



CITY COUNCIL AGENDA ITEM

TO: Mayor & City Council **DATE:** September 14, 2012
FROM: John McDonough, City Manager
AGENDA ITEM: Citywide Pavement Condition Update
MEETING DATE: For Submission onto the September 18, 2012, City Council Work Session Meeting Agenda

BACKGROUND INFORMATION: (Attach additional pages if necessary)

See attached:

APPROVAL BY CITY MANAGER: JFM APPROVED

PLACED ON AGENDA FOR: 9/18/2012

CITY ATTORNEY APPROVAL REQUIRED: () YES () NO

CITY ATTORNEY APPROVAL: _____

REMARKS:



2012 State of the Roadway Network in Sandy Springs

Roadways are the economic lifeline of a community; they provide the means for communities to grow and commerce to flourish.

As such they are an investment to be maintained.

Jon Drysdale, P.E., Principal
Lowe Engineers

Stephen Smith, P.E., Principal
IMS Infrastructure Management Services

State of the Road Network in Sandy Springs



City Of Sandy Springs Roadway Network

Pavement Condition Index (PCI) Displayed,
Grouped Using Descriptive Terms



98,000 +/- people
320 CL +/- miles of City roadways (non-state, non-private)
Slightly lower density than an average City
47 M square feet of pavement

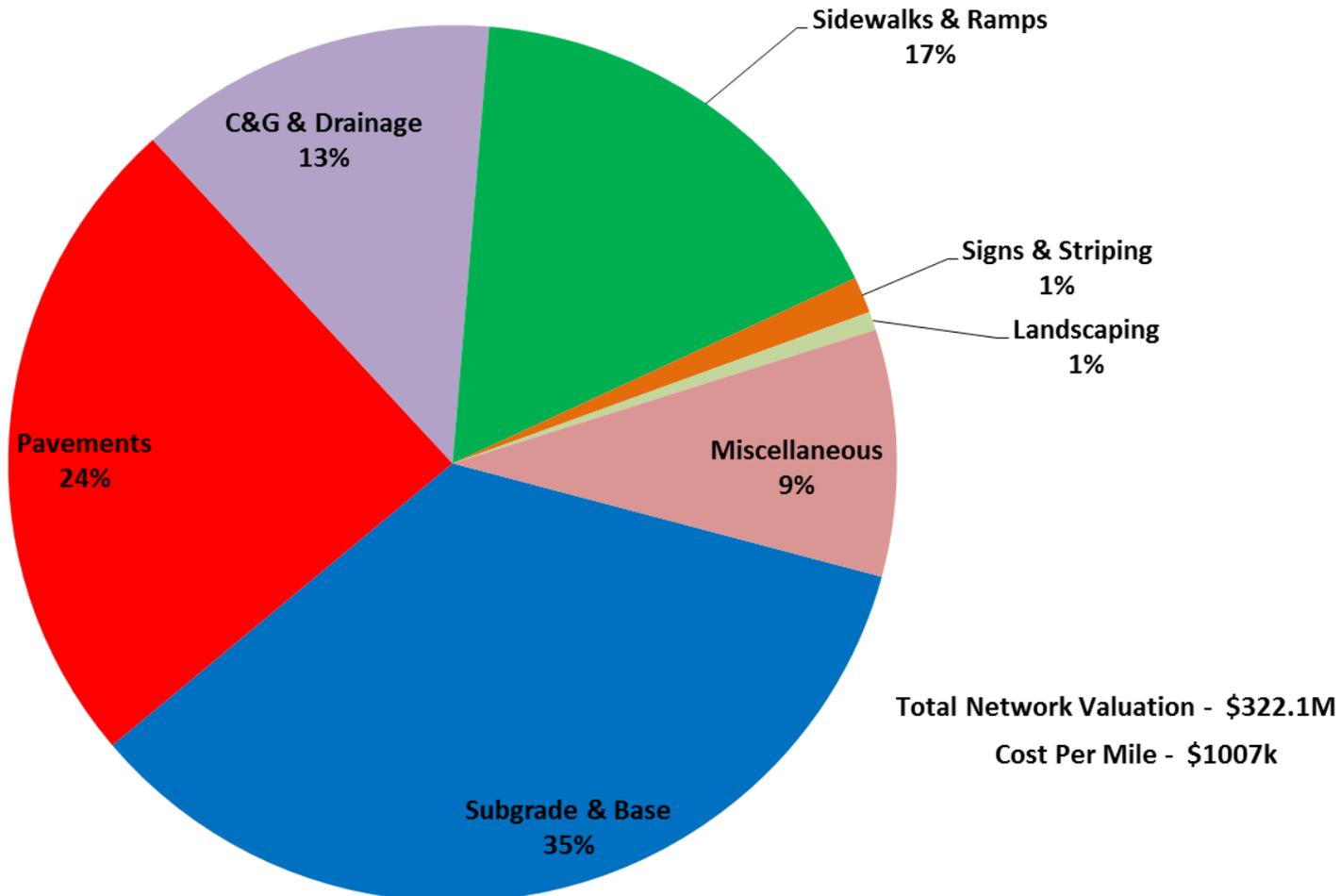
Single largest City asset valued at \$1.0M/mile
or \$322M = \$13.5k/household

Early look at good news:
PCI = 70 = Fair (above national average, was
71 in 2009)
Back log = 11.5% (target < 15%)
Still rating a solid A-

Scale of Investment



City of Sandy Springs - Network Valuation



Concept of Payroll Management...



