OHIO DEPARTMENT OF TRANSPORTATION

MAXIMIZING THE VALUE OF WHAT WE HAVE

TRANSPORTATION ASSET MANAGEMENT • A COMMITMENT TO HIGHWAY INFRASTRUCTURE EXCELLENCE

ANDREW WILLIAMS
Office of Technical Services

WHY IS TRANSPORTATION ASSET MANAGEMENT IMPORTANT?

Strong Transportation System Pivotal to Economy

60%

of the U.S. and Canadian populations live within a day drive of Ohio

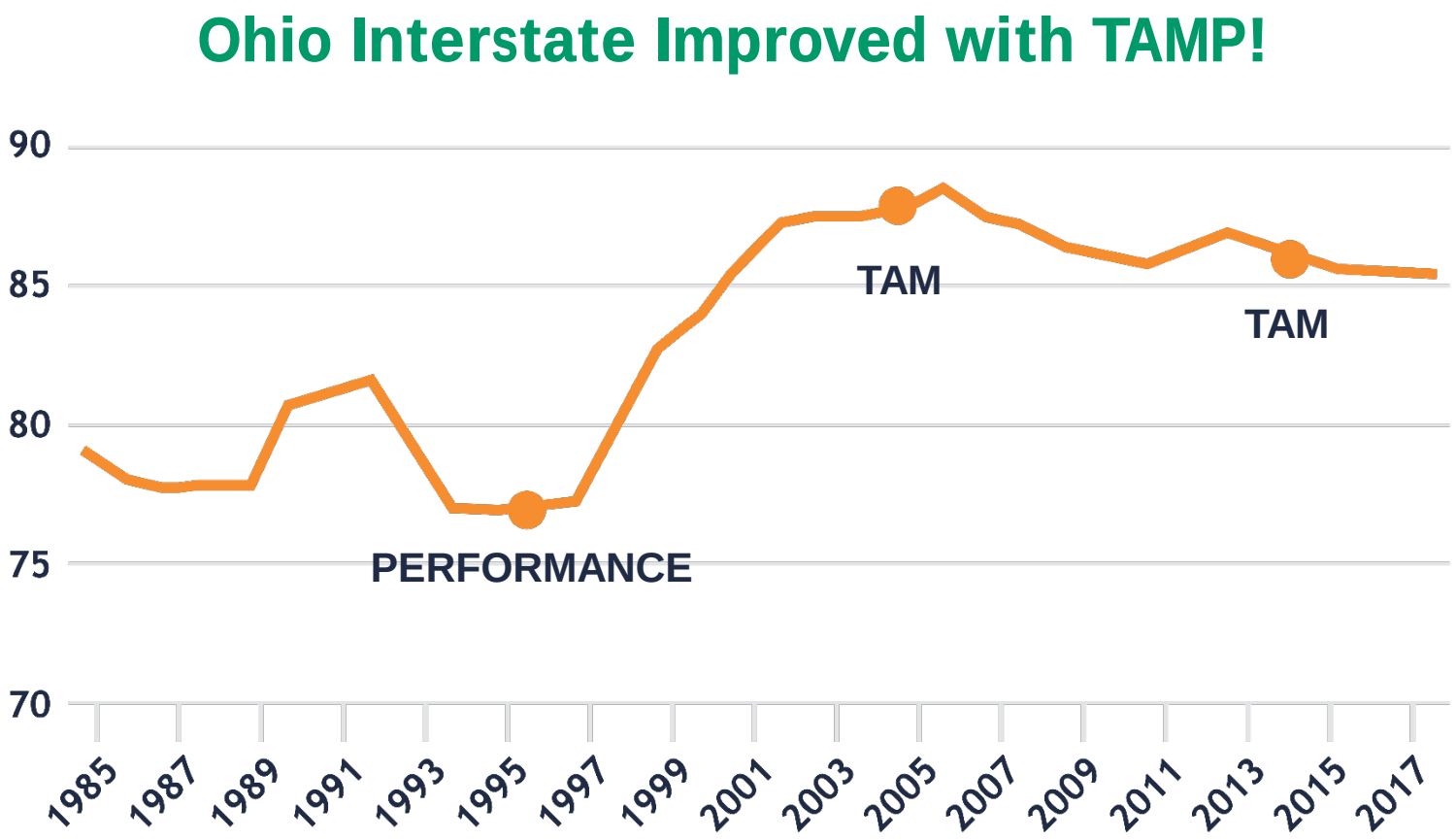
TRANSPORTATION ASSET MANAGEMENT PLAN (TAMP)

TAMP includes:

- ODOT Highway Infrastructure strategies
- Planned investments using anticipated funds
- Emphasis on safety, mobility
- Risk and resiliency

