

**PRESENTATION ON
NEW STREET
CONDITION RATING SYSTEM**



CITY OF BLOOMINGTON

PAVEMENT MANAGEMENT

By Kevin Kothe

**Department of Public Works
Engineering Division**

ENGINEERING DEPARTMENT

- Began collecting data in 2006
- Every block and intersection are rated
- In 2007 started pavement layer in the GIS
– Geographic Information System
- Streets are rated on a scale of 1 to 10



CITY OF BLOOMINGTON

- Ratings are based on PASER Manuals and the rating system developed by the University of Wisconsin

Pavement Surface Evaluation and Rating

PASER Asphalt Roads Manual

RATING
10



RATING
7



RATING
4



RATING
1




 **Transportation
Information Center**
University of Wisconsin–Madison

➤ Separate manual for Concrete Streets

Pavement Surface Evaluation and Rating

PASER Concrete Roads Manual




RATING 10

RATING 7

RATING 4

RATING 1

 **Transportation Information Center**
University of Wisconsin–Madison

RATING SYSTEM

10 - New

5 - Fair +

9 - Excellent

4 - Fair -

8 - Very Good

3 - Poor

7 - Good +

2 - Very Poor

6 - Good -

1 - Failed

GIS Data

Attribute Data

ID	5596
PERIMETER	147.82
AREA_SY	614.8
CURB_FT	32.2
CURB_TYPE	B6.18
CURB_COND	7
SURF_COND	8
INTER_ID	0
NAME	Livingston St
ROUTE	
BLOCK	600
PRE_DIR	5
NAME_NS	Livingston St
NAME_EW	
ROAD_TYPE	City Street
YEAR_BUILT	0
CONTRACTOR	
FUNDI_SOUR	
OWNED_BY	COB
MNT_MAJOR	COB
MNT_MINOR	COB
YEAR_OVERL	1999
OVERL_DEP	0
SURF_ADDTY	HMA
SURF_ADDIN	0
SURF_ORGTY	HMA
SURF_ORGIN	0
SUBSURF_TY	
SUBSURF_IN	0
BASE_TYP	
BASE_IN	0
SUBBASE_TY	
SUBBASE_IN	0
PLANNUMBER	P-1029
PROJECT_NU	
FILENAME	P1029P19.TIF



