



# WVDOH Transportation Asset Management Plan

The West Virginia Asset Management Journey: From Simulation to TAMP to Reality

West Virginia Division of Highways





# Presentation Content



# Presentation Content



- Highway System Overview
- Financial Forecasts
- NHS Pavements and Bridges
- Analysis and the transition from “worst-first” to “data-driven” decisions (New BMS and enhanced PMS)
- The “Wave”
- Implementation
- Q & A



# WVDOH TAMP

Highway System Overview  
Financial Forecasts  
Pavements  
Bridges

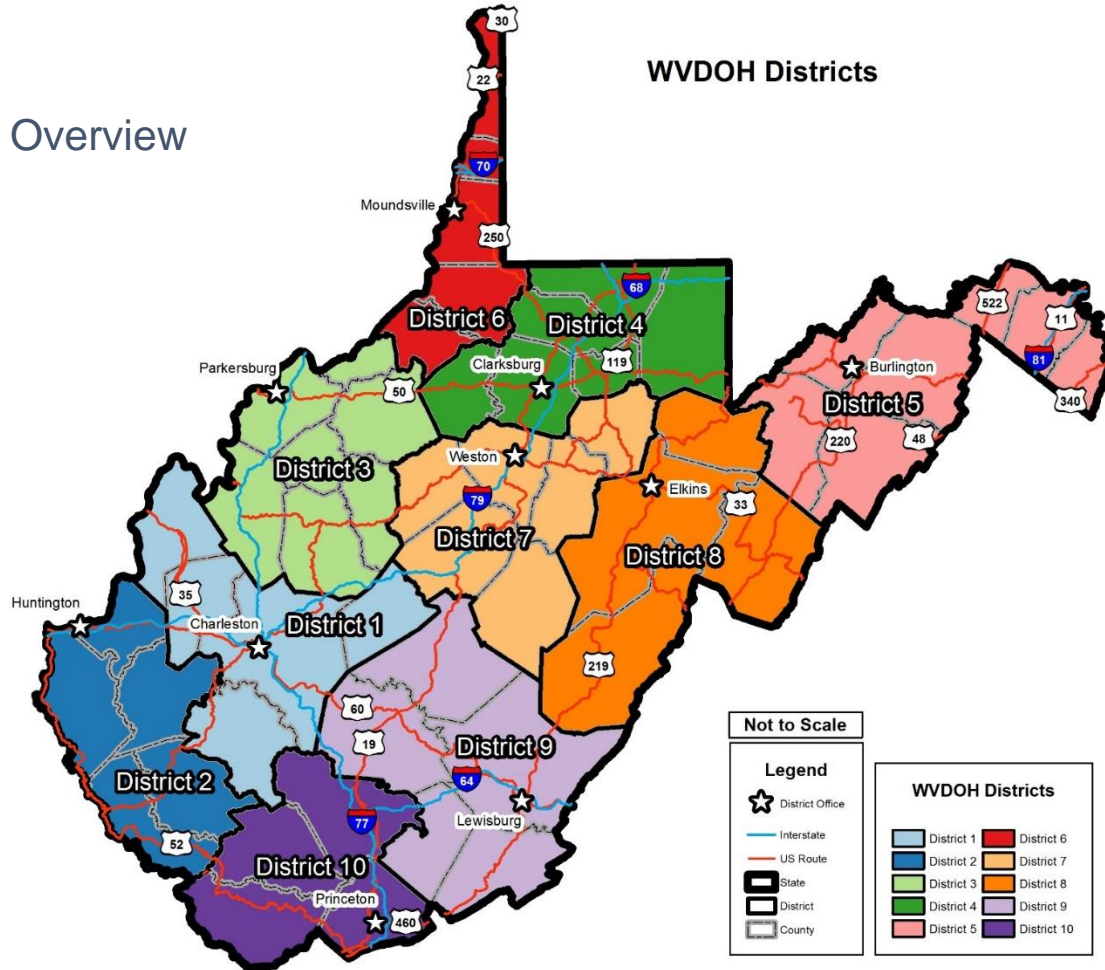


# WVDOH

## Highway System Overview



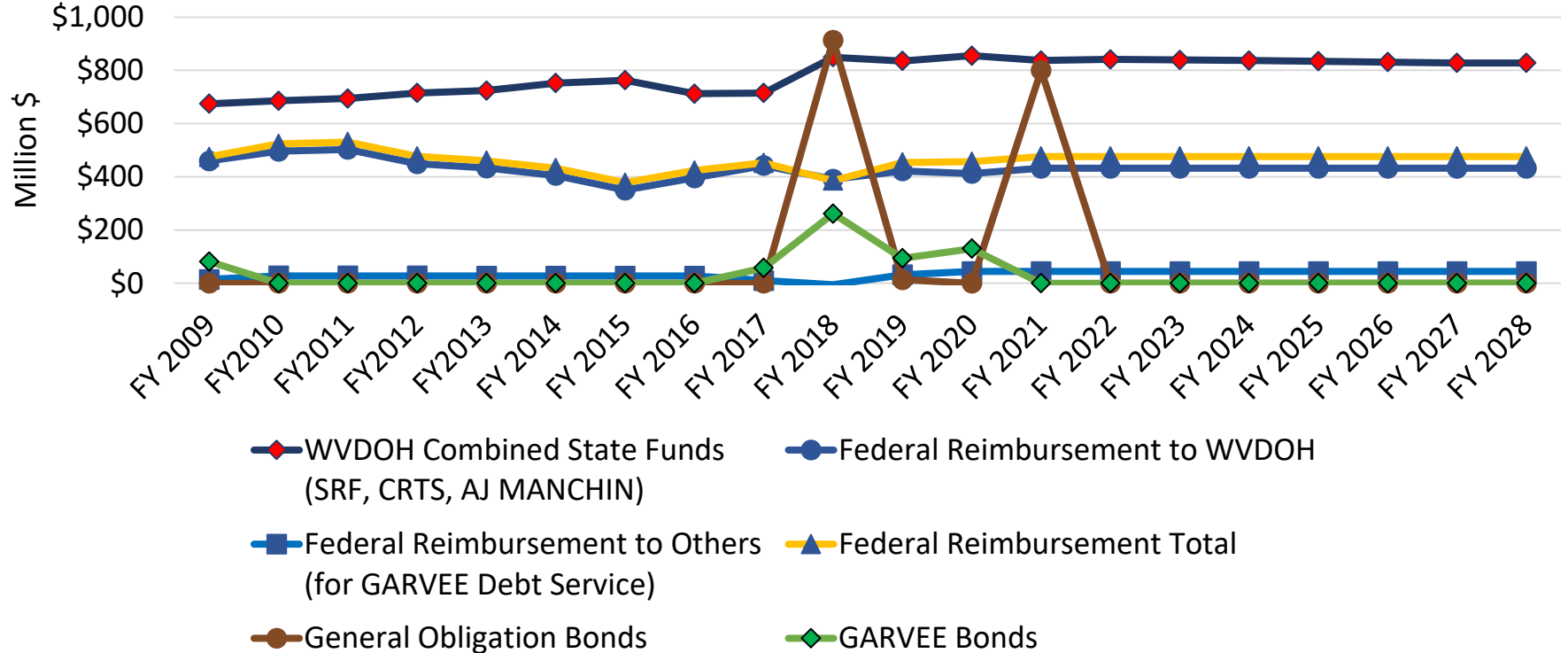
### WVDOH Districts



# WVDOH TAMP



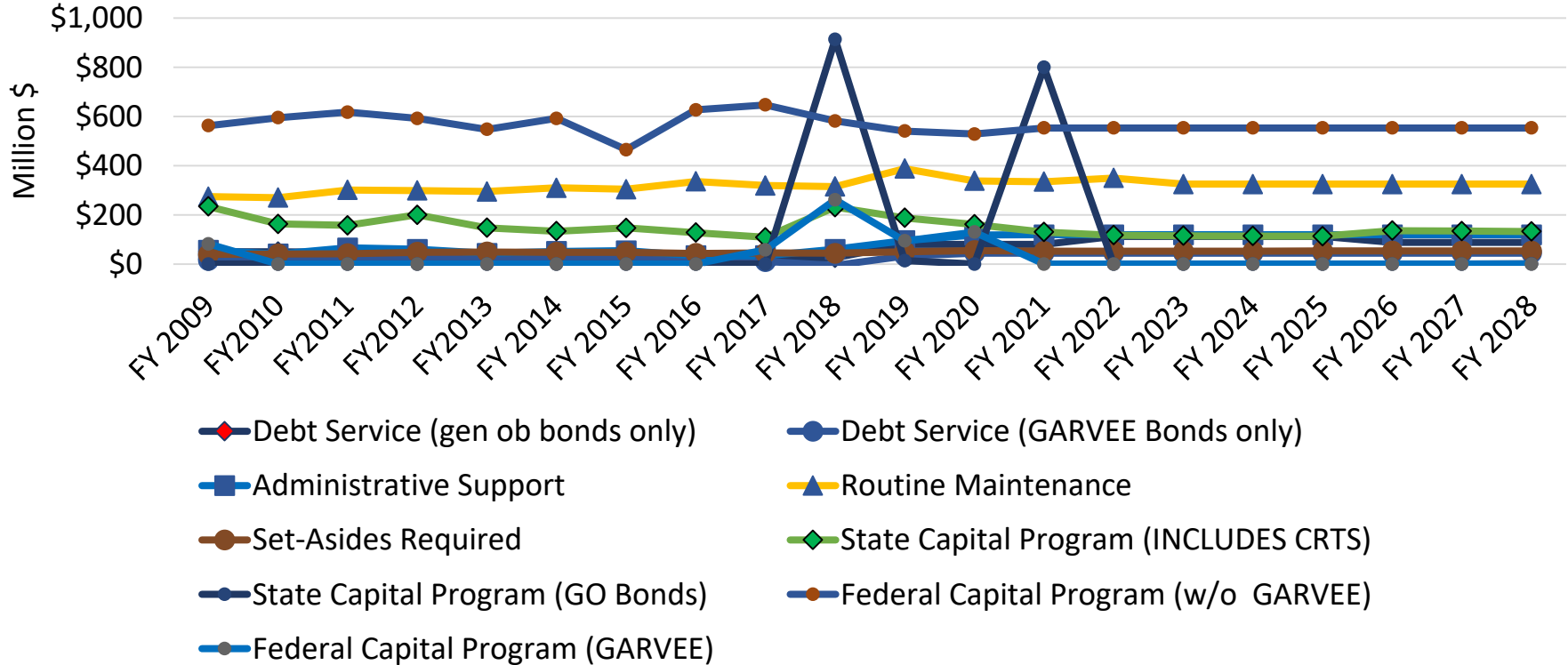
## Revenue - Historical and Baseline Forecast



