



Maintenance Funding & Investment Decisions

STACEY GLASS, P.E.
STATE MAINTENANCE ENGINEER
ALABAMA DEPARTMENT OF TRANSPORTATION

Funding Allocations

- ▶ Routine – State \$ 166 Million
- ▶ Resurfacing – Federal \$ 260 Million
- ▶ Interstate Maintenance – Federal \$ 200 Million
- ▶ Bridges – Federal \$ 90 Million

Fiscal Year 2016-17 Budget

▶ Routine	\$140 Million
▶ Resurfacing – Federal Aid (FM)	\$260 Million
▶ Roadway	\$5.5 Million
▶ Bridge	\$7 Million
▶ Traffic	\$3 Million
▶ Miscellaneous	\$5 Million
▶ Emergency	\$5 Million
▶ State's Park System	\$0.5 Million
▶ Total	\$426 Million

Recapitulation

Area	Routine	Resurfacing	Total
Guntersville	15,068,636	32,552,000	47,620,636
Tuscumbia	10,726,106	23,062,000	33,788,106
Birmingham	19,310,145	20,280,000	39,590,145
Alexander City	12,865,924	24,362,000	37,227,924
Fayette	10,584,187	22,750,000	33,334,187
Tuscaloosa	13,835,000	21,788,000	35,623,000
Montgomery	19,676,648	34,268,000	53,944,648
Troy	11,326,540	37,830,000	49,156,540
Grove Hill	7,307,814	22,412,000	29,719,814
Mobile	19,299,000	20,696,000	39,995,000
Total	\$140,000,000	\$260,000,000	\$400,000,000

Items Considered for Budgeting

- ▶ Miles – 29,278 Lane Miles / 10,874 Center Line Miles
- ▶ Bridges – 15,970 Total Structures / 5,752 State Owned
- ▶ Road Classes – Interstate, National Highway, State Highway
- ▶ Pavement – PCR Values (Age, IRI, Cracking, etc.)
- ▶ 19 Rest Areas / 8 Welcome Centers – 27 Total
- ▶ Grades – Level of Service Grades (A-F)
- ▶ Assets – Guardrail, Signs, Striping, Mowing Area, etc.....
- ▶ Age – Lifespan of Pavements and Bridges
- ▶ Emergencies – Repairs for unplanned events
- ▶ Prioritization – Risk and Needs

Routine Money Captured

- ▶ RoadMAP
 - ▶ Road Maintenance Accountability Program
 - ▶ Off shelf Software
 - ▶ Implemented 2011
 - ▶ Replaced Handwritten Crew Day Cards
 - ▶ Captures Daily Maintenance Operations
 - ▶ Accomplishments and Costs
 - ▶ Employee Hours, Equipment & Material Usage



ALABAMA DEPARTMENT OF TRANSPORTATION MAINTENANCE PERFORMANCE GUIDELINE

Activity: Guardrail Maintenance	Activity Code: 6381
	Effective Date: October 1, 2014

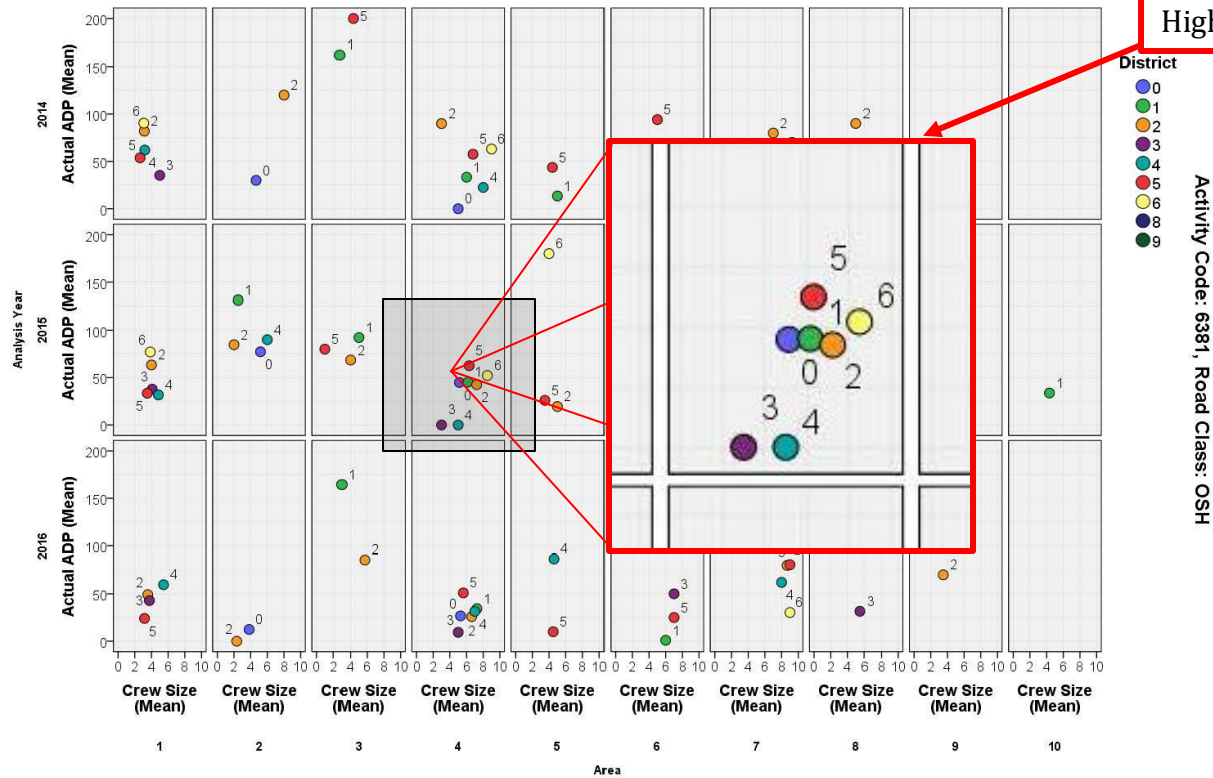
DESCRIPTION AND PURPOSE
Repair or replacement of guardrail sections, posts, and hardware due to accident damage or normal deterioration. (Consider replacing to latest standard.)

AUTHORIZATION AND SCHEDULING
Schedule this work as required throughout the year.