**City Objectives,
Policies & Budgets**

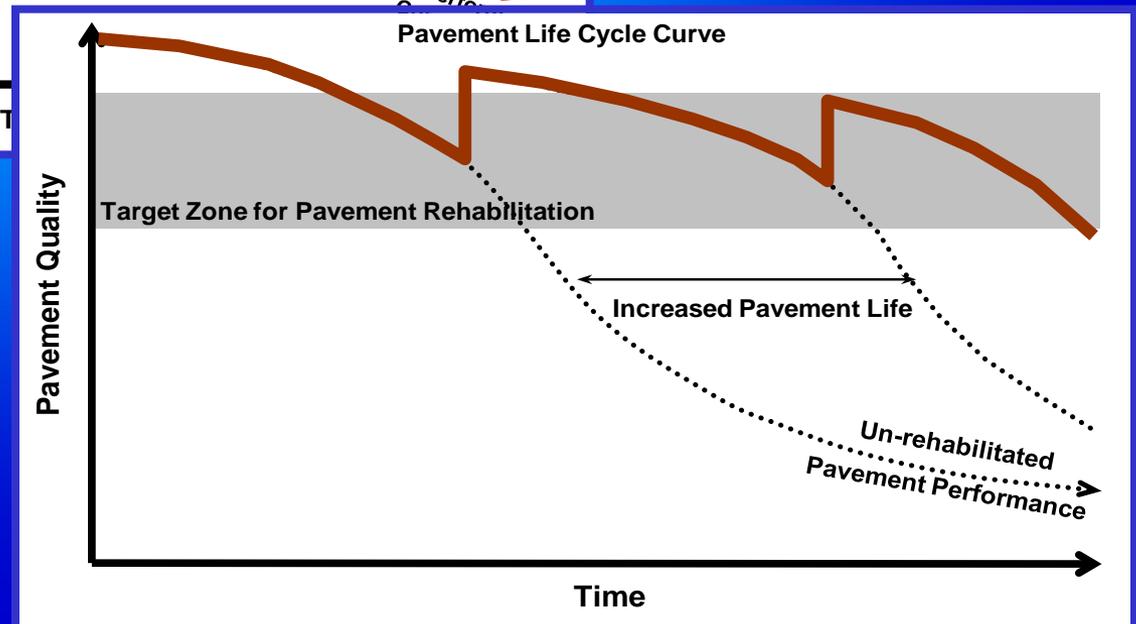
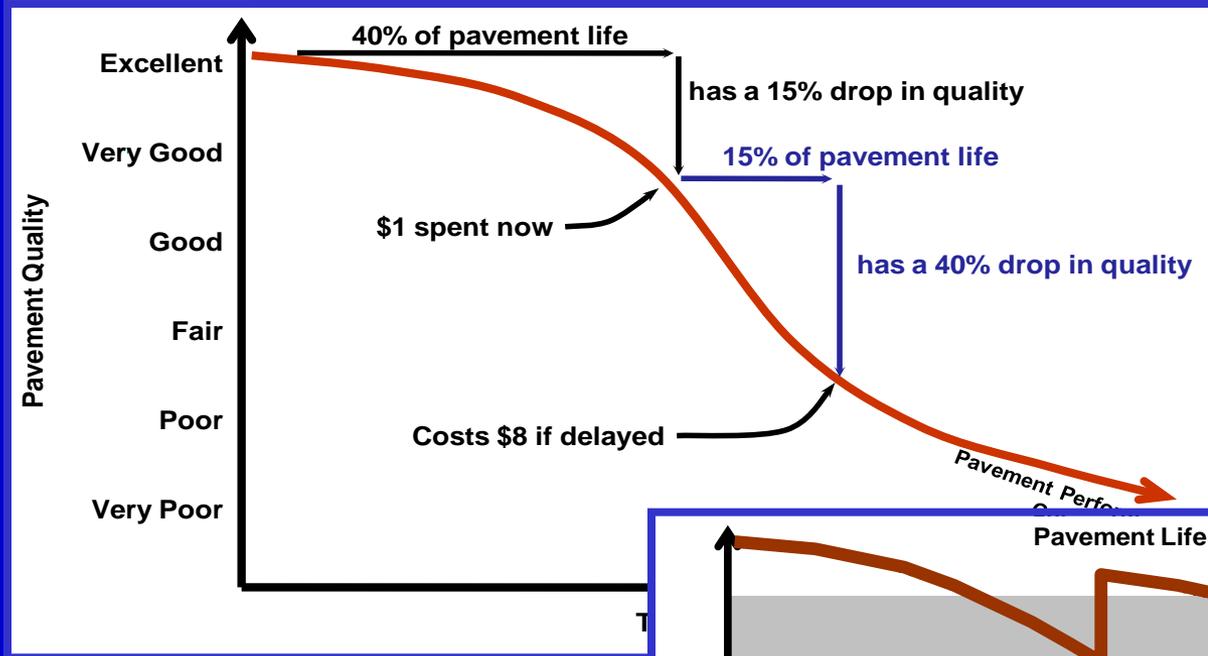
**Balanced
Approach**

**Priorities,
Analysis Techniques
& Reporting**



**Understanding of
Condition**

Why do Pavement Management....



Tools to Rate the Streets – Objective Surveys



Condition focuses on:

Fatigue/Alligator Cracking

Wheel path Rutting

Cracking

Distortions, Weathering & Flushing

Patching & Potholes



Slight drop in PCI since 2009 due to aging, however strong gain in higher rated streets

Building the Pavement Condition Index (PCI)



Surface Distress Index (SDI)

- Rutting
- Longitudinal Cracking
- Alligator Cracking
- Distortions
- Edge Cracking
- Patches & Potholes
- Transverse Cracking
- Map Cracking
- Raveling
- Bleeding