# WVDOH TAMP



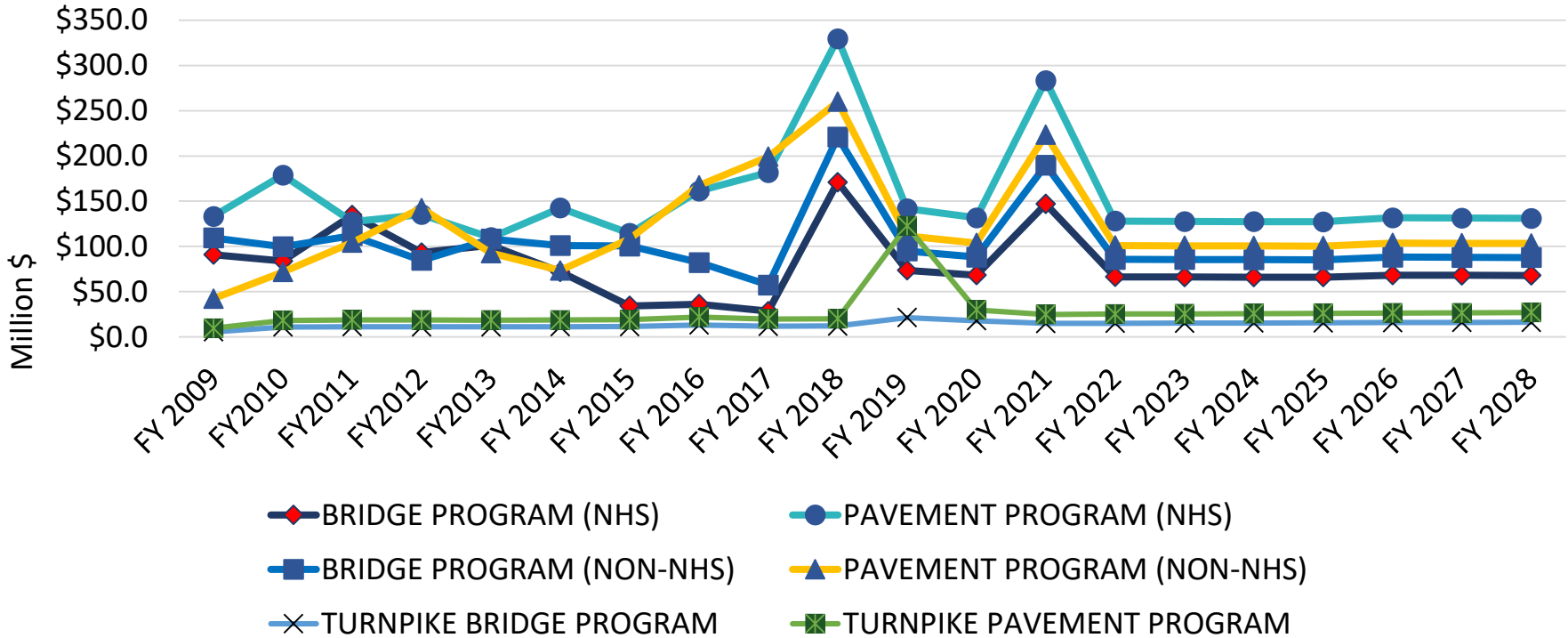
## Expenditures - Historical and Baseline Forecast



# WVDOH TAMP



## Pavement and Bridge Expenditures – Historical and Baseline Forecast





# WVDOH TAMP

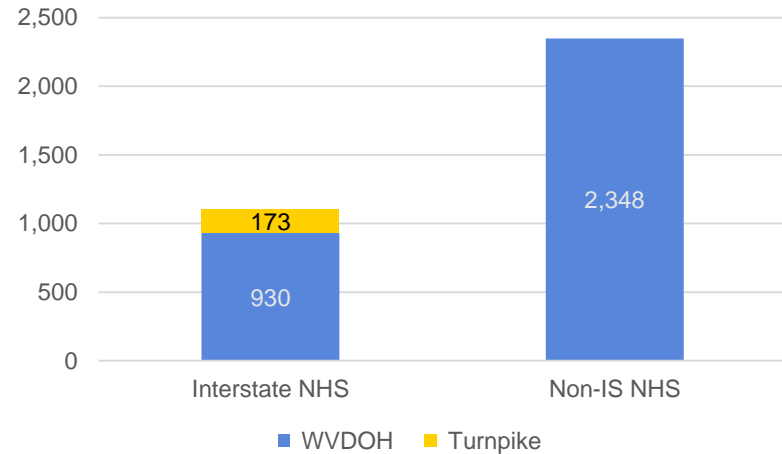
## Pavements Statistics



	Centerline Miles	Lane Miles
Interstate	1,103	4,663
US	3,640	9,093
WV	3,805	8,029
CO	28,883	57,788
State Park/Forest	197	394
Federal Aid Non-State	278	570
Harp	879	1,757

	Centerline Miles
Interstate (NHS)	1,103
Non-Interstate NHS	2,348
ADHS (w/o I-68)	785
Non-NHS US Routes	1,876

	WVDOH	Turnpike	Total
Interstate NHS	930	173	1,103
Non-IS NHS	2,348	-	2,348
Total	3,278	173	3,451

