

MAKING THE PAVEMENT MANAGEMENT SYSTEM WORK TO SUPPORT ASSET MANAGEMENT



Andrew Williams
Office of Technical Services

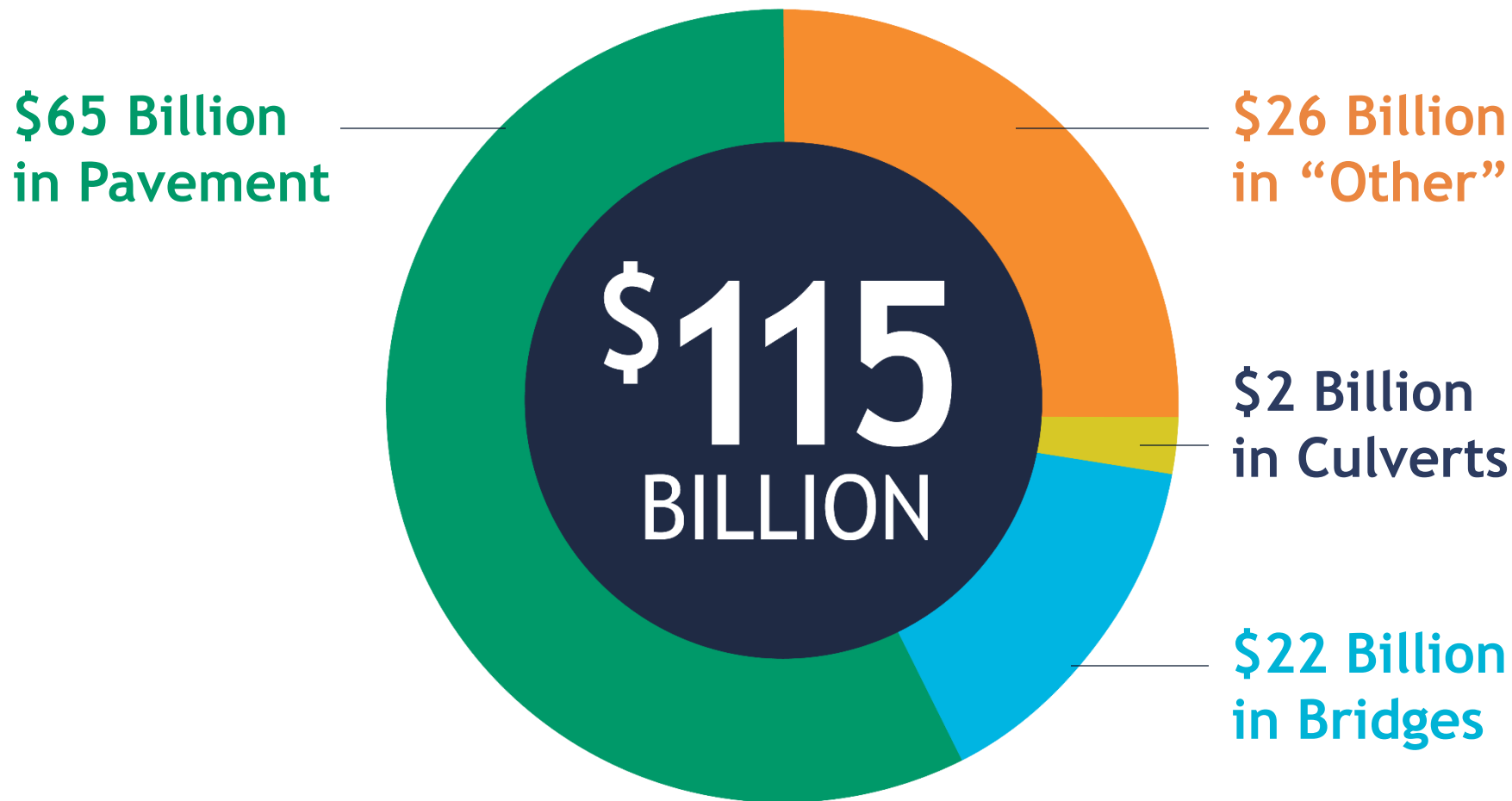
Andrew.Williams@dot.ohio.gov

National Transportation Asset Management Conference
July 14, 2018

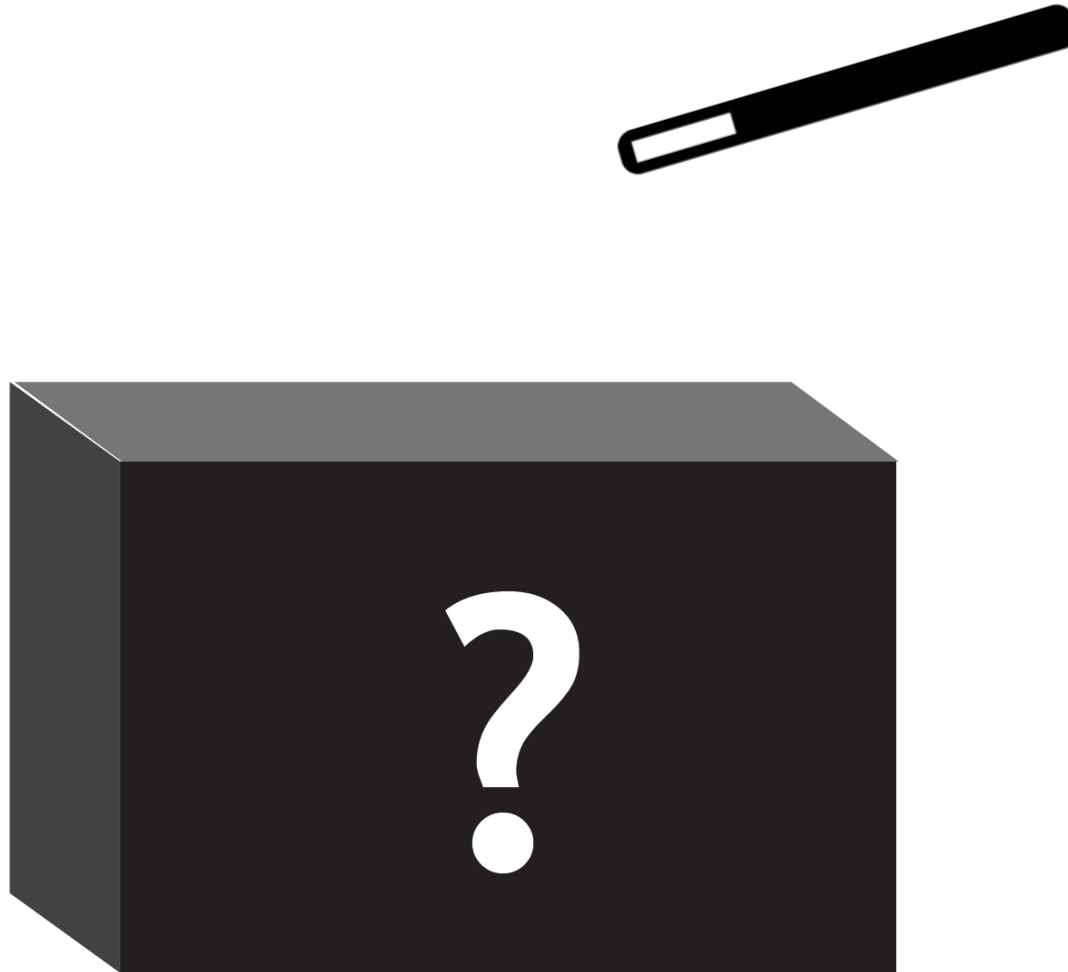
TODAY'S TOPIC

