



Southeastern States Equipment Managers Conference
EMTSP

Improving Management Presentations

2016 National Conference

June 29, 2016

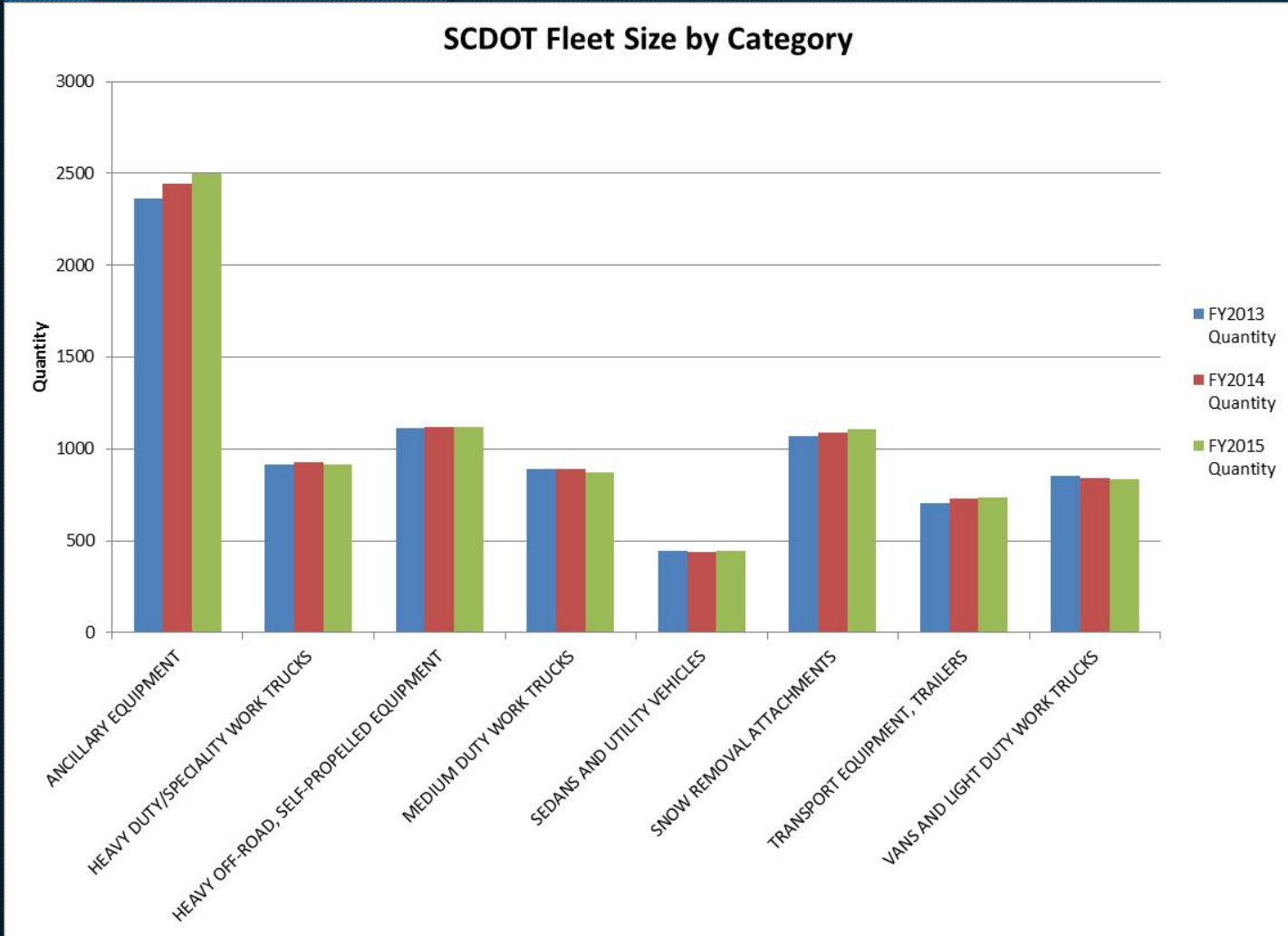
John F. White, PE
803 737 6675

Challenge

- ✓ **You have a story to tell. The message is clear.**
 - ✓ **Fleet Age is increasing**
 - ✓ **Repair Cost and Downtime is increasing**
 - ✓ **Replacement cost is increasing**
 - ✓ **Risk of vehicle/equipment breakdown is increasing**

- ✓ **Change does not happen. What went wrong? Why aren't they understanding?**
 - ✓ **Is it lack of priority?**
 - ✓ **What do they understand?**