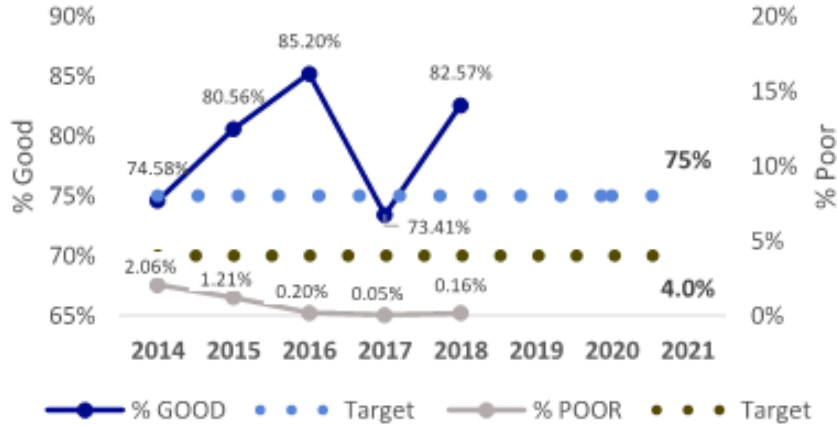


# WVDOH TAMP

## Pavement Conditions



### Interstate NHS - Conditions vs Targets



### Non-IS NHS - Conditions vs Targets

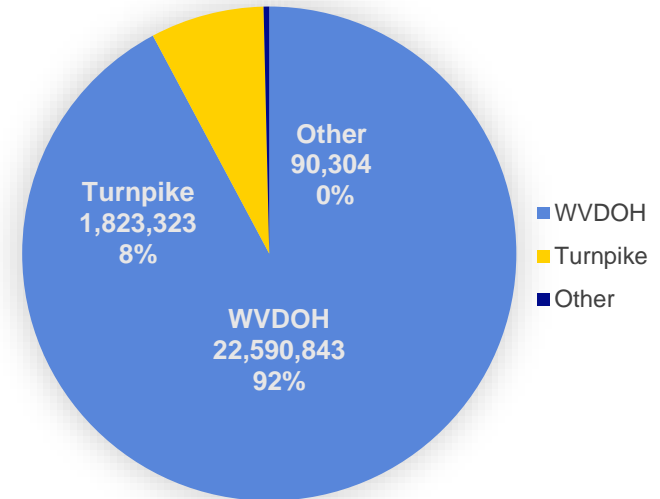
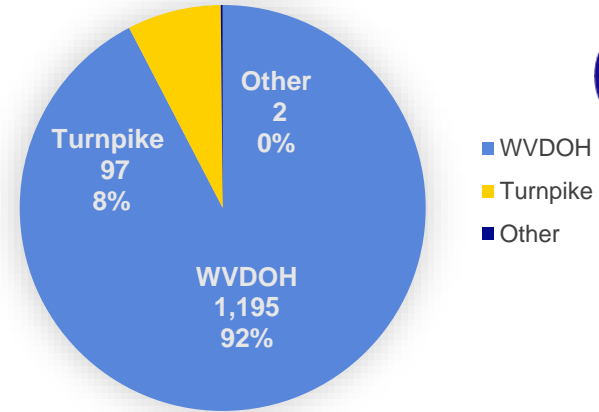
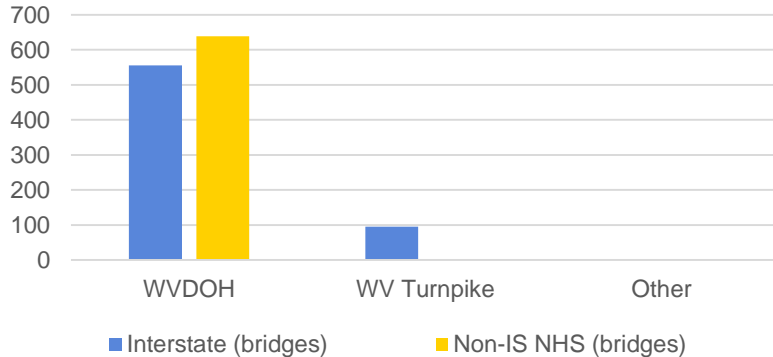


# WVDOH TAMP

## Bridge Statistics



	WVDOH	WV Turnpike	Other	Total
<b>Interstate (bridges)</b>	556	95	0	651
<b>Non-IS NHS (bridges)</b>	639	2	2	643
<b>Interstate (sf)</b>	9,693,560	1,805,570	0	11,499,130
<b>Non-IS NHS (sf)</b>	12,897,283	17,753	90,304	13,005,340