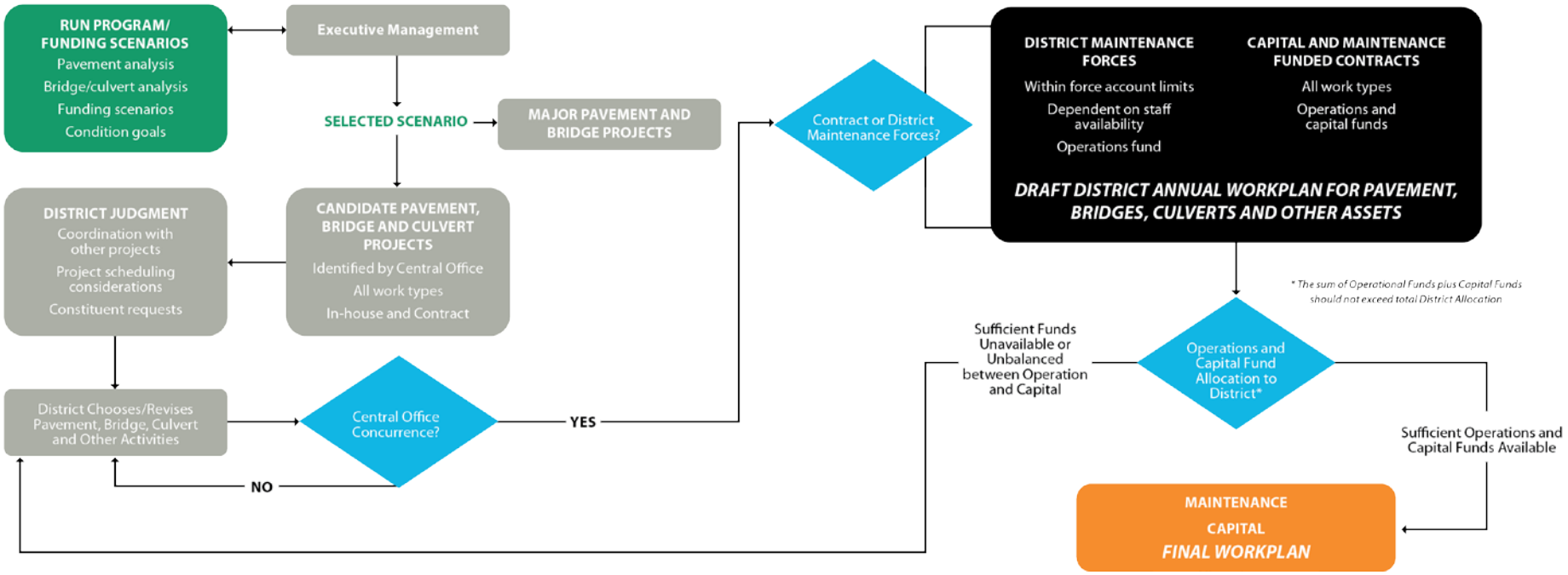
VALUE OF OHIO'S TRANSPORTATION ASSETS

PAVEMENT CONDITION BEFORE TAMP



INFRASTRUCTURE PROGRAM PLANNING PROCESS

DRAFT DISTRICT PRESERVATION PROGRAM BUSINESS PROCESS FLOWCHART

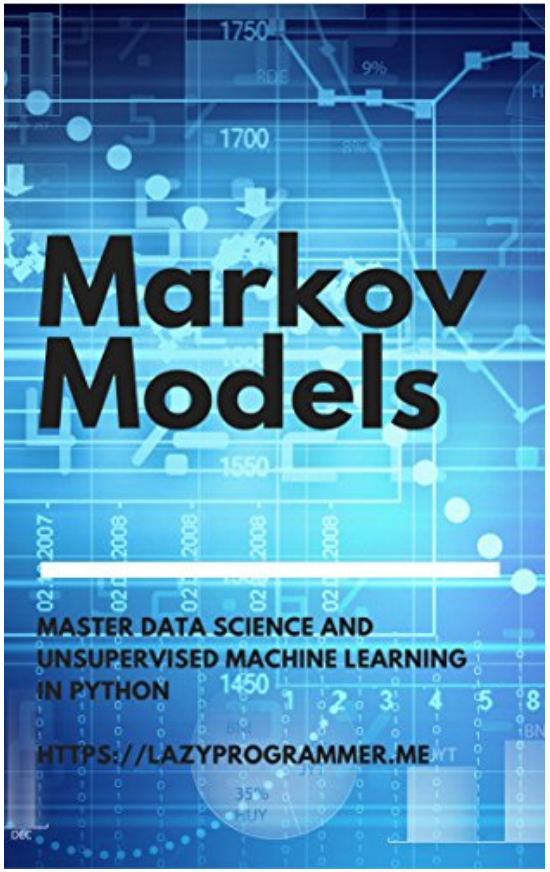


ODOT'S PAVEMENT MANAGEMENT SYSTEM

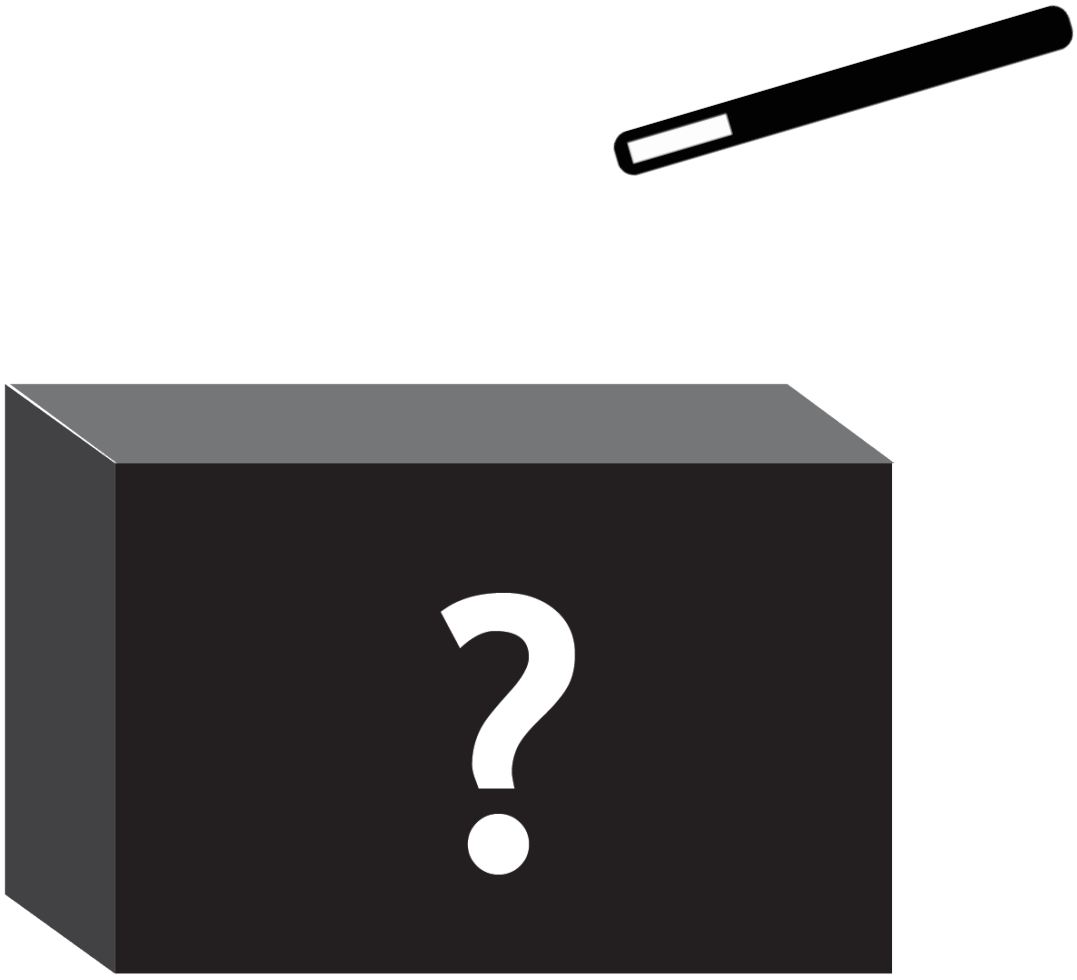
Deighton (dTIMS)