Excerpt from Annual Fleet Operations Report



FY
2013
\$15M



FY
2014
\$17M



FY
2015
\$11M



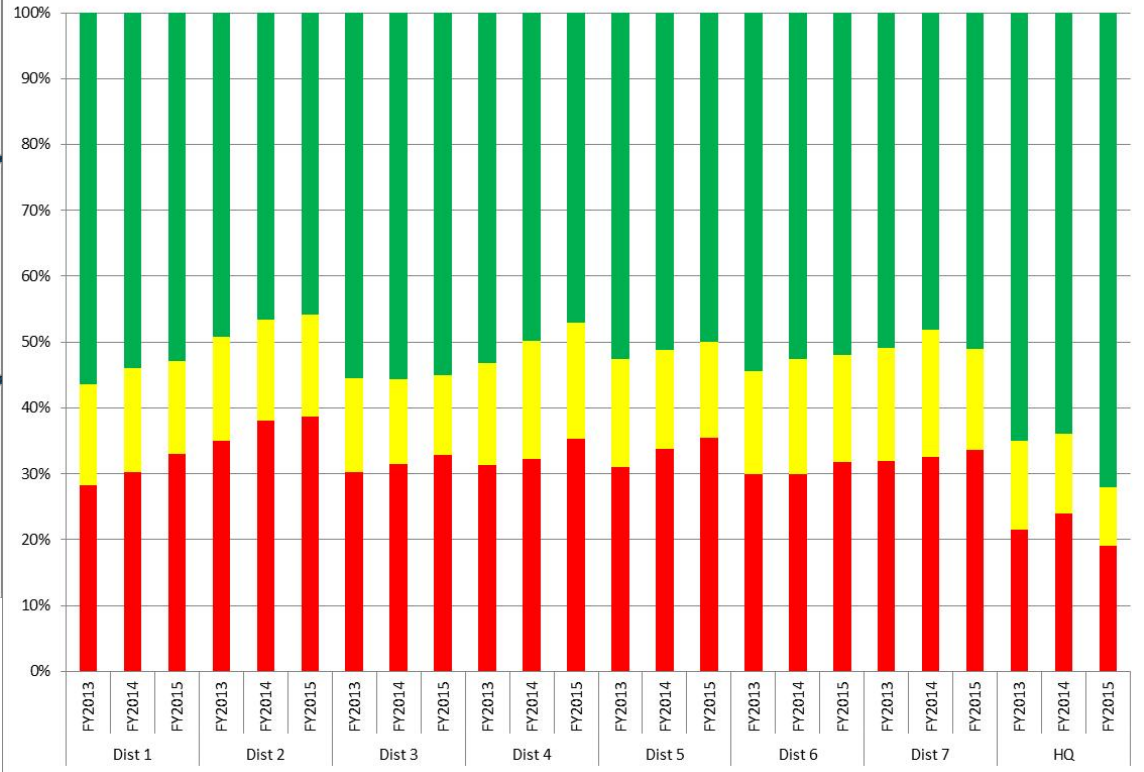
FY
2016
\$16M

TBD

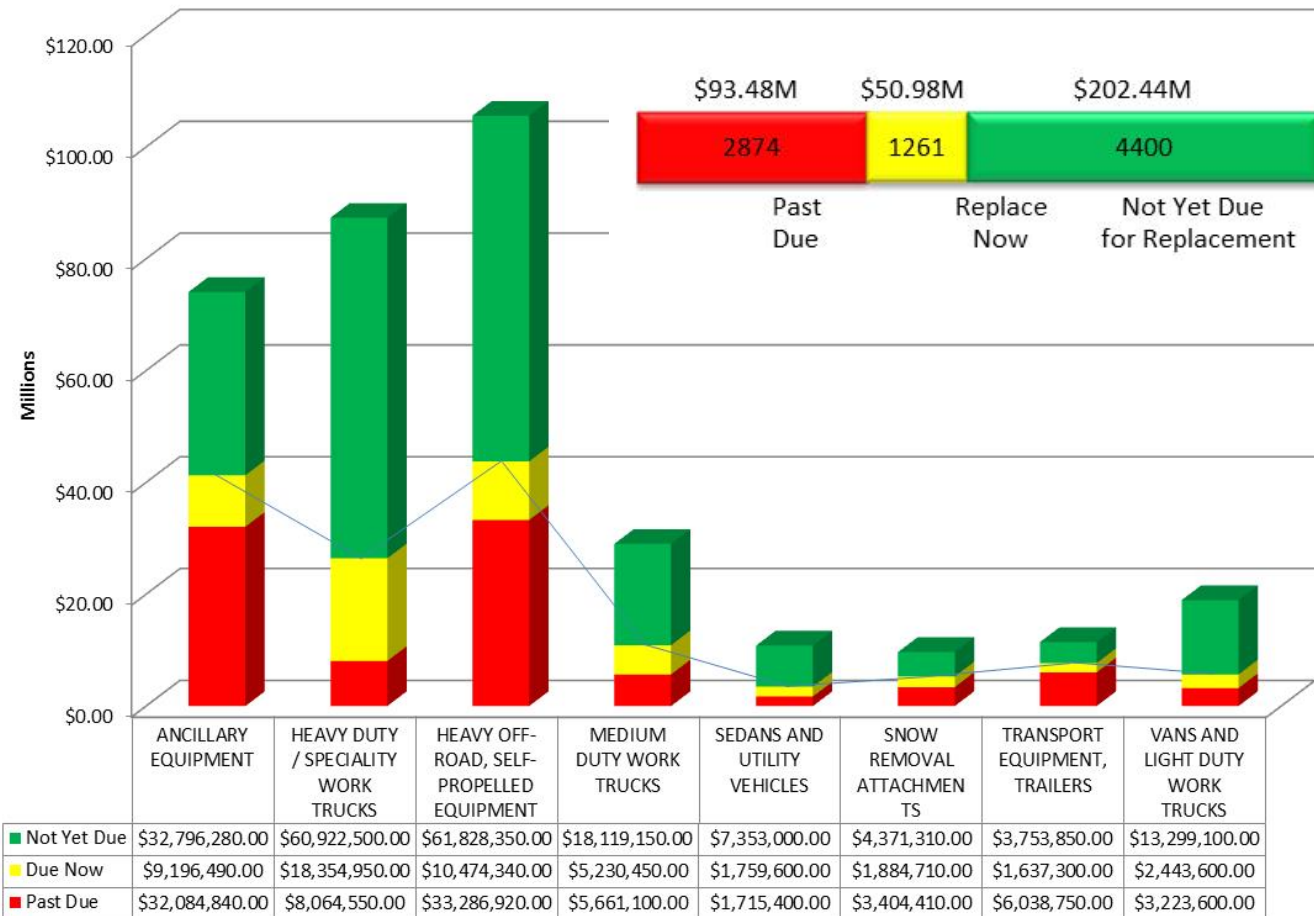
FY
2017
\$21M

TBD

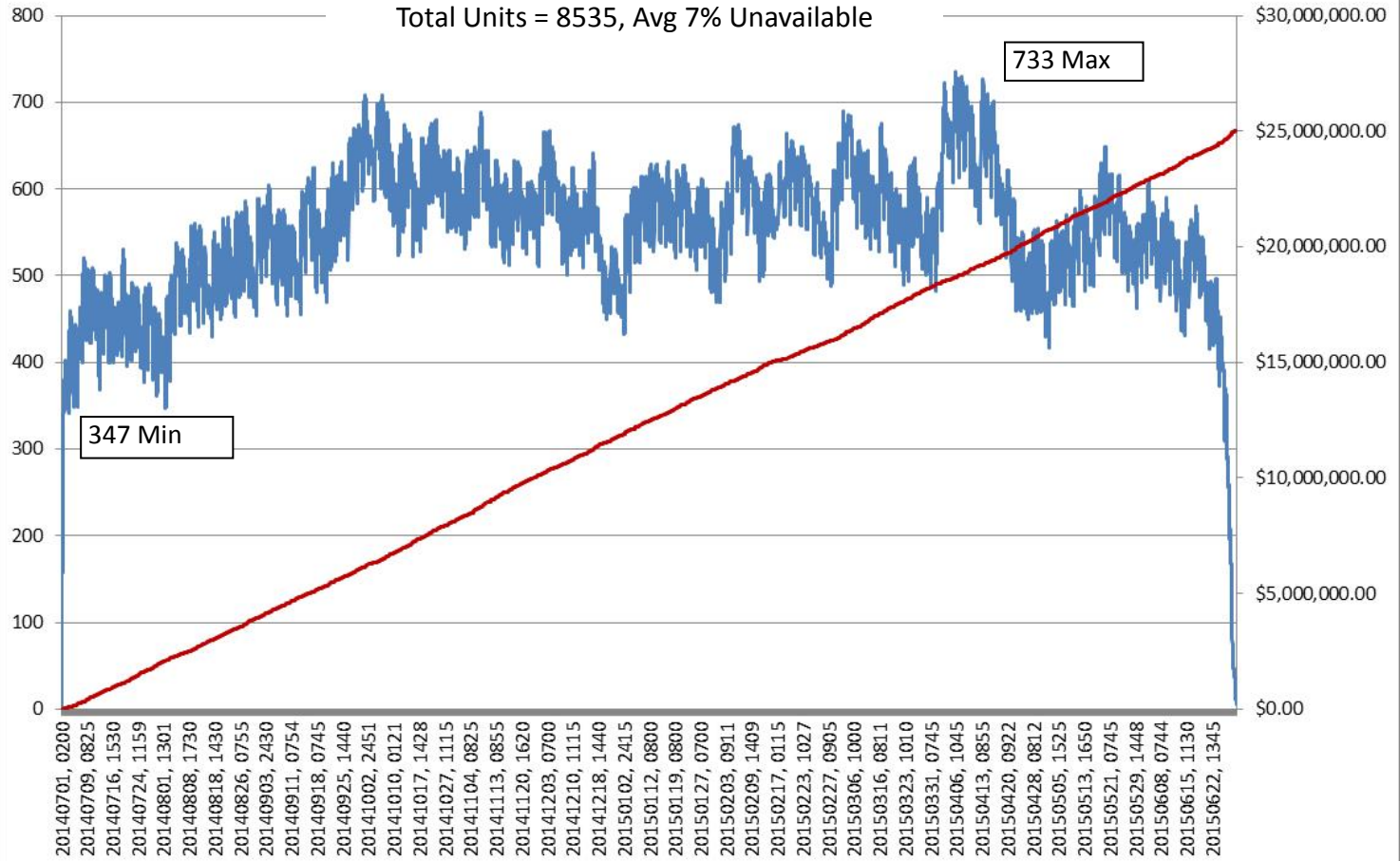
Fleet Aging By District - Quantity of Items



