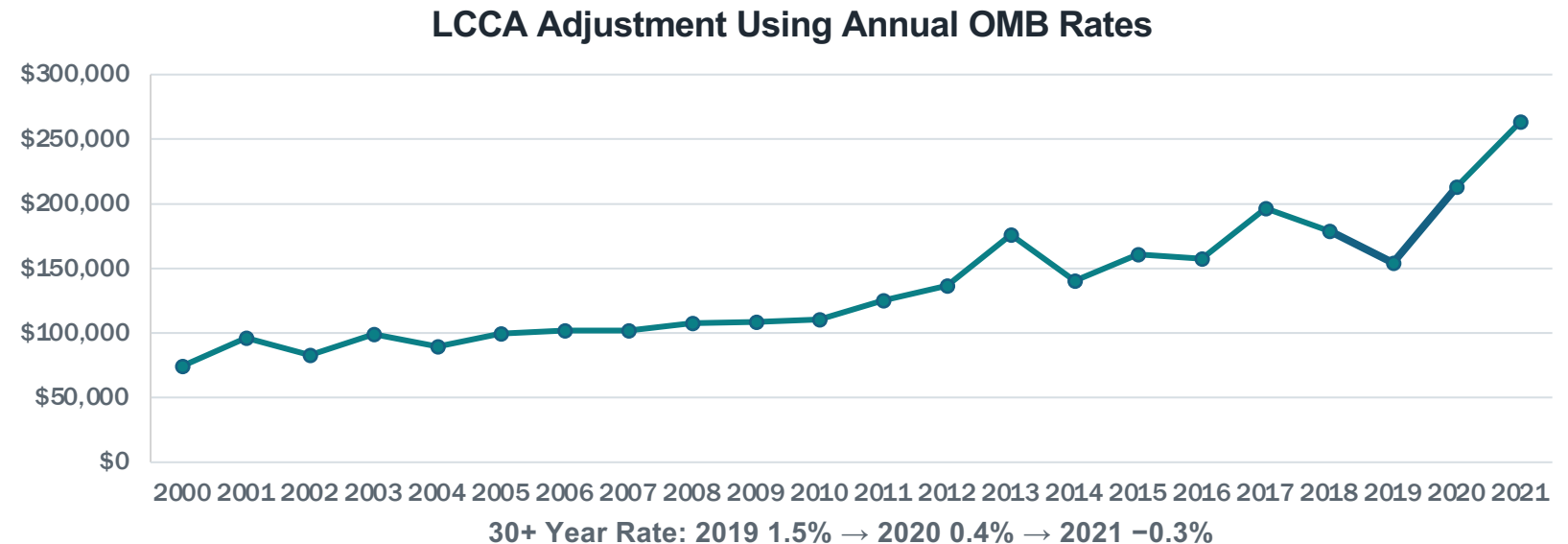


OMB Rates Change The Same Road's LCCA

+38.11%

2019 → 2020

One-mile roadway
Two 12-ft lanes
Two 8-ft shoulders
Fixed maintenance cycles
Fixed 2019 unit prices



Same one-mile section. Same cycles and prices. Only discount rates change.