- Has roads, traffic, history, estimating, decision trees, etc.
- Forecasts roadway distress, rolls up to PCR
- Optimizes solutions by budget, PCR critical success targets

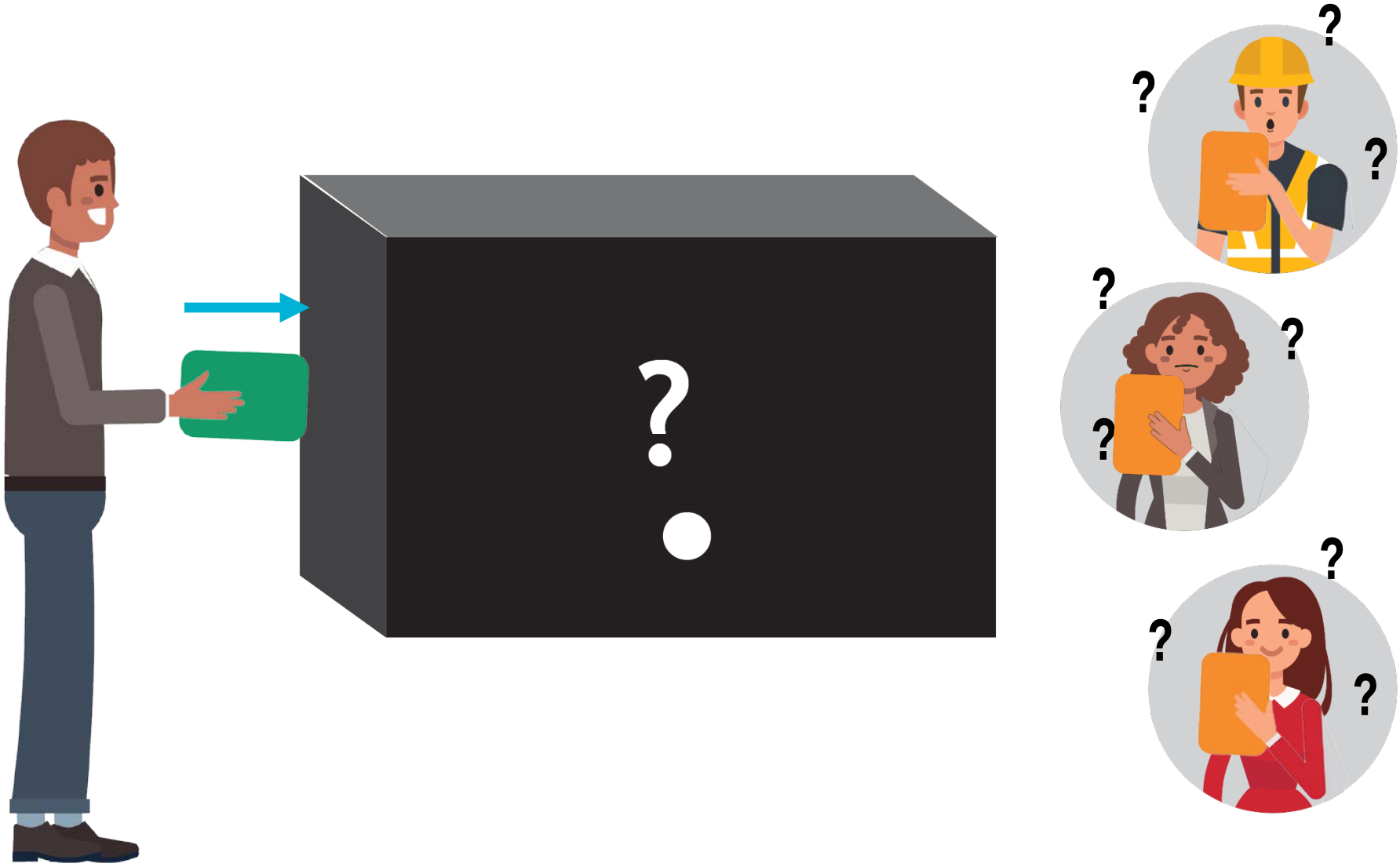
6-yr plan horizon expands to 10-yrs per Federal requirements



PMS BETTER KNOWN AS THE “BLACK BOX”



ODOT PMS BLACK BOX PROCESS



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PMS IS NOT INTUITIVE AT TIMES

Which Route Would You Work on First?

A

B

ODOT NEW BUSINESS PROCESS

$$$ Flows from Central Office to Districts

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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
  - AC Overlay w Repair
  - Concrete Pavement Repair
- MED-42/224 (Lodi Bypass)
  - Micro'd in 2011 - No PMS recommendation
  - 2021 AC Overlay with Repairs
- No Chip Sealing in Villages

CAPITAL WORK PLAN PAVEMENTS

FY2018 GAP Projects

- HUR US 20 – Pavement Repairs (2020/2022)
- HUR SR 601 – Intersection Rutting (2023)
- WAY SR 21 – Smoothseal – (2024)

FY2019 GAP Project

- RIC IR 71 – Pavement Repairs (2020)