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3" style="text-align: center;">CREW SIZE</td> <td style="text-align: center;">5 employees</td> </tr> <tr> <th style="width: 5%;">No.</th> <th style="width: 15%;">Class</th> <th style="width: 80%;">Description</th> <td></td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">TMT III</td> <td style="text-align: center;">Equipment Operator</td> <td></td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">TMT I/II</td> <td style="text-align: center;">Laborer</td> <td></td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3" style="text-align: center;">EQUIPMENT</th> </tr> <tr> <th style="width: 5%;">No.</th> <th style="width: 15%;">Code</th> <th style="width: 80%;">Description</th> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">4</td> <td style="text-align: center;">Pickup</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">12</td> <td style="text-align: center;">Flat Bed Dump</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">106</td> <td style="text-align: center;">Post Driver</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">130</td> <td style="text-align: center;">Trailer</td> </tr> <tr> <td style="text-align: center;">1</td> <td></td> <td style="text-align: center;">Arrow Board</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">MATERIALS</th> </tr> <tr> <th style="width: 15%;">Code</th> <th style="width: 85%;">Description</th> </tr> <tr> <td style="text-align: center;">378</td> <td style="text-align: center;">Guardrail Sections</td> </tr> <tr> <td style="text-align: center;">1378</td> <td style="text-align: center;">End Anchor Kits</td> </tr> <tr> <td style="text-align: center;">2378</td> <td style="text-align: center;">Guardrail Posts and Hardware</td> </tr> </table>	CREW SIZE			5 employees	No.	Class	Description		1	TMT III	Equipment Operator		4	TMT I/II	Laborer		EQUIPMENT			No.	Code	Description	1	4	Pickup	1	12	Flat Bed Dump	1	106	Post Driver	1	130	Trailer	1		Arrow Board	MATERIALS		Code	Description	378	Guardrail Sections	1378	End Anchor Kits	2378	Guardrail Posts and Hardware	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; padding: 5px;">WORK METHODS AND NOTES</td> </tr> <tr> <td style="padding: 5px;"> <p>NOTE: Survey damage and obtain necessary material and equipment.</p> <ol style="list-style-type: none"> 1. Utilize appropriate traffic control devices. 2. Remove parts that cannot be straightened or repaired. 3. Realign loose posts and recompact earth. 4. Install new posts. 5. Install rail and hardware. 6. Clean up work area. 7. Terminate traffic control. </td> </tr> </table>	WORK METHODS AND NOTES	<p>NOTE: Survey damage and obtain necessary material and equipment.</p> <ol style="list-style-type: none"> 1. Utilize appropriate traffic control devices. 2. Remove parts that cannot be straightened or repaired. 3. Realign loose posts and recompact earth. 4. Install new posts. 5. Install rail and hardware. 6. Clean up work area. 7. Terminate traffic control.
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AVERAGE DAILY PRODUCTION
90 linear feet

Average ADP (Actual) vs Average Crew Size (Actual)



Lower Crew Size - Lower ADP. Higher Crew Size - Higher ADP.

- Data is analyzed for every Activity with a measurable unit (not Employee/Man Hours).
- Data is presented at ALDOT's Annual Conference to determine if Performance Measures need to be updated.

3 Year Statewide Grade Trends

Statewide Average - All Road Classes - 3 Year Trends					Statewide Average - All Road Classes - 3 Year Trends					
Group	Feature	2014	2015	2016						
Asphalt Pavement	Potholes	C+	B	B	Roadside	Erosion Control - Front Slopes	A-	B+	A	
	Raveling	B	B	C+		Erosion Control - Back Slopes	B+	B-	A-	
	Shoving	F	C+	F		Mowing	A-	A-	B+	
Concrete Pavement	Spalling	B	B	B+		Undesirable Vegetation	C+	C	B	
	Faulting	C	C+	B		Brush Control	F	F	C+	
	Joint Sealing	A-	A-	A		Tree Removal	F	F	F	
	Punchouts	C+	D+	C+		ALDOT Fence	D+	C+	D+	
	Pumping	A+	A+	A+		Litter Control	C	C	C-	
Paved Shoulders	Potholes	A+	A+	A+		Traffic Services	Pavement Markings & Legends	C	C	C+
	Edge Raveling	B	B	C+			Pavement Striping	C-	C-	C+
	Sweeping	D+	C	B+	Raised Pavement Markers		C-	D	D	
Unpaved Shoulders	Drop Off	C-	C-	D+	Delineators		C+	B-	C+	
	High Shoulder	C-	C-	C-	Object Markers		D	D-	F	
Drainage	Side Drains	F	F	F	Signals		A-	C+	C	
	Cross Drains	C	F	F	Signs - Regulatory and Warning		B+	B+	B	
	Unpaved Ditches	B	B	B	Signs - Other		A	A-	B+	
	Paved Ditches	D+	D-	F	Guardrail		C+	B-	C-	
	Drop Inlets	D	F	F	Cablerail		C	D+	C	
	Curb & Gutter	D	D	D	Impact Attenuators		B+	B	F	
					Barrier Walls		B+	B+	B	
				Highway Lighting	A+		A+	A+		

2014 Pavement Inventory

NHS Status	Centerline Miles	Percent of Total
Interstates	999	9.19%
Non-Interstate NHS	3,169	29.15%
Non-NHS	6,706	61.66%
Total	10,874	100.00%

Condition of Lane Miles by Type

	Good <i>PCR >= 70</i>	Fair <i>70 > PCR > 55</i>	Marginal <i>PCR <= 55</i>					Total
Route Type	Lane Miles	Percent of Type	Lane Miles	Percent of Type	Lane Miles	Percent of Type	Lane Miles	
Interstate	2,811.7	74.1%	627.7	16.5%	354.0	9.3%	3,793.4	
Non-Interstate NHS	7,014.0	68.5%	1,963.4	19.2%	1,265.1	12.4%	10,242.5	
Non-NHS	8,558.0	59.5%	2,367.3	16.4%	3,466.8	24.1%	14,392.1	
Asphalt Total	18,383.7	64.7%	4,958.4	17.4%	5,085.9	17.9%	28,428.0	

Pavement Target Levels

Road	Good	Fair	Marginal
Interstate	70%	20%	10%
Non-Interstate NHS	70%	20%	10%
Non-NHS	60%	25%	15%

FY 2016 ALDOT Pavement Preservation Program

Reg/Area	Federal-Aid Pavement Preservation (FA)			State-Funded Pavement Preservation (MC)				Total Pavement Preservation Program		
	Budget	Contract or Authorized	Available	Budget	Overruns	Contract or Authorized	Available	Budget	Contract or Authorized	Available
Reg 3 Area 1	\$ 30,190,382	\$ 27,773,529	\$ 2,416,853	\$ 250,000	\$ 159,317	\$ 409,317	\$ (159,317)	\$ 30,440,382	\$ 28,182,846	\$ 2,257,536
Reg 3 Area 2	\$ 21,235,438	\$ 21,061,025	\$ 174,414	\$ 350,000	\$ 69,440	\$ 419,440	\$ (69,440)	\$ 21,585,438	\$ 21,480,465	\$ 104,973
Reg 2 Area 3	\$ 18,784,014	\$ 18,096,908	\$ 687,106	\$ 250,000	\$ 326,574	\$ 576,574	\$ (326,574)	\$ 19,034,014	\$ 18,673,483	\$ 360,532
Reg 2 Area 4	\$ 22,090,332	\$ 22,175,562	\$ (85,230)	\$ 600,000	\$ 168,407	\$ 768,407	\$ (168,407)	\$ 22,690,332	\$ 22,943,969	\$ (253,637)
Reg 4 Area 5	\$ 23,583,418	\$ 23,476,487	\$ 106,932	\$ 400,000	\$ 291,587	\$ 691,587	\$ (291,587)	\$ 23,983,418	\$ 24,168,073	\$ (184,655)
Reg 1 Area 6	\$ 27,551,786	\$ 27,474,765	\$ 77,021	\$ 250,000	\$ 10,464	\$ 260,464	\$ (10,464)	\$ 27,801,786	\$ 27,735,228	\$ 66,557
Reg 1 Area 7	\$ 35,345,295	\$ 38,141,220	\$ (2,795,925)	\$ 450,000	\$ 176,382	\$ 626,382	\$ (176,382)	\$ 35,795,295	\$ 38,767,602	\$ (2,972,307)
Reg 5 Area 8	\$ 20,915,141	\$ 19,679,084	\$ 1,236,056	\$ 300,000	\$ 52,183	\$ 352,183	\$ (52,183)	\$ 21,215,141	\$ 20,031,267	\$ 1,183,874
Reg 5 Area 9	\$ 18,382,153	\$ 15,439,869	\$ 2,942,284	\$ 1,000,000	\$ 218,989	\$ 1,218,989	\$ (218,989)	\$ 19,382,153	\$ 16,658,858	\$ 2,723,295
Reg 4 Area 10	\$ 21,672,041	\$ 21,988,384	\$ (316,343)	\$ 400,000	\$ -	\$ 400,000	\$ -	\$ 22,072,041	\$ 22,388,384	\$ (316,343)
Total	\$ 239,750,000	\$ 235,306,831	\$ 4,443,169	\$ 4,250,000	\$ 1,473,343	\$ 5,723,343	\$ (1,473,343)	\$ 244,000,000	\$ 241,030,174	\$ 2,969,826