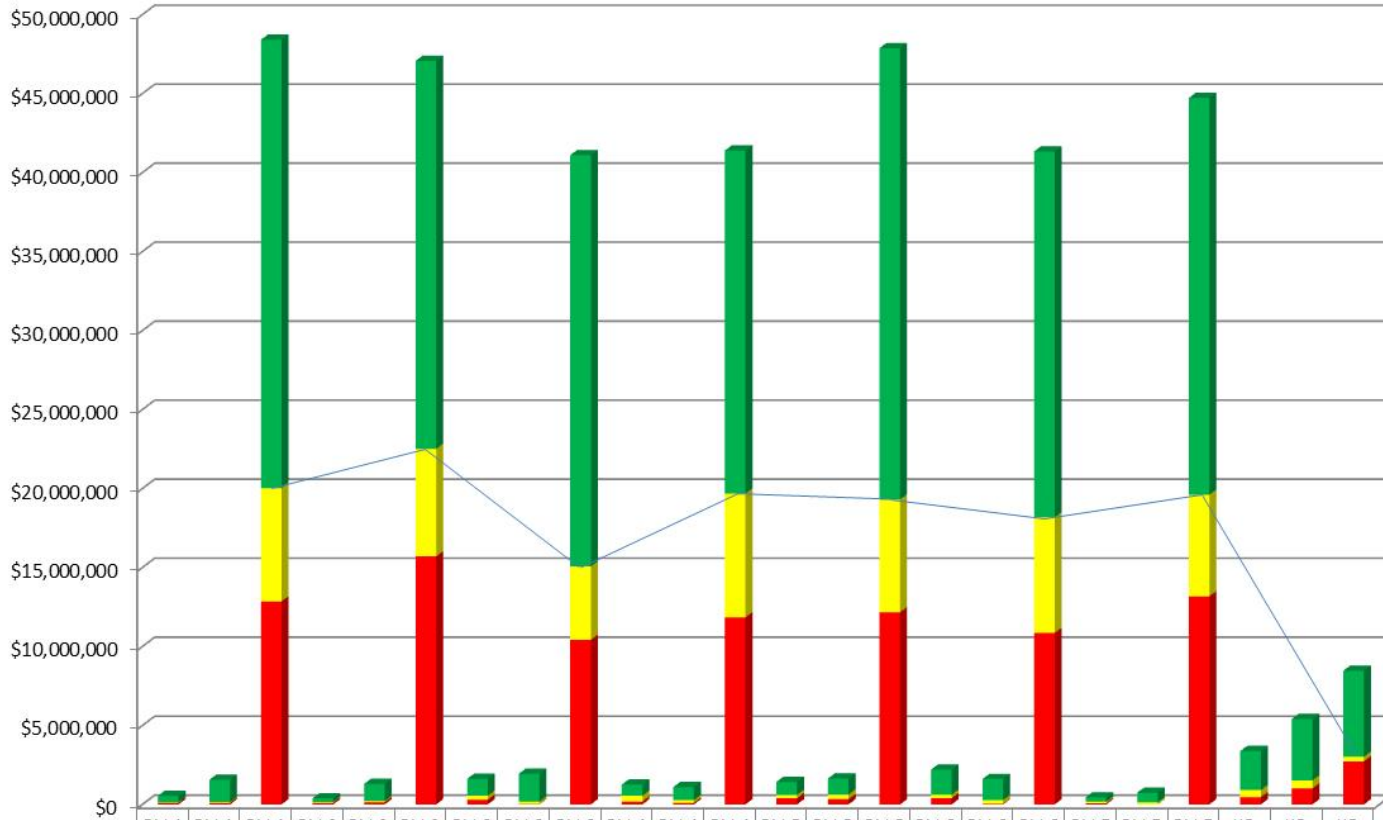
Replacement Needs by Category Type



Quantity All Items Down for Repair & Accumulated Maintenance Cost



Replacement Values Needed by District



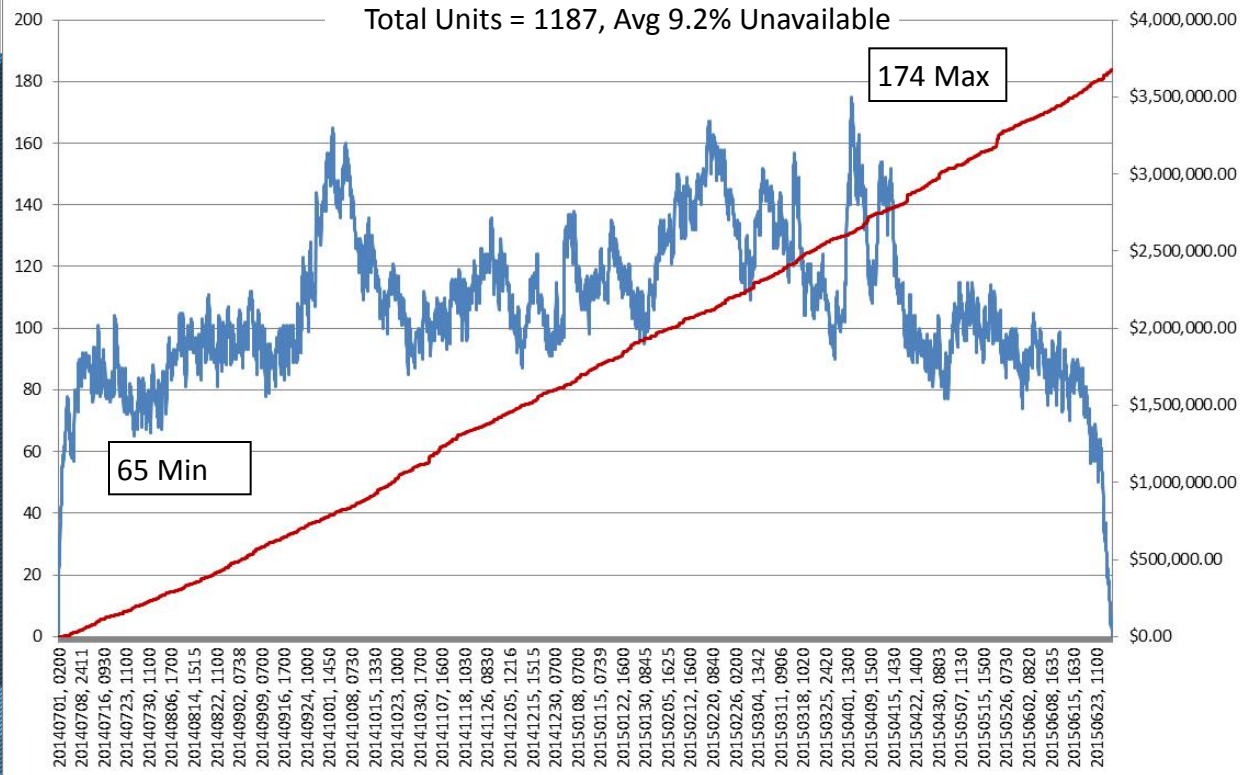
	Dist 1 A&E	Dist 1 Const	Dist 1 Maint	Dist 2 A&E	Dist 2 Const	Dist 2 Maint	Dist 3 A&E	Dist 3 Const	Dist 3 Maint	Dist 4 A&E	Dist 4 Const	Dist 4 Maint	Dist 5 A&E	Dist 5 Const	Dist 5 Maint	Dist 6 A&E	Dist 6 Const	Dist 6 Maint	Dist 7 A&E	Dist 7 Const	Dist 7 Maint	HQ A&E	HQ Const	HQ Maint
█	\$416,3	\$1,398	\$28,37	\$239,3	\$1,086	\$24,54	\$1,070	\$1,766	\$26,03	\$699,1	\$818,1	\$21,71	\$818,4	\$1,013	\$28,56	\$1,579	\$1,337	\$23,15	\$274,3	\$613,8	\$25,11	\$2,466	\$3,891	\$5,443
█	\$37,37	\$59,90	\$7,176	\$44,00	\$75,80	\$6,811	\$253,9	\$149,0	\$4,646	\$373,3	\$180,8	\$7,835	\$217,9	\$296,4	\$7,138	\$229,7	\$238,5	\$7,324	\$102,1	\$132,2	\$6,421	\$445,5	\$502,1	\$288,7
█	\$92,10	\$106,0	\$12,85	\$106,3	\$134,6	\$15,70	\$297,7	\$20,80	\$10,41	\$179,9	\$96,20	\$11,84	\$388,7	\$329,9	\$12,16	\$394,5	\$36,40	\$10,85	\$72,20	\$0	\$13,17	\$466,6	\$1,013	\$2,732

District 1

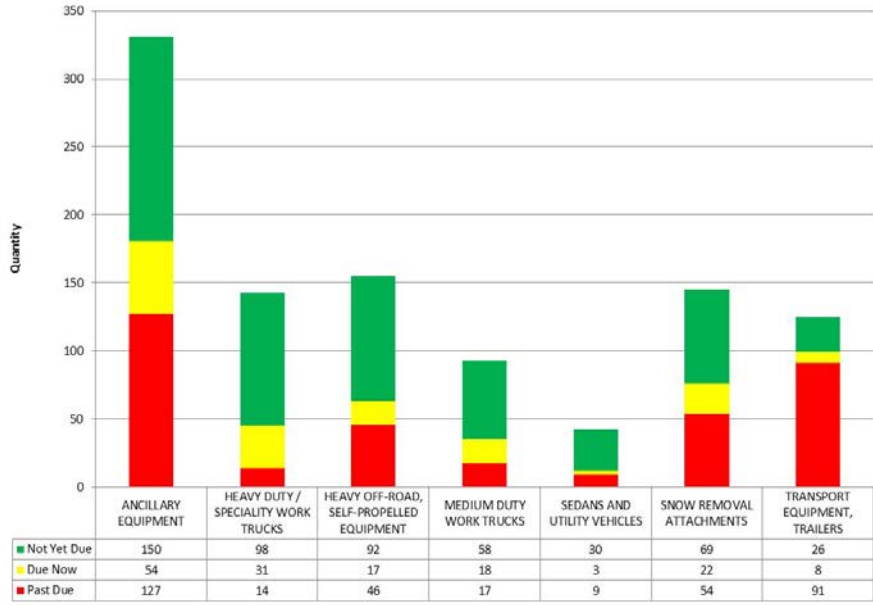
	Overdue for Replacement		Due for Replacement Now		Less Than Replacement Miles, Hours, or Age	
	Qty		Qty		Qty	
Dist 1 Admin & Engrg	4	\$92,100	1	\$37,370	18	\$416,300
Dist 1 Const	4	\$106,000	3	\$59,900	58	\$1,398,350
Dist 1 Maint	383	\$12,853,820	165	\$7,176,640	551	\$28,375,450
Total	391	\$13,051,920	169	\$7,273,910	627	\$30,190,100



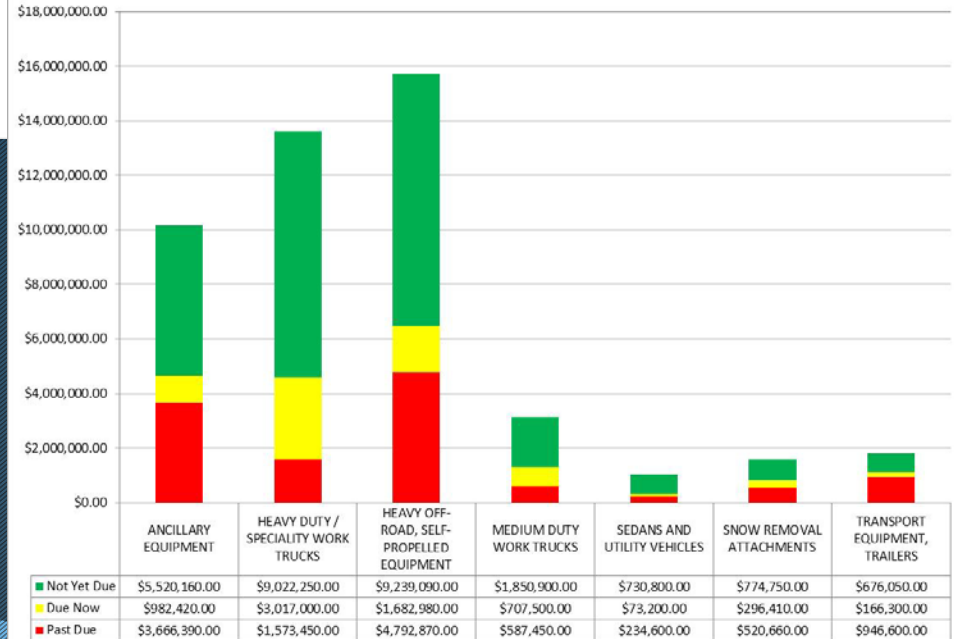
District 1 Items Down for Repair & Accumulated Maintenance Cost



District 1 Replacement Needs by Category Type



District 1 Replacement Needs by Category Type





Transportation Asset Management Plan

10 Year Performance Estimates

Commission Meeting

June 16, 2016

Overview

- ✓ **The Transportation Asset Management Plan (TAMP) is a performance and risk based decision making tool.**
- ✓ **The TAMP is designed to assist the agency in analyzing long-term system performance and condition and guide our investment decisions.**
- ✓ **SCDOT will embrace the TAMP for the entire state-maintained system, regardless of the funding source.**

Guiding Principles for Investment Strategies

- ✓ **Focus on Maintenance and Preservation of existing transportation system.**
- ✓ **Direct investments based on desired system performance.**
- ✓ **Use Percent Vehicle Miles Traveled (%VMT) to guide investment decisions.**
- ✓ **Consider priority networks that support economic competitiveness by enhancing the mobility of people and freight.**
- ✓ **Promote the most efficient use of resources to extend the life of pavements and bridges.**

How will the TAMP be used?

- ✓ **The TAMP is based on a 10-year horizon.**
- ✓ **Phase 1 is to establish fiscally constrained performance goals for pavements and bridges.**
- ✓ **Phase 2 will be to establish fiscally constrained performance goals for the remaining elements.**
- ✓ **The intent is to provide a roadmap for the agency to use to achieve our targeted 10-year performance goals.**
- ✓ **The TAMP will also serve as a resource for deployment of new funding, regardless of the source.**

