



Nevada Department of Transportation



STATE HIGHWAY PRESERVATION REPORT



February 2013

ROAD PRIORITIZATION CATEGORY	TWO DIRECTIONAL ADT AND ESALS	TOTAL LANE MILES	PERCENT OF ROAD NETWORK	REQUIRED FREQUENCY OF REHABILITATION IN YEARS
1	Controlled Access Asphalt	1746	13	8
1	Controlled Access Concrete	723	6	18
2	ESAL>540 or ADT>10,000	2519	19	10
3	540>=ESAL>405 or 1600<ADT<=10,000+NHS	2800	21	12
4	405>=ESAL>270 or 400<ADT<=1,600	1921	15	15
5A	280<ADT<=400	799	6	20
5B	120<ADT<=280	1351	10	20
5C	ADT<=120	1237	9	20
	TOTAL	13095	100	

TABLE 4: Optimal Timing for Pavement Repair Strategies on Major Road Categories

Controlled-access highways, National Highway System routes, and non-controlled-access highways

Roadway Categories	Pavement Type	Repair Strategy (based on pavement age in years)			
		Preventive Maintenance	Corrective Maintenance	Overlay	Major Rehabilitation
Interstates, Freeways, and All Other Controlled-Access Highways	AC	Age ≤ 4 yrs.	4 < Age ≤ 8 yrs.	Age = 8 yrs.	Age > 8 yrs.
	PCC	Age ≤ 10	10 < Age ≤ 18	Age = 18	Age > 18
Non-Controlled-Access Highways with: ADT > 10,000 or ESAL > 540	AC	Age ≤ 4	4 < Age < 10	Age = 10	Age > 10
Non-Controlled-Access Highways with: 1,600 < ADT ≤ 10,000 or 405 < ESAL ≤ 540 And National Highway System routes with ADT ≤ 10,000	AC	Age ≤ 4	4 < Age < 12	Age = 12	Age > 12
Non-Controlled-Access Highways off the National Highway System with: 400 < ADT ≤ 1,600 or 270 < ESAL ≤ 405	AC	Age ≤ 4	4 < Age < 15	Age = 15	Age > 15
Non-Controlled-Access Highways off the National Highway System with: ADT ≤ 400	AC	Age ≤ 4	4 < Age < 20	Age = 20	Age > 20

Notes: ADT = Average Daily Traffic (in vehicles per day)

ESAL = Equivalent 18,000-pound Single-Axle Loads imparted daily. It takes 2,500 cars to impart a single ESAL but just one fully-loading two-axle delivery truck.

AC - Asphalt Concrete, PCC – Portland Cement Concrete

TABLE 3: Pavement Condition on the State Maintained System - 2013

By Repair Strategy Required (Based on 2011 Pavement Age and 2011 Condition Data)