How ODOT uses the Pavement Management System to Meet National Performance Measures

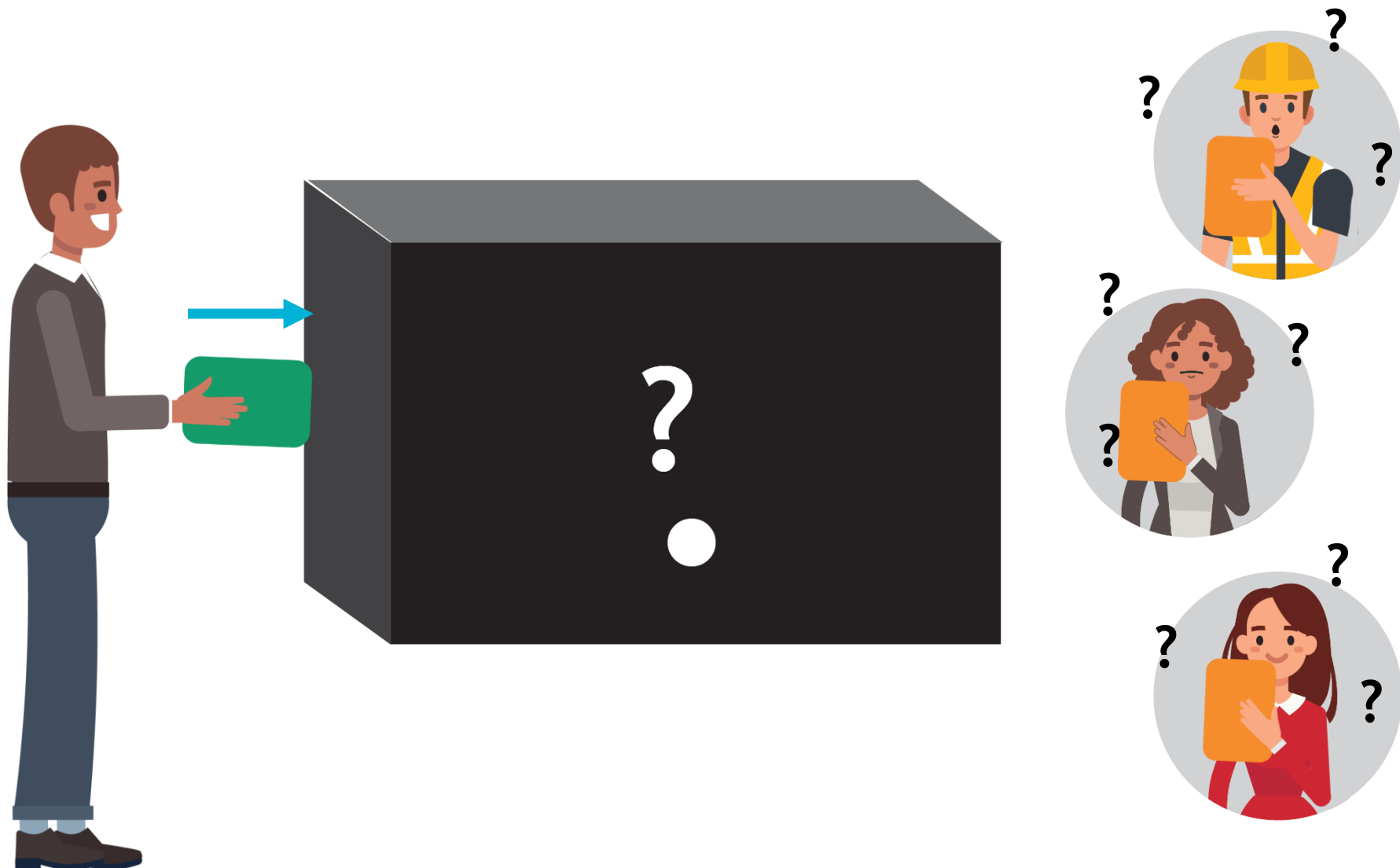
VALUE OF OHIO'S TRANSPORTATION ASSETS



PMS BETTER KNOWN AS THE “BLACK BOX”



ODOT PMS BLACK BOX PROCESS



PMS IS NOT INTUITIVE AT TIMES

Which Route Would you Work on First?