OPERATING 2019/2020 ANNUAL WORK PLAN

GAP Projects

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

Ready To Pave Projects

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

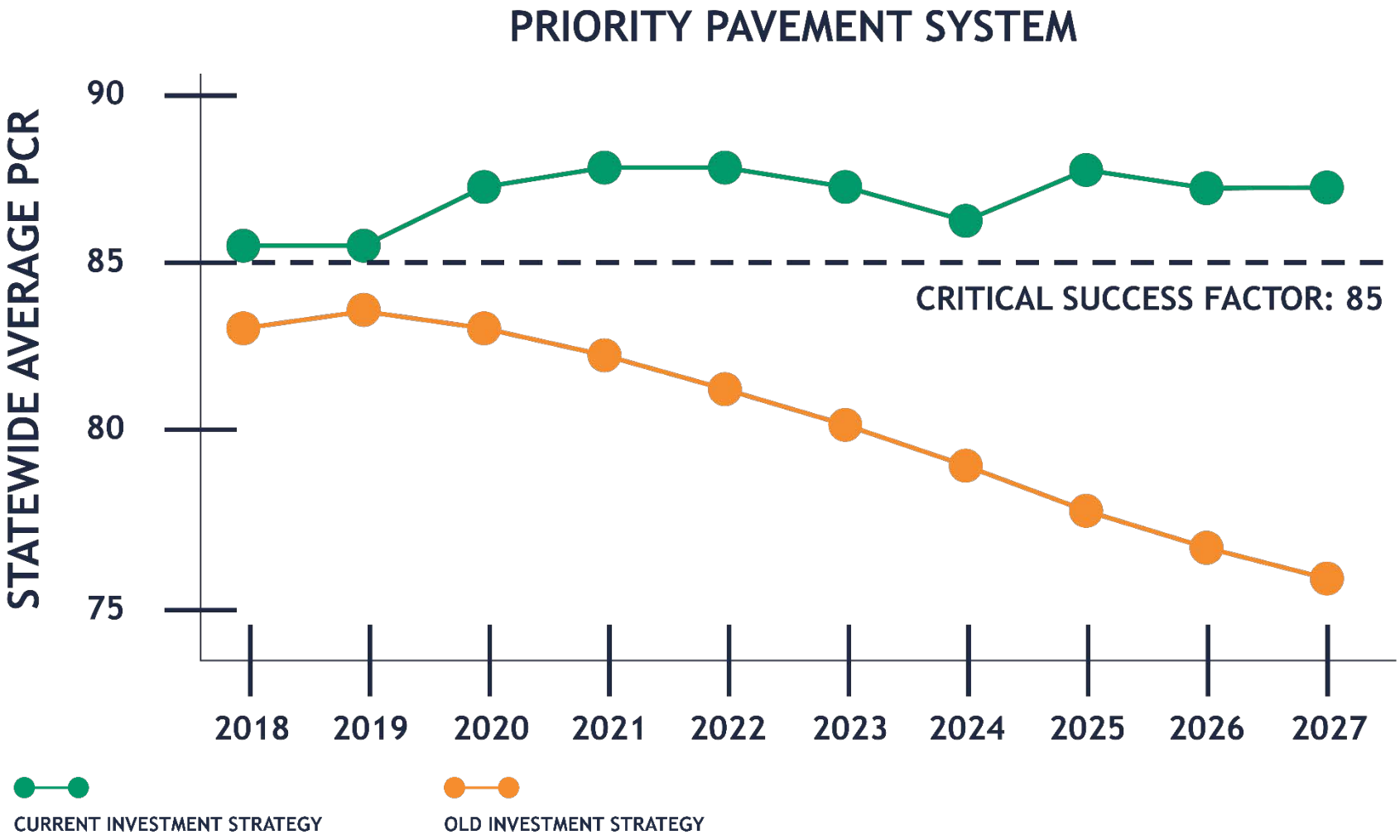
SUMMARY: DISTRICT UNIFIED WORK PLAN

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%

OLD WAY VS. NEW WAY



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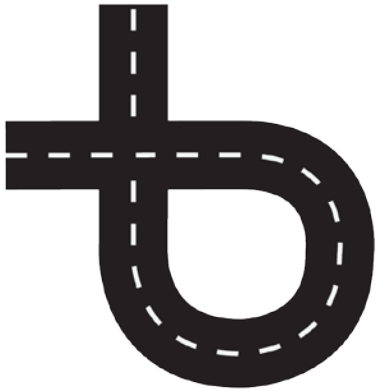
$400 MILLION SAVED OVER 6 YEARS

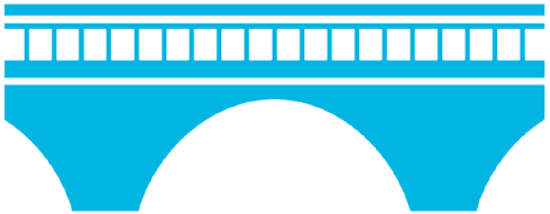
BLACK BOX SUCCESS: INCREASED PAVING AND REPAIRS

ODOT paves 1,700 more miles a year.

Well-maintained roads = safer roads.

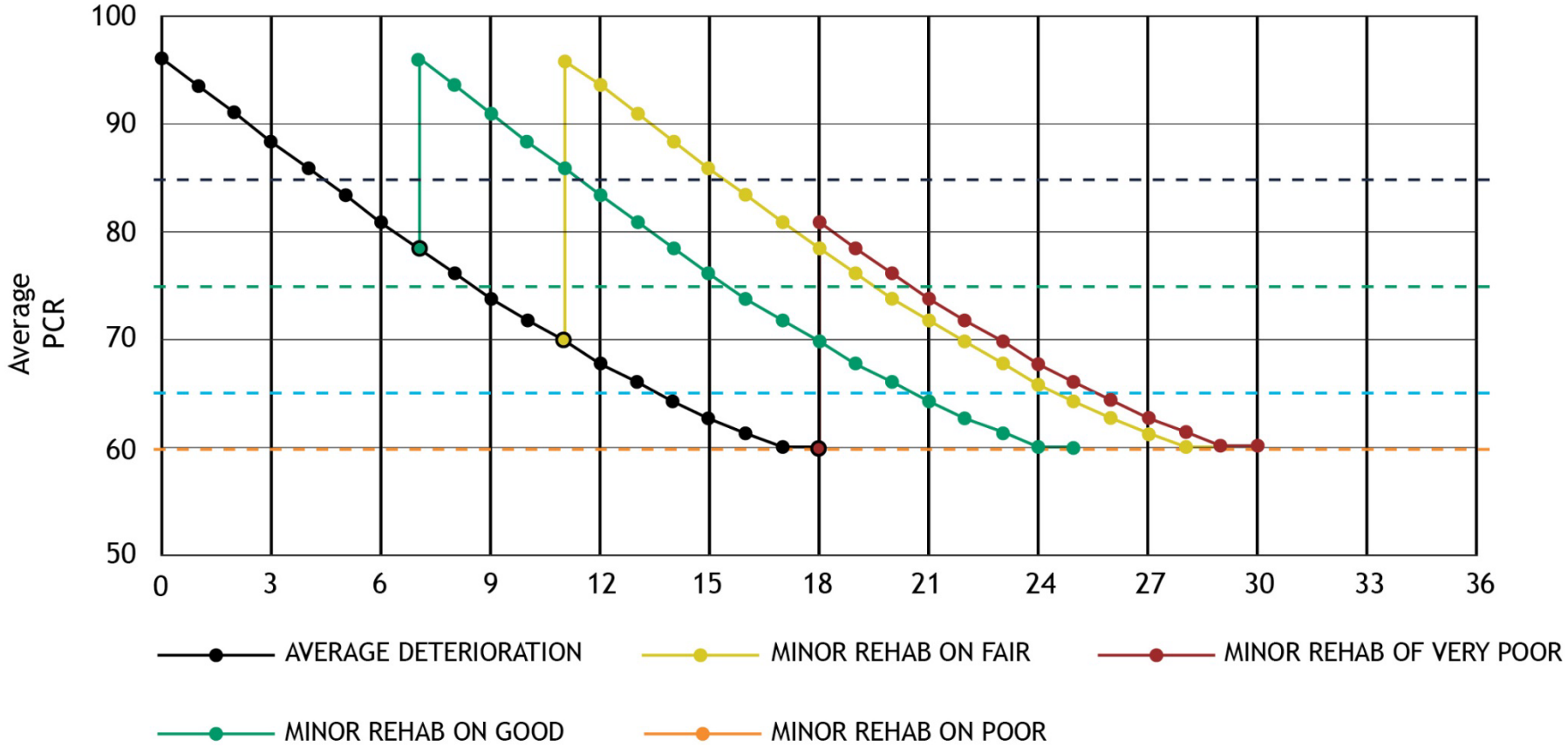


Repairing 150 more bridges a year.