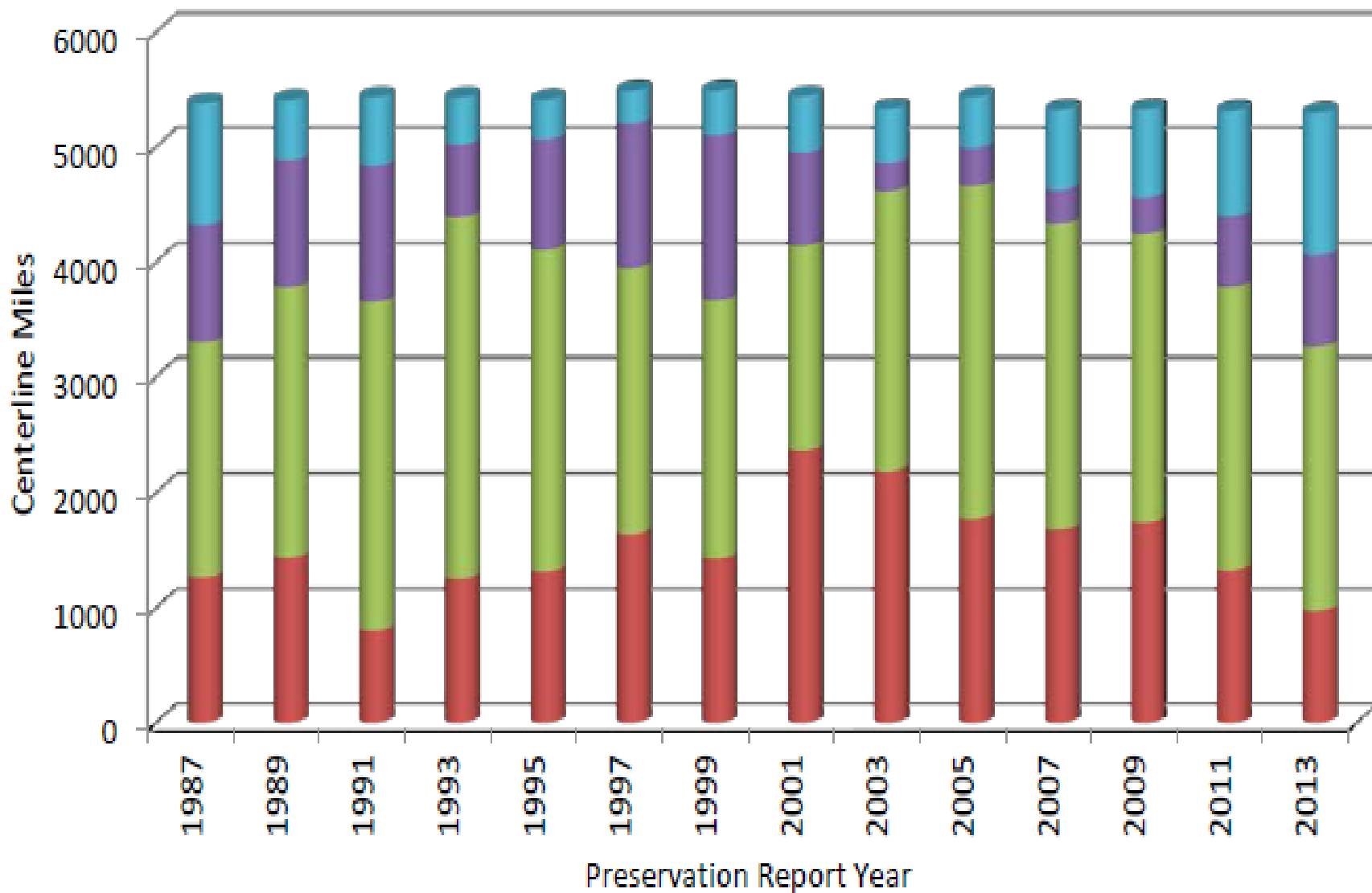
Centerline Miles

Repair categories	Preventive Maintenance		Corrective Maintenance		Overlay		Major Rehabilitation		Total	
	Miles	%	Miles	%	Miles	%	Miles	%	Miles	%
Interstate Highway	290	5.5%	138	2.6%	35	0.7%	95	1.7%	558	10.5%
Principal Arterial-Non Interstate	342	6.4%	503	9.5%	261	4.9%	582	11.0%	1687	31.8%
Minor Arterial	113	2.1%	572	10.8%	72	1.4%	132	2.5%	890	16.8%
Major Collector	184	3.5%	812	15.3%	282	5.3%	294	5.6%	1572	29.7%
Minor Collector and Local	50	1.0%	264	5.0%	149	2.8%	129	2.4%	593	11.1%
Total	979	18.5%	2288	43.2%	799	15.1%	1233	23.2%	5299	100.0%

Lane Miles

Repair categories	Preventive Maintenance		Corrective Maintenance		Overlay		Major Rehabilitation		Total	
	Miles	%	Miles	%	Miles	%	Miles	%	Miles	%
Interstate Highway	1246	9.5%	591	4.8%	142	2.6%	394	3.0%	2372	18.1%
Principal Arterial-Non Interstate	939	7.1%	1385	12.2%	550	3.5%	1325	10.0%	4199	32.0%
Minor Arterial	277	2.1%	1370	9.6%	168	1.0%	356	2.7%	2172	16.6%
Major Collector	368	2.7%	1628	13.3%	569	2.4%	589	4.5%	3154	24.1%
Minor Collector and Local	105	0.8%	533	4.4%	300	1.5%	272	2.1%	1210	9.2%
Total	2935	22.3%	5508	44.3%	1729	11.1%	2935	22.3%	13106	100.0%