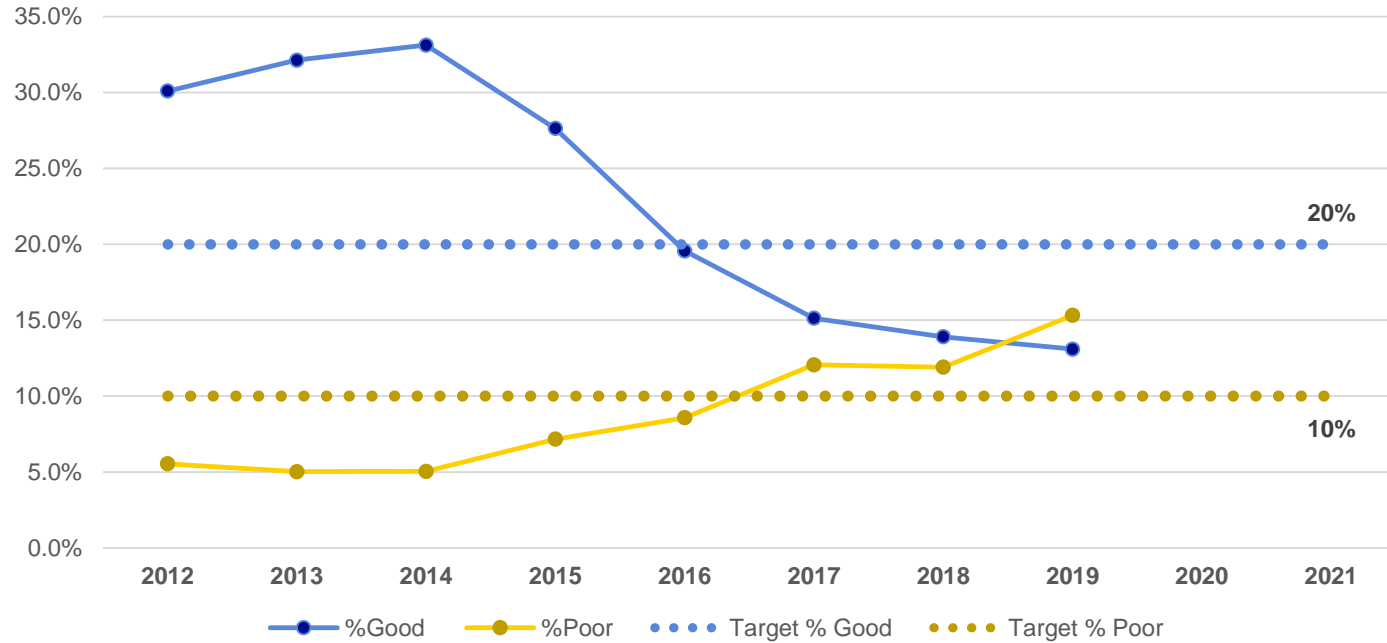


# WVDOH TAMP

## Bridge Conditions



### NHS Bridges - Condition vs Targets





# WVDOH TAMP

Analysis  
Data Driven Decisions  
The “Wave”

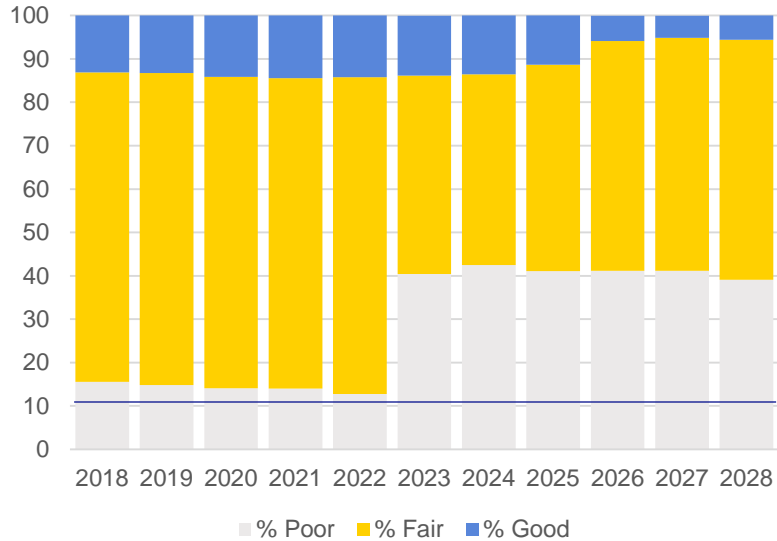


# WVDOH TAMP

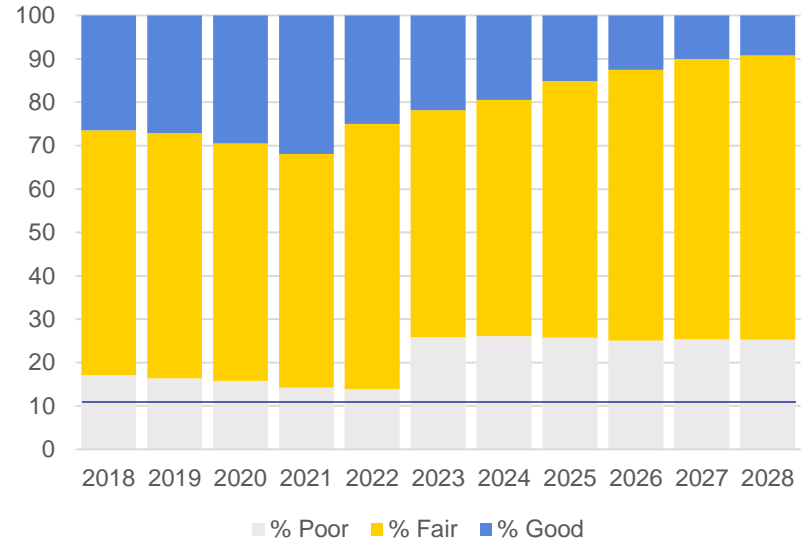
## Bridge Baseline Funding Conditions Forecast



