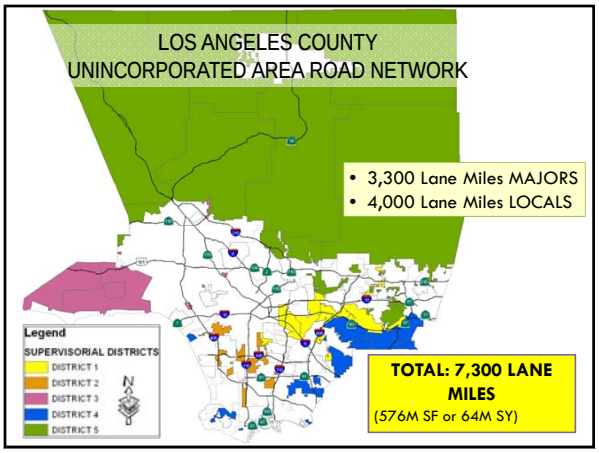
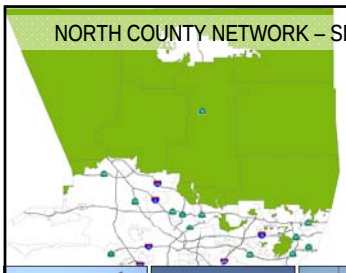
Presentation Overview

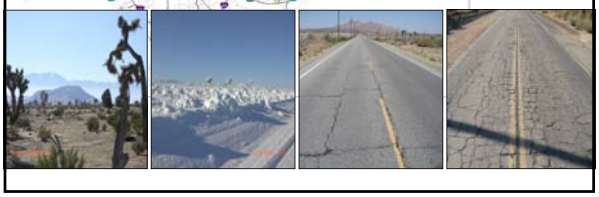
- LA County's Unincorporated Road Network
- Pavement Management System-A Key Element
- LA County Pavement Preservation Projects (FY2009-2010)
- Lessons Learned



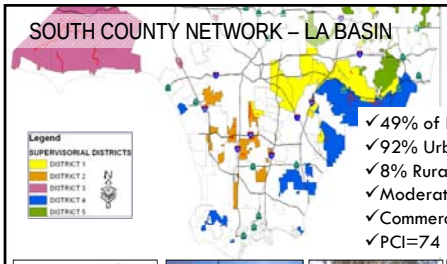
NORTH COUNTY NETWORK – SD5



- ✓51% of Network
- ✓Rural – 2 lanes
- ✓Low to Moderate Traffic
- ✓No Curb and Gutter
- ✓Extreme Temp. Fluctuations
- ✓ PCI=66



SOUTH COUNTY NETWORK – LA BASIN



- ✓49% of Network
- ✓92% Urban – 4 to 7 lanes
- ✓8% Rural – 2 lanes
- ✓Moderate to High Traffic
- ✓Commercial/Residential
- ✓PCI=74

Pavement Management System (PMS): THE KEY COMPONENT

PAST

- Worst-first approach
- Windshield Survey
- No forecasting capabilities
- Limited tool box
- Reactive

PRESENT

- Systematic Condition Assessment (PCI)
- Robust PMS Software
- Forecasting capabilities
- Customizable Decision Trees
- GIS Component, "Big Picture"
- Paradigm Shift to "Good roads first"
- Proactive

PAVEMENT DISTRESS SURVEY MANUAL

Pavement Management Unit
Geotechnical & Materials Engineering Division

Alligator

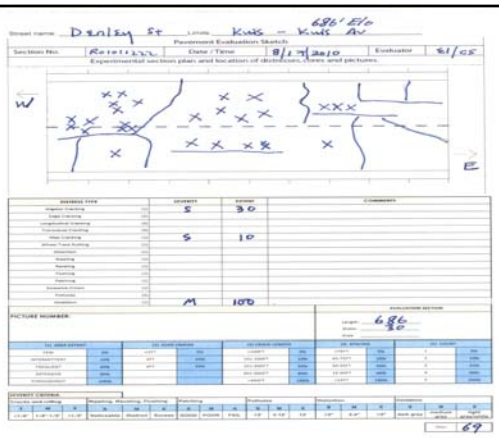
Cracks forming a network of multi-sided (polygon) blocks usually less than 1' on longest side.