AVERAGE PAVEMENT LIFE AFTER TREATMENT

Pavement Deterioration and Treatment Effective Lives



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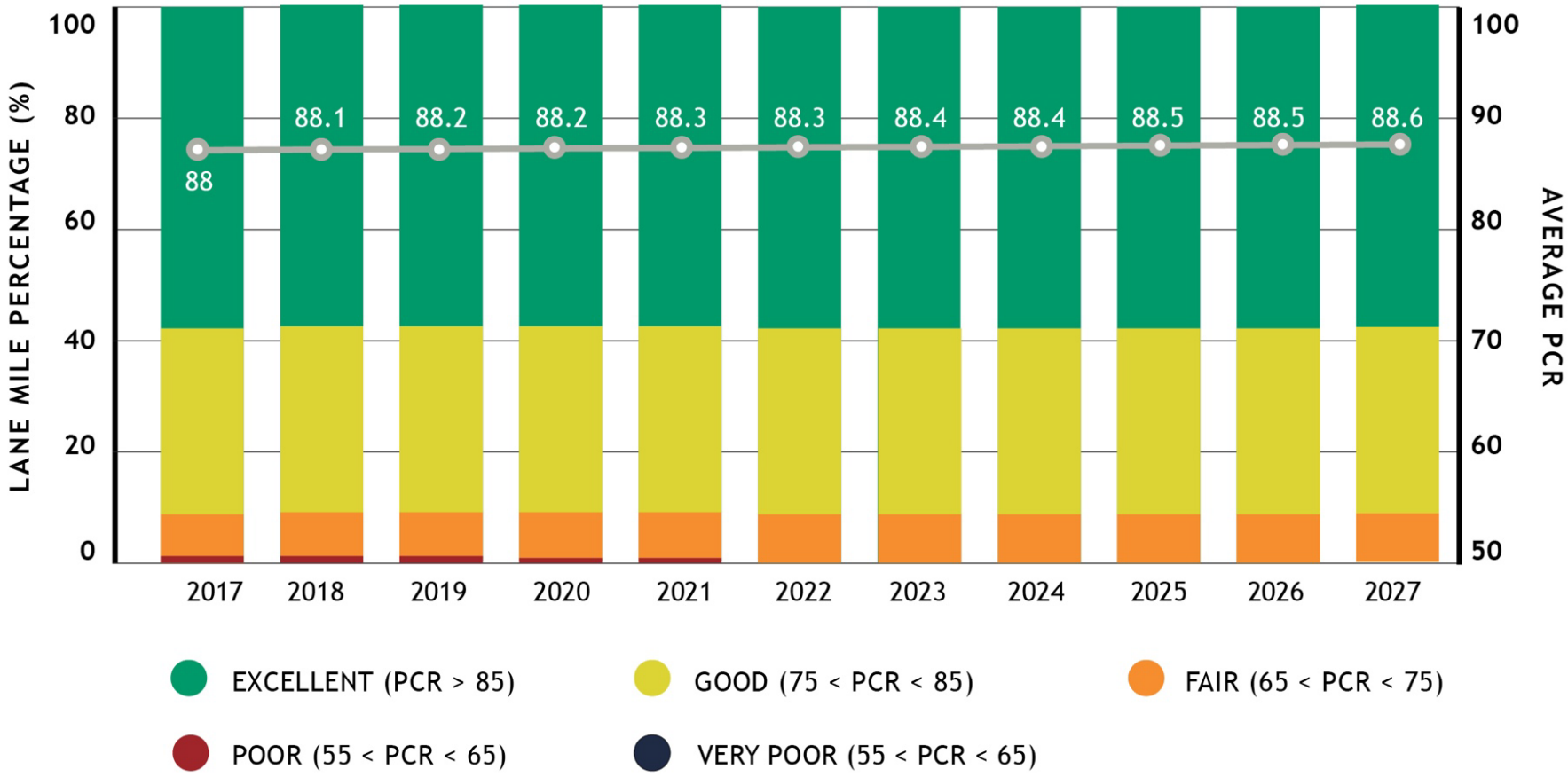
PREDICTED PAVEMENT ASSET CONDITIONS

Projected Network Condition Distribution Pavement



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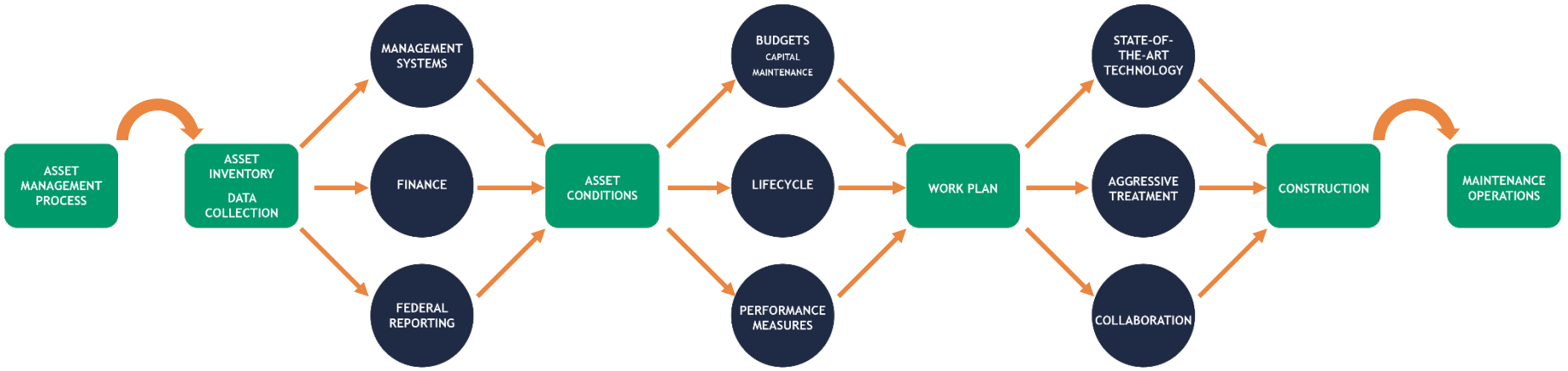
CRADLE TO GRAVE ASSET MANAGEMENT PROCESS