A



B

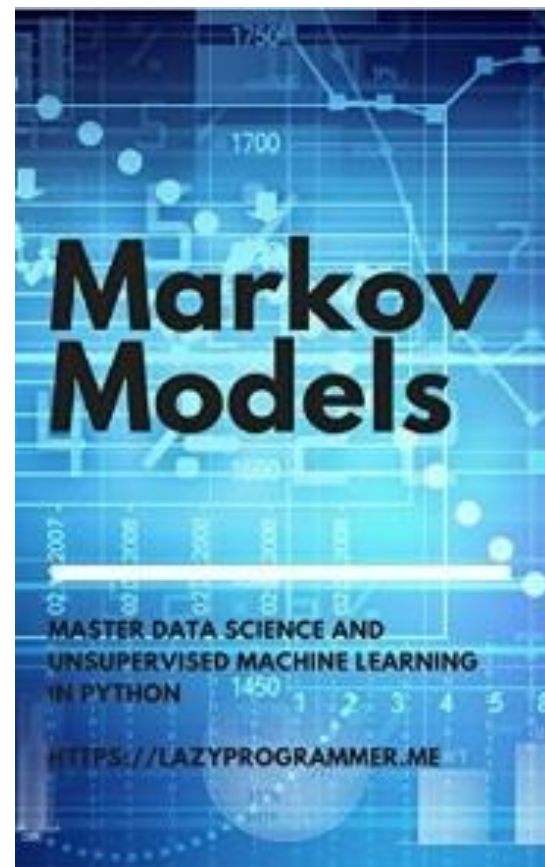


ODOT'S PAVEMENT MANAGEMENT SYSTEM

Deighton Pavement Management System (dTIMS)

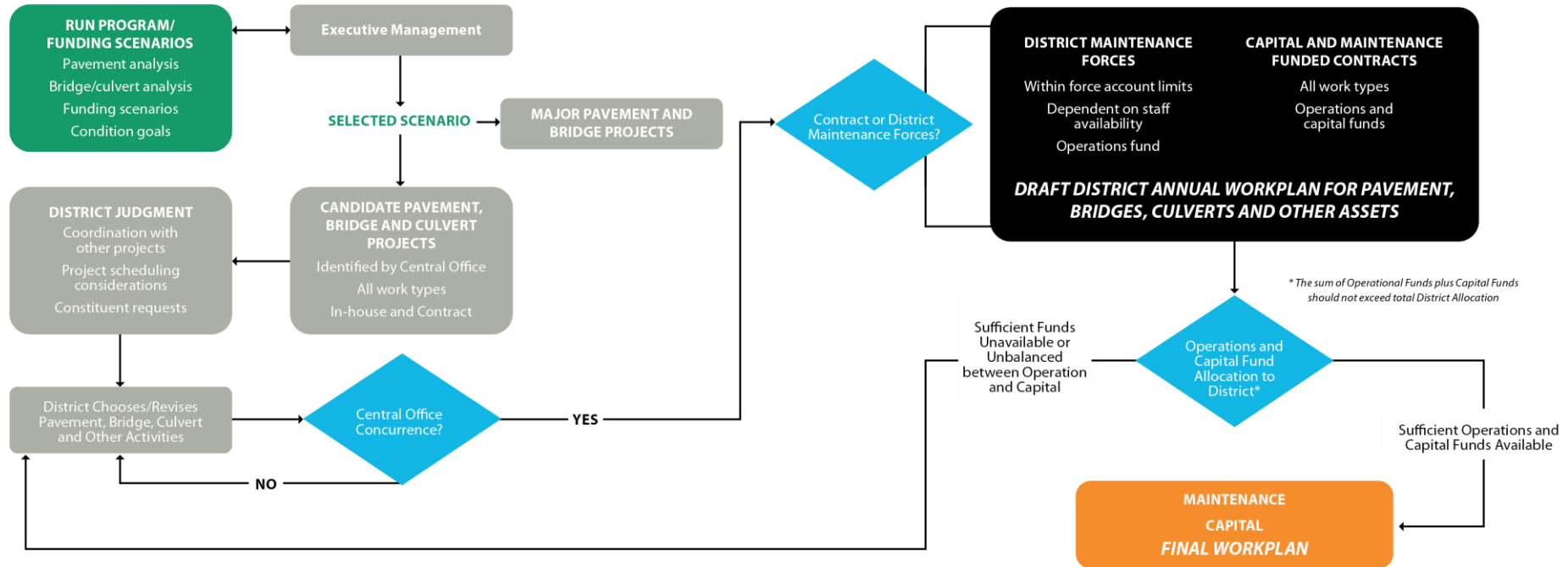
- Includes ODOT's data such as road inventory, traffic, project history, estimating, home grown decision trees, etc.
- Forecasts individual roadway distress, rolled up to a PCR number
- Optimizes solutions constrained by budget and PCR critical success targets