67% Surface Distress

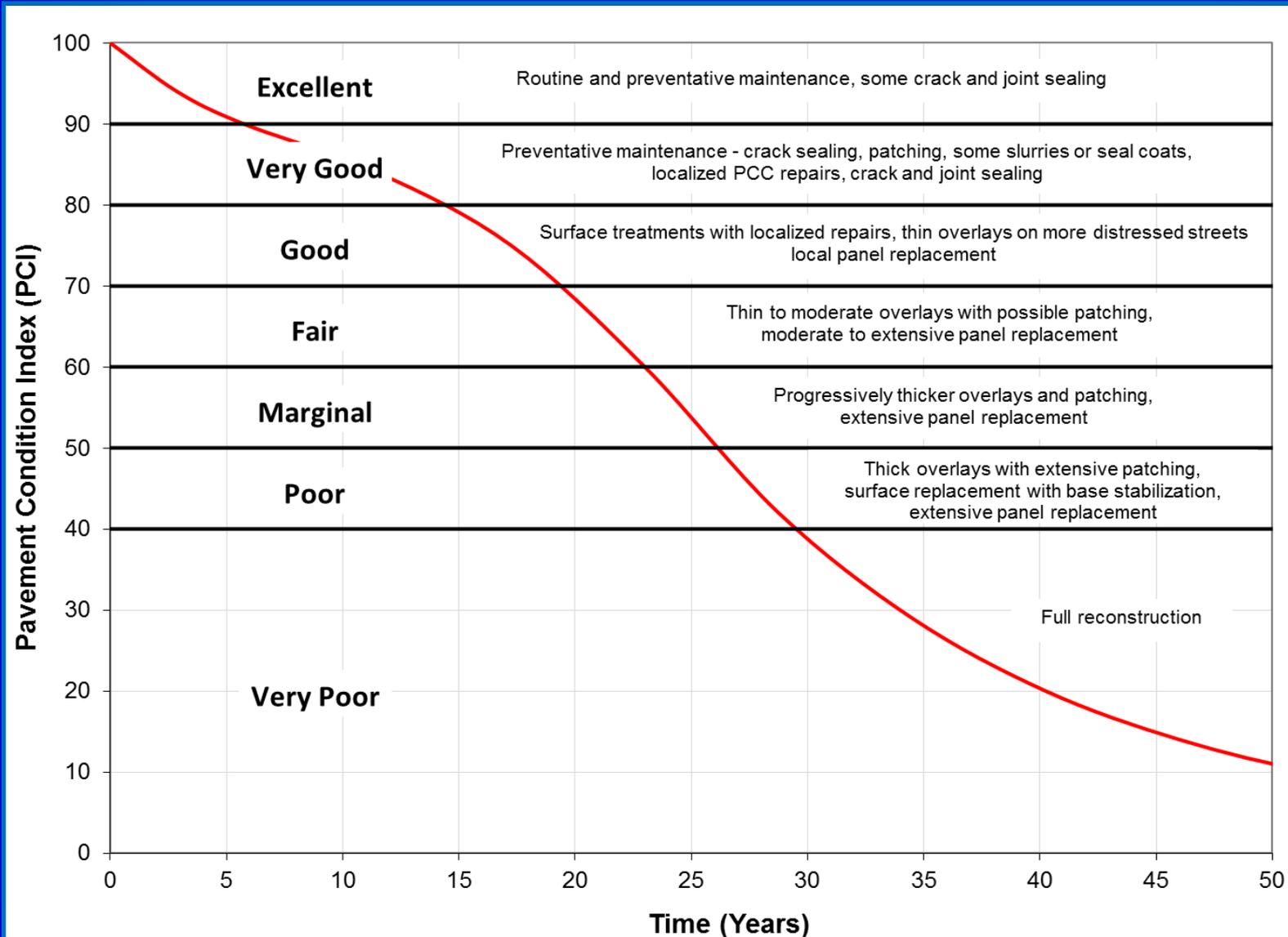
Roughness Index (RI)

- Left Wheel Path
- Right Wheel Path

33% Roughness

Pavement Condition Index (PCI)
0 to 100 Score

Understanding the Pavement Condition Index.....



Understanding the PCI.... Very Poor (0 – 40)



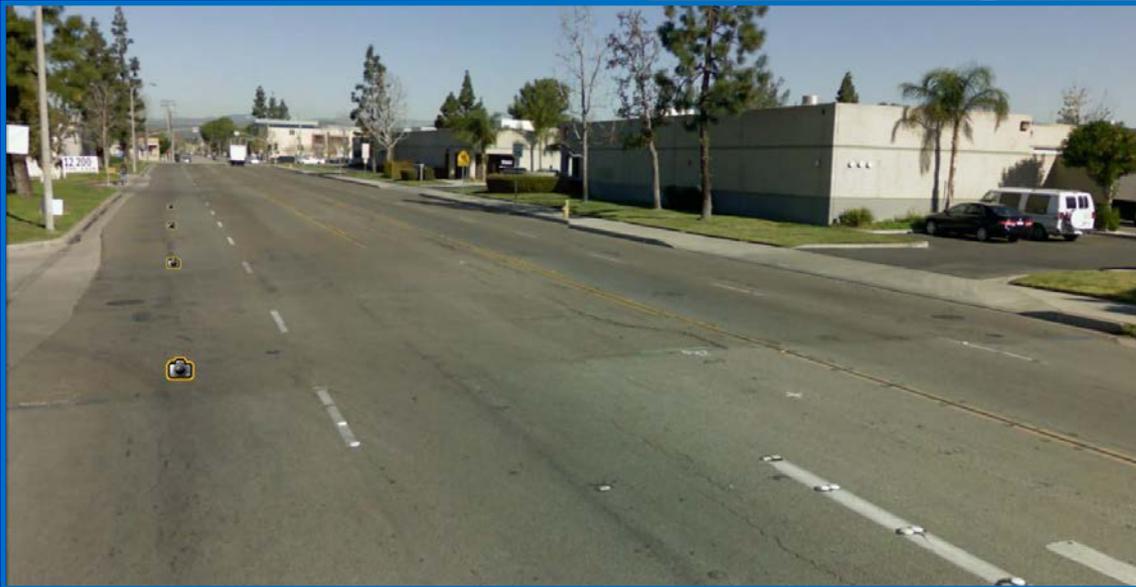
Base &/or Structural Failures
Rutting
Excessive Cracking

Past point of overlay based rehab

Understanding the PCI....Poor to Marginal (40 – 60)



Localized Base Failures
Rutting at stop bar
Progressive Cracking
Extensive patching