Preventive Maintenance Corrective Maintenance Overlay Major Rehabilitation





NEVADA DEPARTMENT OF TRANSPORTATION



STATE HIGHWAY PRESERVATION REPORT

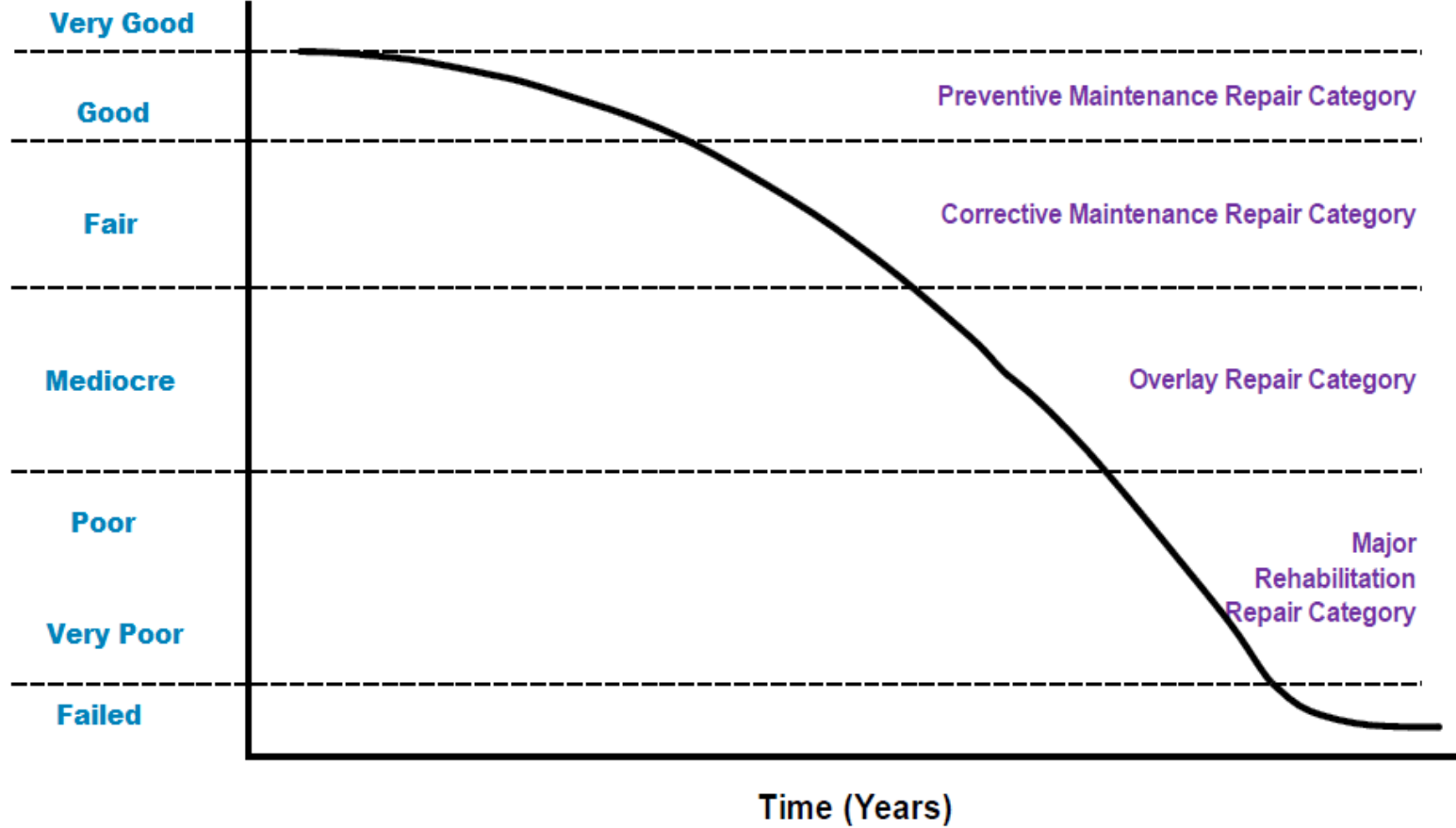


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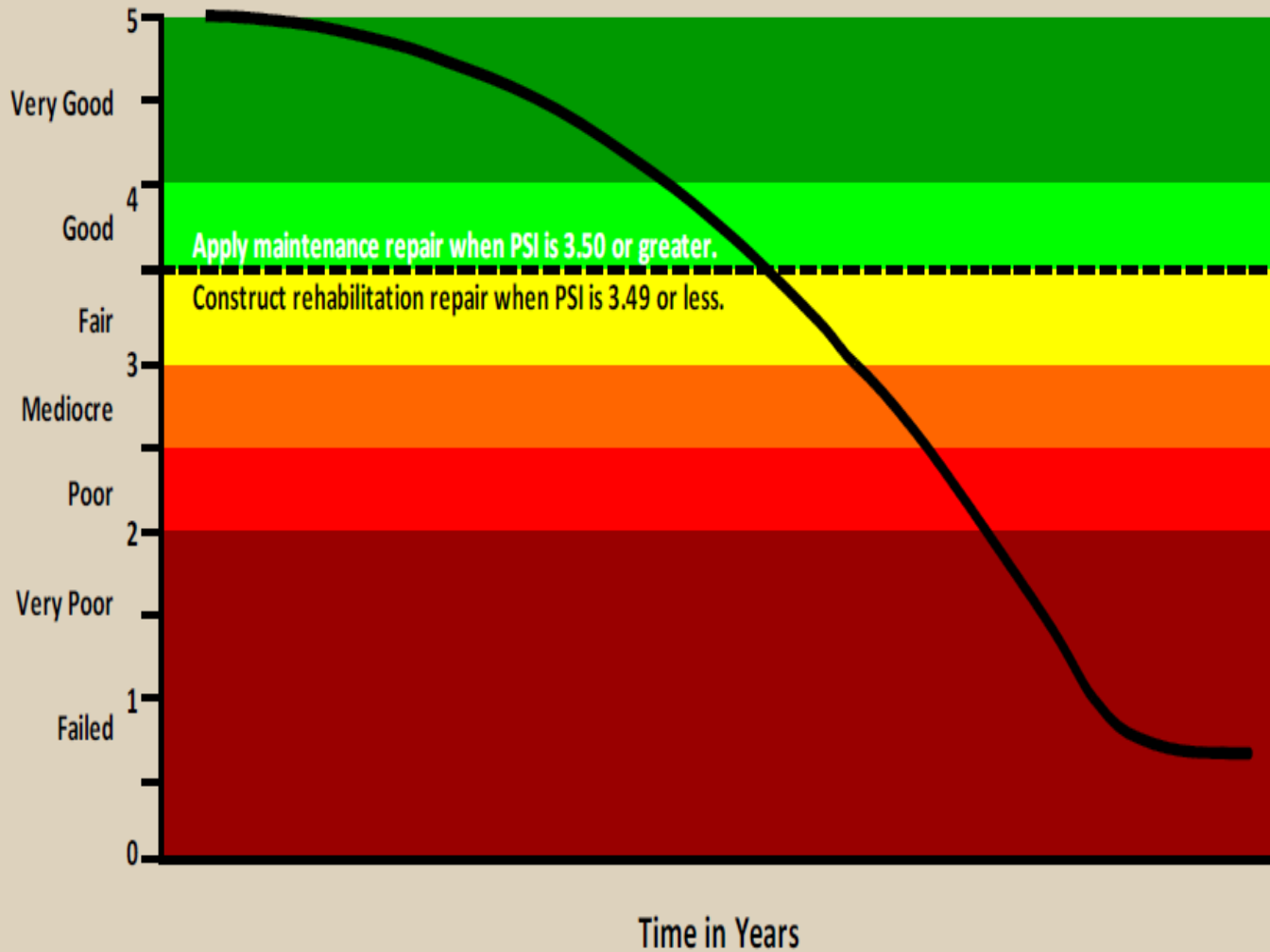
Pavement Conditions	PSI Rating Scale	Description of Pavement Conditions
Very Good	5.00 to 4.00	Pavements in “Very Good” condition have an excellent, very smooth ride quality and are completely free of pavement distress. Pavements are in “new” condition.
Good	3.99 to 3.50	Pavements in “Good” condition have a very smooth ride quality and begin to show minor distresses that are typically environmental rather than load related. Distresses include minor non-wheelpath longitudinal and transverse cracks as well as minor surface raveling.
Fair	3.49 to 3.00	Pavements in “Fair” condition have a good ride quality except noticeable environmental distress has developed. Non-wheelpath longitudinal and transverse cracks are frequent. There is light surface oxidation and weathering. Structural distress in the form of ruts and fatigue cracks begin to occur.
Mediocre	2.99 to 2.50	Pavements in “Mediocre” condition have a barely acceptable ride quality and have accumulated significant environmental and structural distresses. Pavements have non-wheelpath longitudinal cracking and transverse cracks so closely spaced that block cracks develop. Ruts and fatigue cracks are present.
Poor	2.49 to 2.00	Pavements in “Poor” condition have a poor ride quality and have accumulated large amounts of environmental and structural related distresses. The non-wheelpath longitudinal and transverse cracks are severe. The surface is weathered, rutted, and fatigue cracks are widespread.
Very Poor or Failed	< 2.00	Pavements in “Very Poor” condition have a very poor ride quality and have accumulated significant environmental and structural distresses. The surface is pitted and there are wide non-wheelpath longitudinal and transverse cracks. Networked, spalled fatigue cracks and deep ruts are prevalent. The deterioration is so advanced potholes are prevalent. The roads are no longer navigable at the posted speed limits.