**New
2015
Data!**

**Existing Asset
Conditions:
Pavements**

SC NHS SYSTEM



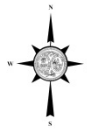
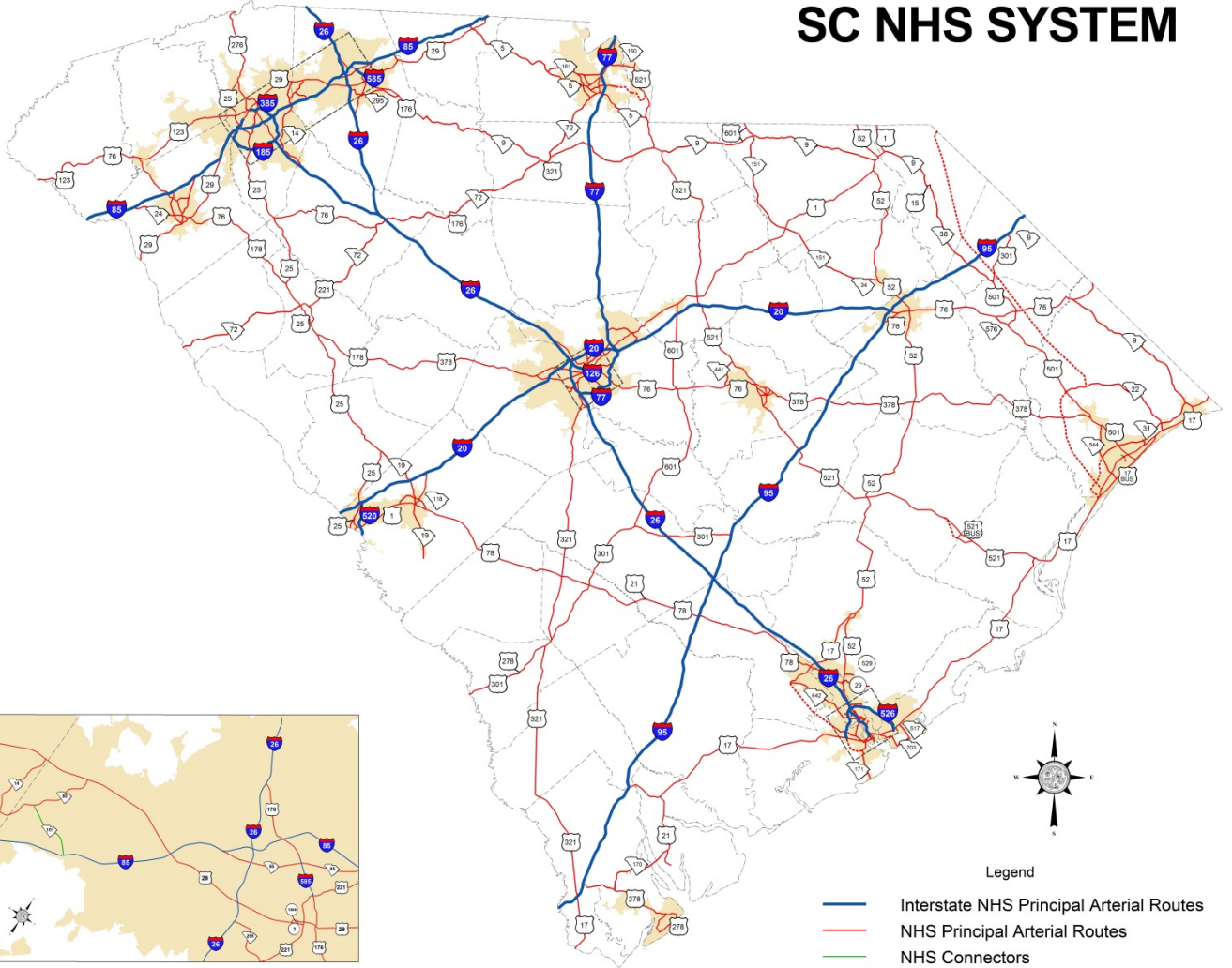
COLUMBIA



CHARLESTON



GREENVILLE - SPARTANBURG



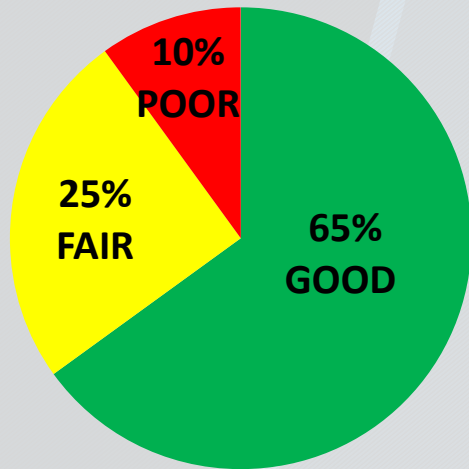
Legend

- Interstate NHS Principal Arterial Routes
- NHS Principal Arterial Routes
- NHS Connectors

National Highway System

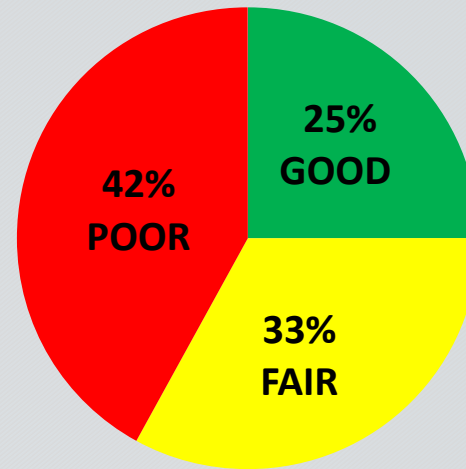
2015 Pavement Conditions

Interstate System



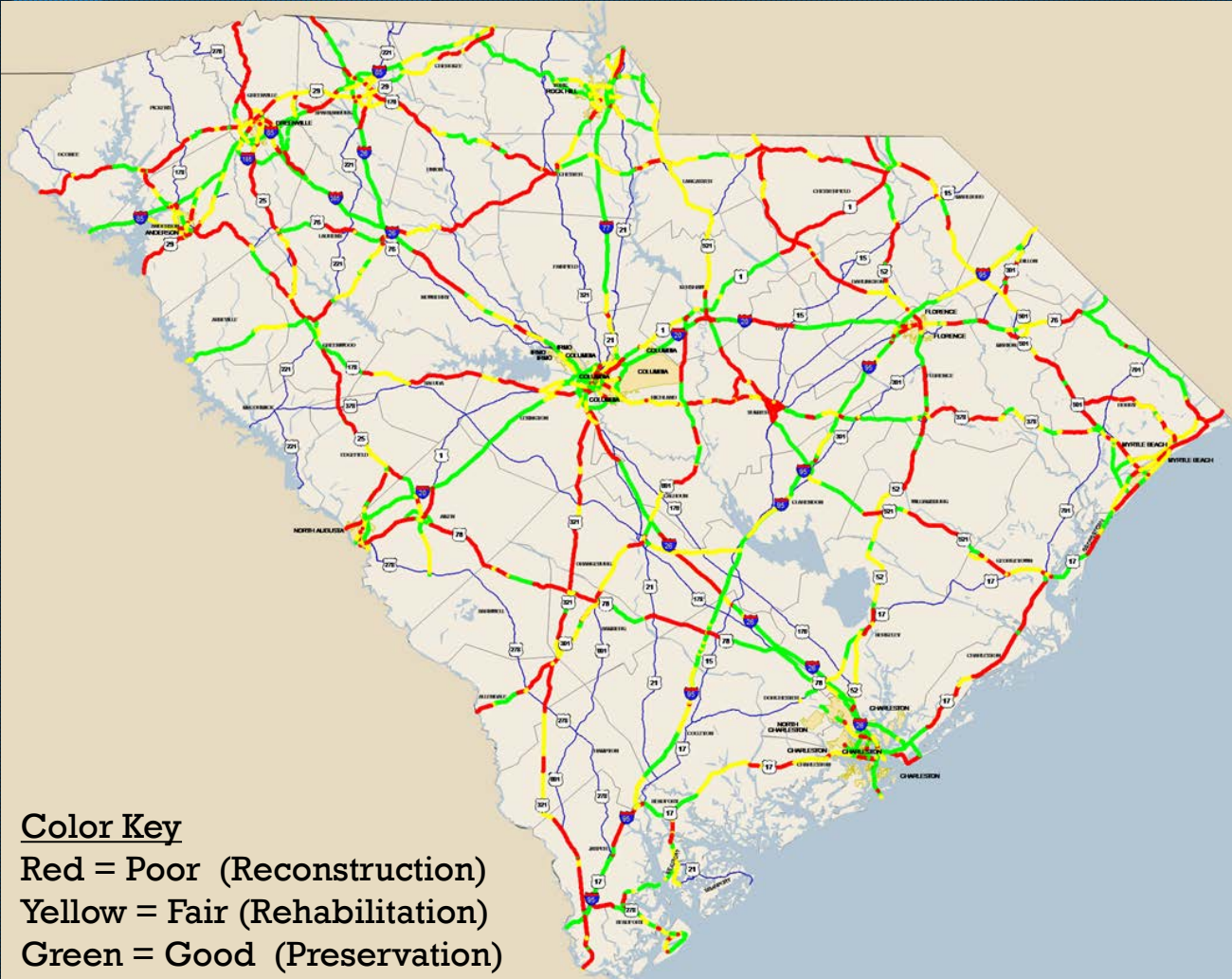
***851 Centerline Miles
Carries 30% of the Traffic
≈\$84 M average annual investment***

NHS Primaries



***2752 Centerline Miles
Represents ≈ 1/3 of the Primary System
Carries 26% of the Traffic
≈\$46 M average annual investment***

National Highway System Pavement Condition

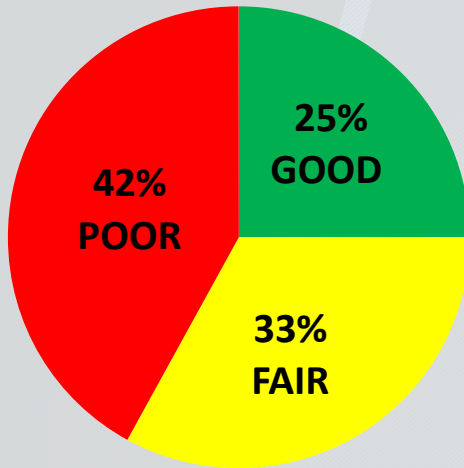


Color Key
Red = Poor (Reconstruction)
Yellow = Fair (Rehabilitation)
Green = Good (Preservation)