Percentages (compared to funding category)

100.0%	98.1%	1.9%	100.0%	34.7%	134.7%	-34.7%	100.0%	98.8%	1.2%
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Percentages (compared to total program)

98.3%	96.4%	1.8%	1.7%	0.6%	2.3%	-0.6%	100.0%	98.8%	1.2%
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FY 2016 Pavement Preservation Program - Southeast Region Montgomery Area

Note - Shaded Areas are for Input

Sheet Updated: 9/19/2016
 E&I Rate: 0.00% 10%: applies to FM and 99
 Indirect Cost Rate: 0.00% 13.63%: applies to FM only

	Budget	Under Contract	Difference
FM Budget	\$ 27,551,785.78	\$ 27,474,764.76	\$ 77,021.02
99 Budget	\$250,000	\$ 260,463.60	\$ (10,463.60)
Total Budget	\$ 27,801,785.78	\$ 27,735,228.36	\$ 66,557.42

D=Del	Priority	County	Project Number	CPMS #	Funding Source	Additive Rate	"Original" Resurfacing Estimate on Program/CPMS	Resurfacing Estimate on Plans when Submitted	Date Submitted to OE	OE Updated Estimate Amount	Estimated Applicable Letting Amount	Contractor Bid (As-read/As-bid)	Date Let	Authorized OR Final Contract Amount (reported by OE)	Best Available Cost including E&I and Indirect as Applicable	Balance
		PE	99-306-690-000-601	100064671	99	1.00	\$250,000								\$ 250,000	\$27,551,786
		Total Overruns as of date shown				99	1.00	10,463.60					11/9/15		\$ 10,464	\$27,541,322
*	1	Montgomery	NH-HSIP 0006(556)	100060876	FM	1.00	4,192,023.46			3,155,105.61	3,943,661.15	2,979,606.58	12/4/15	\$ 3,277,383.69	\$ 3,277,384	\$24,263,938
	8	Montgomery	STPAA-HSIP 0126(500)	100061514	FM	1.00	\$1,764,302	2,130,576.83	10/9/2015	2,144,602.72	2,680,603.27	1,634,186.50	12/4/15	\$ 1,879,209.23	\$ 1,879,209	\$22,384,729
	9	Montgomery	STPAA-HSIP 0293(500)	100061515	FM	1.00	\$565,693	605,227.65	10/9/2015	599,024.93	748,739.23	475,821.50	12/4/15	\$ 511,479.47	\$ 511,479	\$21,873,250
	4	Macon	STPAA-HSIP 0008(580)	100062484	FM	1.00	\$2,598,101	2,354,159.37	11/19/2015	2,364,773.59	2,955,801.46	2,241,186.92	1/29/16	\$ 2,325,101.22	\$ 2,325,101	\$19,548,149
	2	Dallas	NH 0005(545)	100064449	FM	1.00	\$2,141,775	2,020,076.42	12/30/2016	1,761,142.00	2,201,304.22	1,934,671.25	2/26/16	\$ 2,418,203.64	\$ 2,418,204	\$17,129,945
	6	Butler	STPAA-HSIP 0003(596)	100065058	FM	1.00	\$3,571,469			2,109,551.68	2,636,791.93	2,656,414.66	3/25/16	\$ 2,722,672.55	\$ 2,722,673	\$14,407,272
	7	Lowndes	STPAA-HSIP 0097(505)	100060033	FM	1.00	\$2,449,343			3,601,978.94	4,502,221.53	3,500,504.92	3/25/16	\$ 3,762,832.06	\$ 3,762,832	\$10,644,440
	5	Russell	STPAA 0169(502)	100064755	FM	1.00	\$2,391,171	2,644,273.06	3/4/2016	1,876,422.04	2,345,396.20	1,889,150.65	4/29/16	\$ 1,983,497.10	\$ 1,983,497	\$8,660,943
	10	Elmore	STPAA-HSIP 0111(501)	100056610	FM	1.00	\$1,201,971	1,349,941.67	3/4/2016	956,023.74	1,194,962.75	998,948.31	4/29/16	\$ 1,048,836.99	\$ 1,048,837	\$7,612,106
	3	Lee	STPAA-HSIP 0051(513)	100063148	FM	1.00	\$2,634,350	4,654,786.90	4/1/2016	3,513,335.41	4,391,423.32	4,441,920.90	5/27/16	\$ 4,663,755.76	\$ 4,663,756	\$2,948,350
	11	Lee	STPAA 0169(503)	100065756	FM	1.00	\$1,000,000			1,025,400.00	1,281,678.22	1,085,332.80	8/26/16	\$ 1,356,590.03	\$ 1,356,590	\$1,591,760
	12	Dallas	NH 0008(571)	100060034	FM	1.00	\$1,143,222	1,092,143.59	6/10/2016	898,355.00	1,122,880.87	1,220,230.75	8/26/16	\$ 1,525,203.02	\$ 1,525,203	\$66,557
		<i>Funding to Troy Area for 100065745</i>					1.00	550,000.00						\$ 550,000.00	\$ 550,000	(\$483,443)
						1.00									\$ -	(\$483,443)
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*** STPAA 0185(502) is shown as deleted in CPMS.
 *** STPAA-HSIP 0094(501) moved to June due to funding
 *** STPAA 0041(516) is shown as deleted in CPMS.

Resurfacing Program Yearly Amounts

	Budgeted	Budgeted	Budgeted	Budgeted	Budgeted	Budgeted	Budgeted	Budgeted	Budgeted	Budgeted	Budgeted	Budgeted
Fiscal Year	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Resurfacing Budget	\$ 101,418,692	\$ 99,492,011	\$ 107,268,031	\$ 158,000,000	\$ 179,366,587	\$ 200,000,000	\$ 230,000,000	\$ 230,000,000	\$ 230,000,000	\$ 230,000,000	\$ 230,000,000	\$ 235,000,000
ARRA Budget							\$ 144,000,000	\$ 81,000,000				
Resurf \$/mile	\$ 190,996	\$ 180,895	\$ 160,581	\$ 215,259	\$ 286,071	\$ 301,659	\$ 278,067	\$ 374,248	\$ 369,181	\$336,257	\$ 347,958	\$347,432
Miles Resurfaced	531	550	668	734	627	663	697	631	623	684	661	662
ARRA Miles Resurfaced							648	200				

Did You Know?