6 year planning horizon can be expanded to 10 years to meet Federal requirements



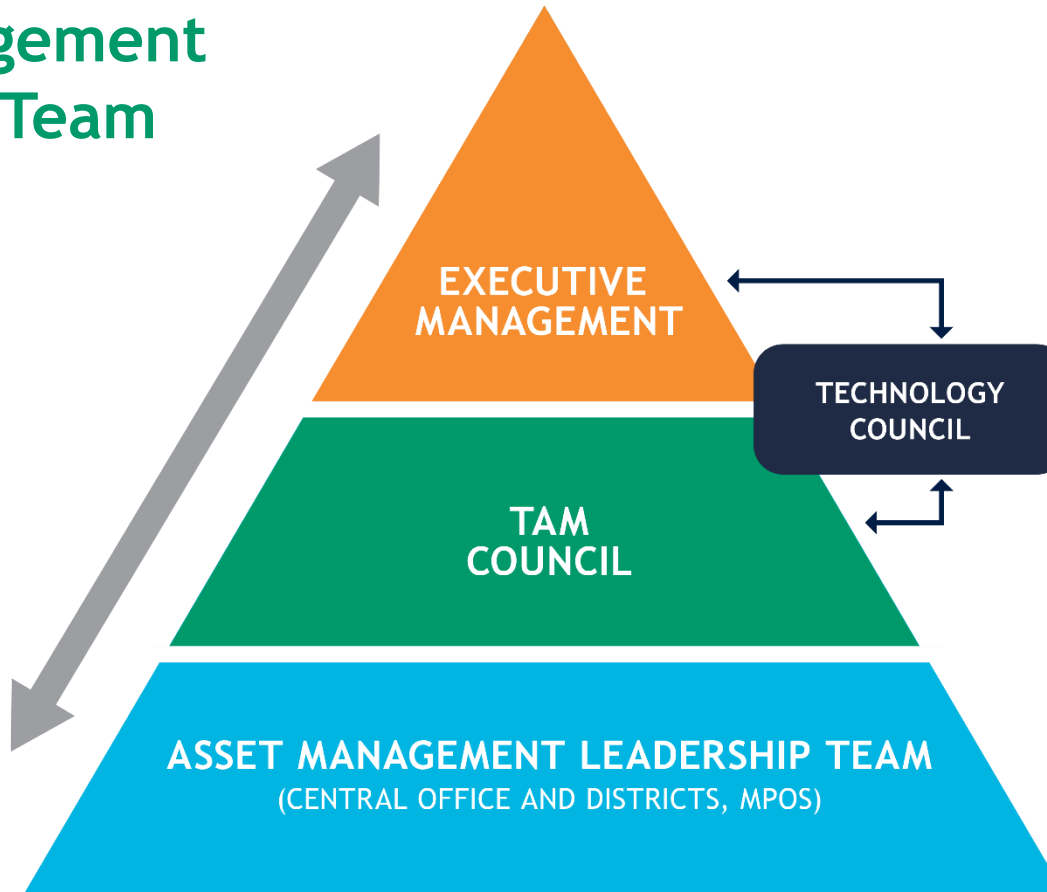
CAPITAL PROGRAM PROCESS

DRAFT DISTRICT PRESERVATION PROGRAM BUSINESS PROCESS FLOWCHART

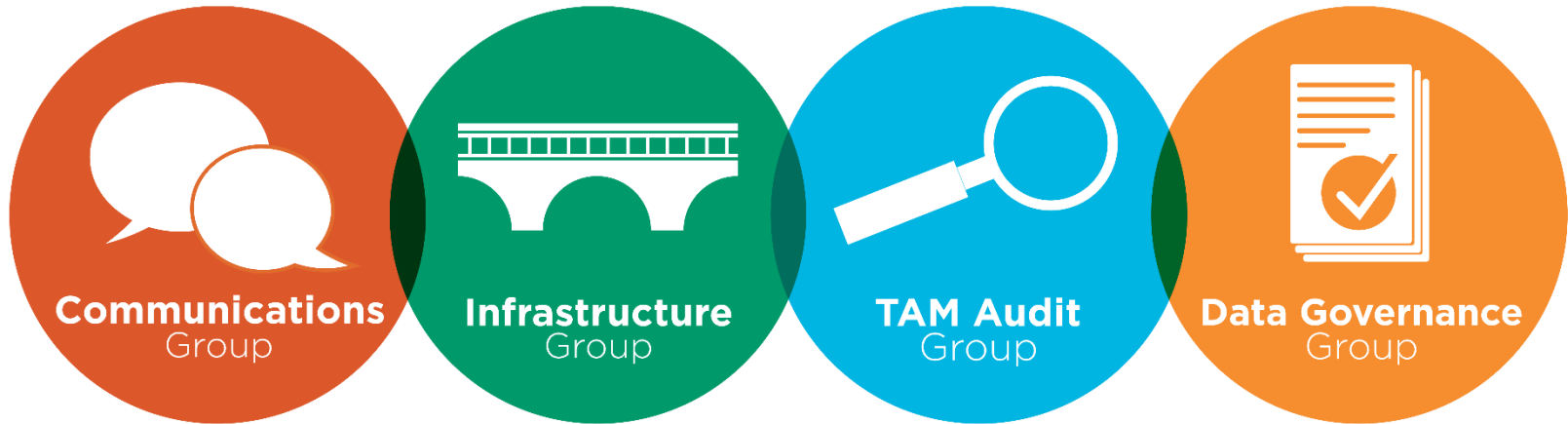


ODOT AMLT

Asset Management Leadership Team



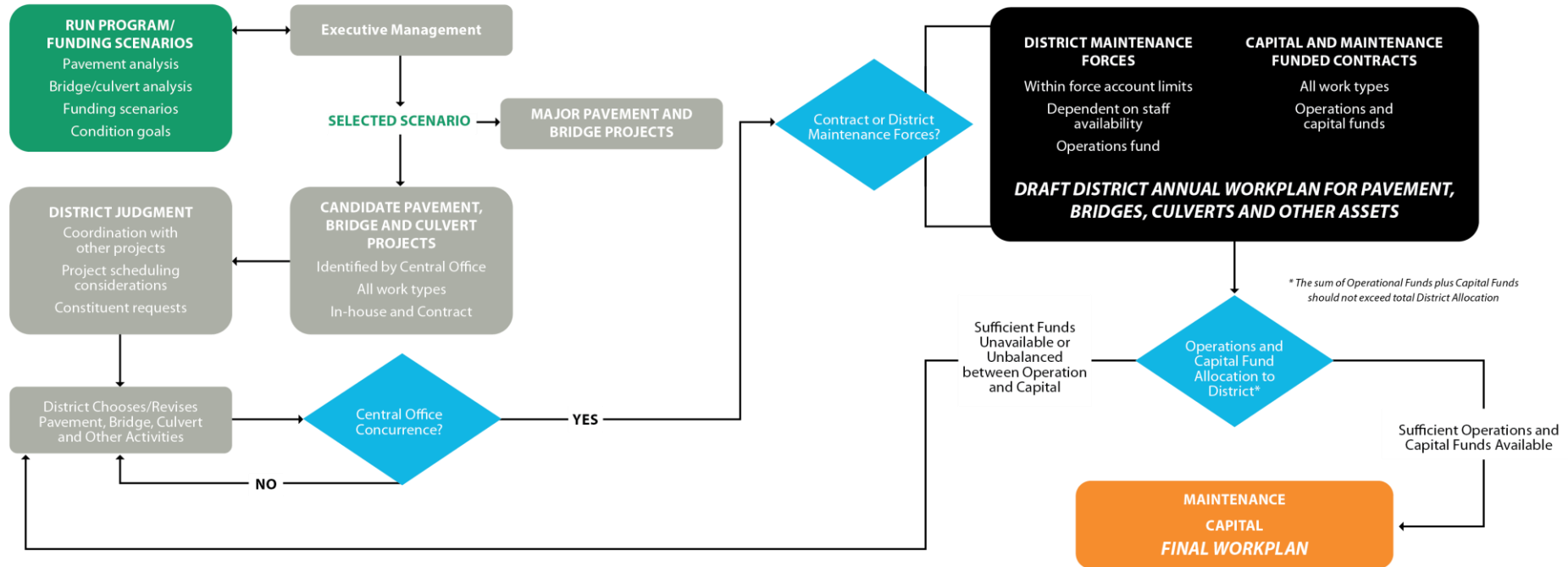
LEADERSHIP TEAM



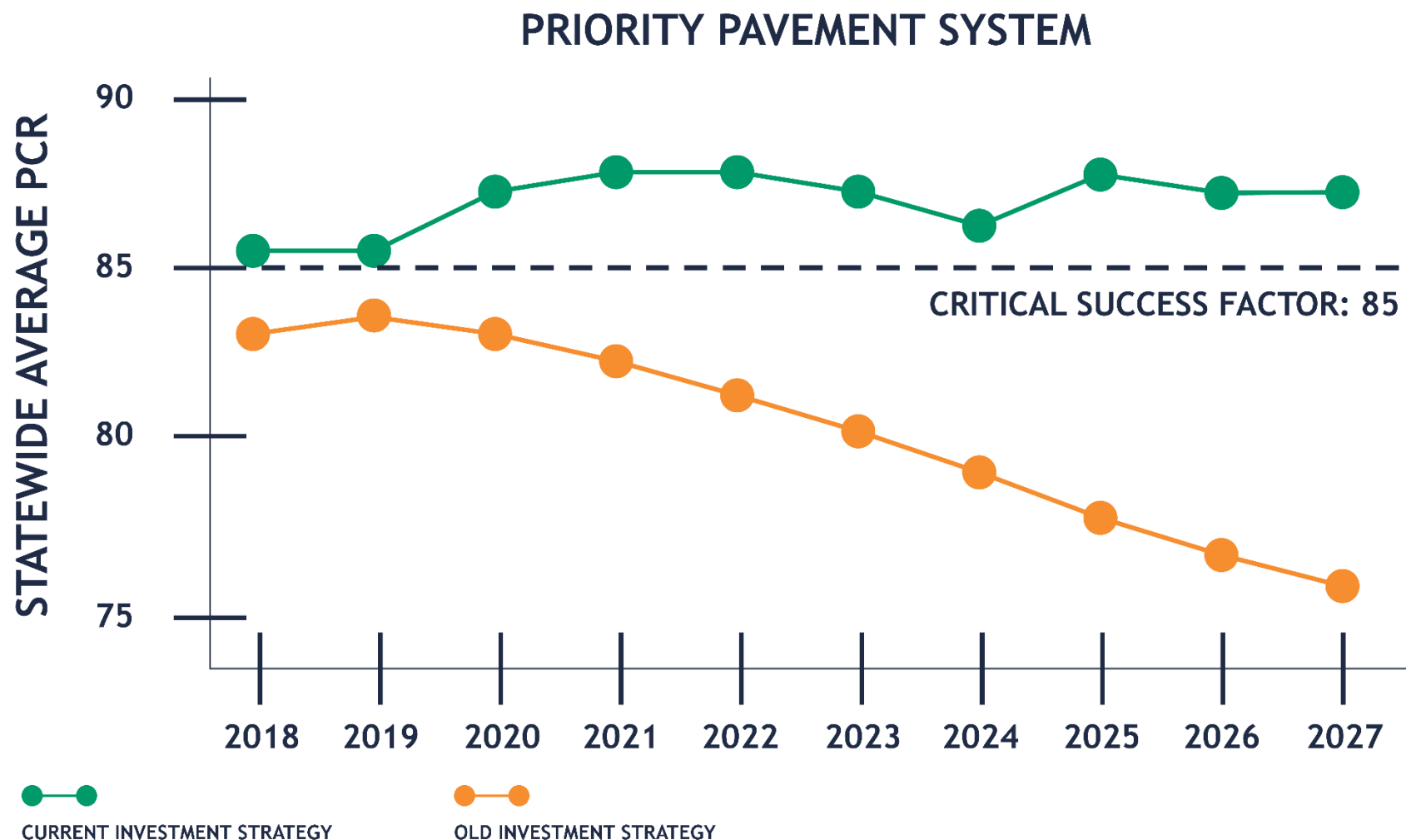
**Multi-Disciplinary Business Owners
and Stakeholders from ODOT
Central and District Offices**

CAPITAL PROGRAM PROCESS

DRAFT DISTRICT PRESERVATION PROGRAM BUSINESS PROCESS FLOWCHART



OLD WAY VS. NEW WAY



ODOT NEW BUSINESS PROCESS

\$\$\$ Flows from Central Office to Districts



CAPITAL WORK PLAN PAVEMENTS

PRIORITY SYSTEM - PLANNED VS. PROGRAMMED

FY2018

DISTRICT 3 TREATMENTS	PLANNED	PROGRAMMED	% AWARDED TO DATE
25 - Chip Seal	0.00	0.00	-
30 - Microsurfacing	0.00	0.00	-
31 - Double Application Microsurfacing	8.20	8.20	100.00%
38 - Fine Graded Polymer AC Overlay	98.58	114.82	100.00%