Pavement Condition

Repair Categories



PSI Rating Scale and
Corresponding Pavement Condition



Condition	PSI Rating Scale	PSI Condition by Road Prioritization Category Percentage (%) and Number of Miles					
		Road Category 1	Road Category 2	Road Category 3	Road Category 4	Road Category 5	Roadway Network Totals
Very Good	5.00 to 4.00	43.5% 219	40.4% 374	22.8% 273	3.7% 32	0.4% 7	17.7% 905
Good	3.99 to 3.50	50.8% 256	39.4% 365	54.8% 657	28.0% 240	7.1% 117	31.9% 1,635
Fair	3.49 to 3.00	5.0% 25	15.9% 147	18.0% 216	37.7% 323	22.6% 371	21.1% 1,082
Mediocre	2.99 to 2.50	0.6% 3	3.0% 28	3.2% 38	21.2% 182	32.7% 535	15.3% 786
Poor	2.49 to 2.00	0.1% 0.55	0.9% 8	0.8% 10	7.2% 62	24.8% 406	9.5% 487
Very Poor	< 2.00	0.0% 0	0.4% 4	0.3% 4	2.1% 18	12.3% 202	4.5% 228
Total Miles:		504	926	1,198	857	1,638	5,123
Condition Goal: Min. Percentage of Roads in Fair or Better Condition		95%	95%	95%	95%	95%	----
Current Condition: Percentage of Roads in Fair or Better Condition		99.3%	95.7%	95.6%	69.5%	30.2%	----
Does the current condition meet the condition goal?		YES	YES	YES	NO	NO	----

Condition	PSI Rating Scale	PSI Condition by Road Priority Percentage (%) and Number			
		Road Category 1	Road Category 2	Road Category 3	Road Category 4
Very Good	5.00 to 4.00	43.5% 219	40.4% 374	22.8% 273	3.3% 31
Good	3.99 to 3.50	50.8% 256	39.4% 365	54.8% 657	28.9% 282
Fair	3.49 to 3.00	5.0% 25	15.9% 147	18.0% 216	37.3% 363
Mediocre	2.99 to 2.50	0.6% 3	3.0% 28	3.2% 38	21.5% 211
Poor	2.49 to 2.00	0.1% 0.55	0.9% 8	0.8% 10	7.4% 72
Very Poor	< 2.00	0.0% 0	0.4% 4	0.3% 4	2.9% 28

PSI Condition by Road Prioritization Category
Percentage (%) and Number of Miles

Road Category 1	Road Category 2	Road Category 3	Road Category 4	Road Category 5	
43.5%	40.4%	22.8%	3.7%	0.4%	
219	374	273	32	7	
50.8%	39.4%	54.8%	28.0%	7.1%	
256	365	657	240	117	
5.0%	15.9%	18.0%	37.7%	22.6%	
25	147	216	323	371	
0.6%	3.0%	3.2%	21.2%	32.7%	
3	28	38	182	535	
0.1%	0.9%	0.8%	7.2%	24.8%	
0.55	8	10	62	406	

Very Poor	< 2.00	0.0% 0	0.4% 4	(
Total Miles:		504	926	1
Condition Goal: Min. Percentage of Roads in Fair or Better Condition		95%	95%	9
Current Condition: Percentage of Roads in Fair or Better Condition		99.3%	95.7%	9
Does the current condition meet the condition goal?		YES	YES	9

Condition	PSI Rating Scale	PSI Condition by Road Prioritization Category Percentage (%) and Number of Miles					
		Road Category 1	Road Category 2	Road Category 3	Road Category 4	Road Category 5	Roadway Network Totals
Very Good	5.00 to 4.00	43.5% 219	40.4% 374	22.8% 273	3.7% 32	0.4% 7	17.7% 905
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Condition Goal: Min. Percentage of Roads in Fair or Better Condition		95%	95%	95%	95%	95%	----
Current Condition: Percentage of Roads in Fair or Better Condition		99.3%	95.7%	95.6%	69.5%	30.2%	----
Does the current condition meet the condition goal?		YES	YES	YES	NO	NO	----