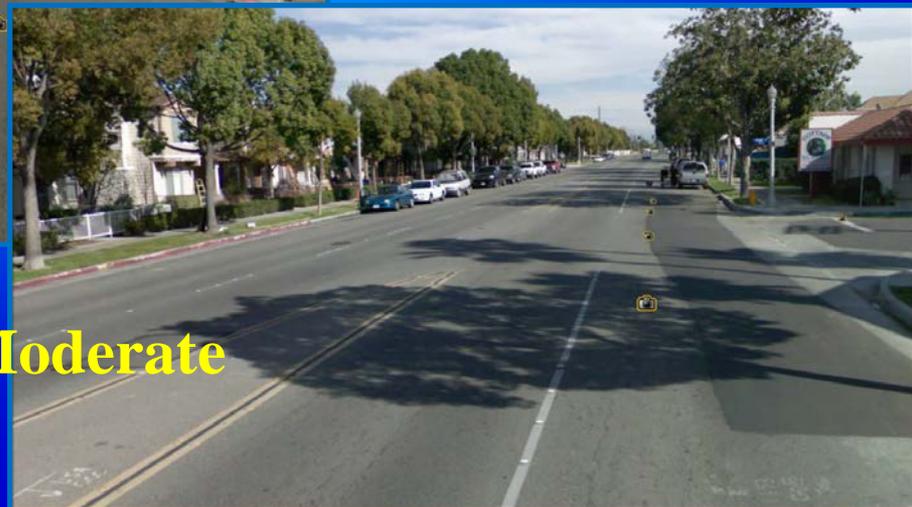
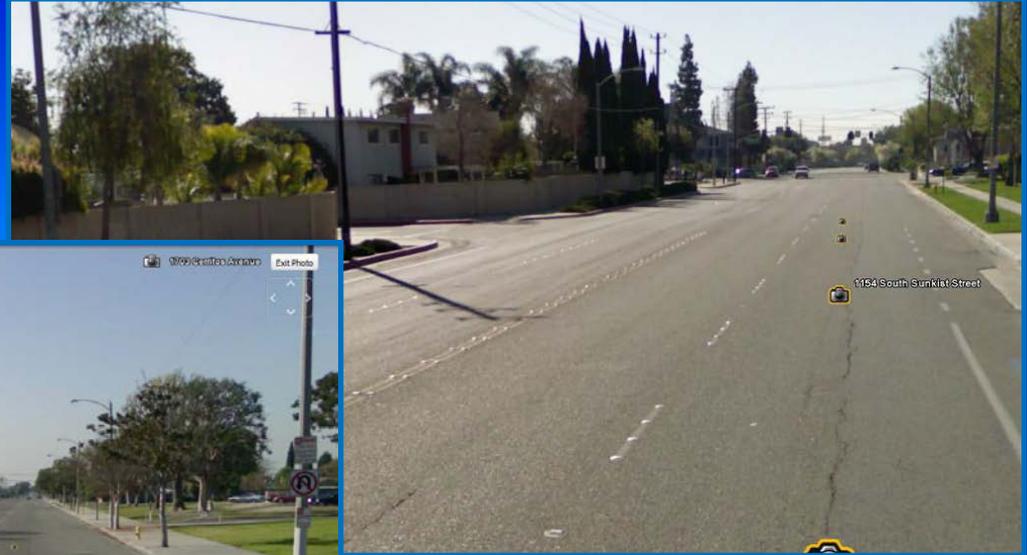


Tired streets due for a progressively thicker overlay

Understanding the PCI....Fair (60 – 70)