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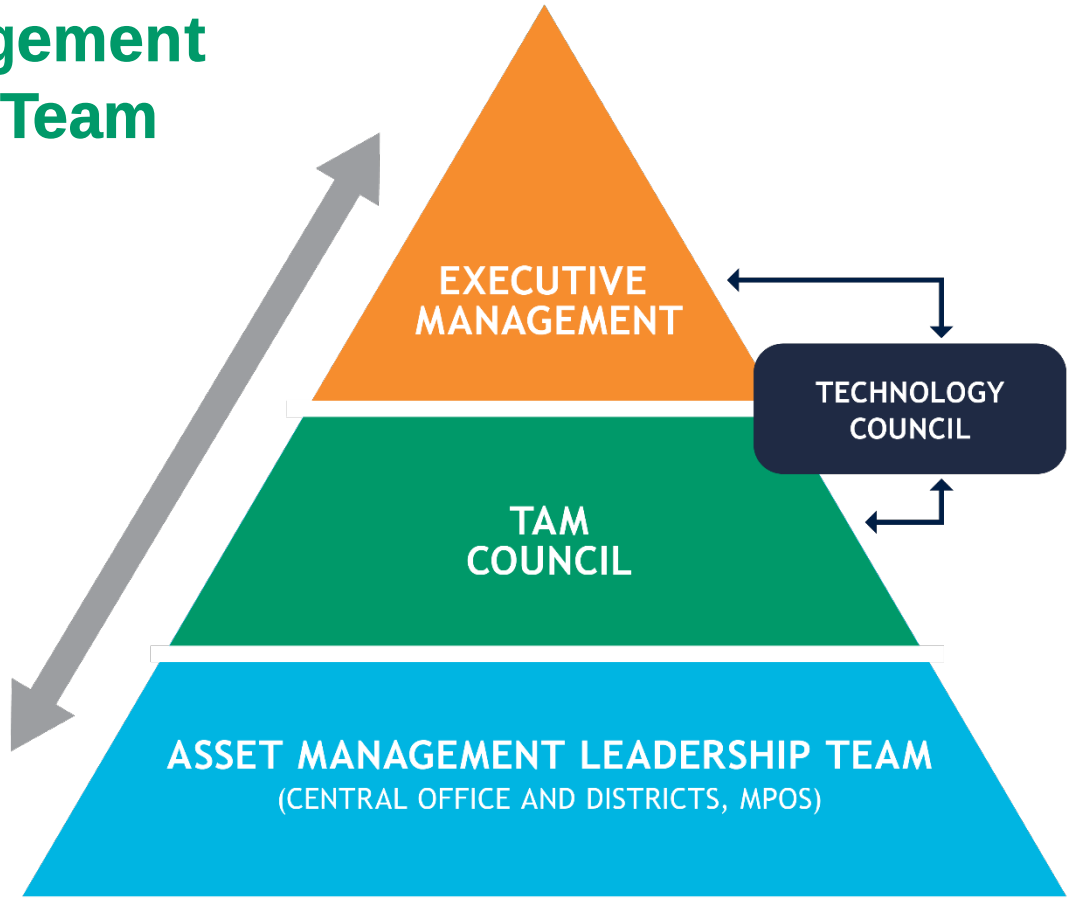
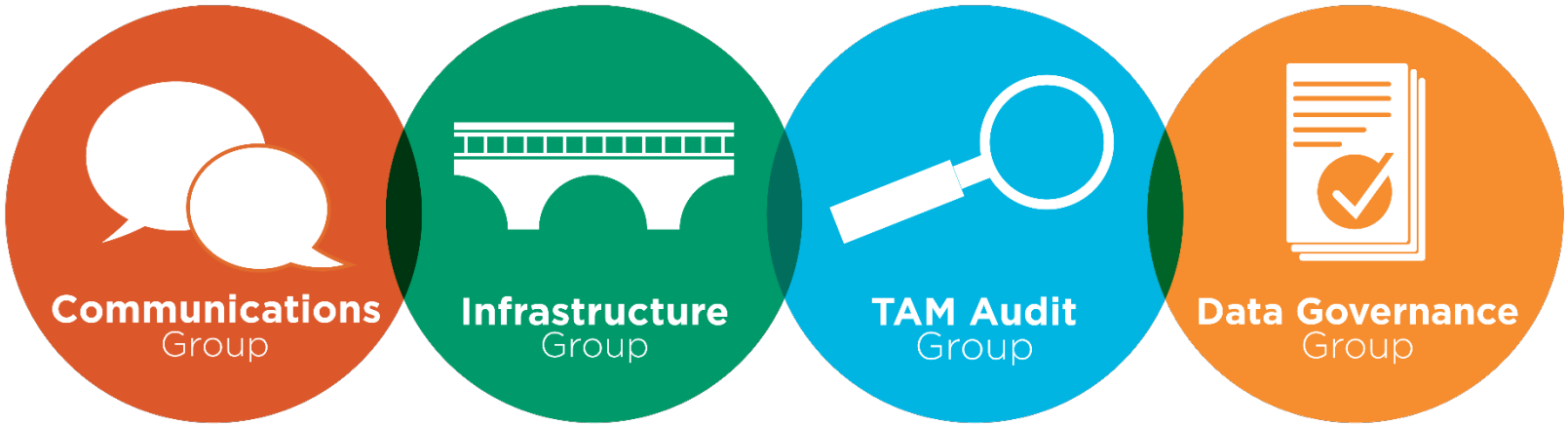
ODOT AMLT

Asset Management Leadership Team



LEADERSHIP TEAM



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

COMMUNICATION

- Fact card
- Frequently asked questions
- Talking points
- Video
- Web page
- PowerPoint

ODOT. Taking Care of What We Have.