Primary System Components

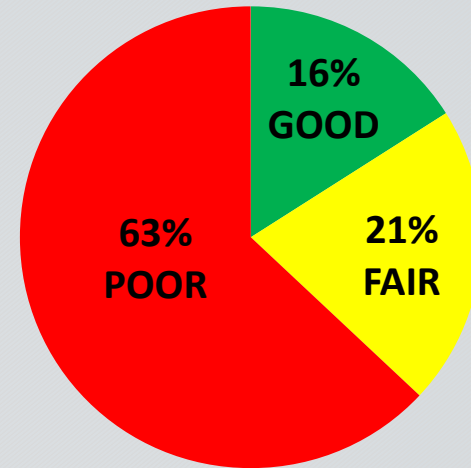
2015 Pavement Conditions

NHS Primaries



***2752 Centerline Miles
Carries 26% of the Traffic
≈\$46 M average annual investment***

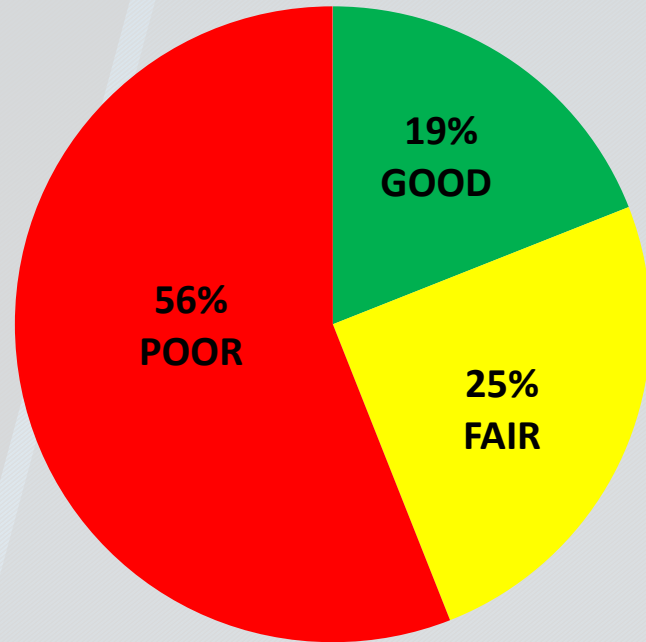
Non-NHS Primaries



***6765 Centerline Miles
Carries 20% of the Traffic
≈\$58 M average annual investment***

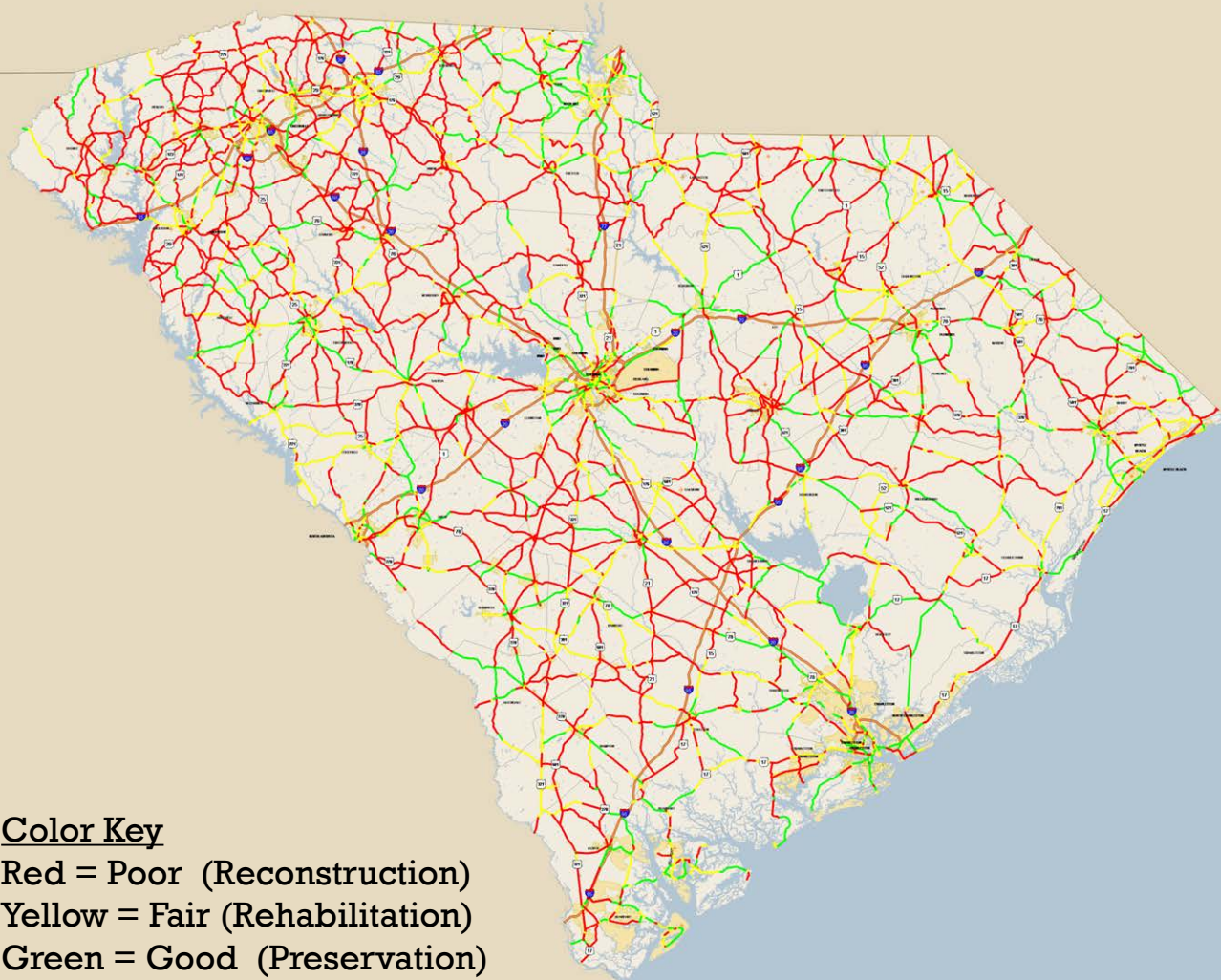
Entire Primary System

2015 Pavement Conditions



***9517 Centerline Miles
Carries 46% of the Traffic
≈\$104 M average annual investment***

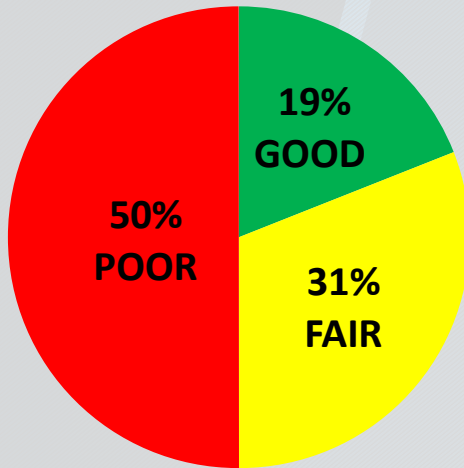
Entire Primary System Pavement Condition



Secondary System Components

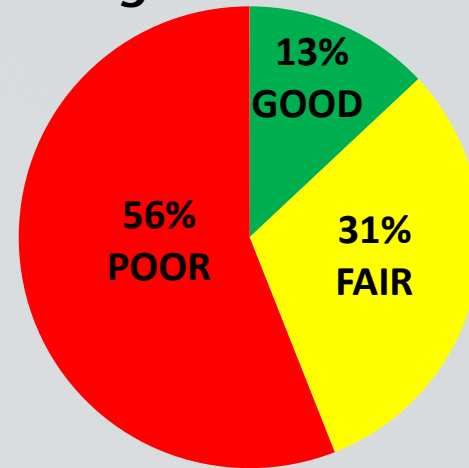
2015 Pavement Conditions

***Federal Aid Eligible
Secondaries***



***10370 Centerline Miles
Carries 17% of the Traffic
≈\$56 M average annual investment***

***Non-Federal Aid
Eligible Secondaries***



***20657 Centerline Miles
Carries 7% of the Traffic
≈\$94 M average annual investment***

10 Year Performance Estimates

Pavements			Current Conditions PQI (Pavement Quality Index)		Ave Annual Historical Expenditure <i>(Millions)</i>
Asset Categories	Centerline Miles	% VMT	%Good	%Poor	
Interstate	851	30%	65%	10%	\$ 84
PRIMARY SYSTEM	9,517	46%	19%	56%	\$ 104
Non-Interstate NHS	2,752	26%	25%	42%	\$ 46
Non-NHS Primaries	6,765	20%	16%	63%	\$ 58
FA Secondaries	10,370	17%	19%	50%	\$ 56
Non FA Secondaries	20,657	7%	13%	56%	\$ 94

2016 Year-end Data

10 Year Performance Estimates

Pavements	Asset Categories	Centerline Miles	% VMT	Current Conditions PQI (Pavement Quality Index)		Ave Annual Historical Expenditure <i>(Millions)</i>	10-yr Performance Estimates Based on FAST Act Budget		10 Yr Estimated Annual Expenditures <i>(Millions)</i>
				%Good	%Poor		%Good	%Poor	
	Interstate	851	30%	65%	10%	\$ 84	57%	18%	\$ 90
	PRIMARY SYSTEM	9,517	46%	19%	56%	\$ 104	18%	74%	\$ 131
	Non-Interstate NHS	2,752	26%	25%	42%	\$ 46	24%	60%	\$ 58
	Non-NHS Primaries	6,765	20%	16%	63%	\$ 58	14%	80%	\$ 73
	FA Secondaries	10,370	17%	19%	50%	\$ 56	15%	70%	\$ 56
	Non FA Secondaries	20,657	7%	13%	56%	\$ 94	20%	65%	\$ 94