Pavement Preservation Comparisons

	Pavement Preservation Type			
	Thin Lift	Micro-Surface	Scrub Seal	Chip Seal
Corrects Surface Distress	X	X	X	X
Increase Skid Resistance	X	X	X	X
Minimizes Curb Loss	X	X	X	X
Can Be Applied In One Pass	X	X	X	X
Eliminates Loose Aggragate	X	X		
Corrects Minor Rutting	X			
Minimizes Delamination	X			
Improves Ride Quality	X			
Increases Structural Strength	X			
Improves Pavement Drainage	X			

DID You Know?

Performance Life Estimates

- ▶ Thin Lift HMA = 10 Years
- ▶ Scrub Seal And Micro-Surfacing = 6 Years
- ▶ Scrub Seal = 5 Years
- ▶ High Performance Chip Seal = 5 Years
- ▶ Micro-Surfacing = 4 Years

NOTE: Performance Life Definition “Length Of Time Pavement Treatment Lasts Before Exhibiting Distresses Generally Equivalent To Condition of Original Pavement.”

Sources: ALDOT, CDOT, MDOT, MNDOT, ODOT, NCPP, and NCAT

Thinking Smarter Extending Pavement Life

- ▶ Is “**Worst First**” the best thing to do?
- ▶ Educate ourselves to the preventative maintenance processes available to us to extend our pavement life.
- ▶ Evaluate pavement regularly to determine when to apply preventative applications.
- ▶ Have a good pavement management program in place.
- ▶ Perform routine pavement maintenance in a timely manner.
- ▶ Select the proper preventative application for the roadway condition.

ALDOT Evaluation of SE Region Pavement Preservation Program

Based on Remaining Service Life (RSL) Method Area: **Montgomery** Program Year: **FY2016**

Lane Miles in Southeast Region, Montgomery Area

Road Class	D61	D62	D63	D64	D65	D66	Area Total
INT	97	115	196	213	0	88	709
NHS	174	26	365	84	213	423	1285
OSH	392	456	194	433	250	254	1979
District Tot	663	597	755	730	463	765	3973

Treatment Information

Num	Category	Description	Expected Life Extension (Years)		
			Low	High	Used
0	--	--	0	0	0
1	PM1	Crack Seal	3	5	4
2	PM1	Cape Seal	4	6	5
3	PM1	High Perf Chip Seals	5	7	6
4	PM1	OGFC/PLST	8	10	9
5	PM2	Mill WS, Replace	10	12	11
6	MR	Mill WS/BL, Replace	14	16	15

FY2016 Pavement Preservation Results (Lane Mile Years)

Summary of Projects Listed on "AreaProjList" Tab

Road Class	D61	D62	D63	D64	D65	D66	Area Total
INT	-	631	247	449	-	376	1,702
NHS	-	215	216	-	518	-	949
OSH	121	-	397	510	-	849	1,878
Totals	121	845	860	959	518	1,226	4,530

Treatment	D61	D62	D63	D64	D65	D66	Area Total
1 PM1 Crack Seal	-	-	-	-	-	-	-
2 PM1 Cape Seal	-	-	-	-	-	-	-
3 PM1 High Perf Chip Seals	-	-	-	-	-	-	-
4 PM1 OGFC/PLST	-	-	-	-	-	-	-
5 PM2 Mill WS, Replace	121	845	247	449	227	810	2,699
6 MR Mill WS/BL, Replace	-	-	613	510	291	416	1,831
Totals:	121	845	860	959	518	1,226	4,530

Change in Age of Network (Lane Mile Years)

(Negative Values) = Net Decrease in Network Age. Desirable outcome.

Positive Values = Net Increase in Network Age. Undesirable outcome.

Road Class	D61	D62	D63	D64	D65	D66	Area Total
INT	97	(516)	(51)	(236)	-	(288)	(993)
NHS	174	(189)	149	84	(305)	423	336
OSH	271	456	(203)	(77)	250	(595)	101
Totals	542	(248)	(105)	(229)	(55)	(461)	(557)

Color Keys: Input Desirable Undesirable

List of SE Region Pavement Preservation Projects

Area: **Montgomery** Program Year: **FY2016**

= Input Field Project Count: 18 Total of Project Lane Miles: 367.42 Total LnMiYrs: 4529.772

Treatment

District	Project Num	Road Class	Route	Num	Category	Description	Lane Miles	Life Extension (Years)	Lane*Mile* Years
D63	100060876	NHS	US-82	6	MR	Mill WS/BL, Replace	14.418	15	216.27
D63	100061514	OSH	AL-126	6	MR	Mill WS/BL, Replace	21.48	15	322.2
D63	100061515	OSH	AL-293	6	MR	Mill WS/BL, Replace	5	15	75
D65	100064449	NHS	AL-5	5	PM2	Mill WS, Replace	20.656	11	227.216
D66	100063148	OSH	AL-51	6	MR	Mill WS/BL, Replace	27.72	15	415.8
D62	100062484	NHS	US-80	5	PM2	Mill WS, Replace	19.52	11	214.72
D64	100065058	OSH	US-31	6	MR	Mill WS/BL, Replace	16.7	15	250.5
D64	100060033	OSH	AL-97	6	MR	Mill WS/BL, Replace	17.32	15	259.8
D61	100056610	OSH	AL-111	5	PM2	Mill WS, Replace	11.044	11	121.484
D65	100060034	NHS	US-80	6	MR	Mill WS/BL, Replace	19.4	15	291
D66	100061937	INT	I-85	5	PM2	Mill WS, Replace	34.204	11	376.244
D64	100055204	INT	I-65	5	PM2	Mill WS, Replace	40.8	11	448.8
D63	100055200	INT	I-65	5	PM2	Mill WS, Replace	22.412	11	246.532
D62	100055210	INT	I-85	5	PM2	Mill WS, Replace	16.424	11	180.664
D62	100061805	INT	I-85	5	PM2	Mill WS, Replace	21.8	11	239.8
D62	100061806	INT	I-85	5	PM2	Mill WS, Replace	19.112	11	210.232
D66	100064755	OSH	AL-169	5	PM2	Mill WS, Replace	19.41	11	213.51
D66	100065756	OSH	AL-169	5	PM2	Mill WS, Replace	20	11	220
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Bridges

- ▶ As of October 25, 2016 there were 14,164 active structures over water in Alabama.
 - ▶ 7,885 Bridges
 - ▶ 6,279 Culverts

Bridge Priorities

- ▶ FY 2013
 - ▶ 19 Bridges
- ▶ FY 2014
 - ▶ 13 Bridges & 1 Major Rehab
- ▶ FY 2015
 - ▶ 7 Bridges & 2 Major Rehabs
- ▶ FY 2016
 - ▶ 14 Bridges