Slight : Cracks < ¼" wide.

Moderate: Cracks ¼" to ½"

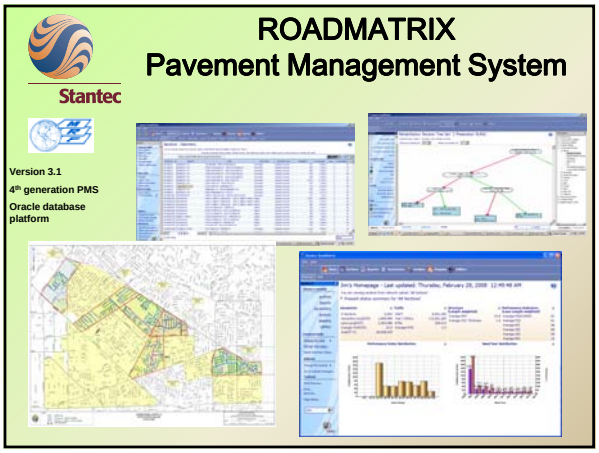
Severe: Cracks > ½ " wide.

Extent: % Area



Local Street-Overview (Fair Condition-PCI: 58-74)

Local Street-Close Up (Fair Condition-PCI: 58-74)



What condition is the road in?

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
PAVEMENT CONDITION INDEX (PCI) OF UNINCOPORATED COUNTY ROADS 2009

UNINCORPORATED LA COUNTY PCI (2009):	74	MAJOR PCI:	72	LOCAL PCI:	76

MAJORS		
SUPERVISORIAL DISTRICT	AREA (SF)	PCI
SD1	31,538,882	80
SD2	35,842,116	80
SD3	12,791,830	79
SD4	23,634,254	76
SD5	145,668,884	66
TOTAL	249,472,501	72

LOCALS		
SUPERVISORIAL DISTRICT	AREA (SF)	PCI
SD1	74,226,122	78
SD2	54,716,345	76
SD3	10,012,408	77
SD4	59,371,848	75
SD5	128,436,695	75
TOTAL	326,756,919	76

GENERAL NOTES:

PCI = 100-86 (EXCELLENT)

PCI = 39-0 (FAILED)

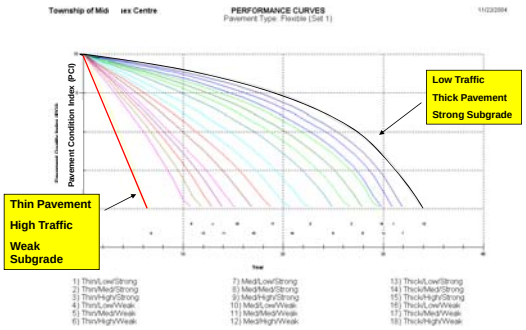
PCI = 74-58 (FAIR)

PCI = 85-75 (GOOD)

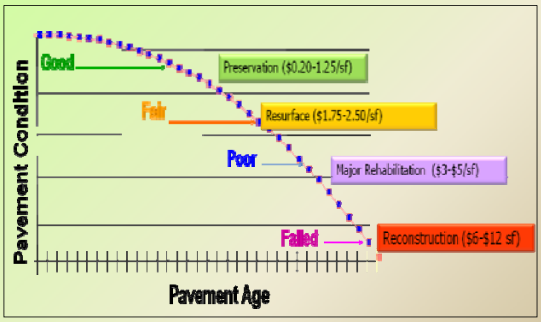
PCI = 57-40 (POOR)

CONDITION CATEGORY	TREATMENT STRATEGY
PCI = 100 - 86 (Excellent)	Do Nothing / Pavement Preservation
PCI = 85 - 75 (Good)	Pavement Preservation
PCI = 74 - 58 (Fair)	Resurface
PCI = 57 - 40 (Poor)	Major Rehabilitation
PCI = 39 - 0 (Failed)	Reconstruct