Most people notice when ODOT builds something new. We actually spend 93% of our time and resources taking care of what we already have. While repair costs have gone up, funding has not. So we must constantly do more with less (what cost ODOT $1 in 2006 now costs $1.56 in 2015). We continue to implement new, smarter ways to improve safety and protect the huge investment in the more than 43,000 miles of roads and 14,000 bridges that ODOT maintains.

Innovators. Again.

ODOT has spent the last 10 years moving to a more data-focused approach to managing and improving our transportation system. Now we are taking another major step forward with little or no additional funding. Our **innovative, three-pronged approach** will allow us to redirect an estimated $300 million toward more preservation over the next six years.

1 **State-of-the-Art Technology for Improved Decision-Making**

- Our Pavement Management System software conducts in-depth analysis of road conditions to determine road resurfacing priorities with the highest benefit at the lowest cost.
- The Transportation Information Mapping System (TIMS) is a robust data source with the latest on ODOT facilities, roads and bridges, airports, ports, transit systems, culverts, safety barriers, railroads, intermodal facilities and much more.

2 **Aggressive Preservation Treatments**

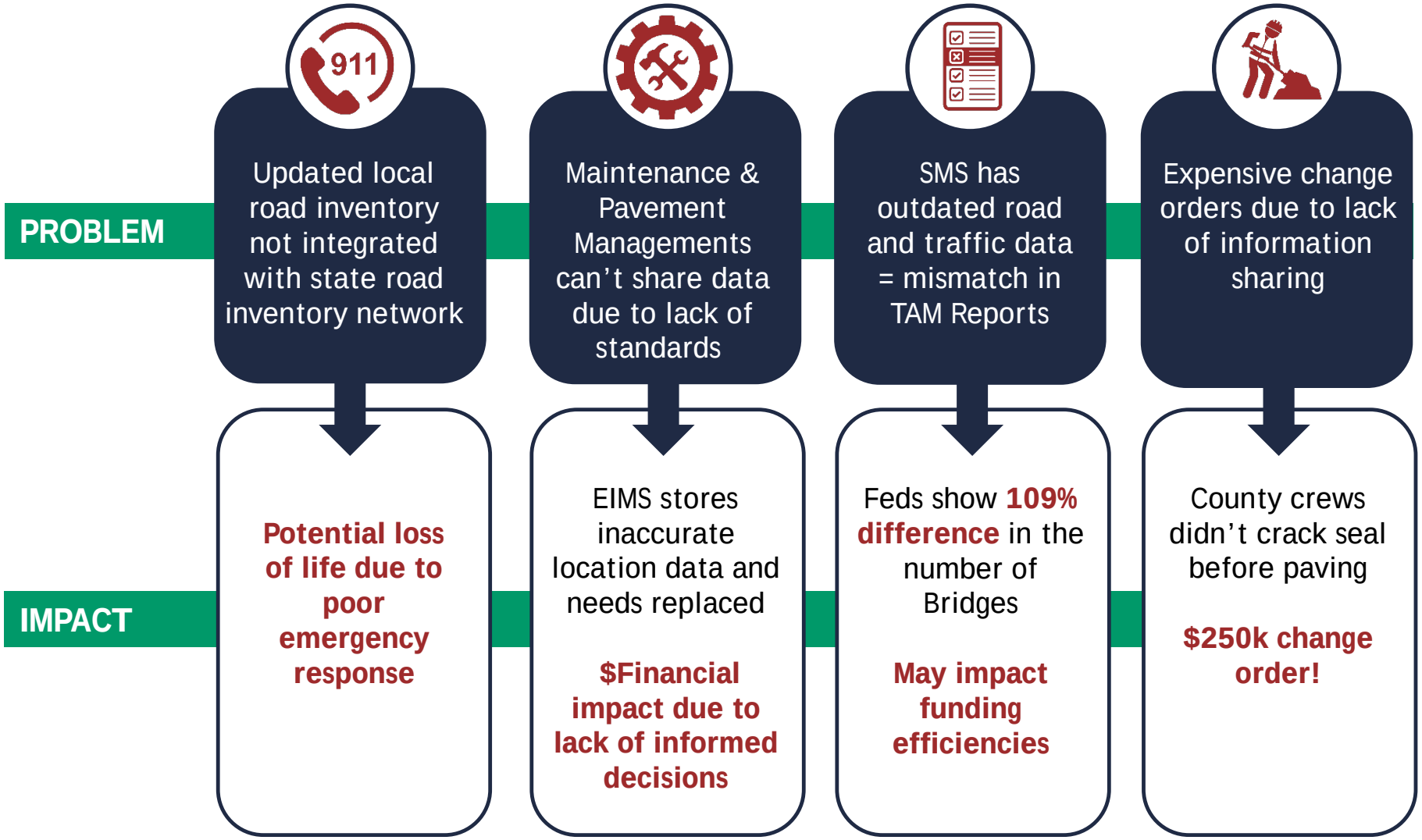
- More chip seal and microsurfacing of roads to extend surface life – at fractions of the cost of conventional overlays.
- Proactively clean and seal bridges to keep the joints, side structures, surfaces and drains in good repair and extend surface life.

3 **More Collaboration**

- Coordinate capital and maintenance work under one plan.
- Continuously interact with our front line crews, contractors and local governments to share information and benefit from their first-hand, practical knowledge.
- Capture, analyze and replicate successes across the state.

Ohio Department of Transportation

WHY DATA GOVERNANCE?