Percentage of Miles per Road Category

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%

Very Poor

Poor

Mediocre

Fair

Good

Very Good

Pavement Condition

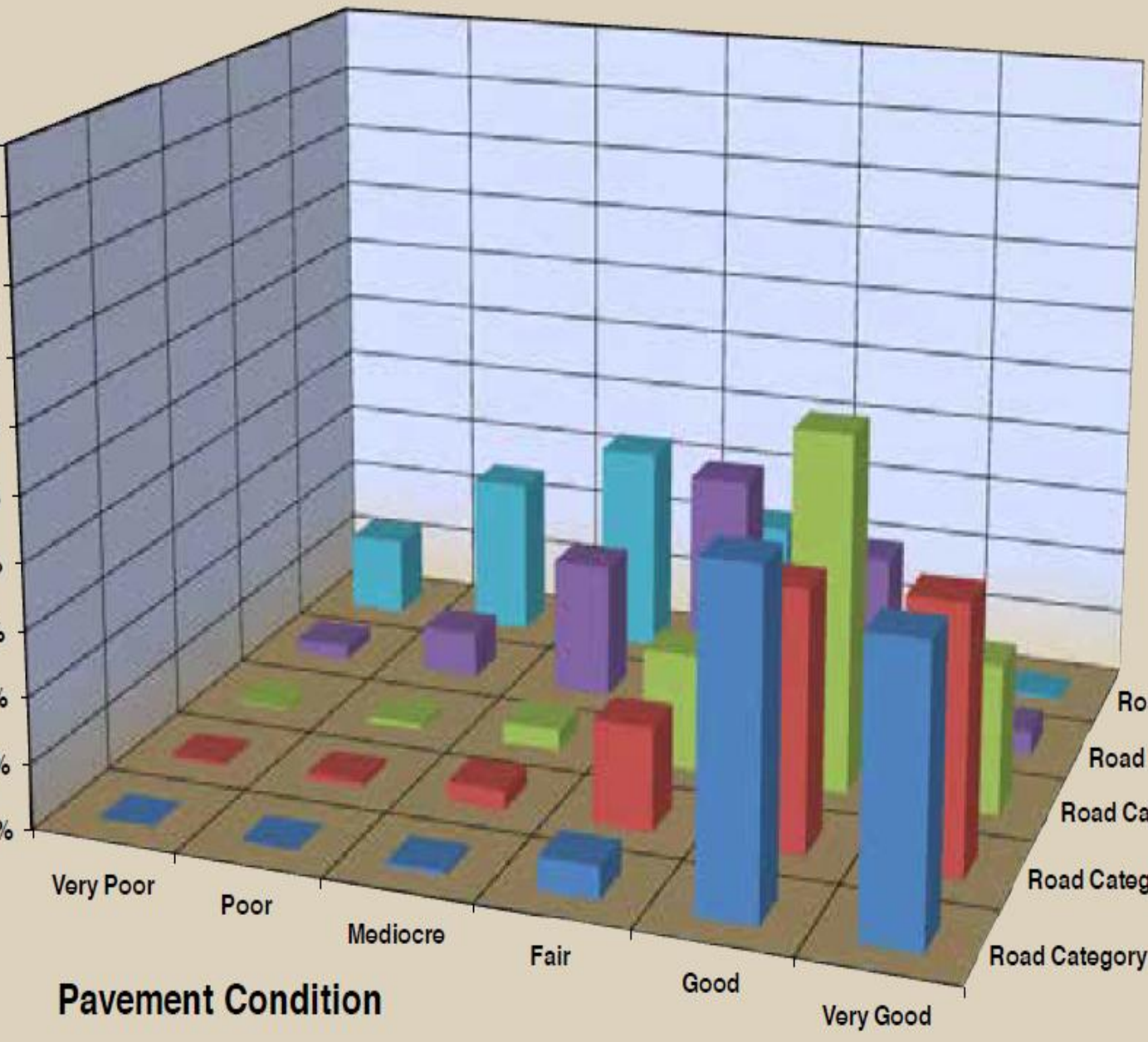
Road Category 5

Road Category 4

Road Category 3

Road Category 2

Road Category 1



Condition	PSI Rating Scale	PSI Condition by Road Prioritization Category Percentage (%) and Number of Miles					
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Current Condition: Percentage of Roads in Fair or Better Condition		99.3%	95.7%	95.6%	69.5%	30.2%	----
Does the current condition meet the condition goal?		YES	YES	YES	NO	NO	----