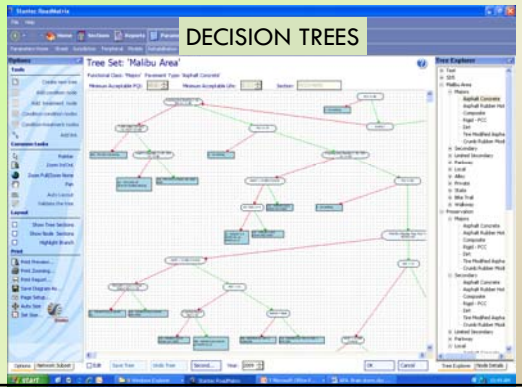
RoadMatrix
Performance Prediction Curves



When do we fix our road?

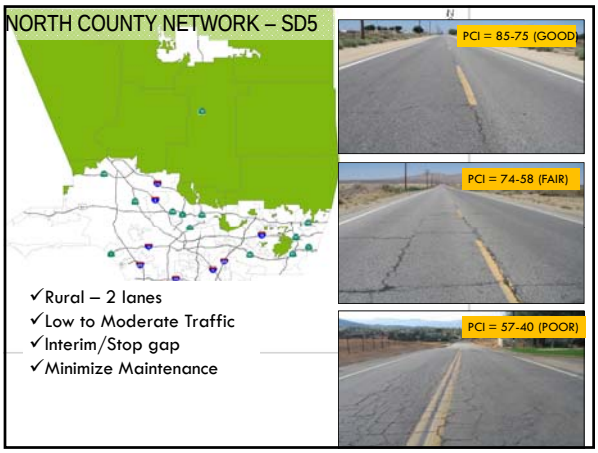


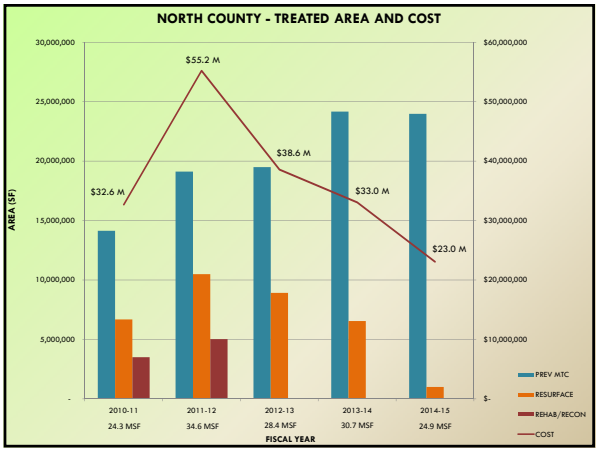
How do we fix our road?