FHWA Proposed Performance Measures

	GOOD	FAIR	POOR
Bridges	37.1%	61.3%	1.6%
Deck Area	33.6%	64.4%	2.0%

2015 Bridge Condition Summary

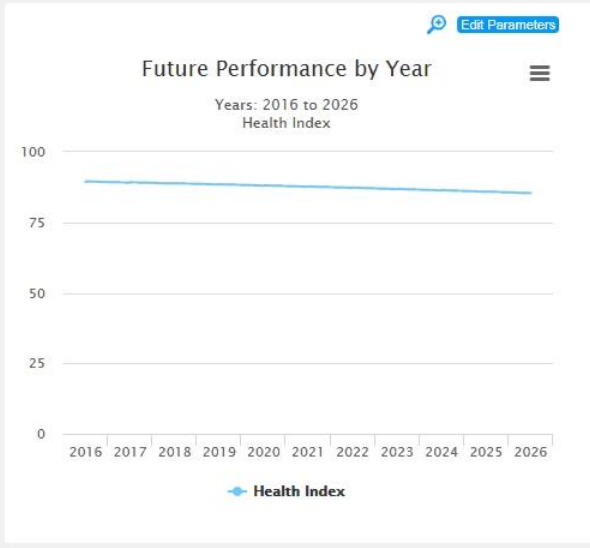
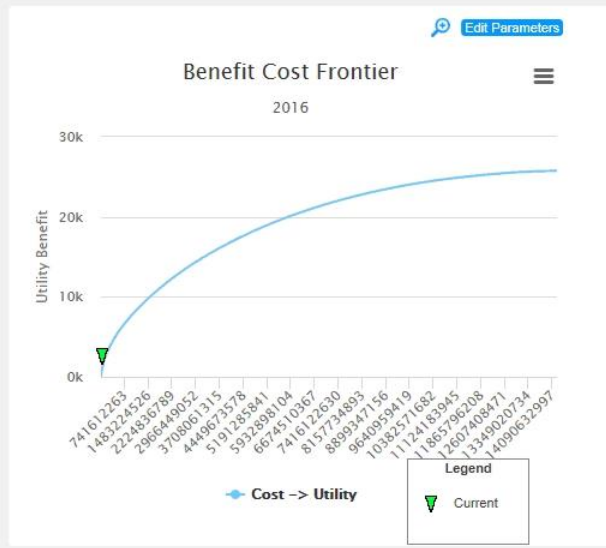
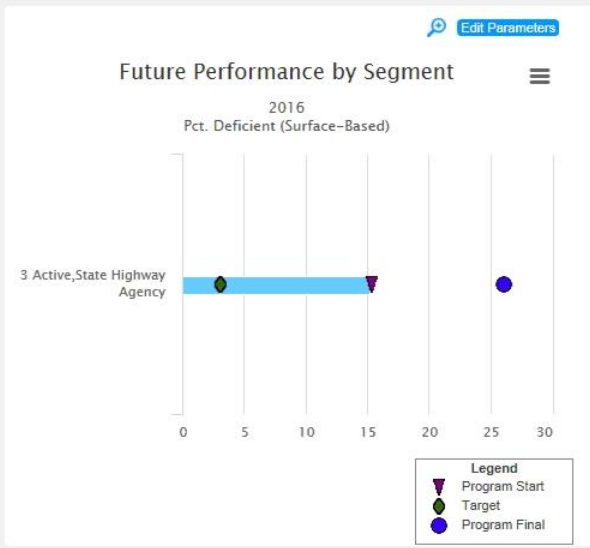
	Good		Fair		Poor	
	Deck Area (sq. ft.)	Percent	Deck Area (sq. ft.)	Percent	Deck Area (sq. ft.)	Percent
Bridges carrying interstate highways	7,051,529	20.3%	26,701,208	76.9%	947,435	2.7%
Bridges carrying other National Highway System roads - state-owned	10,840,597	44.1%	13,376,933	54.4%	360,551	1.5%
Bridges carrying other National Highway System roads - non-state-owned	344,238	57.2%	257,418	42.8%	0	0.0%
Bridges carrying non-NHS roads - state-owned	11,207,938	49.6%	11,030,512	48.9%	341,309	1.5%
Bridges carrying non-NHS roads - non-state-owned	16,483,446	55.7%	11,808,125	39.9%	1,309,804	4.4%
Total	45,927,748	41.0%	63,174,196	56.4%	2,959,099	2.6%
NHS Bridges	18,236,364	30.5%	40,335,559	67.4%	1,307,986	2.2%
State-Owned	29,100,064	35.5%	51,108,653	62.4%	1,649,295	2.0%

AASHTOWare Bridge Management 5.2.3

- ▶ Planned Release in Fall 2016
- ▶ Fully supporting the FHWA Rule Making
- ▶ Key Features
 - ▶ Capability to perform life cycle cost analysis
 - ▶ Deterioration Models for Replacement
 - ▶ Capability to perform network level analysis
 - ▶ Dashboards for easy data visualization and tracking performance measures

Program: Scenario: [Apply](#)

Programs > Program Results

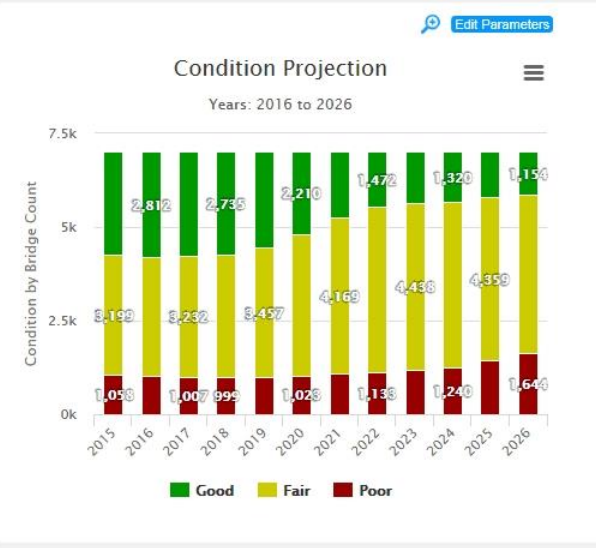
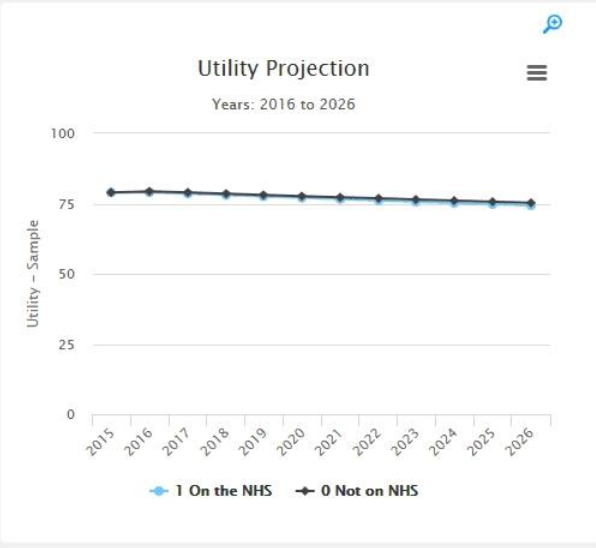
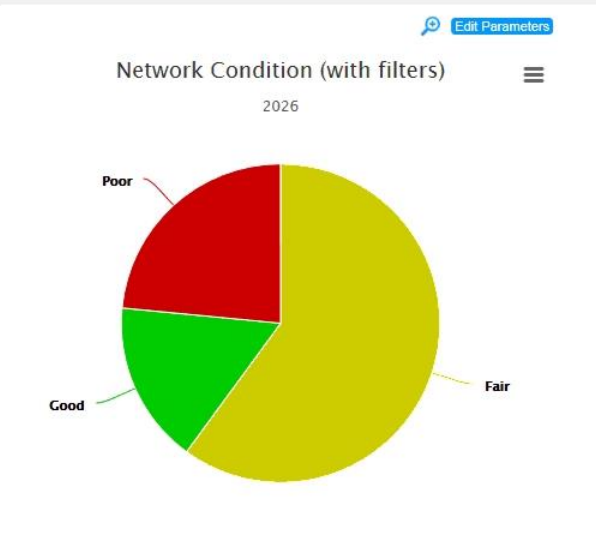
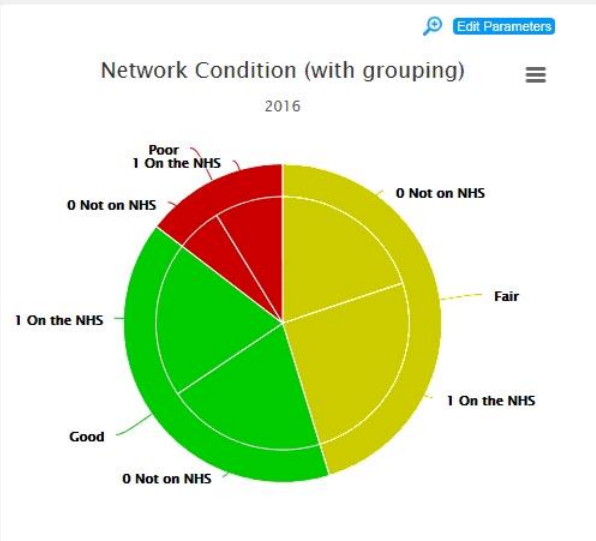