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DATA GOVERNANCE ADVANTAGE

47%

Increase in employee productivity

up to

25%

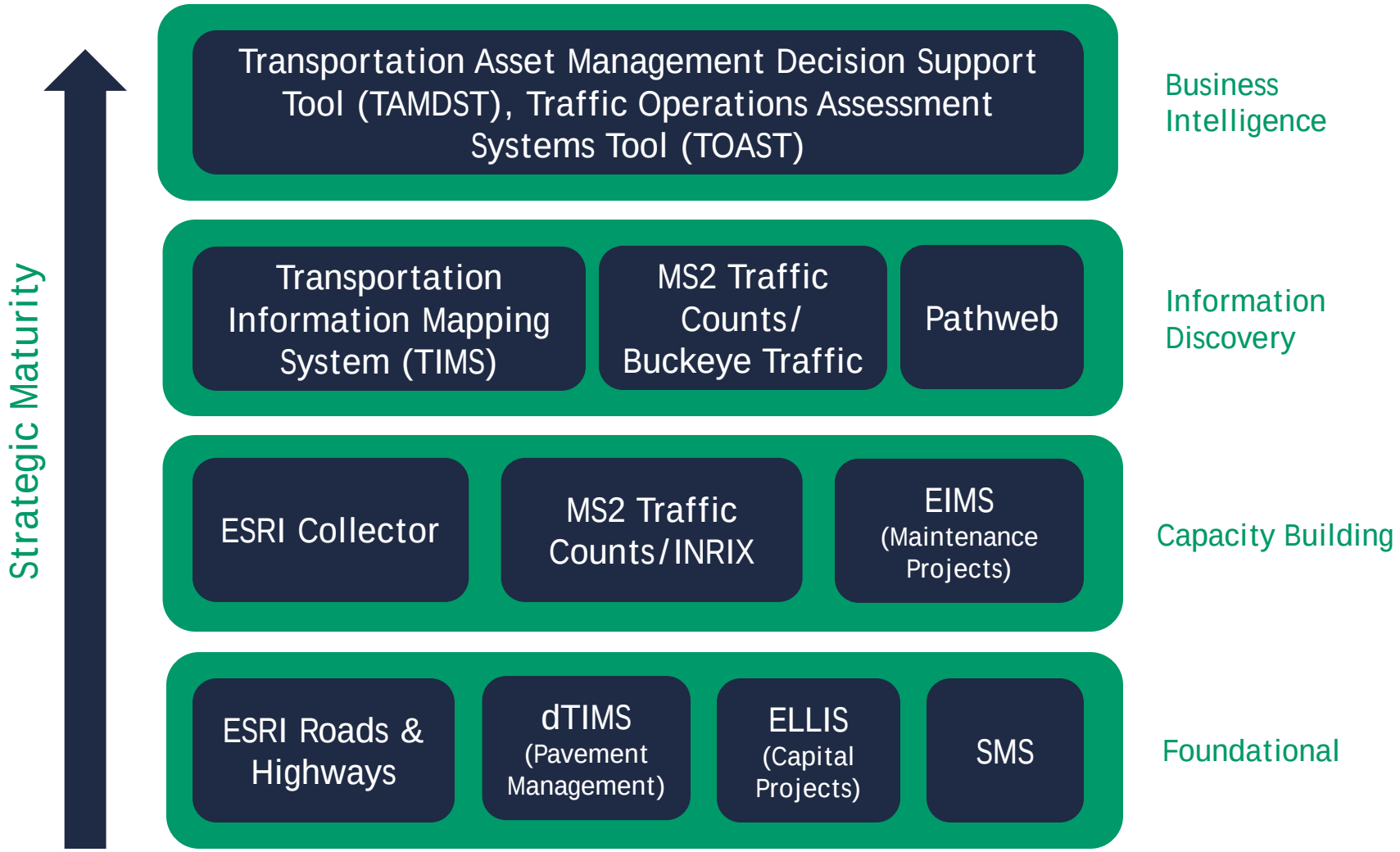
Reduction in Change Orders

15%

Savings in Capital Program budget

SYSTEMATIC PROCESS: OPTIMIZE INVESTMENTS

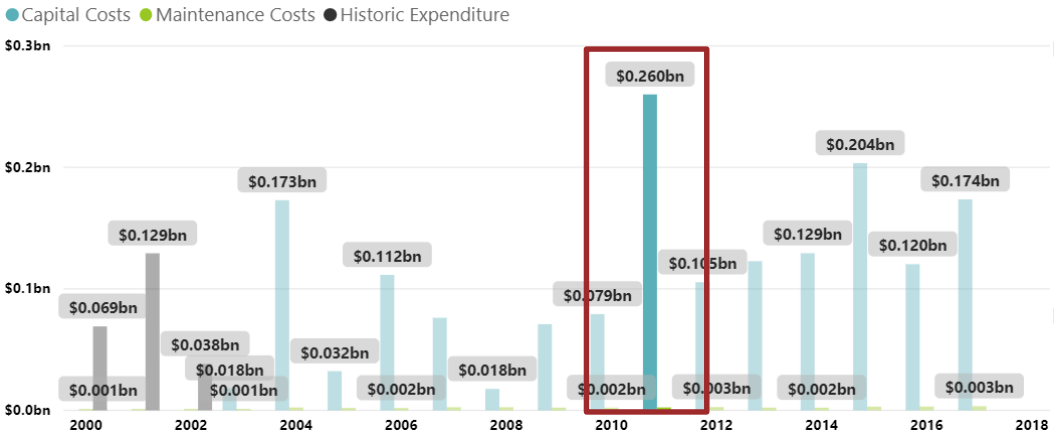
TECHNOLOGY PORTFOLIO



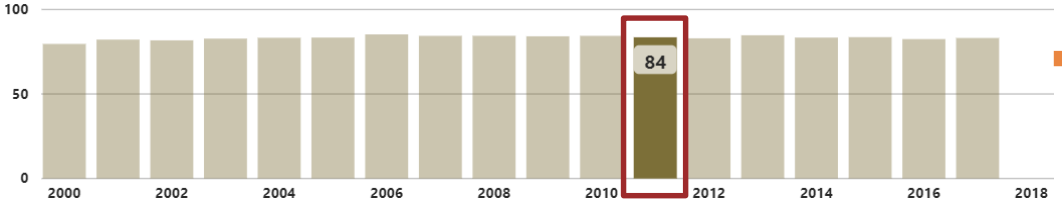
TAMDST WALKTHROUGH: ASSET EXPENDITURE REPORT

Drill Throughs Offer Details! Details! Details!

Asset Expenditure



Pavement Condition Rating (PCR)



Auto Populate Data

Selected Year Maintenance Expenditures per Project Category

Year	Maintenance Category	Maintenance Expenditure
2011	PAVEMENT	$845,305.49
2011	BRIDGE	$490,984.74
2011	ROADWAY	$464,355.81
Total		**$2,375,118.91**

Selected Year Capital Expenditures per Treatment Category

Project Year	Treatment Category	Capital Expenditure
2011		$250,730,879.70
2011	Minor Rehabilitation	$211,538,387.74
2011	New Construction	$21,528,684.15
2011	Reactive Maintenance	$2,789,047.87
Total		**$260,044,734.94**

Selected Year Historic Capital Expenditures per Category

Historic Project Year	Historic Treatment Category	Historic Expenditure

OHIO DEPARTMENT OF TRANSPORTATION

ENHANCED PUBLIC/LEGISLATIVE TRUST

Good Stewardship of Newly Acquired Motor Vehicle User Fees

RESOURCES

FOR MORE INFORMATION, PLEASE VISIT

transportation.ohio.gov/AssetManagement

QUESTIONS?