### NHS: Bridges



### Non-NHS: Bridges



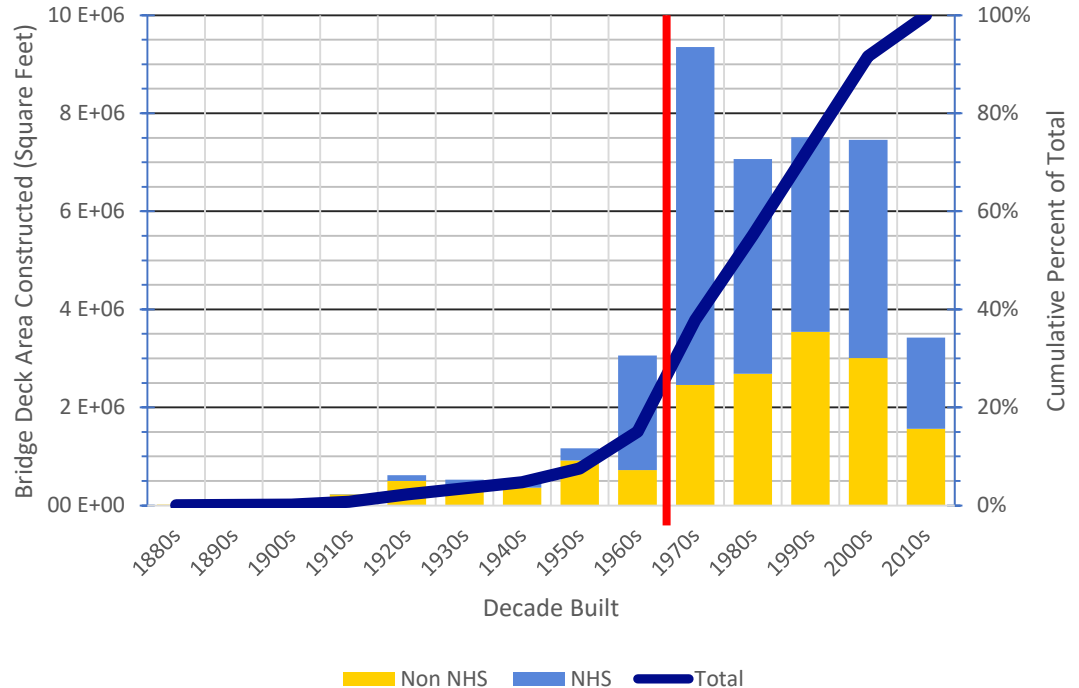
# WVDOH TAMP

## Bridge Age



Decade	Individual Decade %/Total Deck Area			Cumulative %/Total Deck Area		
	Total	NHS	Non NHS	Total	NHS	Non NHS
1880s	0%	0%	0%	0%	0%	0%
1890s	0%	0%	0%	0%	0%	0%
1900s	0%	0%	0%	0%	0%	0%
1910s	1%	0%	1%	1%	0%	2%
1920s	1%	0%	3%	2%	0%	5%
1930s	1%	0%	3%	4%	1%	7%
1940s	1%	1%	2%	5%	1%	10%
1950s	3%	1%	6%	8%	2%	15%
1960s	7%	10%	4%	15%	12%	20%
1970s	23%	28%	15%	38%	40%	34%
1980s	17%	18%	16%	55%	58%	51%
1990s	18%	16%	22%	73%	74%	72%
2000s	18%	18%	18%	92%	92%	91%
2010s	8%	8%	9%	100%	100%	100%

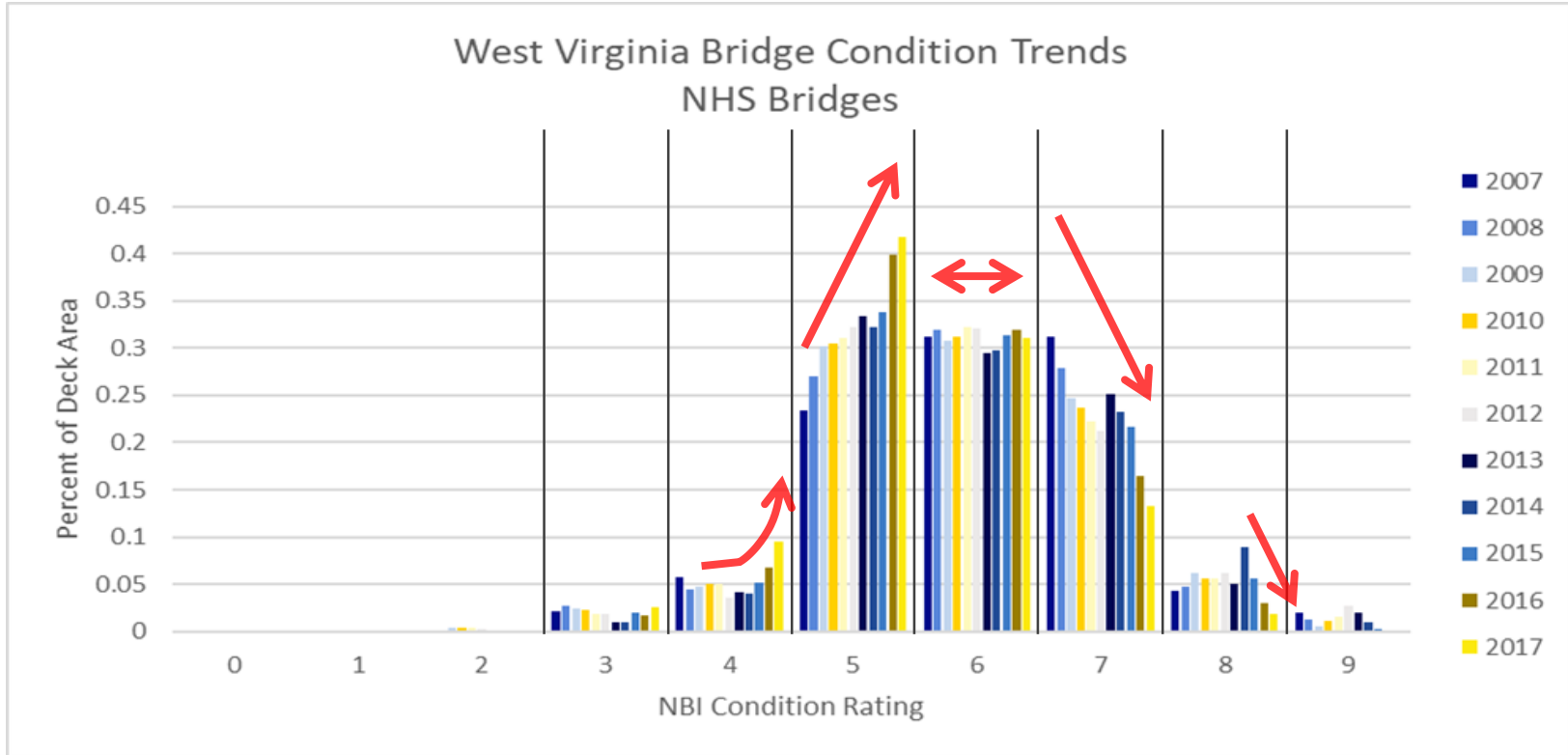
### Bridge Deck Area Construction Histogram