Last estimation for this program and scenario was done on 7/18/2016. Click to begin a new estimation [Begin Estimation](#)

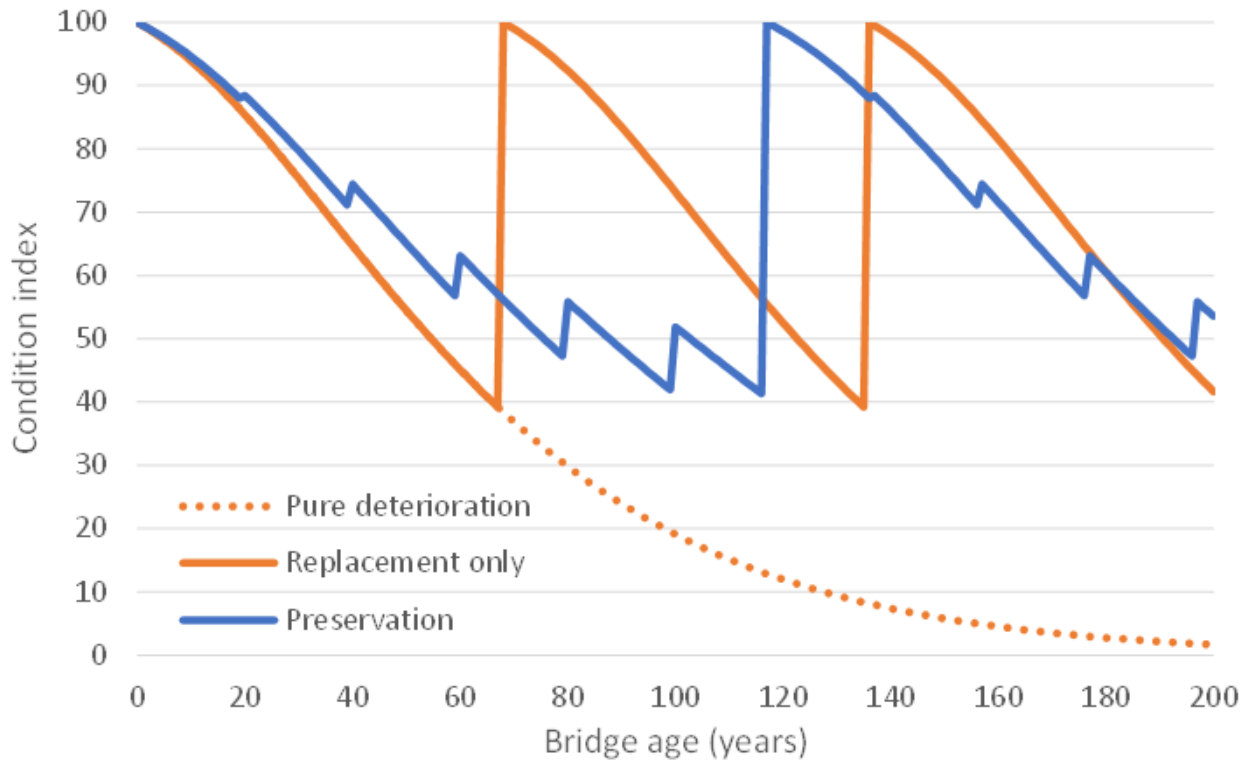


Programs > Executive Summary

- BRIDGES
- REPORTS
- ADMIN
- INSPECTION
- GATEWAY
- ANALYSIS
- PROJECTS
- PROGRAMS
 - PROGRAM LIST
 - CREATE/EDIT PROGRAMS
 - ASSIGN PROJECTS
 - PERFORMANCE MEASURES
 - FUNDING ALLOCATION
 - PROGRAM PLANNING
 - PROGRAM RESULTS
 - EXECUTIVE SUMMARY**
 - CREATE/EDIT SCENARIOS
 - SCENARIO EXPLORER