40 - CPR Concrete Pavement Repair	0.00	0.00	-
41 - Thin AC Overlay without Repairs	0.00	0.00	-
50 - AC Overlay without Repairs	40.56	41.04	100.00%
60 - AC Overlay with Repairs	19.80	29.24	96.85%
100 - New Flexible Pavement	0.00	0.00	-
SUBTOTAL	167.14	193.30	99.52%
20 - Crack Sealing	50.96	50.96	100.00%
Gap Projects	38.00	38.00	100.00%
TOTAL		282.26	

CAPITAL WORK PLAN PAVEMENTS


GENERAL SYSTEM - PLANNED VS. PROGRAMMED

FY2018

DISTRICT 3 TREATMENTS	PLANNED	PROGRAMMED	% AWARDED TO DATE
25 - Chip Seal	56.52	32.46	100.00%
30 - Microsurfacing	59.40	33.42	0.00%
31 - Double Application Microsurfacing	0.00	0.00	-
38 - Fine Graded Polymer AC Overlay	19.14	19.14	100.00%
40 - CPR Concrete Pavement Repair	0.42	0.42	100.00%
41 - Thin AC Overlay without Repairs	0.00	24.06	100.00%
50 - AC Overlay without Repairs	80.40	110.94	76.31%
60 - AC Overlay with Repairs	166.18	149.92	73.04%
100 - New Flexible Pavement	0.00	2.76	100.00%
SUBTOTAL	382.04	373.12	73.22%
20 - Crack Sealing	63.54	63.54	100.00%
Gap Projects	8.72	8.72	100.00%
TOTAL		445.38	