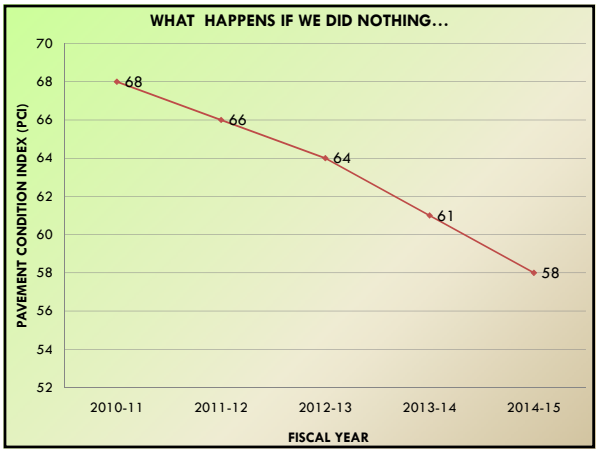


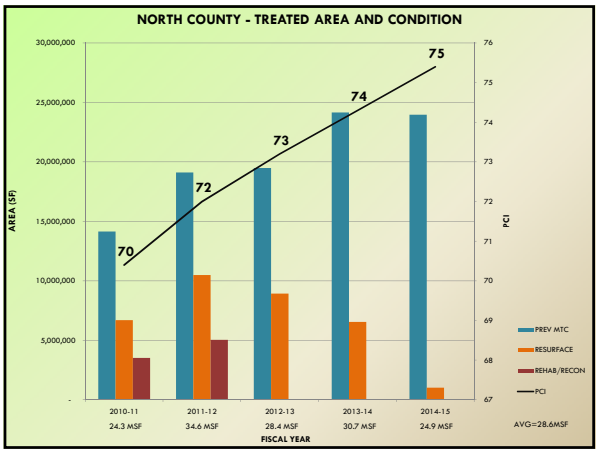
Treatment Strategy Considerations

1 Design	2 Construction	3 Additional
✓Distress type, severity & extent	✓Constructability	✓Cost Effectiveness
✓Structurally adequate	✓Location	✓ Life Expectancy
✓Traffic level	✓Treatment timing	✓ Public Perception
	✓Temperature	

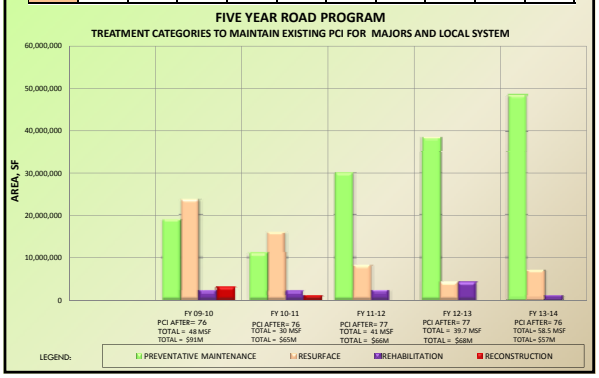

NORTH COUNTY NETWORK – SD5
PCI = 85-75 (GOOD)
PCI = 74-58 (FAIR)
PCI = 57-40 (POOR)
✓Rural – 2 lanes
✓Low to Moderate Traffic
✓Interim/Stop gap
✓Minimize Maintenance

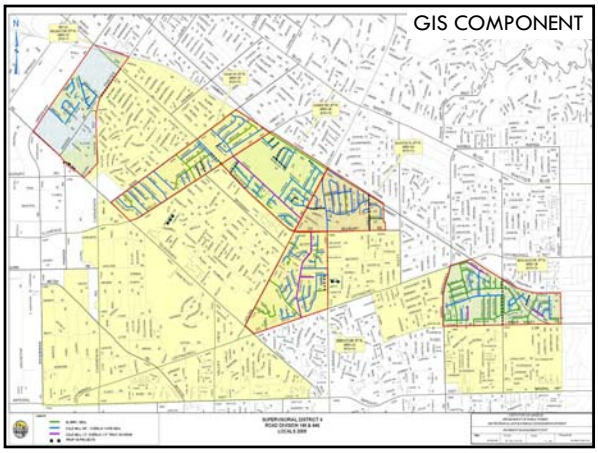

NORTH COUNTY - TREATED AREA AND COST
AREA (SF)
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
-
$60,000,000
$50,000,000
$40,000,000
$30,000,000
$20,000,000
$10,000,000
$-
$32.6 M
$55.2 M
$38.6 M
$33.0 M
$23.0 M
2010-11
24.3 MSF
2011-12
34.6 MSF
2012-13
28.4 MSF
2013-14
30.7 MSF
2014-15
24.9 MSF
FISCAL YEAR
PREV MTC
RESURFACE
REHAB/RECON
COST


WHAT HAPPENS IF WE DID NOTHING…
PAVEMENT CONDITION INDEX (PCI)
70
68
66
64
62
60
58
56
54
52
68
66
64
61
58
2010-11
2011-12
2012-13
2013-14
2014-15
FISCAL YEAR