Typical Bridge Service Life

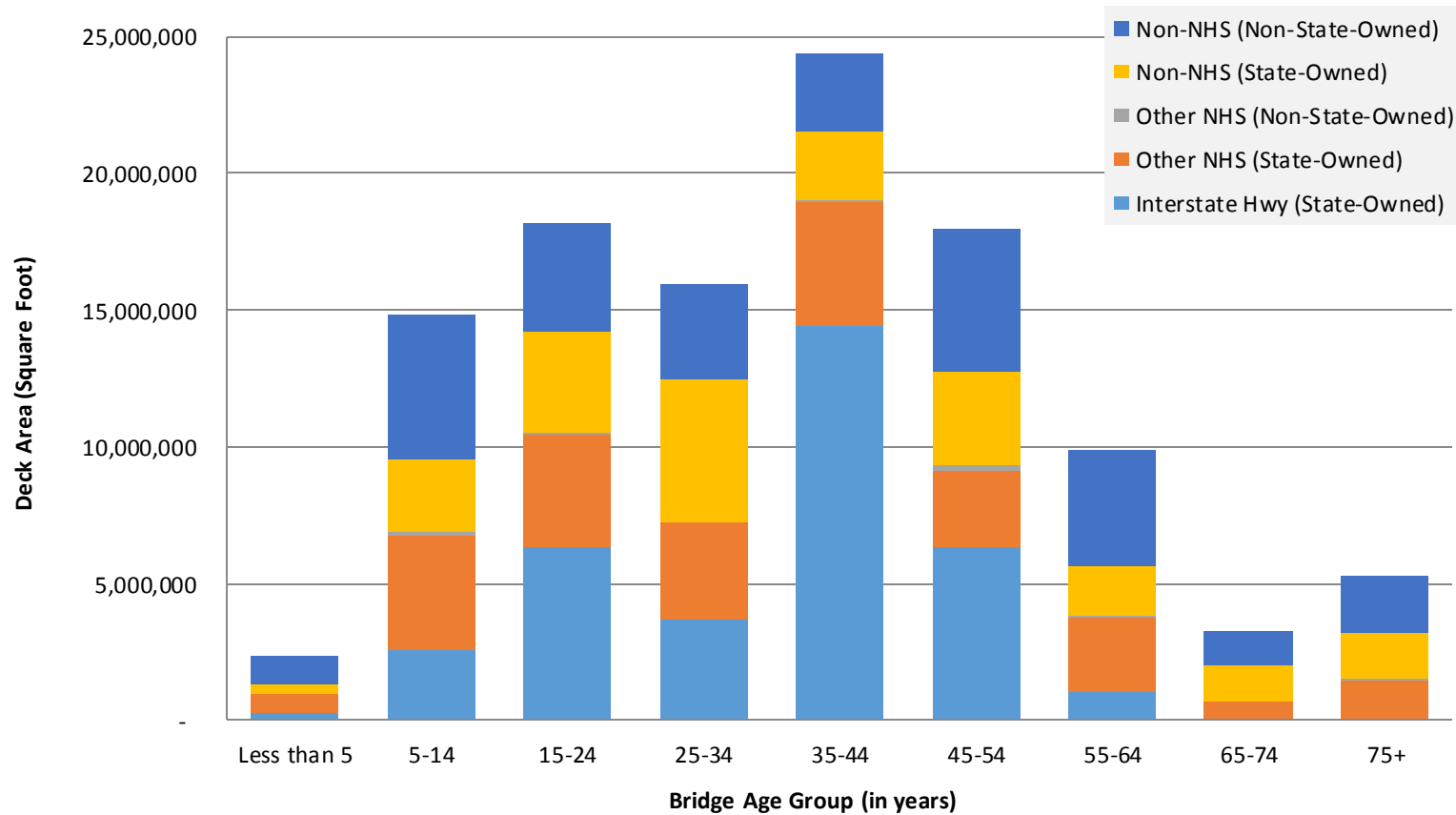


Bridge Issues

▶ Historical funding level is not sufficient

▶ Future funding uncertainty

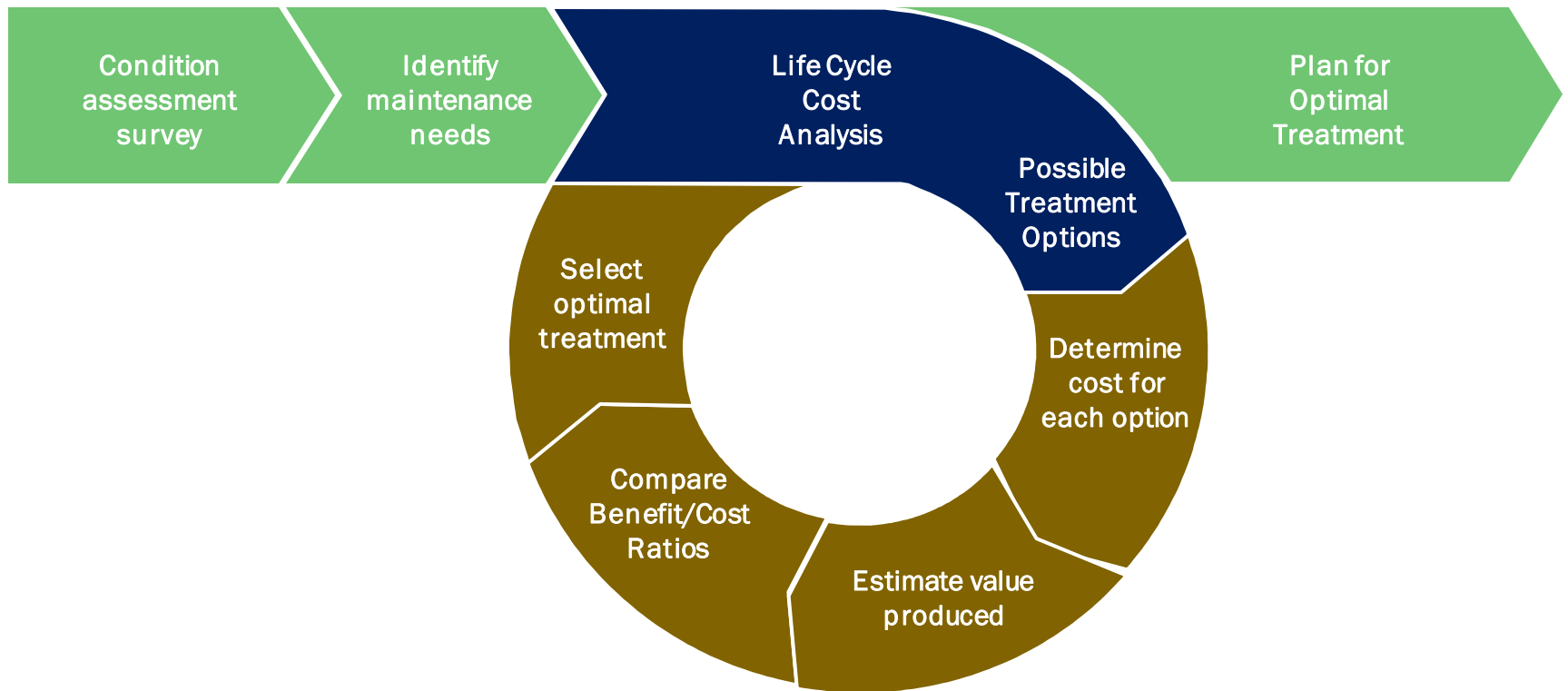
▶ Age



Average Bridge Age in Alabama

- ▶ The State owns 5751 bridges
- ▶ If we expect each bridge to last 100 years
- ▶ $5751/100 = 57.51$
- ▶ The State would need to replace 58 bridges per year to maintain a 100 year service life

What is TAM?



Federal Asset Management Direction

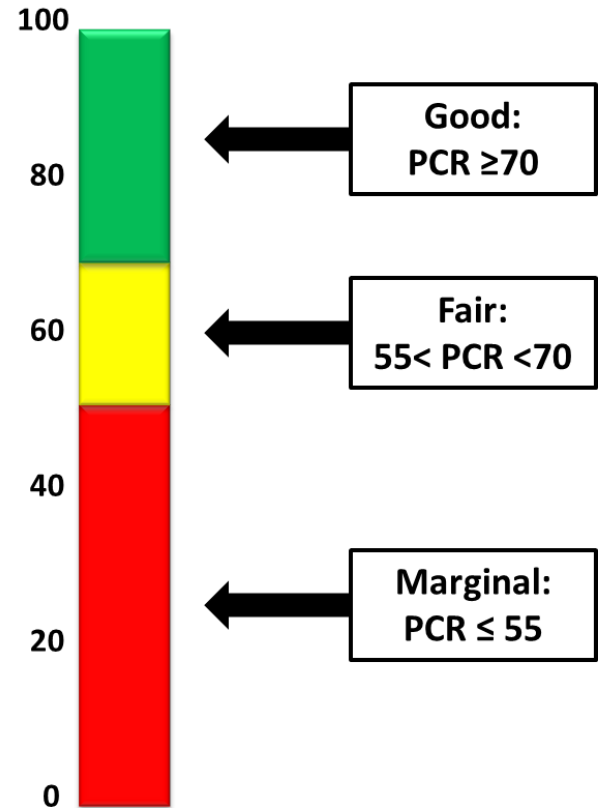
- ▶ AASHTO adopted TAM as a priority initiative in 1998
- ▶ Performance and risk-based TAM plan to be formalized on a nationwide basis
- ▶ Based on AASHTO Asset Management Guide, January 2011
- ▶ MAP-21 passed, July 2012