CAPITAL WORK PLAN PAVEMENTS

Compliance with Pavement Management System*

DISTRICT 3				
YEAR	PMS	DWP MATCHES	PERCENTAGES	MEETS GOAL
2020	307.44	269.58	82.01%	
2021	339.21	354.42	79.47%	
2022	421.34	456.38	84.12%	
2023	528.69	158.16	86.32%	
2024	383.99	252.12	41.19%	
TOTAL	1,980.67	1,490.66	75.26%	

**Goal: Match 75% of the PMS
Location and Treatment
Recommendations**

* District 3 Multi-Year Work Plan - April 24, 2018

CAPITAL WORK PLAN PAVEMENTS

Rejected PMS Recommendations

- LOR-301-24.99 to 26.69
 - PMS recommended AC Overlay w Repair
 - District Work Plan - Concrete Pavement Repair
- MED-42/224 (Lodi Bypass)
 - Micro'd in 2011 - No PMS recommendation
 - District Work Plan - FY 2021 AC Overlay with Repairs
- No Chip Sealing in Villages

CAPITAL WORK PLAN PAVEMENTS

FY2018 GAP Projects

- HUR US 20 - Pavement Repairs - Next project 2020/2022
- HUR SR 601 - Intersection Rutting - Upcoming project 2023
- WAY SR 21 Smoothseal - Upcoming Project 2024

FY2019 GAP Project

- RIC IR 71 - Pavement Repairs - Next Project 2020

OPERATING 2019/2020 ANNUAL WORK PLAN

GAP Projects

- Full/Partial Depth Repair/Resurfacing
 - 2019: GAP - 11,200 tons of asphalt repair
 - 2020: GAP - 12,100 tons of asphalt repair

Ready To Pave Projects

- Full Depth Repair
 - 2019: 12,360 tons of asphalt repair estimated at \$927,000
 - 2020: 1,880 tons of asphalt repair estimated at \$141,000

SUMMARY OF DISTRICT'S UNIFIED WORK PLAN

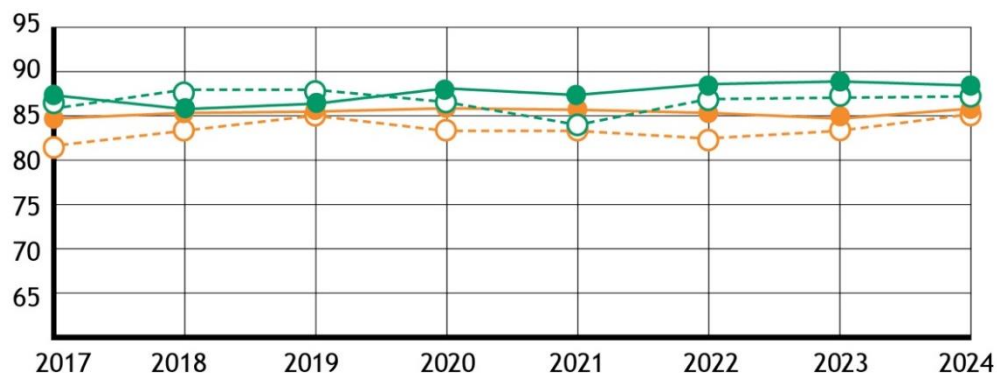
DISTRICT 3 TREATMENTS	CAPITAL PROGRAMMED	OPERATIONS PLANNED
25 - Chip Seal	422.44	
30 - Microsurfacing	210.48	
31 - Double Application Microsurfacing	73.68	
38 - Fine Graded Polymer AC Overlay	738.00	
40 - CPR Concrete Pavement Repair	39.18	
41 - Thin AC Overlay without Repairs	0.00	
50 - AC Overlay without Repairs	83.38	
60 - AC Overlay with Repairs	763.47	
100 - New Flexible Pavement	81.68	
110 - New Rigid Pavement	0.00	
SUBTOTAL	2,412.31	0.00
20 - Crack Sealing	662.00	
Ready to Pave (Pavement Repair)	0.00	
Gap Projects (Band-Aid Activities until Capital Project)	336.00	460.60
TOTAL	3,410.31	460.60

PERCENT OF DISTRICT LANE MILES WITH AN ACTIVITY	
= $\frac{\text{Lane Miles of Activities (Inclusive of RTP, GAP \& Crack Seal)}}{\text{Total District P \& G Lane Miles}}$	
= $\frac{3,870.91}{4,176.30}$	= 92.69%

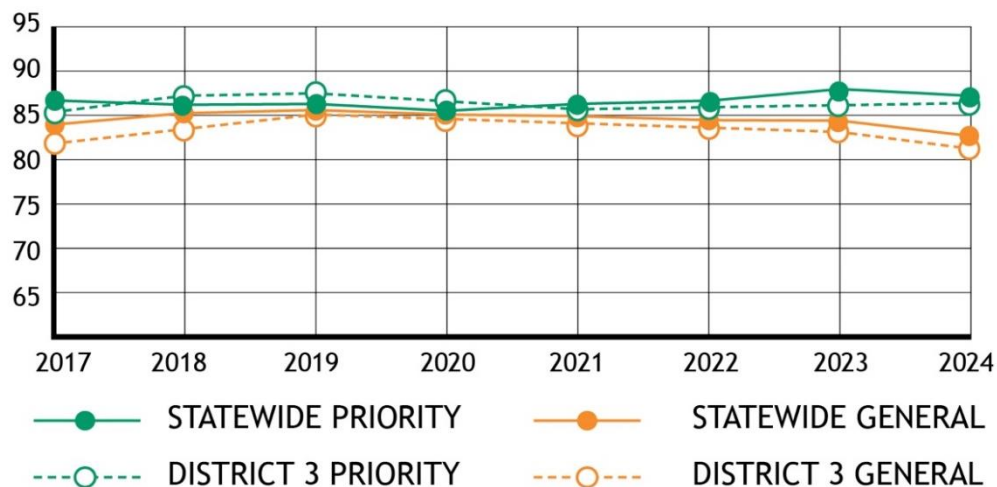
PERCENT OF DISTRICT LANE MILES WITH AN ACTIVITY TO IMPROVE THE PCR	
= $\frac{\text{Lane Miles of Activities (Inclusive of RTP, GAP \& Crack Seal)}}{\text{Total District P \& G Lane Miles}}$	
= $\frac{2,412.31}{4,176.30}$	= 57.76%

PAVEMENTS: PERFORMANCE - WEIGHTED AVG.