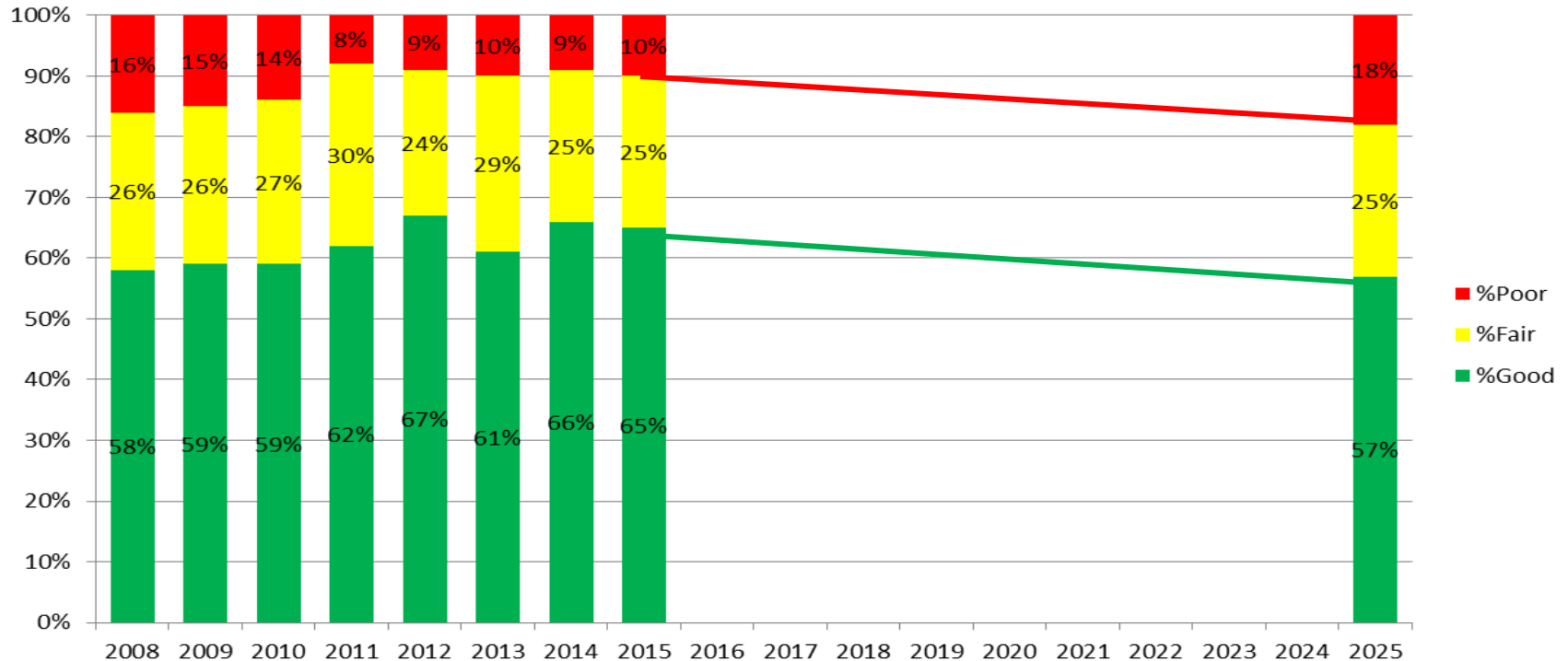
2016 Yer-end Data

Forecasted Pavement Conditions in 10 years



Pavements

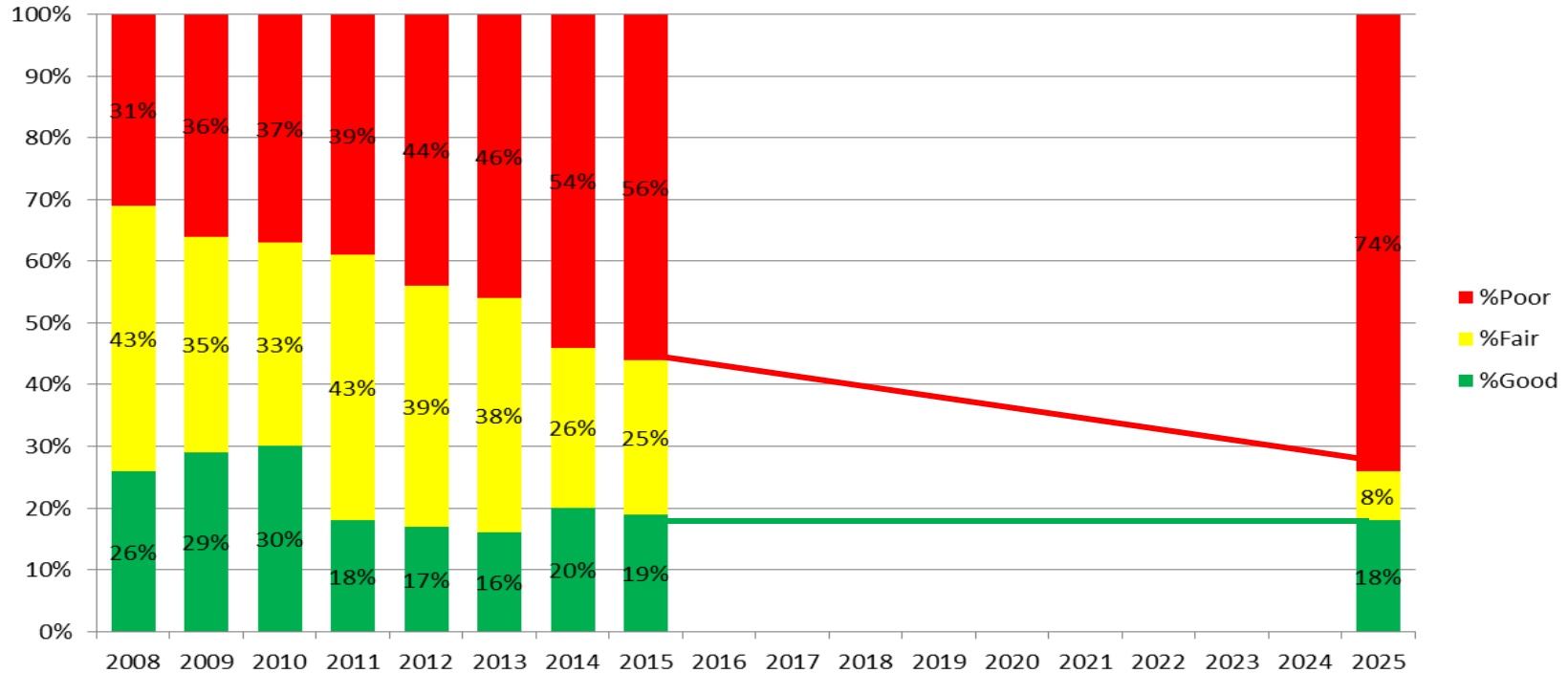
Interstate Pavements - 10 Yr Performance Estimates



851 CL miles, 30% of VMT, Current Investment \$84 M, Projected Investment \$90 M

Pavements

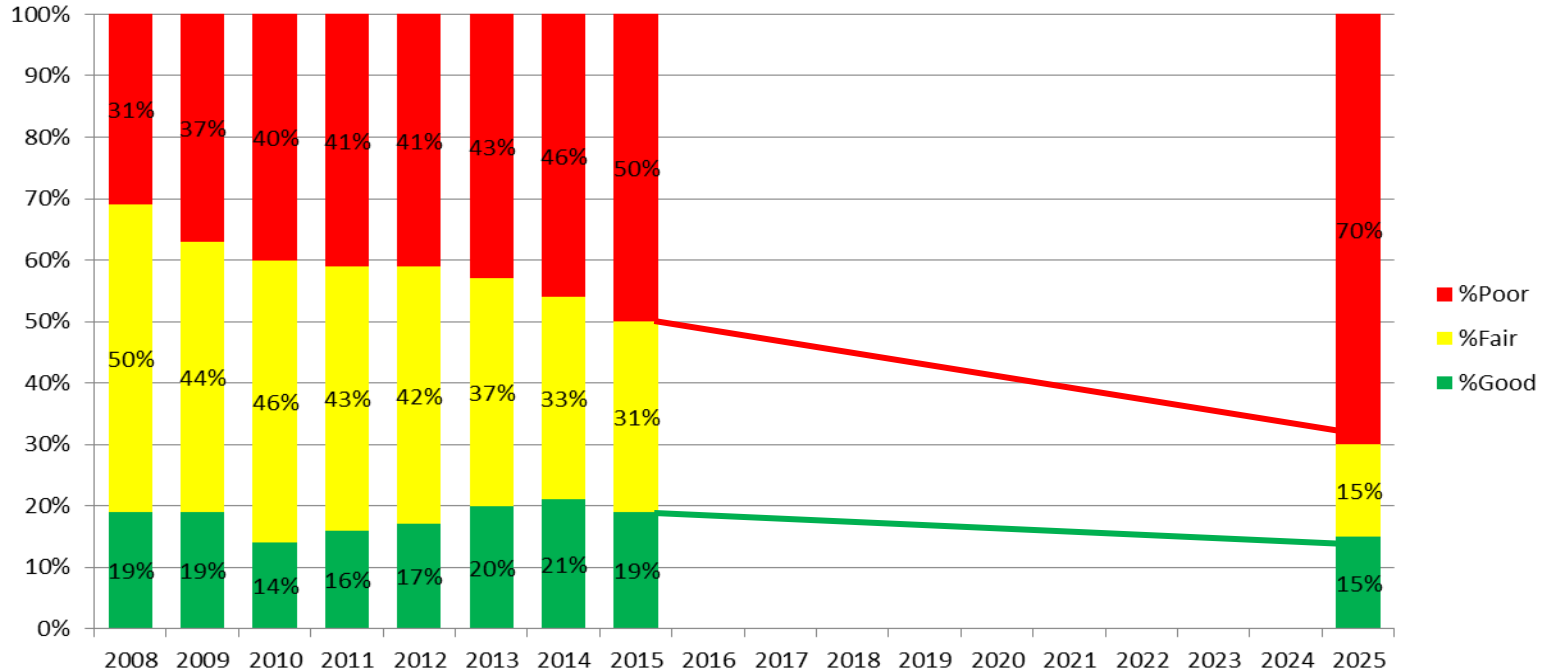
Primary Pavements - 10 Yr Performance Estimates