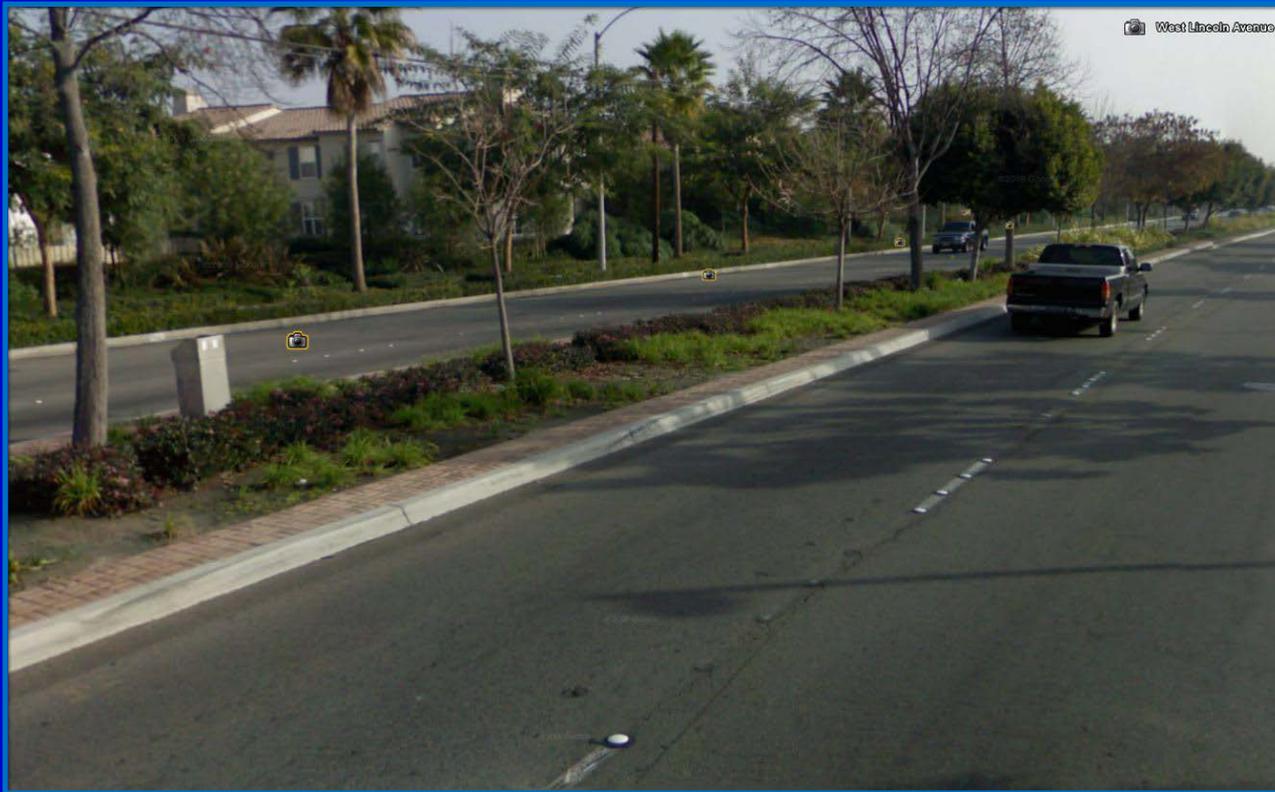


**Localized distresses
No Failures**



**Optimum timing for Thin – Moderate
Overlay
Greatest cost benefit**

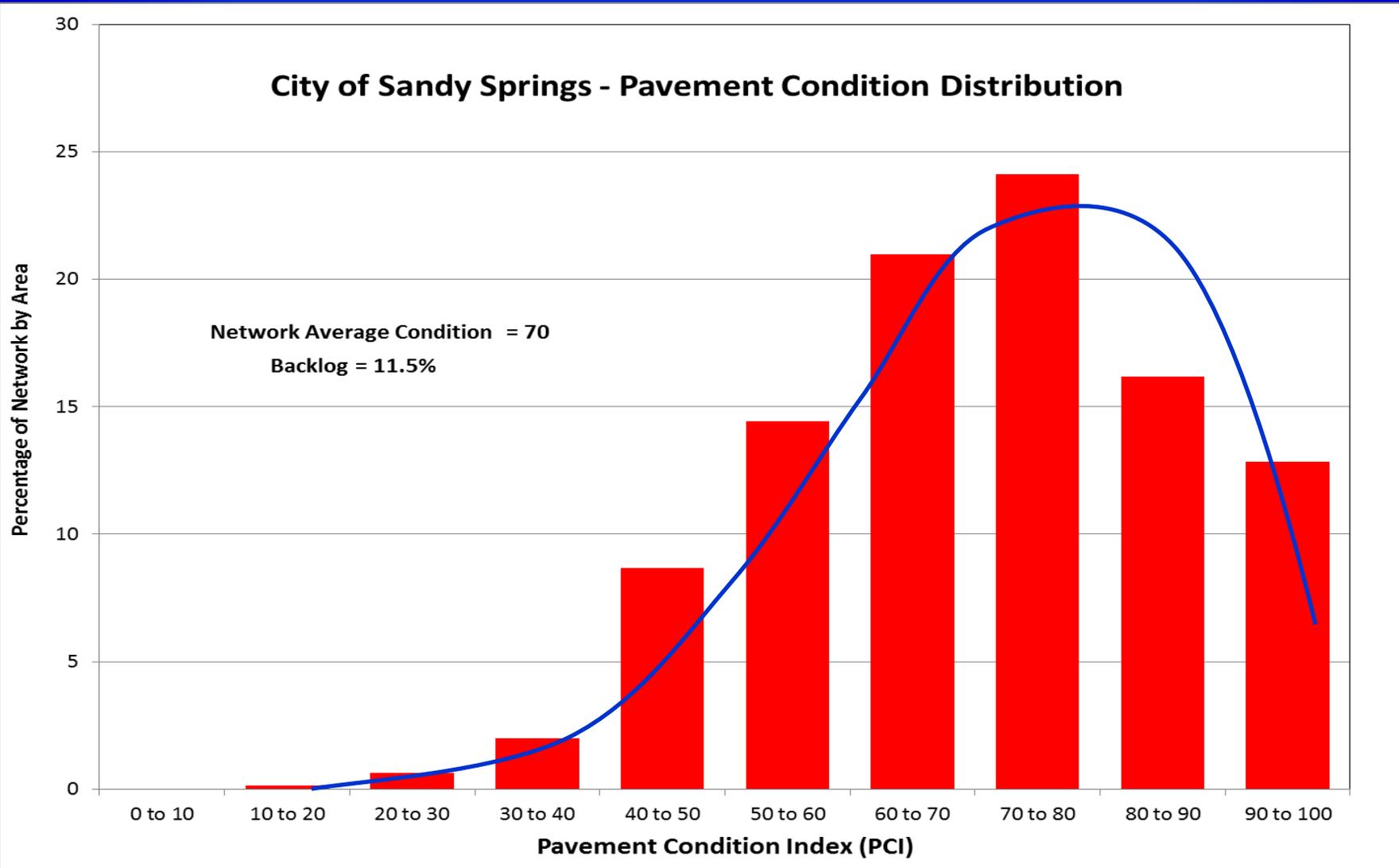
Understanding the PCI....Good (70 - 80)



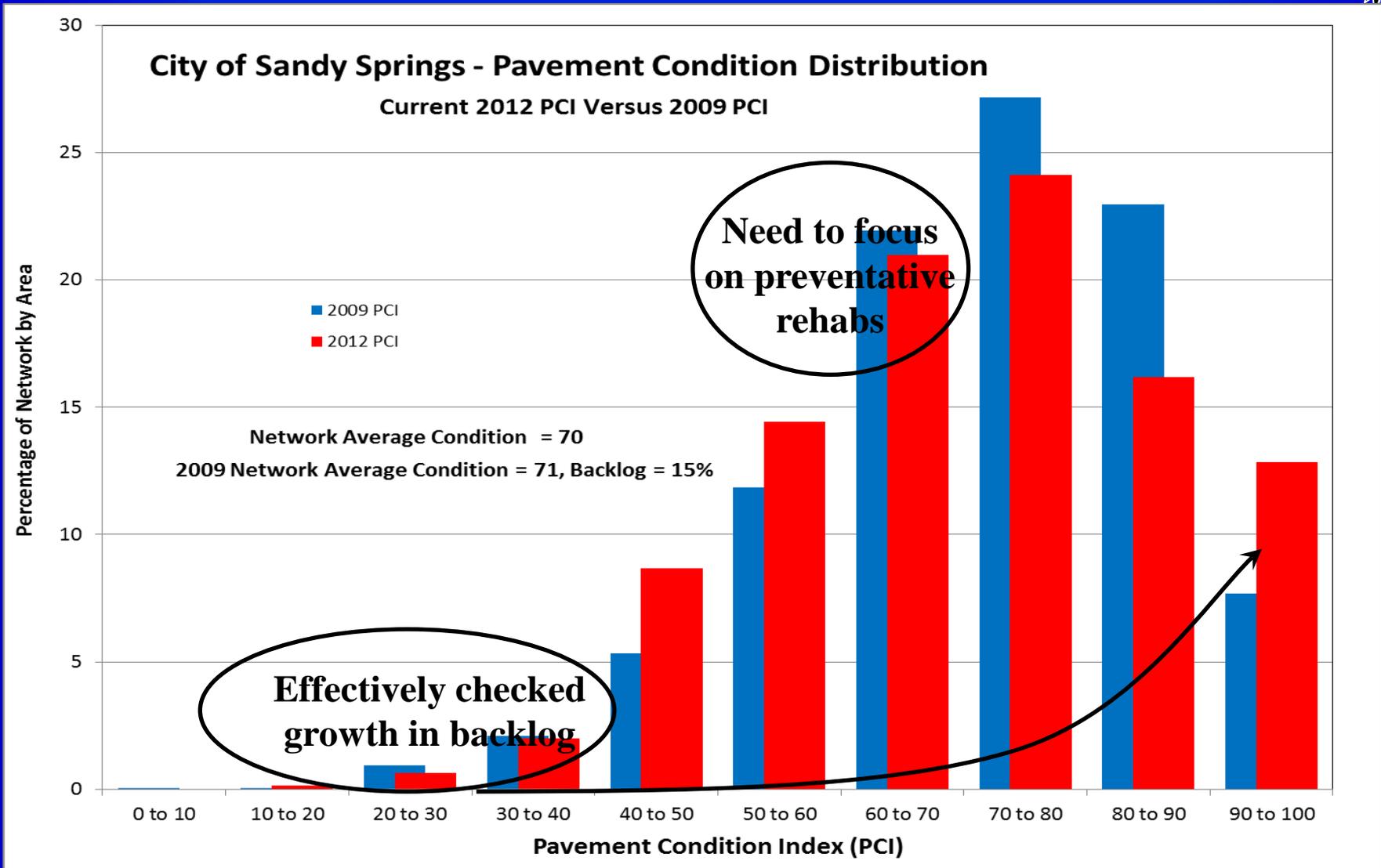
**Very few distresses
No Rutting
No Failures**