Most States Avoided Annual OMB Rates

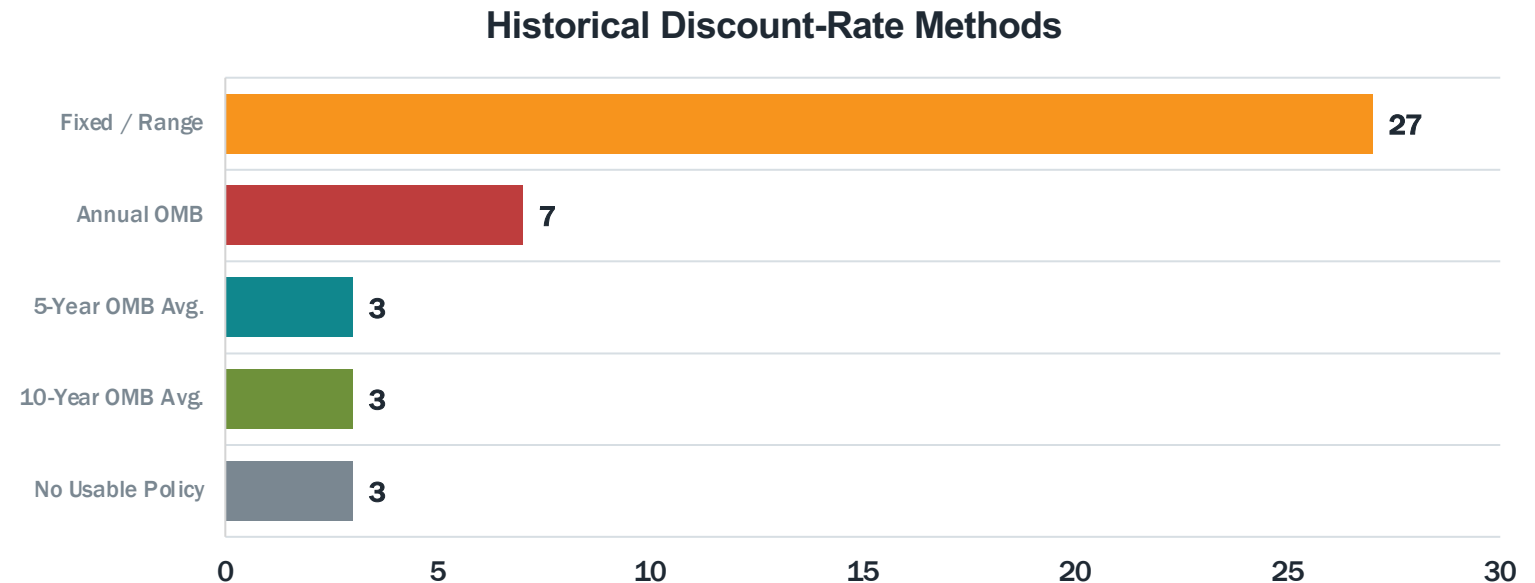
77%

FIXED OR MULTI-YEAR

33 OF 43 STATES

3.7% AVG. FIXED RATE*

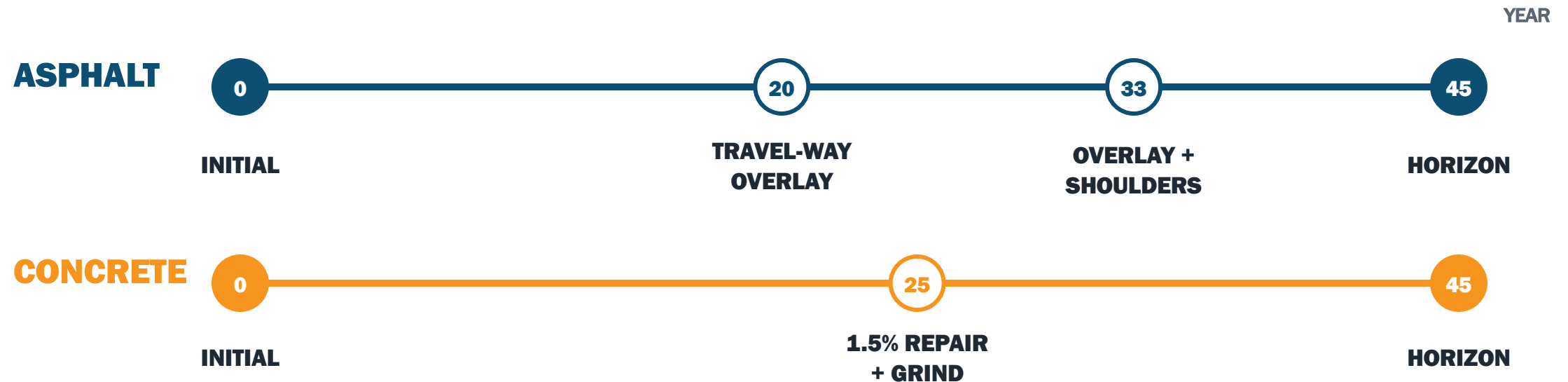
***26 SINGLE-RATE POLICIES**



Only 7 of 43 states used the annual OMB rate in the historical survey.