Percentage of Miles per Road Category

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%

Very Poor

Poor

Mediocre

Fair

Good

Very Good

Pavement Condition

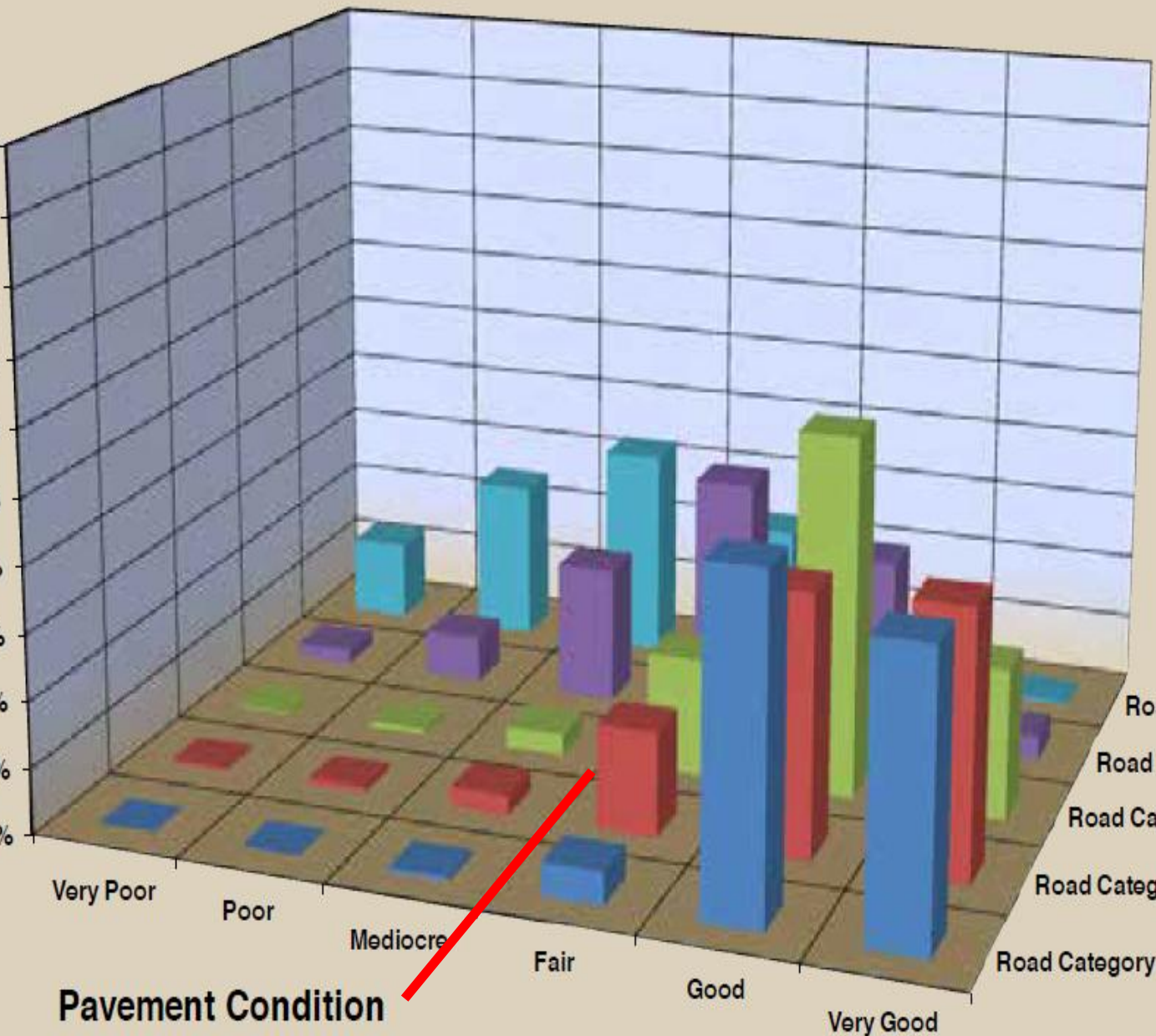
Road Category 5

Road Category 4

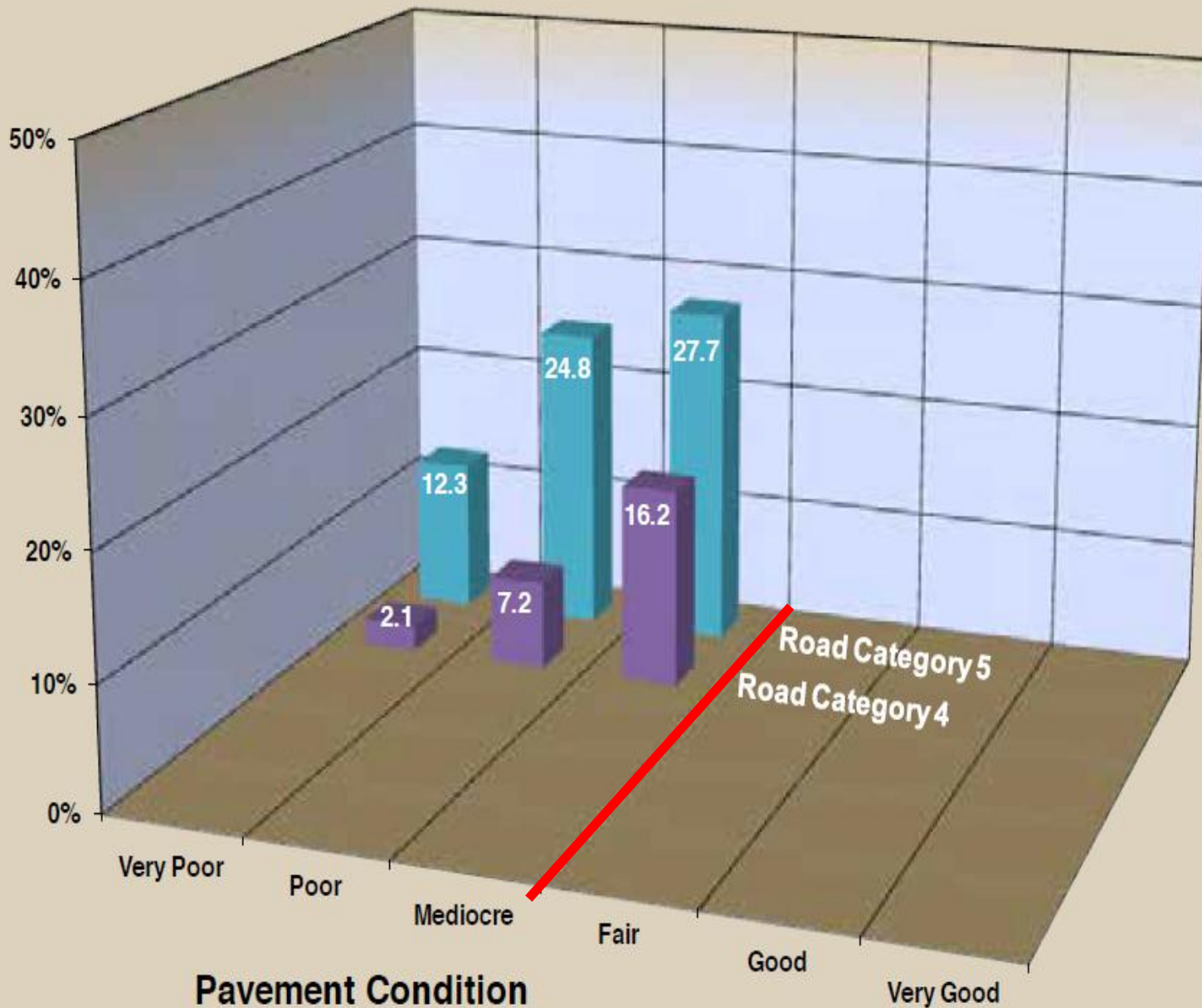
Road Category 3

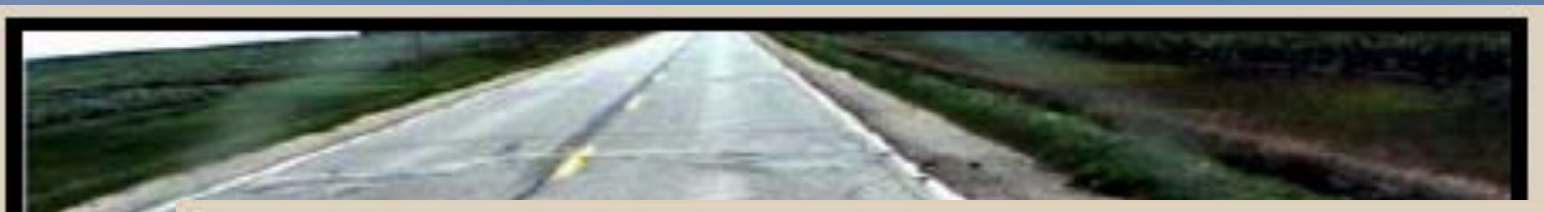
Road Category 2

Road Category 1



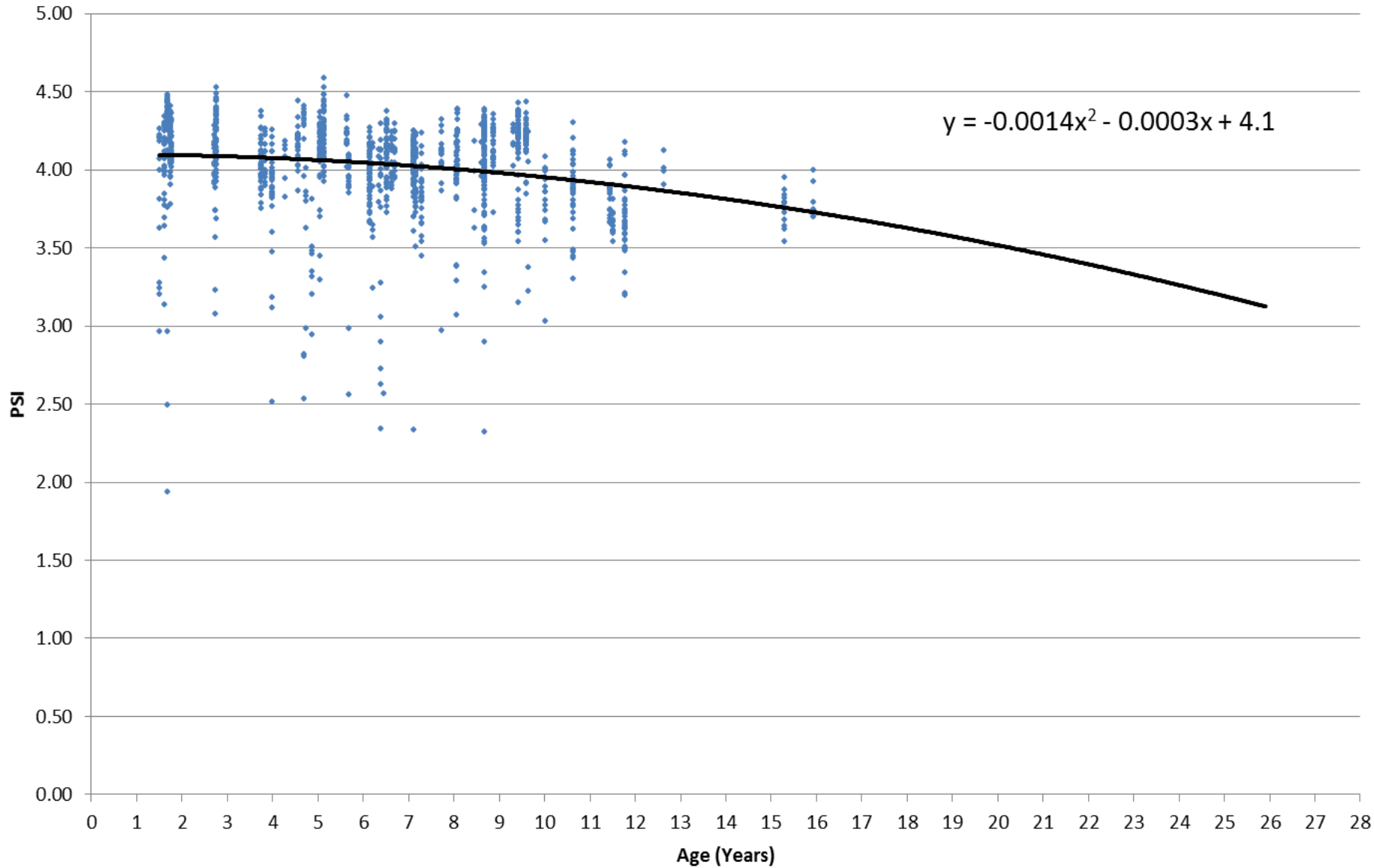