Surface treatment based rehabilitation before distresses appear adds no structural value, if distressed due to loading – thin overlay

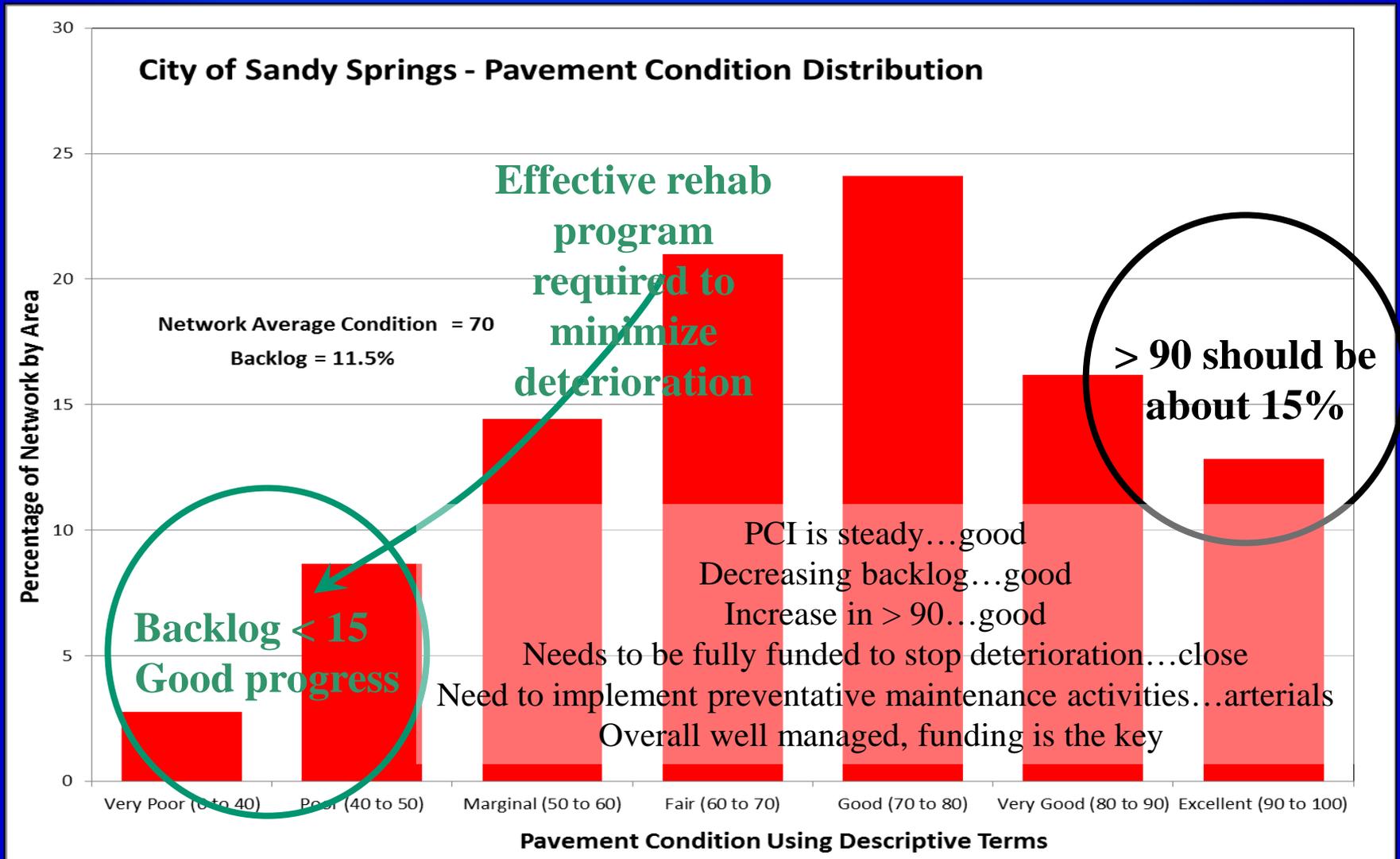
Sandy Springs Results for 2012.....