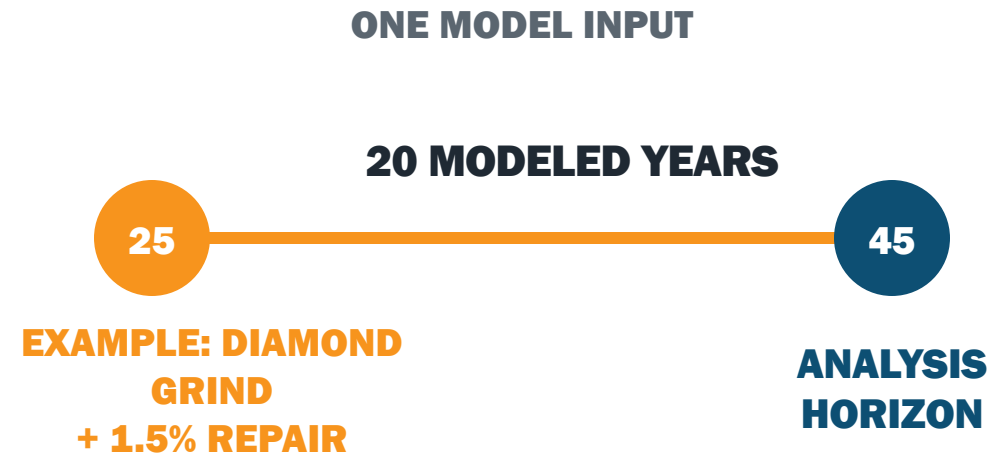


Missouri Looks 45 Years Ahead



Missouri's modeled schedule sets the future events to be discounted.

Maintenance Cycles Must Match The Field



The model assumes 20 more years after grinding; field data must support that gap.



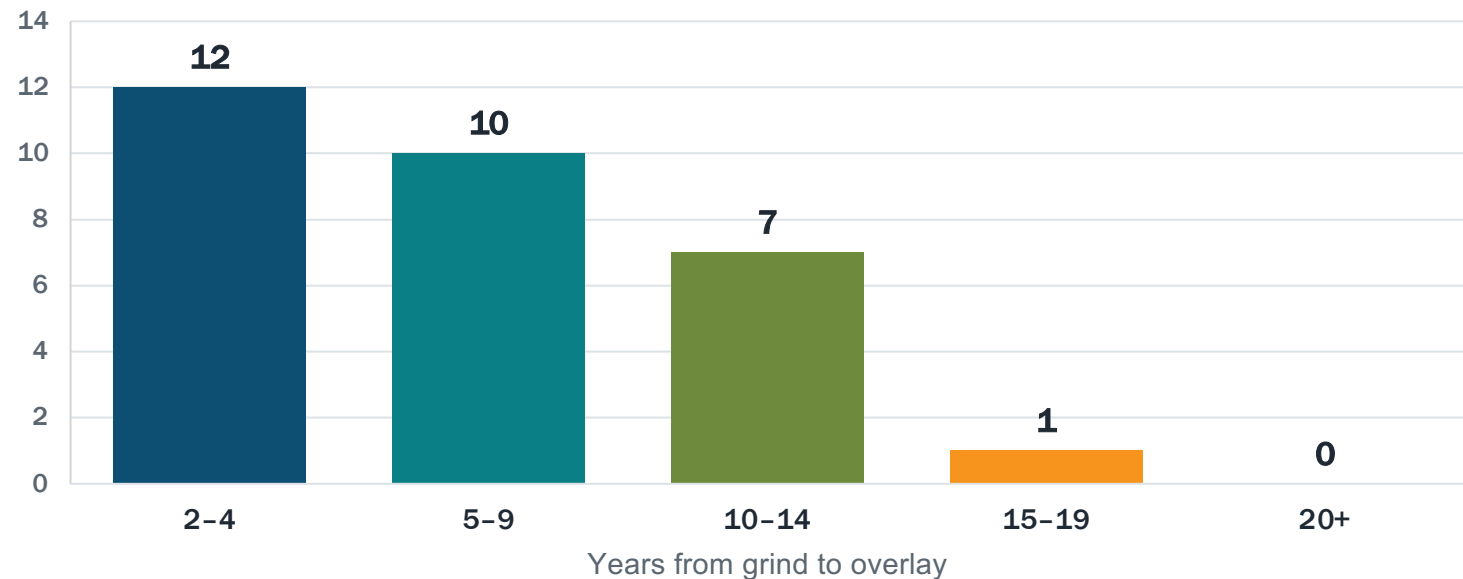
The Grind Records Challenge A 20-Year Gap