**Backlog of Rehabilitation Work
Percentage of Miles per Road Category**



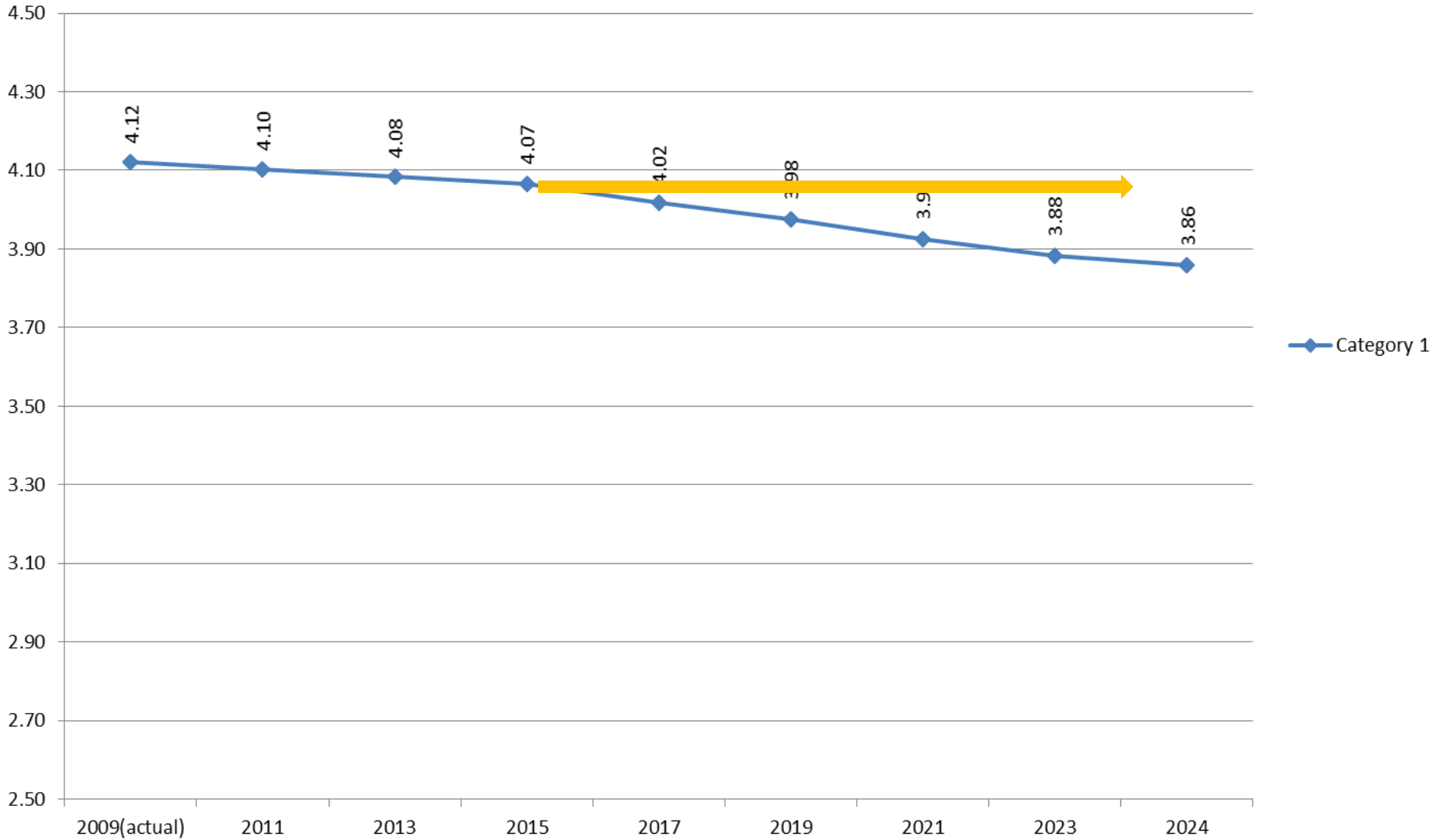


Road Prioritization Category	1	2	3	4	5
Deficient Pavement In Miles	0	0	0	219	1061
Estimated Cost to Rehabilitate Pavement Per Mile	\$2.1M	\$1.3M	\$0.7M	\$0.6M	\$0.5M
Total Cost to Rehabilitate Pavement Per Road Category	\$0M	\$0M	\$0M	\$131.4M	\$530.5M
Total Backlog of Pavement Rehabilitation Work	\$661.9M				