9517 CL miles, 46% of VMT, Current Investment \$104 M, Projected Investment \$131 M

Pavements

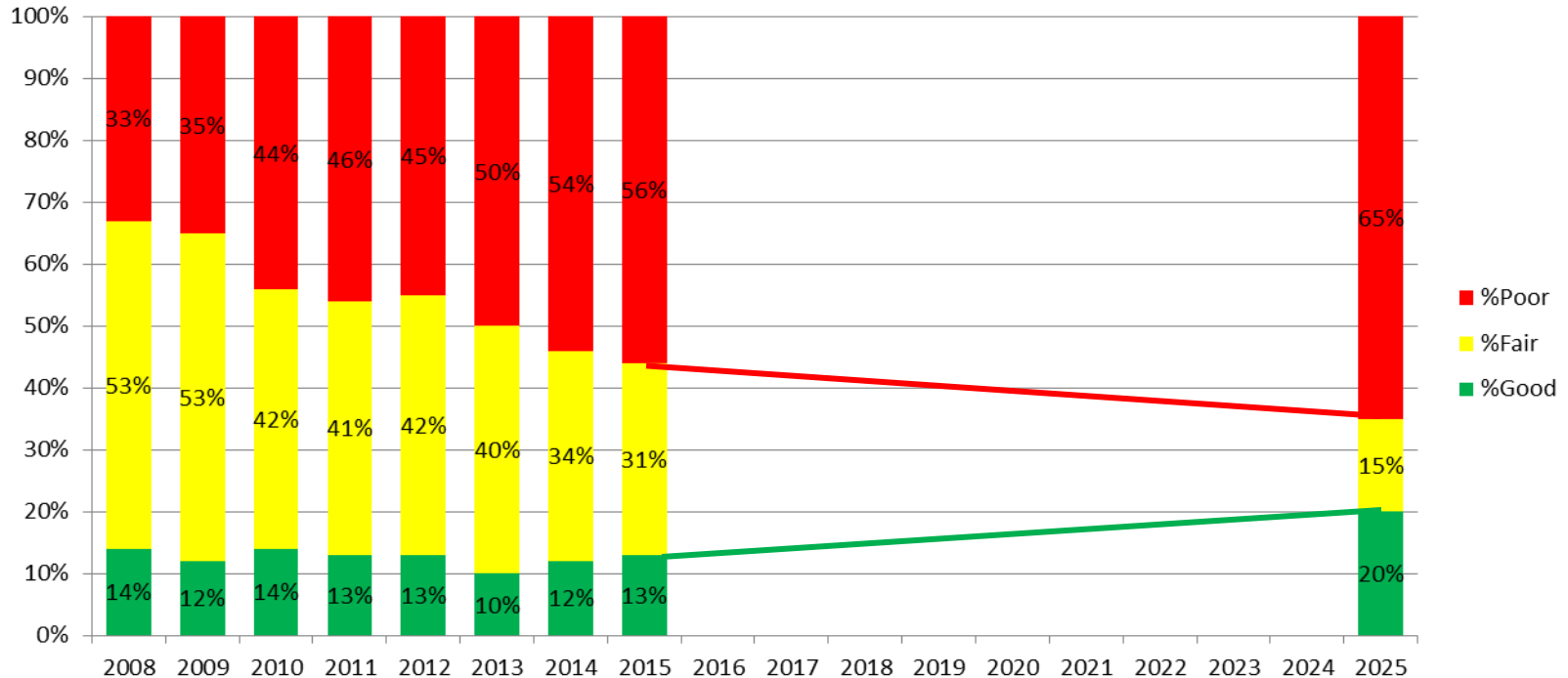
Federal Aid Secondary Pavements - 10 Yr Performance Estimates



10,370 CL miles, 17% of VMT, Current Investment \$56 M, Projected Investment \$56 M

Pavements

Non-Federal Aid Secondary Pavements - 10 Yr Performance Estimates



20,657 CL miles, 7% of VMT, Current Investment \$94 M, Projected Investment \$94 M

**New
2015
Data!**

**Existing Asset
Conditions:
Bridges**

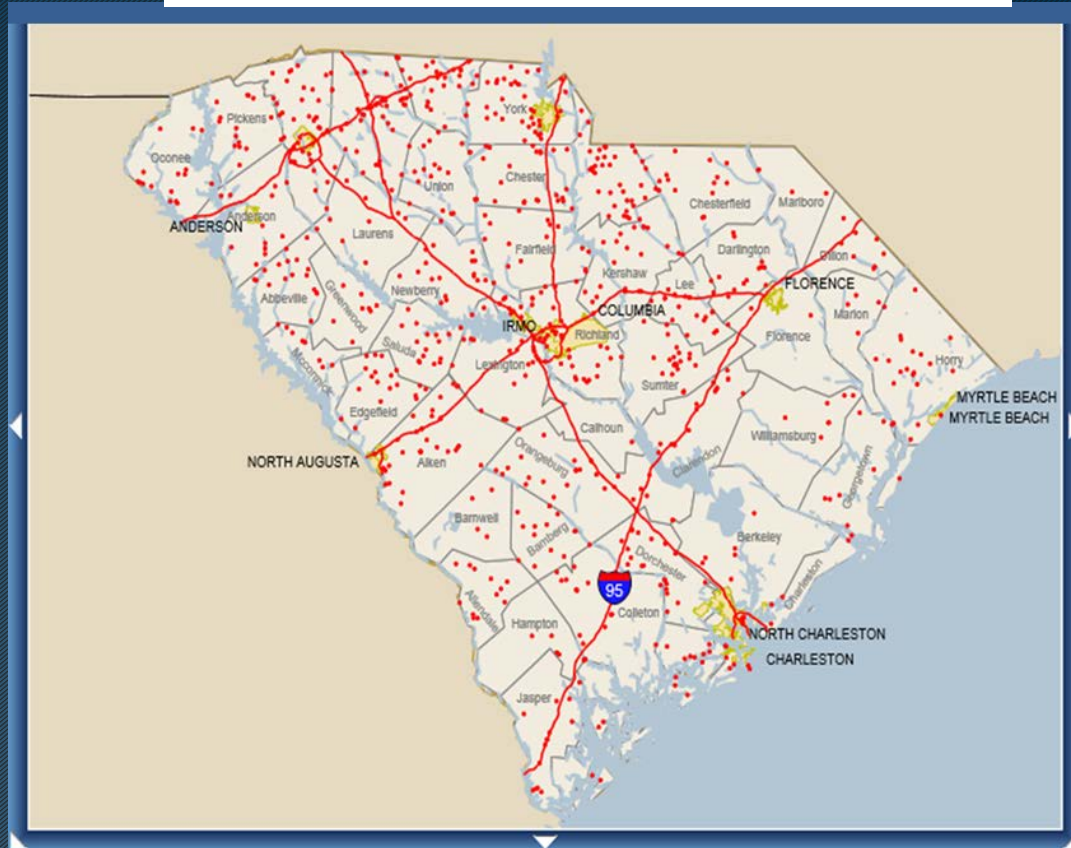
Bridges

**Most of SC's 8,426
Bridges are in Good
Condition**

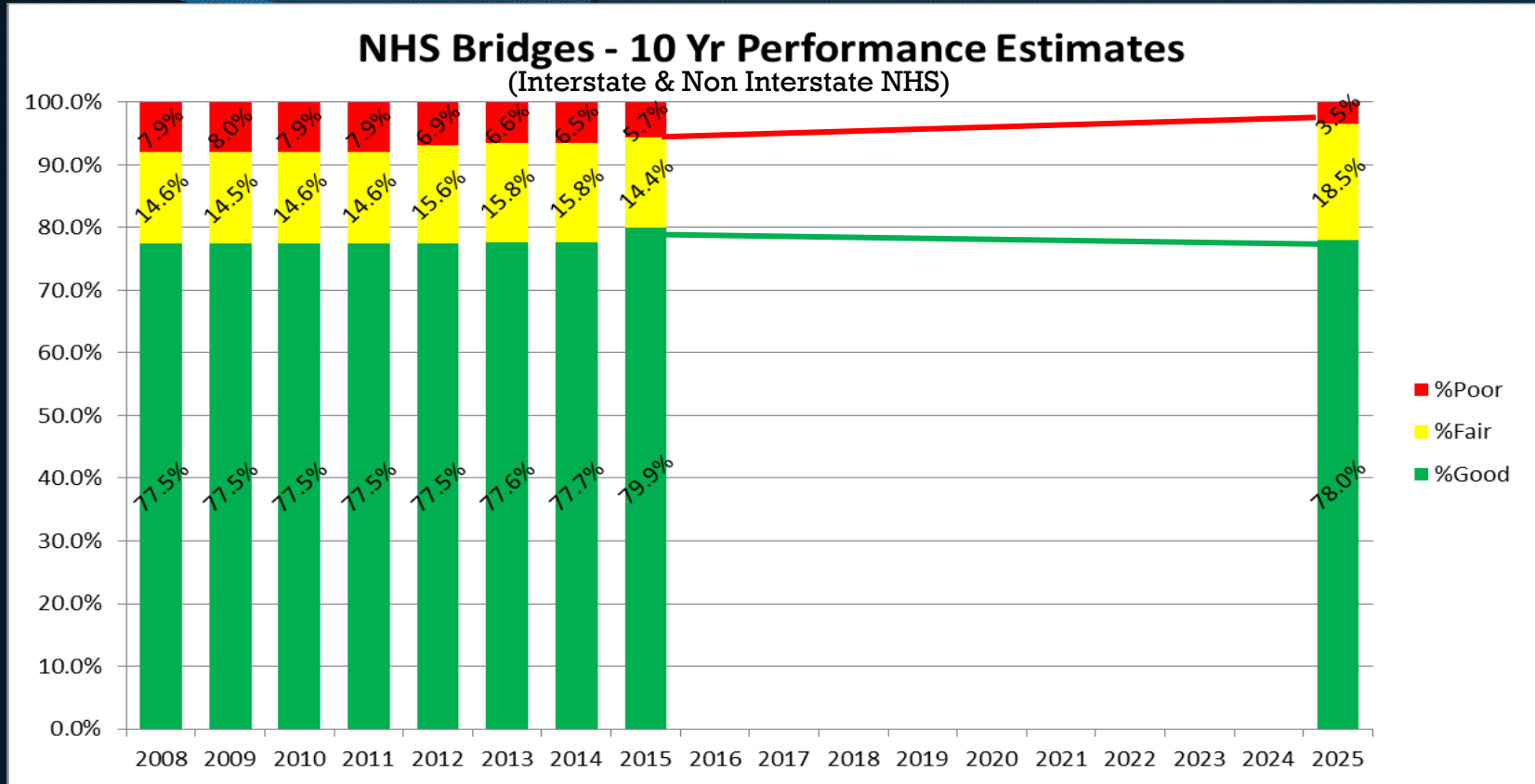
***However, there are \approx 9% that
are Structurally Deficient.
These 768 bridges, including
339 Load Restricted bridges,
are across the entire system.***