6 years

median documented interval

30 / 30

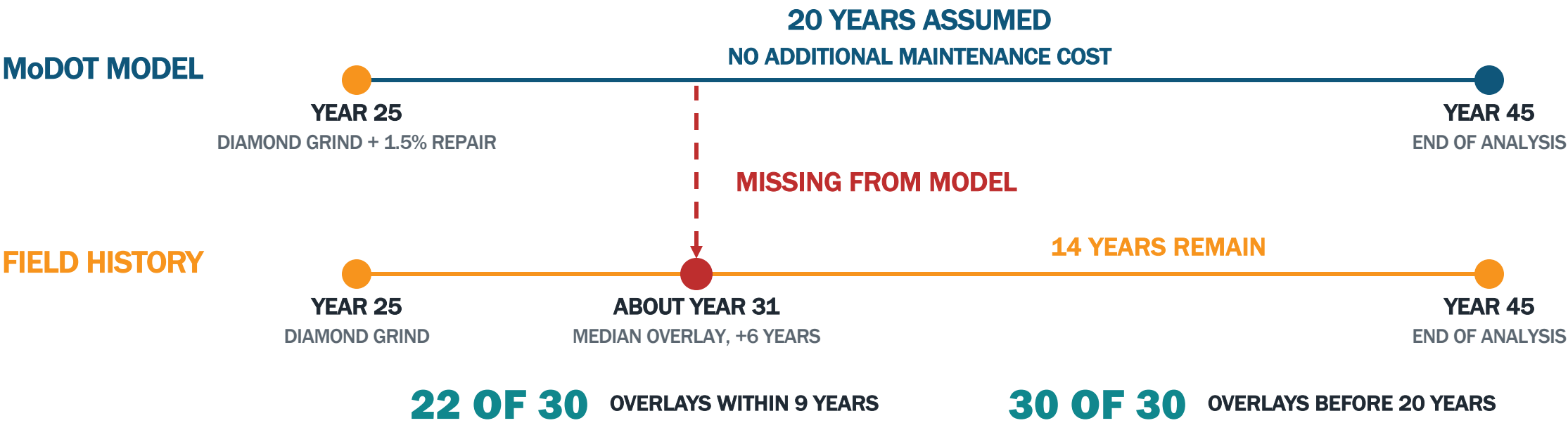
documented intervals
under 20 years



Validate every treatment and both materials—not just diamond grinding.