	FY 2009-2010*		FY 2010-2011*		FY 2011-2012		FY 2012-2013		FY 2013-2014	
	COST	PCI	COST	PCI	COST	PCI	COST	PCI	COST	PCI
MAJORS	$62M	76	$49M	76	$26M	76	$25M	76	$25M	76
LOCALS	$32M	78	$13M	77	$44M	78	$39M	77	$43M	78





Preservation Projects 2008-2010

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- Cape Seals – 11 MSF
- Micro-surfacing Type II -1.0 MSF
- Slurry Seals – 13.0 MSF
- Chip Seals – 7.0 MSF

32 MSF of Roads Preserved
Cost of $11.7 million

Microsurfacing on Scrub Seal

Piuma Road, Et al

Length: Approximately 15 miles

Width: Range from 24 to 26 feet

Average Pavement Condition Index (PCI): 63

Predominant distresses: slight longitudinal cracking (20%) and slight transverse cracking (30%)

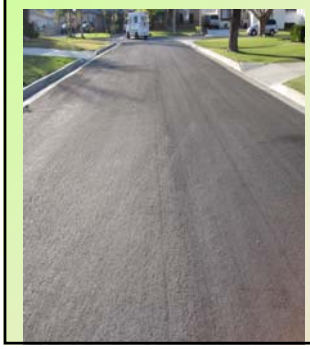
Existing Structural Section: 5 inches of Asphalt Concrete (AC) on native soil

10-Years TI: 5.0-5.5

Microsurfacing on Scrub Seal

Microsurfacing on ARAM

Cape Seal: Type II Slurry **on** ARAM



Arroyo and Richvale, Et Al

Area: 2.5 MSF
Width: 20 to 64 feet
PCI Range: 57-80
Predominant distresses: moderate alligator cracking (10%) and moderate map cracking (60%)
Existing Structural Section: 3 to 7 inches of Asphalt Concrete (AC) on 3 to 8 inches of soil mixture
10-Years TI: 5.0-10.0

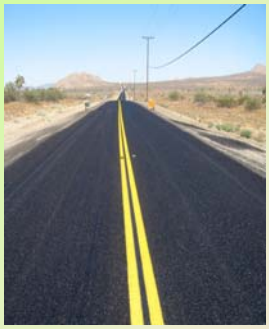
Double Chip Seal

Red Rover Mine Road

Length: 2 miles
Width: Range from 24 to 26 feet
Average Pavement Condition Index (PCI): 47
Predominant distresses: severe alligator cracking throughout (80%)
Existing Structural Section: 5 inches of Asphalt Concrete (AC) on native soil
10-Years TI: 5.0

Terminal Blend Chip Seal

Avenue J and Avenue O



Length: 6.5 miles

Width: 24 feet

Average PCI: 42

Predominant distresses: moderate alligator cracking (30%) and moderate map cracking (50%)

Existing Structural Section: 2 inches of Asphalt Concrete (AC) on 3 inches of soil mixture or Crushed Miscellaneous Base (CMB)

10-Years TI: 7.0-9.0

Bonded Wearing Course (BWC)

Kanan Dume Road

Rural Major Road

Length: **Approximately 2.8 miles**

Width: **26 to 60 feet**

Average Pavement Condition Index (PCI): **71**

Predominant Distress: **moderate longitudinal and transverse cracking (30%), localized alligator cracking (<10%)**

Existing Structural Section: **5 to 8 inches of Asphalt Concrete (AC) on native soil**

10-Years TI: **8**

What did we learn?

- Pavement management system is key in a pavement preservation program.
- Street condition ratings is the basis of all analyses, so strive for accurate data.
- During strategy selection, take into consideration aesthetics/public expectations. Community outreach is a must!
- Construction inspection and material testing significantly impacts quality of project ("Expect what you Inspect")
- Education and training on pavement preservation is on-going

- In these challenging economic times, pavement preservation must be a teamwork effort between agency, industry, material suppliers, and contractors.

Thank You!