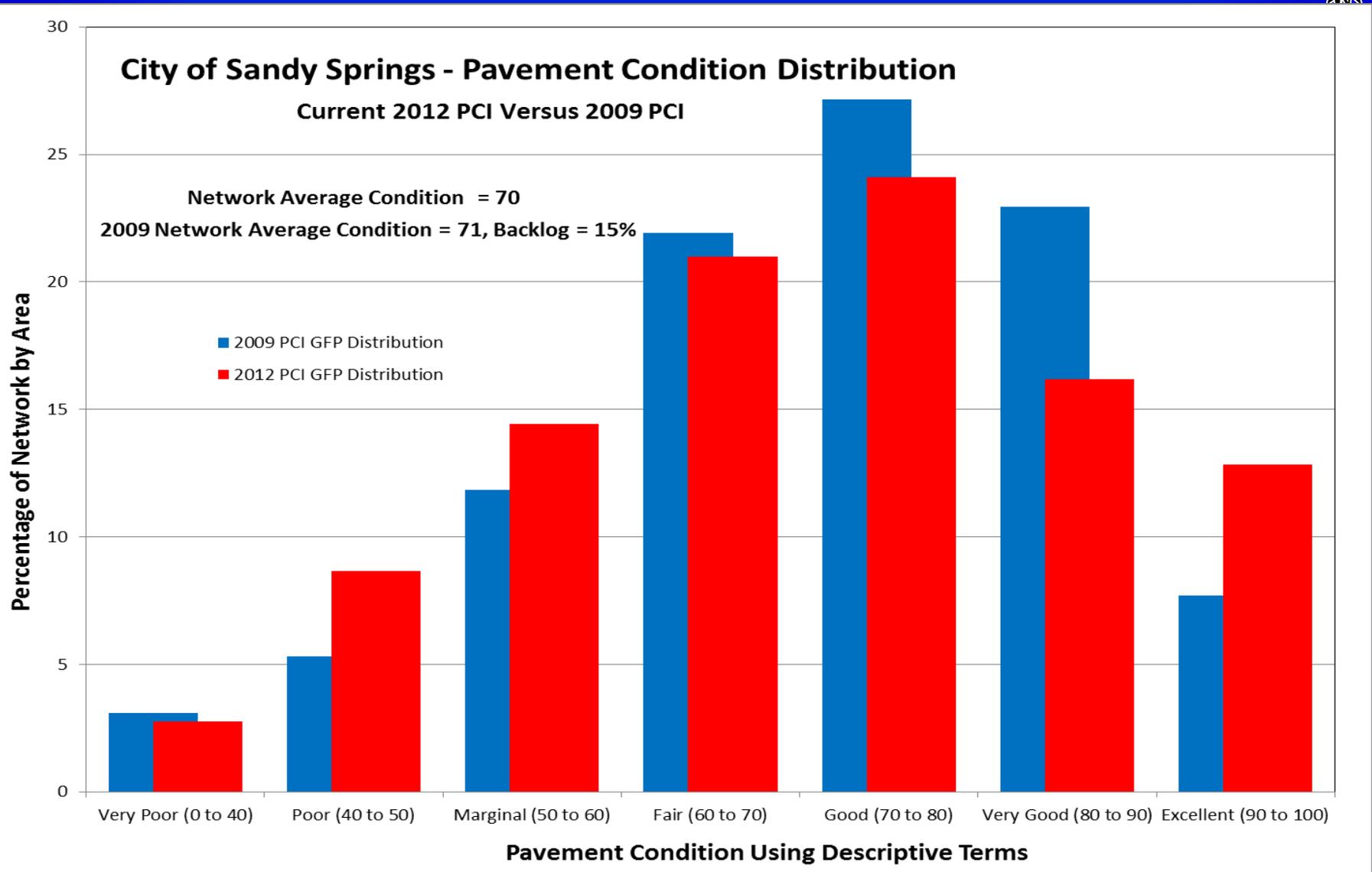
Sandy Springs....2012 compared to 2009



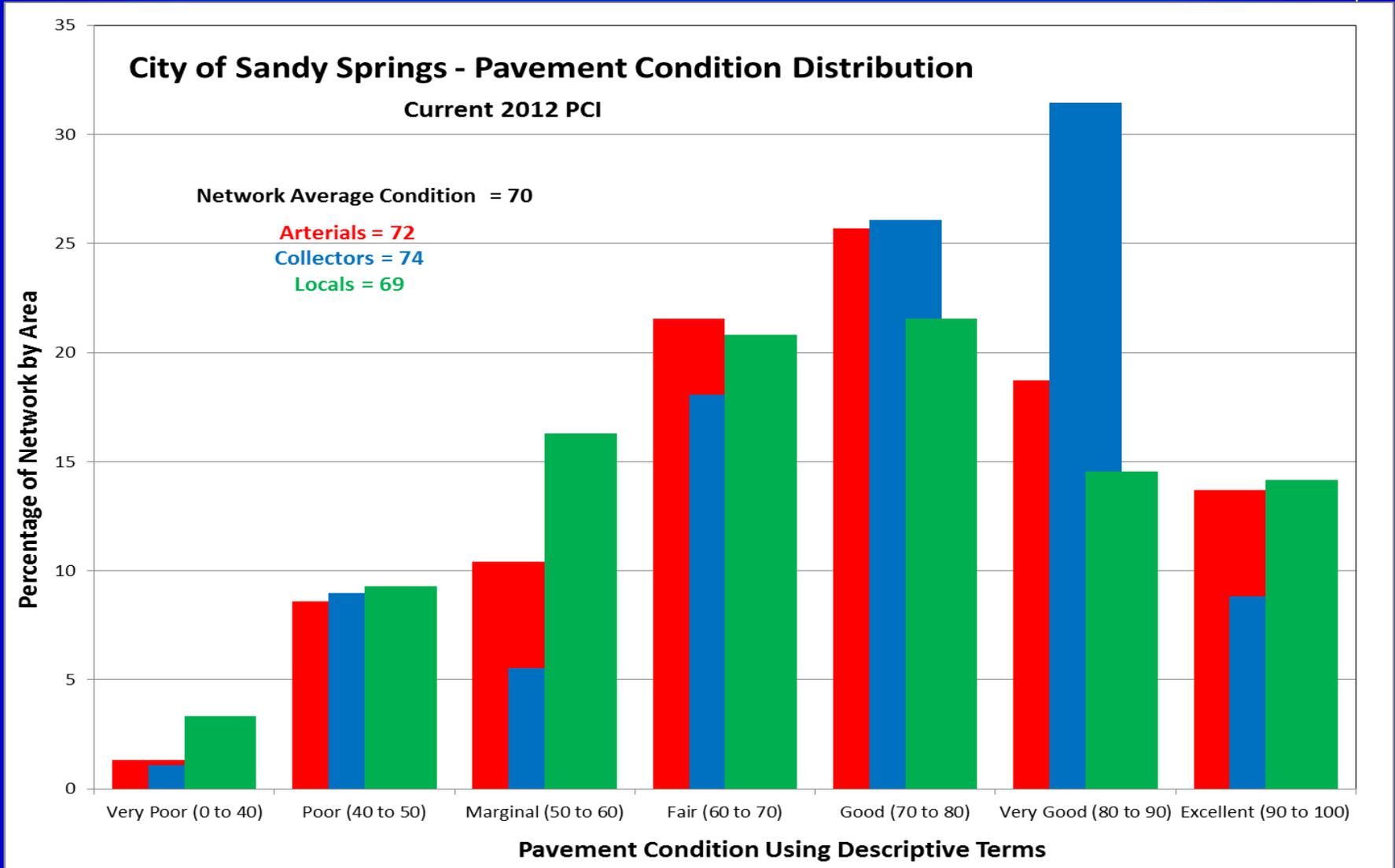
Sandy Springs Results...mainly good, some areas of concern



Sandy Springs Results...improvement since 2009



Sandy Springs Results



Sandy Springs Looking Forward....