The Model Omits An Earlier Concrete Maintenance Event

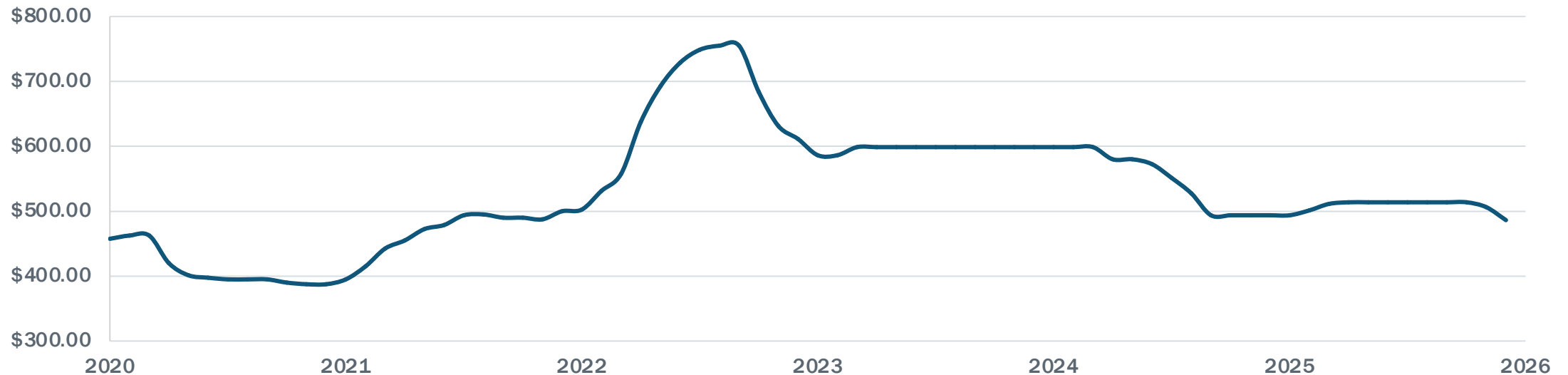


Observed Overlay Timing And Cost Must Be Included In The LCCA.



One Price Snapshot Can Distort Future Costs

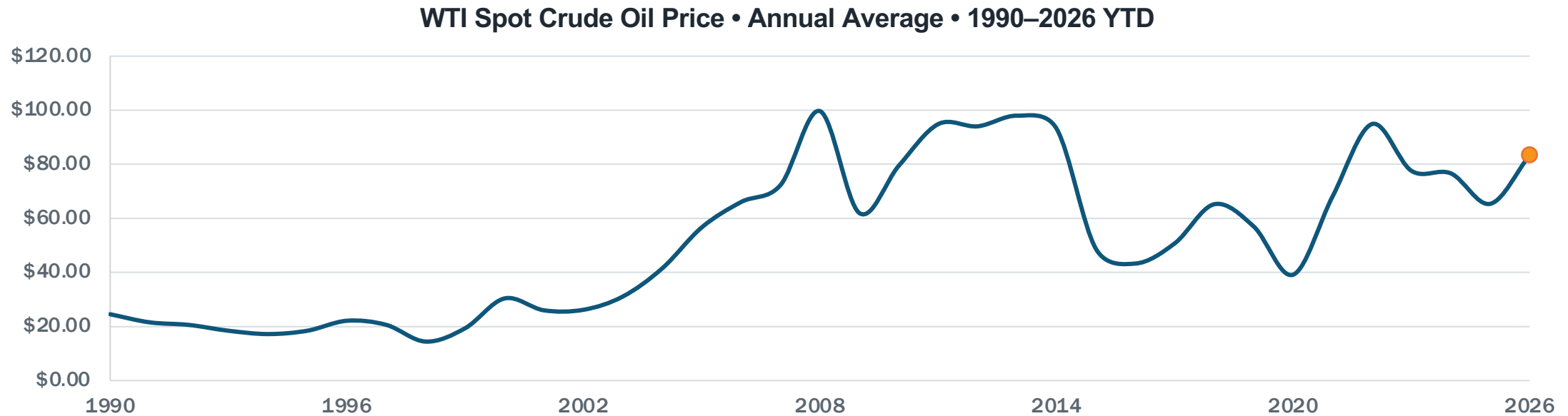
MoDOT Asphalt Price Index, Monthly Nominal Dollars, 2020–2025



Normalize multi-year input prices to a common dollar basis before forecasting.



Crude Oil Prices Swing Across Decades



Long-run trends expose the spikes and valleys that one price year can hide.



Missouri Adds The Maintenance Cost Difference

ASPHALT BID

+

MAINTENANCE DIFFERENCE

=

EVALUATED BID

**PV: ASPHALT FUTURE
MAINTENANCE**

MINUS

**PV: CONCRETE FUTURE
MAINTENANCE**

**= ASPHALT
ADJUSTMENT**

A higher upfront award buys less construction from the same annual budget.

Get The Three Core Inputs Right



INPUT	REQUIRED BASIS	WHY IT MATTERS
Discount Rate	FHWA-Aligned Long-Run Rate	Reflect Long-Run Economics
Maintenance Cycles	Actual Field Performance	Match Treatment Timing And Life
Material Prices	Normalized Multi-Year Prices	Filter Out Spikes And Valleys

My recommendation: validate all three before applying a bid adjustment.