MAP-21 TAMP Requirements

- ▶ FHWA's required components for the TAMP include:
 - ▶ Summary list, including condition of pavements and bridges on the National Highway System (NHS)
 - ▶ Asset management objectives and measures
 - ▶ Performance gap identification
 - ▶ Life cycle cost and risk management analysis
 - ▶ Financial plan
 - ▶ Investment

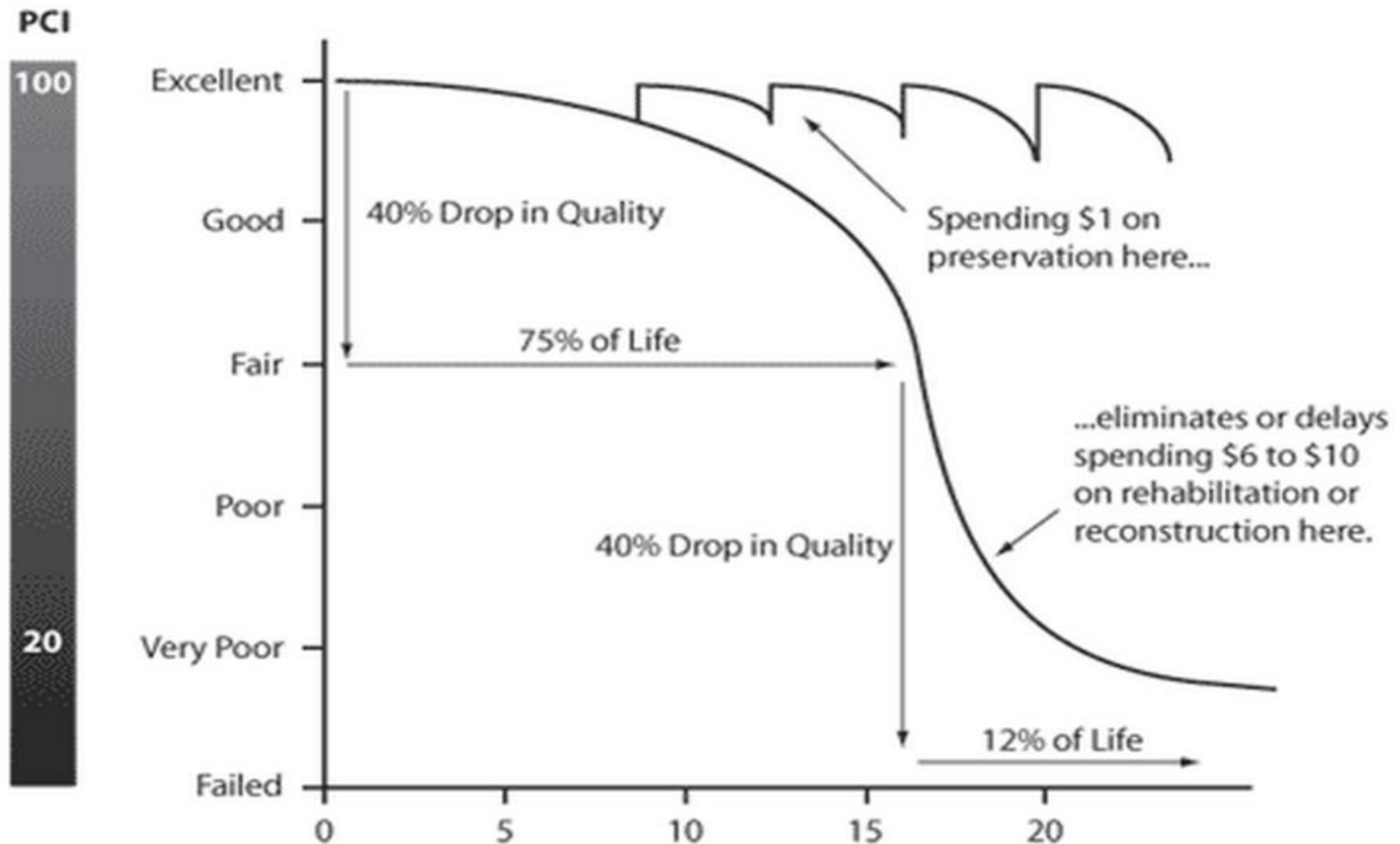
Target Levels

- ▶ Quantitative goal for asset categories
- ▶ Requirement by MAP-21
- ▶ TAMP performance measures should coincide with data
 - ▶ Bridges: Condition Rating (Good/Satisfactory/Fair/Poor)
 - ▶ Pavement: PCR Score



How Can TAM Help ALDOT?

Maximizing ROI - It's not about cost, it's about value



Investment Scenarios

- ▶ Determine possible LOS outcomes for asset categories (pavement and bridge) across various funding levels
- ▶ Scenarios
 - ▶ Funding remains level
 - ▶ Funding Increases
 - ▶ Achieve target performance levels
 - ▶ Maintain Current Performance Rating

Pavement Scenarios 2025

Scenarios		Interstate	Non-Int NHS	Non-NHS	Avg. Budget (\$M/year)	
Achieving Target Levels	Good	70.4%	69.5%	60.5%	\$ 151.8	Interstate
	Fair	20.7%	23.2%	24.7%	\$ 142.7	Non-Int NHS
	Marginal	8.9%	7.2%	14.8%	\$ 165.9	Non-NHS
Current Budget	Good	57.5%	69.2%	25.3%	\$ 140.7	Interstate
	Fair	33.4%	19.6%	50.9%	\$ 163.5	Non-Int NHS
	Marginal	9.1%	11.2%	23.9%	\$ 83.2	Non-NHS
Budget Increase 10%	Good	63.1%	70.8%	31.5%	\$ 154.5	Interstate
	Fair	26.9%	18.0%	52.5%	\$ 166.2	Non-Int NHS
	Marginal	10.1%	11.2%	15.9%	\$ 104.1	Non-NHS

10 Year Bridge Spending Projection

		Current Bridge Spending	Budget Increase 10%	Budget Increase 20%	Target 97% Good or Fair	Maintain Current % Good or Fair
% Deck Area in Good or Fair Condition	State - NHS	95.3	95.4	95.5	97.0	97.8
	State - Off NHS	96.8	96.9	97.0	97.0	98.5
	State - All	95.7	95.8	95.9	97.0	98.0
\$M/Yr Required	State - NHS	\$ 66	\$ 72	\$ 79	\$ 161	\$ 204
	State - Off NHS	\$ 25	\$ 27	\$ 30	\$ 29	\$ 67
	State - All	\$ 91	\$ 100	\$ 109	\$ 190	\$ 271

Results of Bridge Scenarios