***There is also another 799
bridges across the state that
are considered Functionally
Obsolete.***

Structurally Deficient Bridges



Bridges

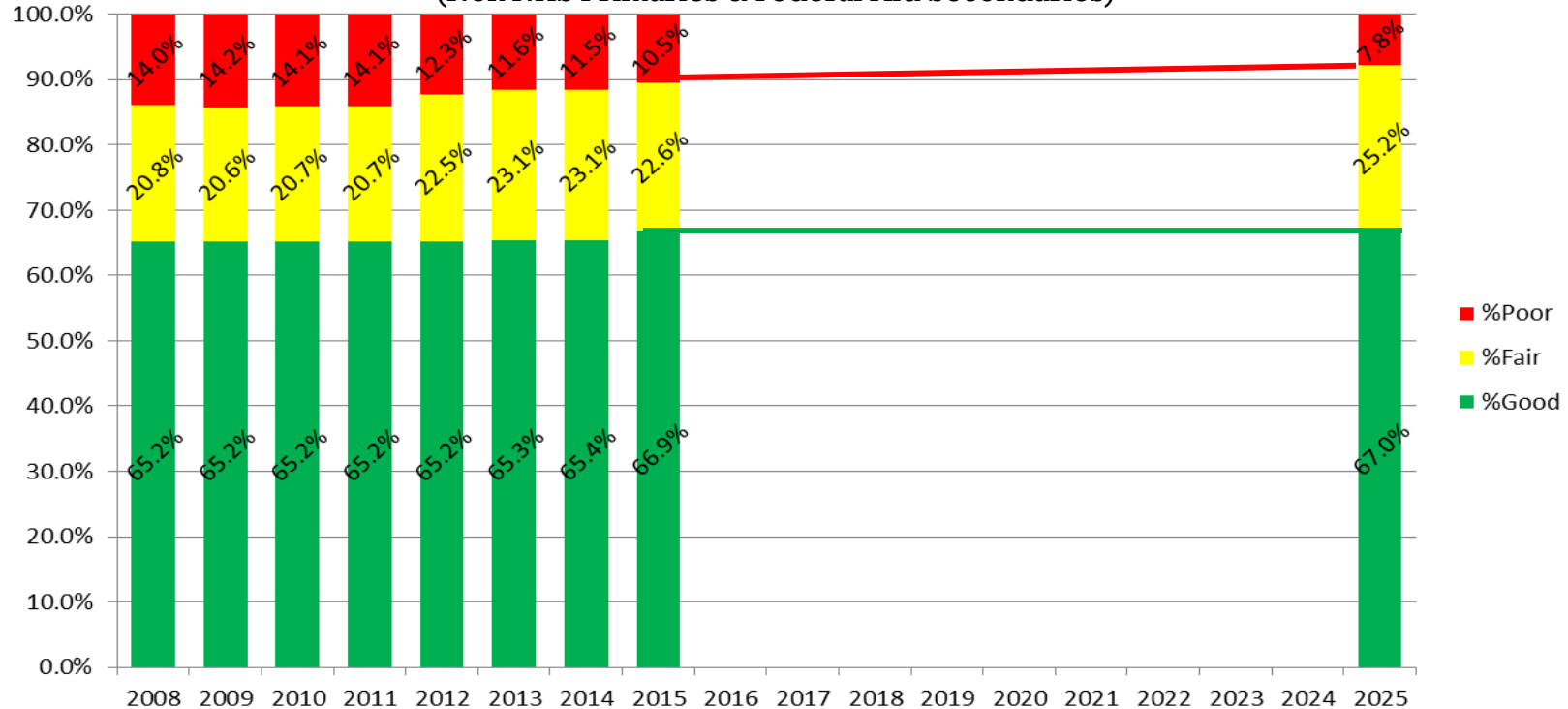


1,747 bridges, 56% of VMT, Current Investment \$56 M, Projected Investment \$56 M

● Poor - Replacement
 ● Fair - Rehabilitation
 ● Good - Preservation

Bridges

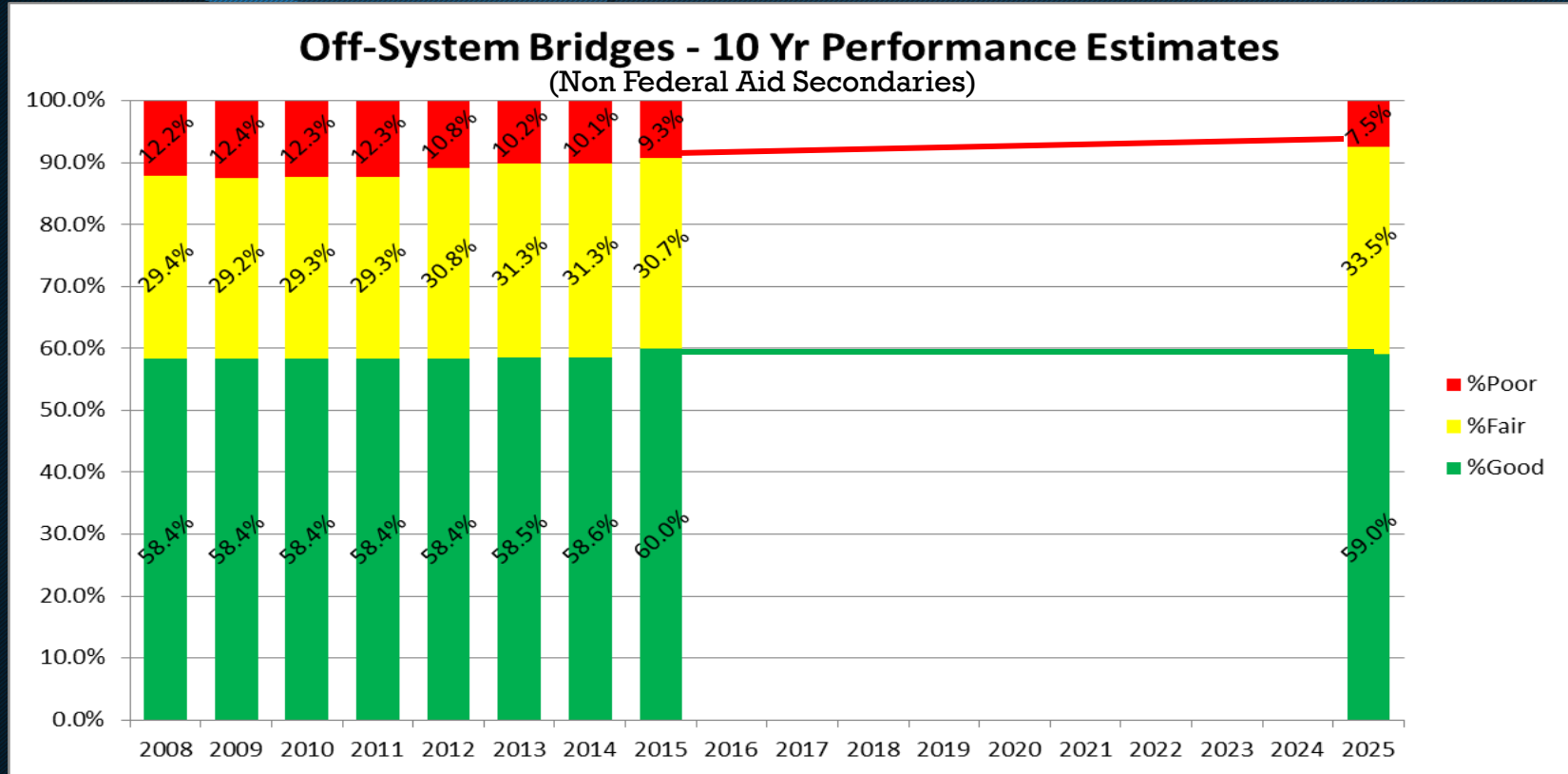
Non-NHS Bridges - 10 Yr Performance Estimates (Non NHS Primaries & Federal Aid Secondaries)



3,881 structures, 37% of VMT, Current Investment \$51 M, Projected Investment \$51 M

● Poor - Replacement ● Fair - Rehabilitation ● Good - Preservation

Bridges



2,798 structures, 7% of VMT, Current Investment \$12 M, Projected Investment \$12 M

● Poor - Replacement

● Fair - Rehabilitation

● Good - Preservation

10 Year Performance Estimates

Bridges

Asset Category	Structures	% VMT	Current Conditions NBI Scale % (Nat'l Bridge Inspection)		Ave Annual Historical Expenditure <i>(Millions)</i>
			%Good	%Poor (%SD)	
NHS	1,747	56%	79.9%	5.7%	\$ 56
Non-NHS	3,881	37%	66.9%	10.5%	\$ 51
Off-System	2,798	7%	60.0%	9.3%	\$ 12

10 Year Performance Estimates

Bridges			Current Conditions NBI Scale % (Nat'l Bridge Inspection)		10-yr Performance Estimate Based on Current Funding Levels			
Asset Category	Structures	% VMT	%Good	%Poor (%SD)	Ave Annual Historical Expenditure	%Good	%Poor *(%SD)	10 Yr Estimated Annual Expenditures
					<i>(Millions)</i>			<i>(Millions)</i>
NHS	1,747	56%	79.9%	5.7%	\$ 56	78%	3.5%	\$ 56
Non-NHS	3,881	37%	66.9%	10.5%	\$ 51	67%	7.8%	\$ 51
Off-System	2,798	7%	60.0%	9.3%	\$ 12	59%	7.5%	\$ 12

Jun-16

* %Poor is equal to %Structurally Deficient



TAMP Phase 1: Pavements & Bridges

10 Year Performance Estimates

Pavements			Current Conditions PQI (Pavement Quality Index)		10-yr Performance Estimates Based on FAST Act Budget			
Asset Categories	Centerline Miles	% VMT	%Good	%Poor	Ave Annual Historical Expenditure	%Good	%Poor	10 Yr Estimated Annual Expenditures
					(Millions)			(Millions)
Interstate	851	30%	65%	10%	\$ 84	57%	18%	\$ 90
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2016 Yer-end Data

Bridges			Current Conditions NBI Scale % (Nat'l Bridge Inspection)		10-yr Performance Estimate Based on Current Funding Levels			
Asset Category	Structures	% VMT	%Good	%Poor (%SD)	Ave Annual Historical Expenditure	%Good	%Poor *(%SD)	10 Yr Estimated Annual Expenditures
					(Millions)			(Millions)
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Non-NHS	3,881	37%	66.9%	10.5%	\$ 51	67%	7.8%	\$ 51
Off-System	2,798	7%	60.0%	9.3%	\$ 12	59%	7.5%	\$ 12

Jun-16

* %Poor is equal to %Structurally Deficient

Next Steps

- ✓ **Request Commission approval of 10 Year Performance Estimates for the Draft TAMP, Phase 1. (Anticipate updating base performance estimates to reflect 2016 State Funding Bill).**
- ✓ **Continue along performance journey by moving into Phase 2 of the TAMP to establish targets for the balance of the system performance and condition items.**
- ✓ **Utilize the TAMP to guide investment decisions and communicate trends for the state's infrastructure.**
- ✓ **Finalize TAMP after the release of FHWA's Final Rulemaking to comply with federal metrics and submit to FHWA's Division Office.**