Arterials have the highest priority
Followed by collectors then locals

Order of rehab selection to be based
on the additional cost if deferred.

For example:

if a street requiring a thick overlay is deferred, the incremental cost is about 100%, but if a street slips from a thin to a moderate overlay, the penalty is only about a 25% increase.

Sandy Springs Looking Forward...



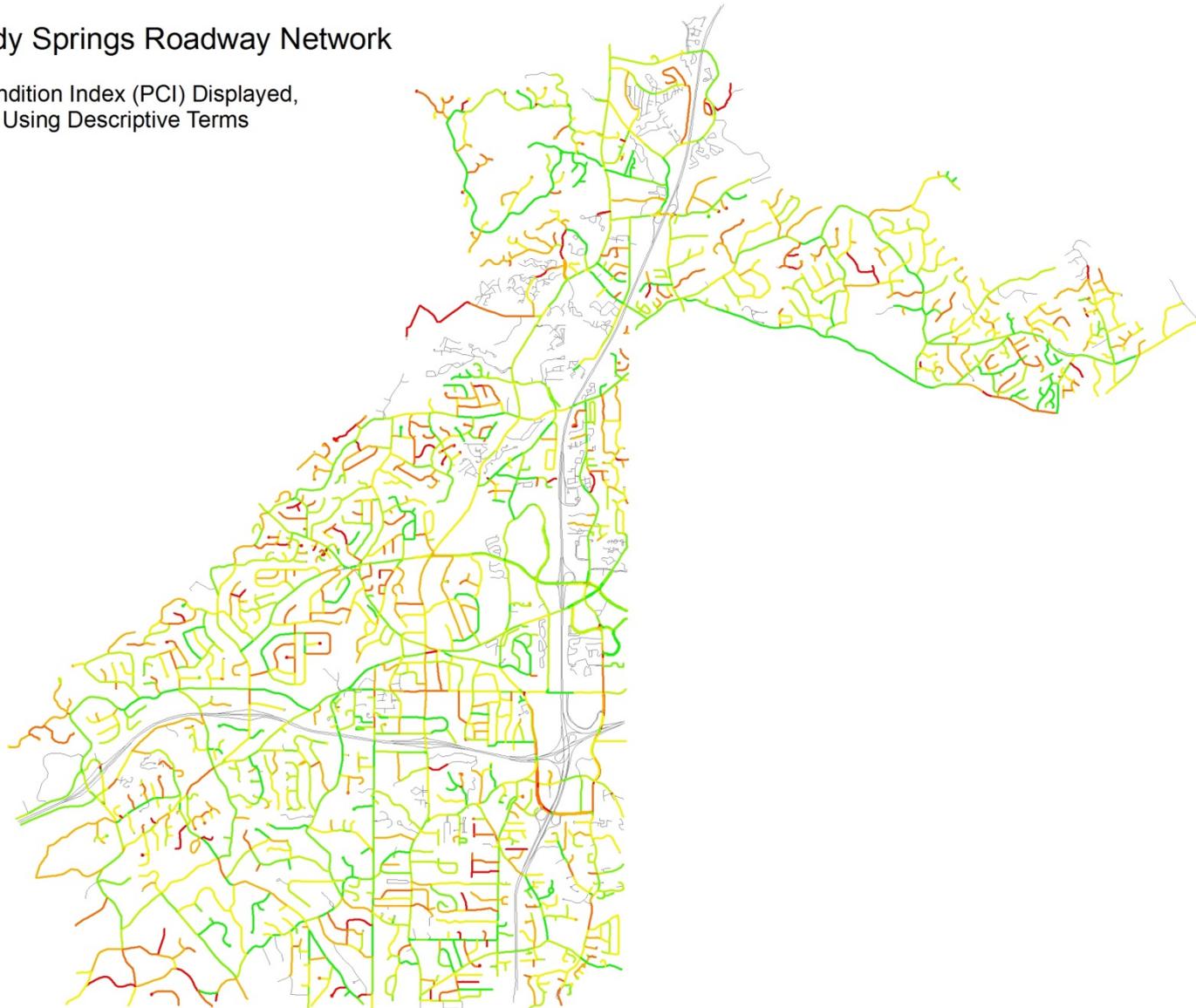
Estimated Total Network Deficiency and Life Cycle Cost

Asphalt Deficiency	Total Cost (\$)	% of Total	ART	COL	LOC	Life Cycle (years)	Life Cycle Cost (\$)
Full Reconstruction	6,387,200	9.2	514,300	250,800	5,622,100	30	213,100
Partial Reconstruction	15,512,900	22.4	2,324,900	1,412,500	11,774,800	25	620,300
Thick Overlay	12,737,100	18.4	1,330,400	440,600	10,951,000	15	850,100
Moderate Overlay	16,075,000	23.2	2,448,700	1,248,200	12,338,800	15	1,071,600
Thin Overlay & Rehab	18,484,400	26.7	3,007,700	1,989,100	13,382,700	10 - 15	2,128,800
Total Asphalt Network:	69,185,600	100	9,621,300	5,337,400	54,064,900		4,883,900

Sandy Springs Results

City Of Sandy Springs Roadway Network

Pavement Condition Index (PCI) Displayed,
Grouped Using Descriptive Terms



Legend	
SS PCI Scores	
PCI	
Red line	Very Poor (0 - 40)
Orange line	Poor (40 - 50)
Yellow line	Marginal (50 - 60)
Light Green line	Fair (60 - 70)
Green line	Good (70 - 80)
Dark Green line	Very Good (80 - 90)
Lightest Green line	Excellent (90 - 100)
Grey line	Streets Not Surveyed

Next Steps



- \$4.2 Million in Pavement Repair Funds available in current FY
- Staff recommends priority of funding to be committed to Preventative Rehabilitation (patching and thin overlays) on roads rating from 50-70 in PCI order (lowest score first) if possible.
- Remainder of funds for reconstruction & resurfacing of roads to address ratings from 0-50 in PCI order (lowest score first).