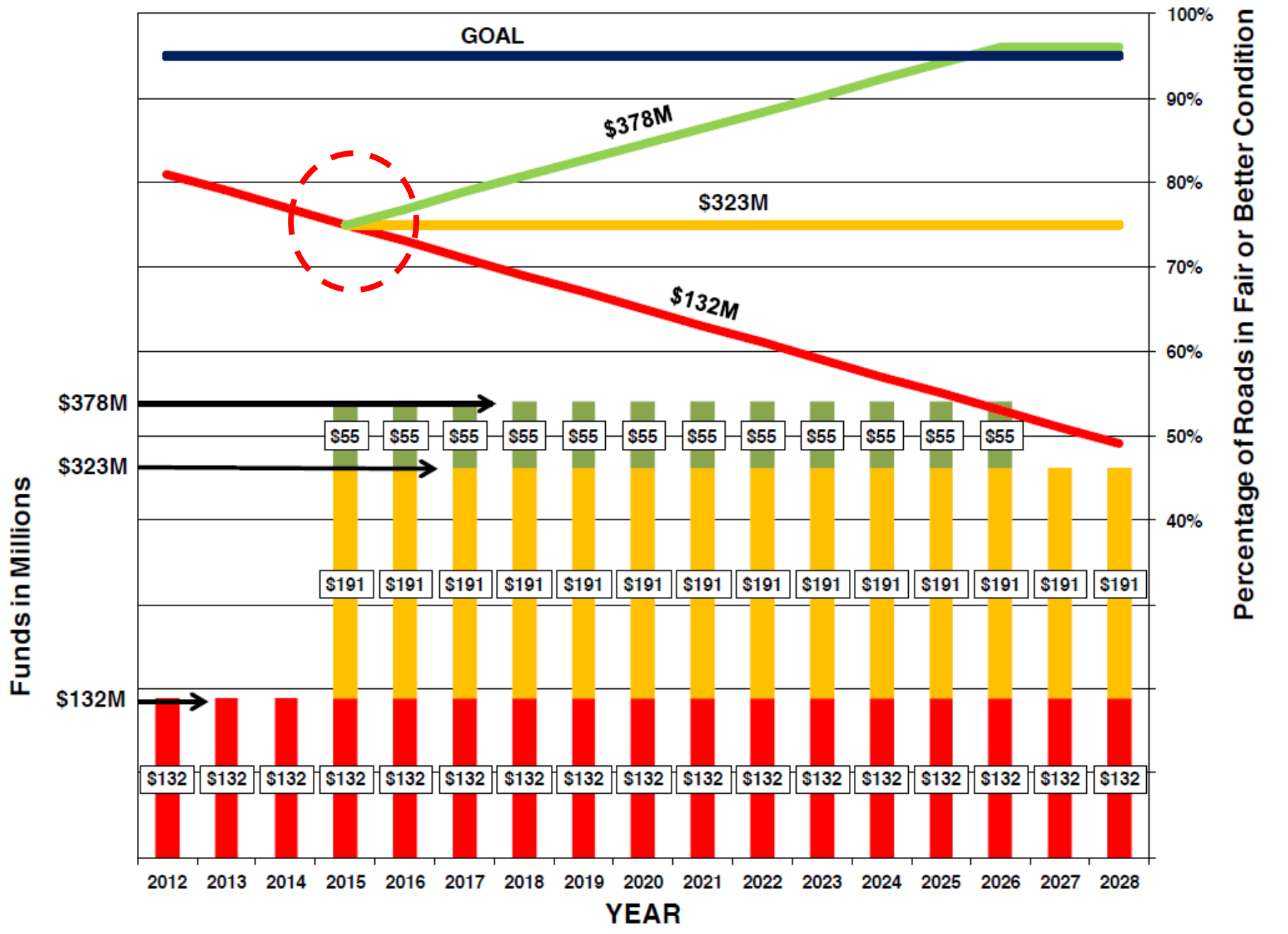
NDOT MATERIALS DIVISION PAVEMENT DETERIORATION CURVE CATEGORY 1



NDOT MATERIALS DIVISION AVERAGE PSI PROJECTIONS YEARS 2009-2024 CATEGORY 1



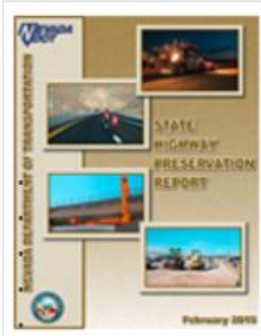
Road Prioritization Category	1	2	3	4	5
Current Average Number of Miles Rehabilitated per Year	42	33	30	8	2
*Current Average Funds per Year	\$71M	\$30M	\$25M	\$5M	\$1M
*Total Current Average Funds per Year	\$132M				
Additional Average Number of Miles Requiring Rehabilitation per Year	8	44	70	49	80
Additional Average Funds Required per Year	\$16M	\$57M	\$49M	\$29M	\$40M
Total Additional Average Funds Required per Year	\$191M				





STATE HIGHWAY PRESERVATION REPORT

Introduction



The State Highway Preservation Report is created biennially by the Nevada Department of Transportation to summarize and report our work to preserve the state highway system. This report also provides the Legislature with a tool to discern whether highway-preservation revenue is adequate. With regard to our state-maintained highways, this report answers the following questions:

- How do we fund their preservation?
- How do we care for the state highways?
- What is their condition? What will they cost to maintain?
- What are we doing to protect and improve them?
- How has their condition changed over time?
- What cost is imposed on roadway users due to poorly maintained highways?

The report is available in PDF format.

Current Report

 [2015 State Highway Preservation Report](#)



February 2015



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Does the current condition meet the condition goal?		YES	YES	YES	NO	NO	----