# WVDOH TAMP



## Bridge Condition Rating Trends



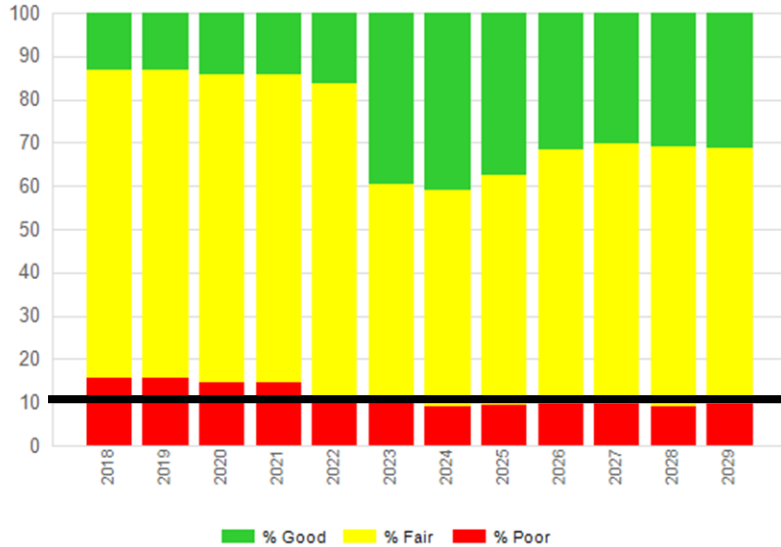


# WVDOH TAMP

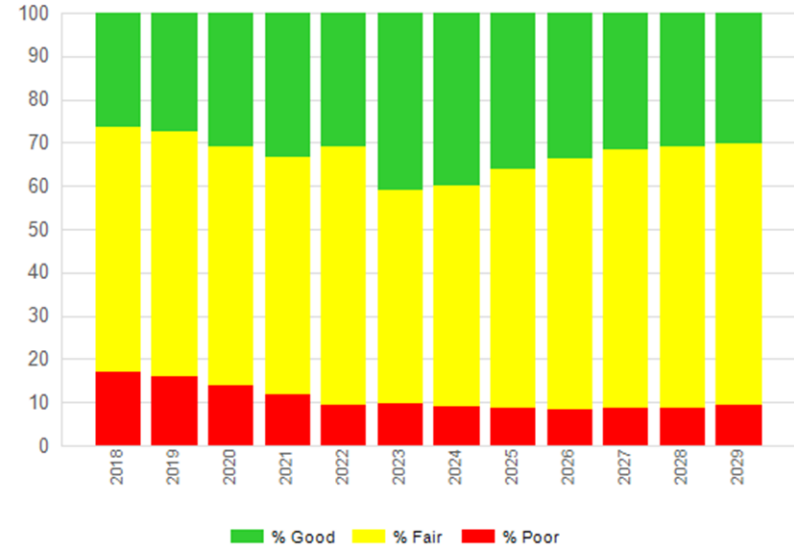
Bridge <10% Scenario Condition - Full Network