OPTIMIZED AVG WEIGHTED PCR

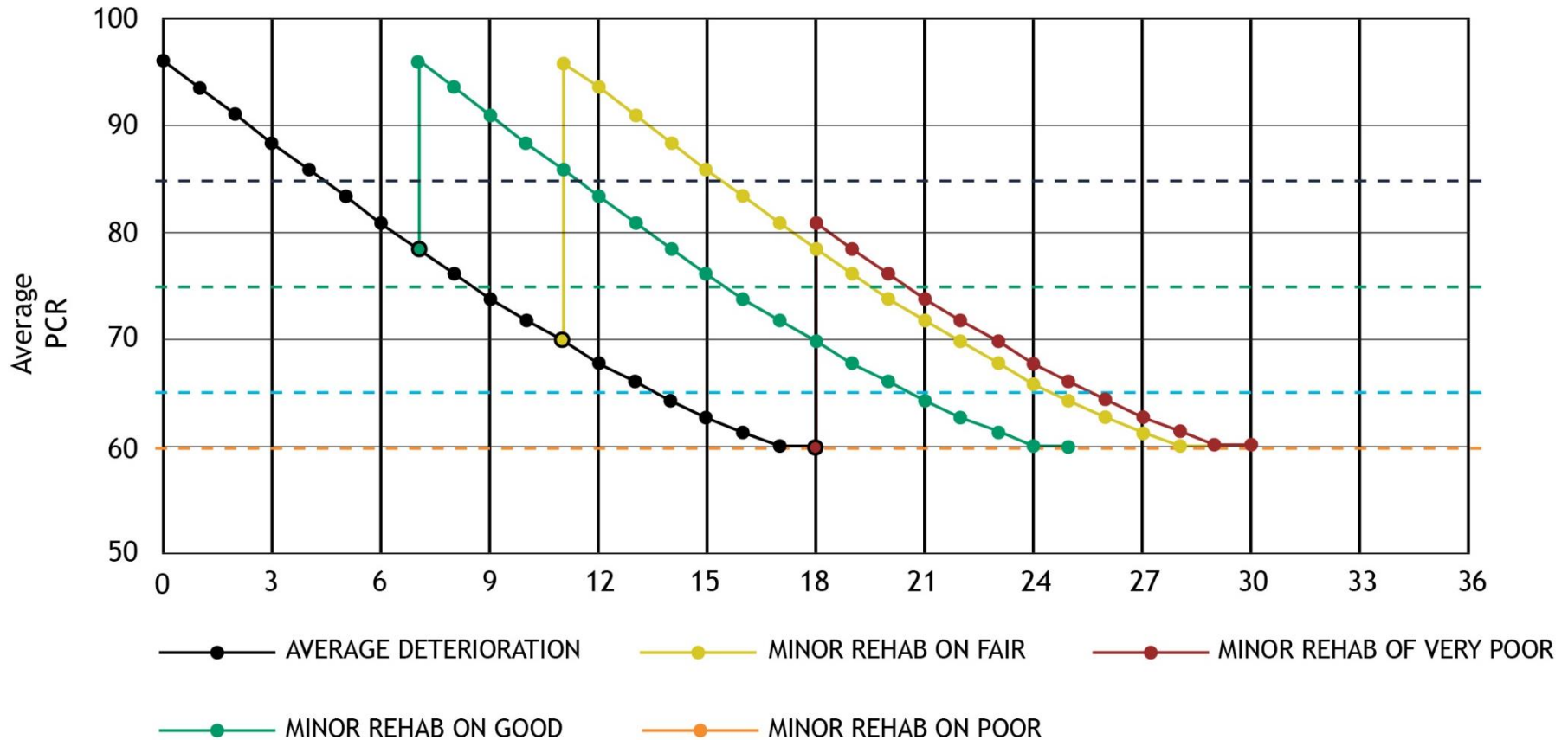


DWP AVG WEIGHTED PCR



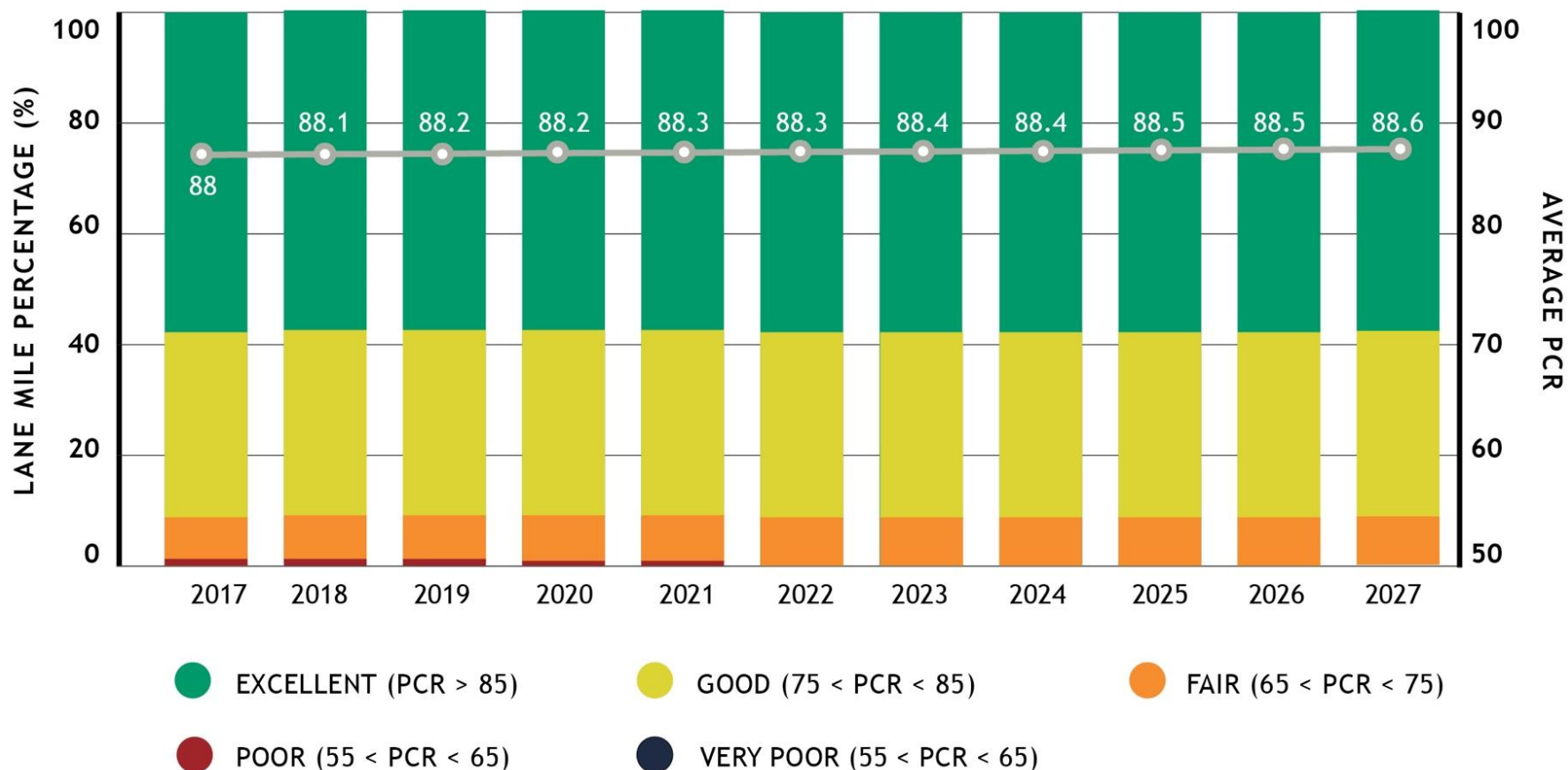
AVERAGE PAVEMENT LIFE AFTER TREATMENT

Pavement Deterioration and Treatment Effective Lives



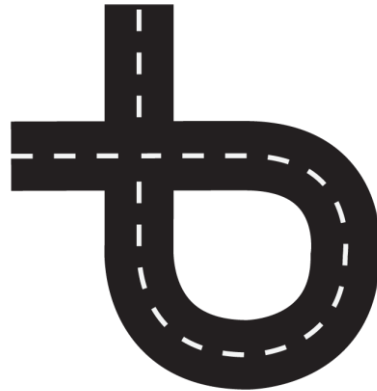
PREDICTED PAVEMENT ASSET CONDITIONS

Projected Network Condition Distribution Pavement



BLACK BOX SUCCESS: INCREASED PAVING AND REPAIRS

ODOT paves 1,700 more miles a year.
Well-maintained roads = safer roads.



Repairing 150 more bridges a year.



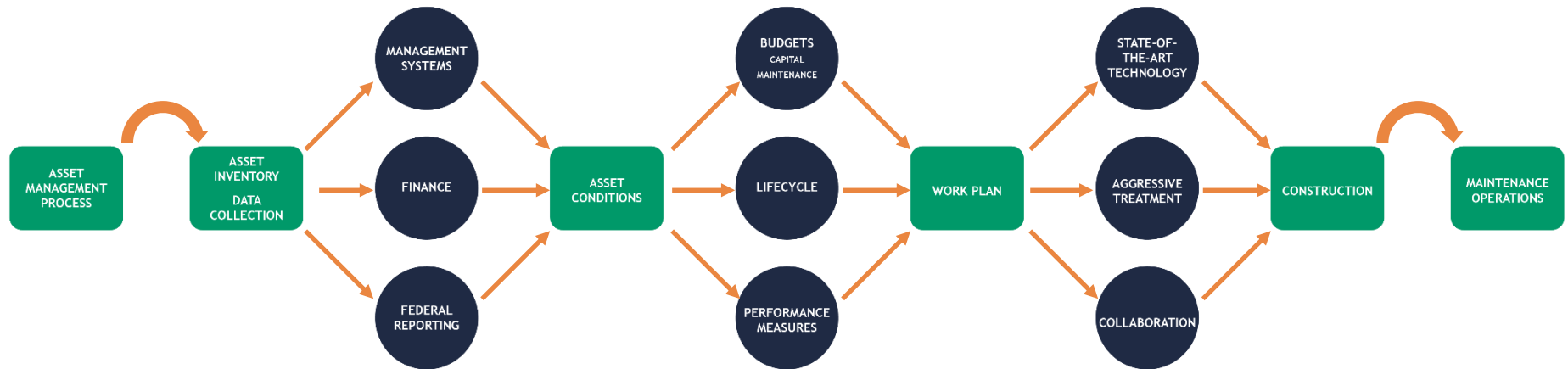
\$400 MILLION SAVED OVER 6 YEARS



SYSTEMATIC PROCESS: OPTIMIZE INVESTMENTS



CRADLE TO GRAVE ASSET MANAGEMENT PROCESS



ARE YOU MEETING FEDERAL TARGETS?

§ 490.311 Metric Thresholds in Final Rule

Rating	Good	Fair	Poor
IRI (inches/mile)	<95	95-170	>170
PSR* (0.0 - 5.0 value)	≥4.0	2.0-4.0	≤2.0
Cracking Percent (%)	<5	CRCP: 5-10 Jointed: 5-15 Asphalt: 5-20	>10 >15 >20
Rutting (inches)	<0.20	0.20-0.40	>0.40
Faulting (inches)	<0.10	0.10-0.15	>0.15

*PSR may be used only on routes with posted speed limit <40 mph.

TPM 2 - PAVEMENT INTERSTATE

FHWA Pavement Performance Measure Statewide Interstate



RESOURCES

FOR MORE INFORMATION,
PLEASE VISIT



transportation.ohio.gov/AssetManagement

QUESTIONS?