## NHS Bridges



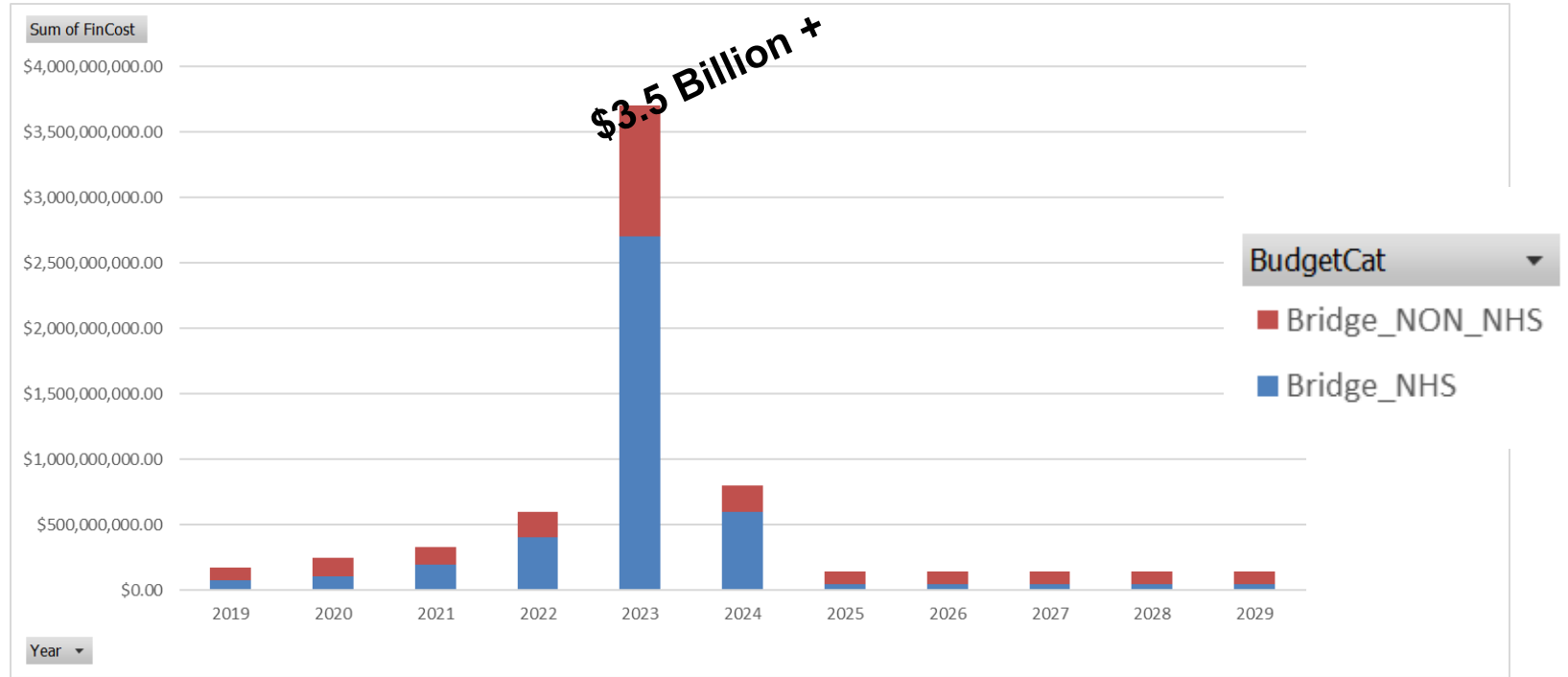
## Non-NHS Bridges



# WVDOH TAMP



## Bridge Funding Required <10% Condition Scenario - Full Network



# WVDOH TAMP

## Bridge Federal Rules and Investment Strategy



“The required risk-based TAMP is to improve or preserve the condition of assets and improve the performance of the NHS.” – FHWA

### WVDOH Investment Strategy:

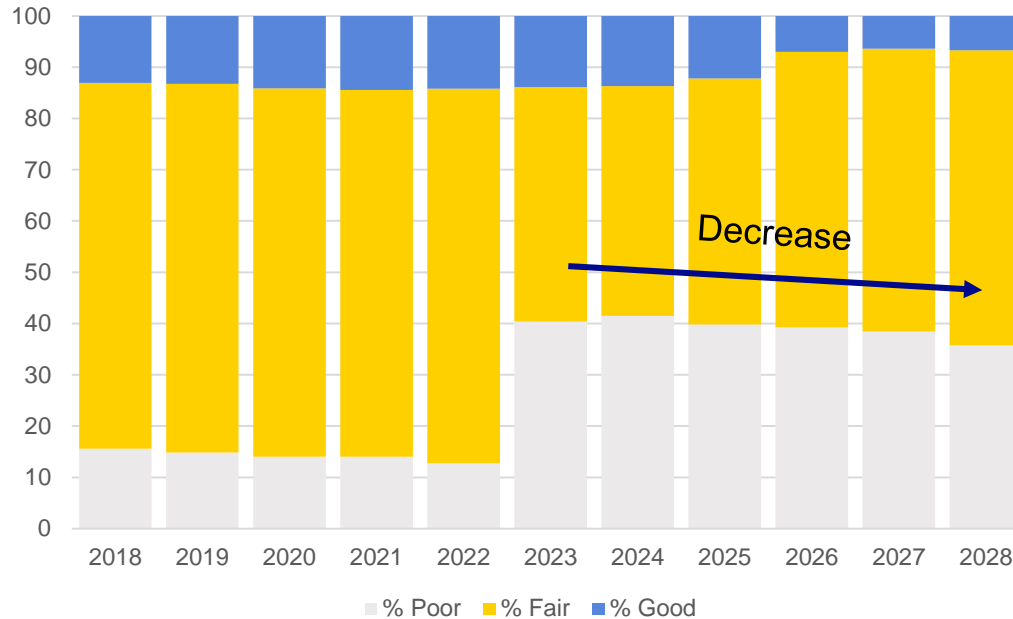
- The bridge baseline funding scenario results in a significant increase of percent of bridges by deck area in poor condition starting in 2023 due to the “wave” of older bridges.
- WVDOH will increase funding for NHS bridges by \$50 million per year beginning in 2024
- NHS bridges by deck area in poor condition will gradually decrease due to the additional funding

# WVDOH TAMP



## Bridge Condition Forecast for Plus \$50 million per year starting in 2024 Scenario

NHS: Bridges



# WVDOH TAMP

## Overall Investment Scenario Summary

- Maintain **Non-NHS pavement and bridge** funding at forecasted levels throughout (Secondary roads and bridges)
- Maintain **NHS pavement** funding at forecasted levels throughout
- Increase **NHS bridge** funding above baseline forecasted level toward target levels (Starting now)
- Increase **NHS bridge** funding in 2024 moving forward at \$50 million above baseline funding level
- Design reports, environmental, etc. process needs to begin right away to allow swift project delivery.





# Implementation



# West Virginia Department of Transportation



## Our Mission

Connecting citizens throughout the state and to the nation through the delivery of a well-maintained, quality transportation system which is safe and reliable.

## Our Vision

To enhance the quality of life for all West Virginians by providing modern transportation solutions.

## Our Goals

- ▶ Promote Transportation Safety
- ▶ Value Our Employees
- ▶ Foster Public Trust
- ▶ Protect Our Transportation Asset Investments
- ▶ Ensure Network Mobility



# Implementing a Formal Asset Management Plan

## Key Success Factors For Successful Implementation



- Leadership support
- Organizational alignment
- Department-wide buy-in
- Good data
- Ability to do life-cycle cost analysis
- Willingness to stick to the plan
- Stakeholder support





# Q & A





# Thank you



Eric Bess

[Eric.bess@mottmac.com](mailto:Eric.bess@mottmac.com)

304-356-3004