Livingston Street north of Oakland

Rated 8

03/17/2009 11:10

Wood Street west of Morris

Rated 6

03/17/2009 11:06

Croxtton Avenue east of Ryan

Rated 5

03/17/2009 10:34

Olive Street from Mason to Lee

Rated 4

03/16/2009 13:50

Kreitzer Avenue south of Grove



Rated 3

03/17/2009 10:14

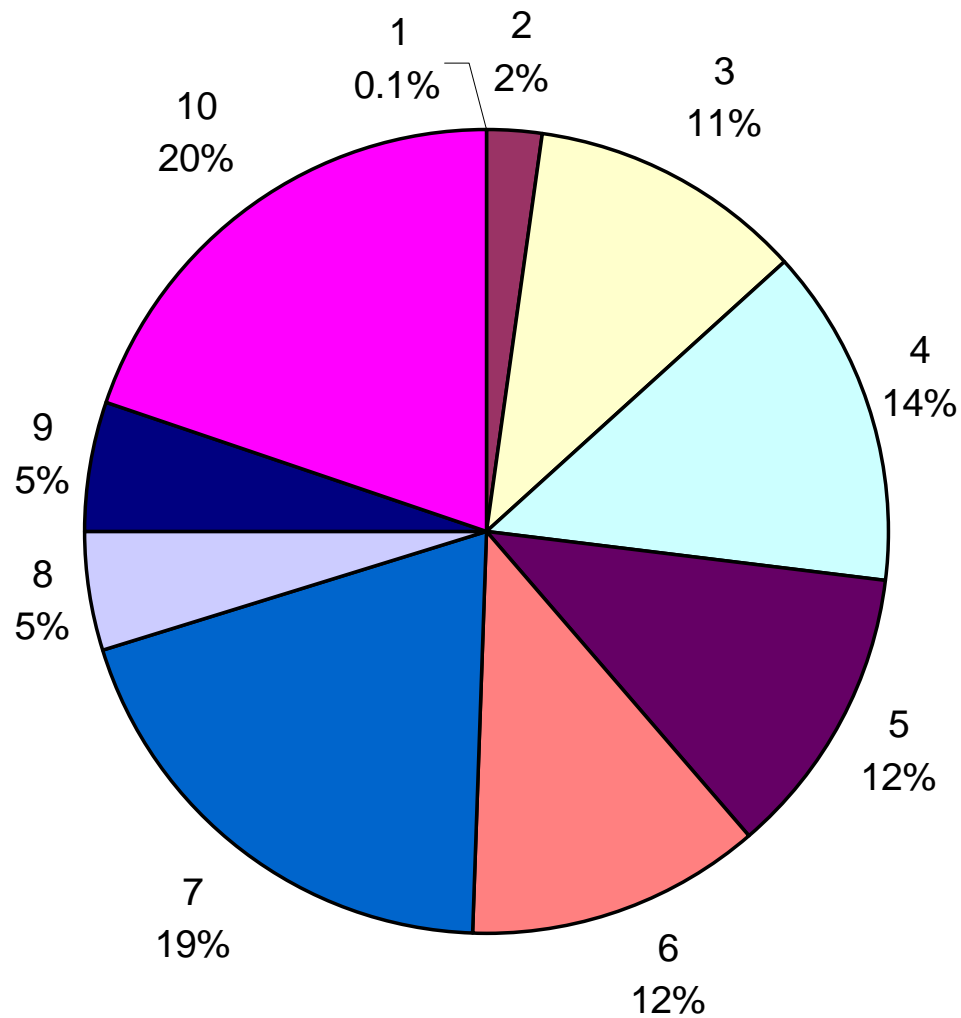


**Livingston Street at
Blackstone**

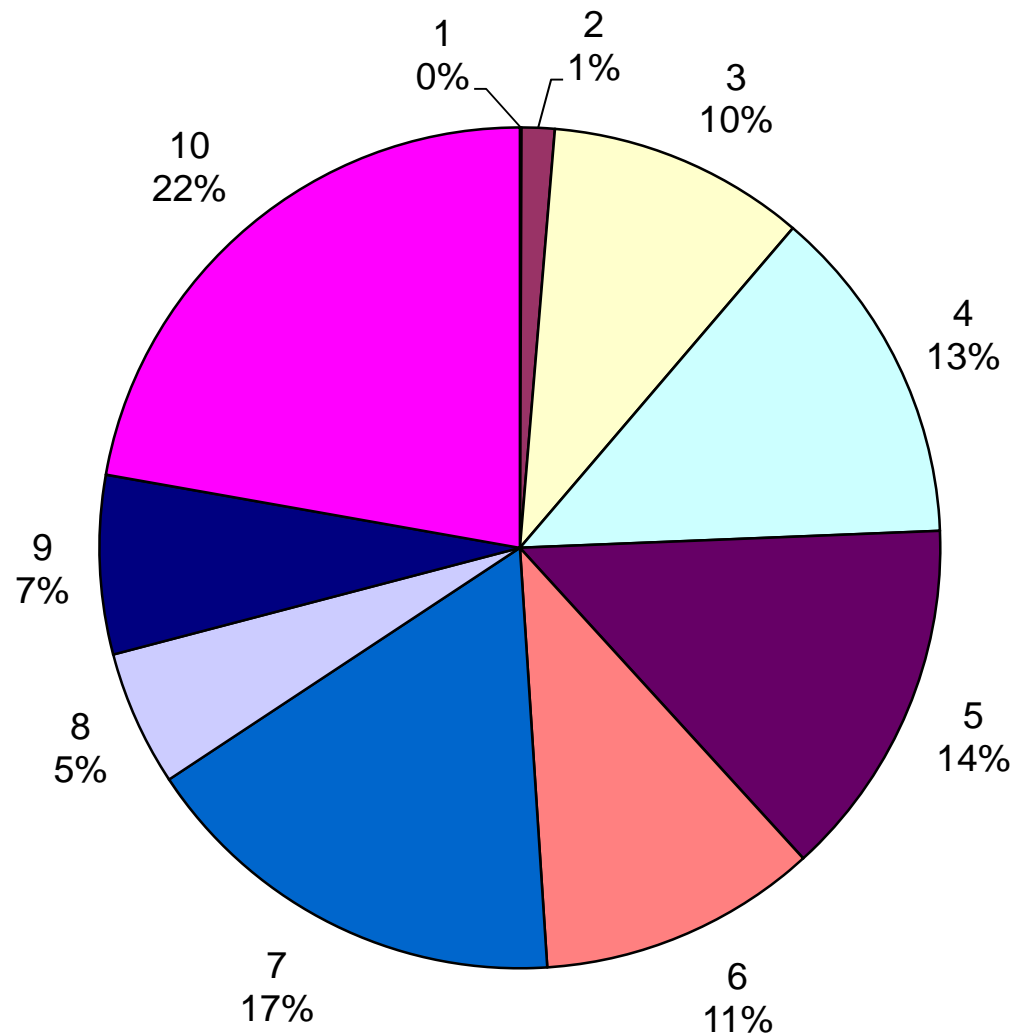
Rated 2

03/16/2009 13:32

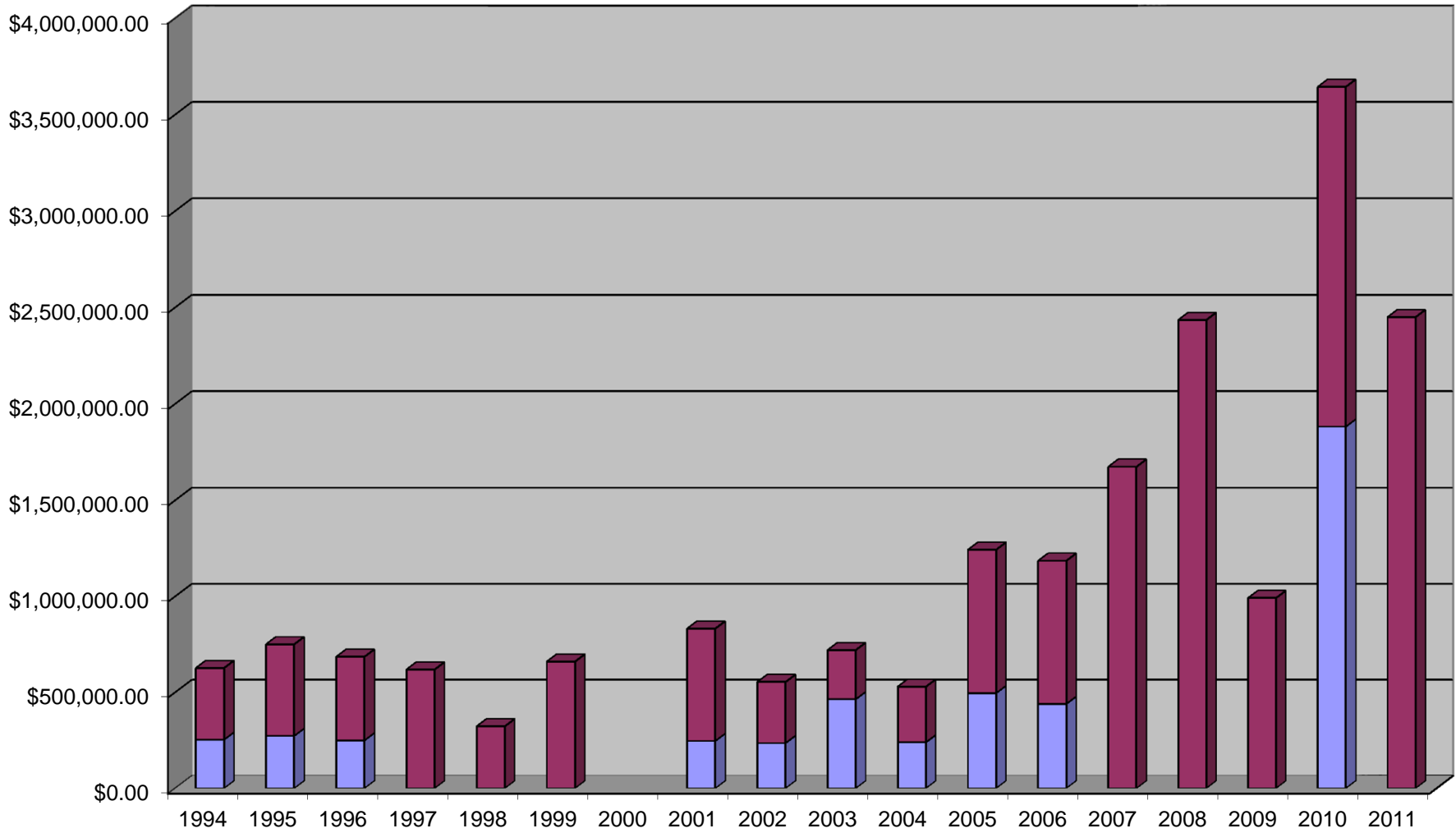
2008 Ratings by Amount of Surface Area



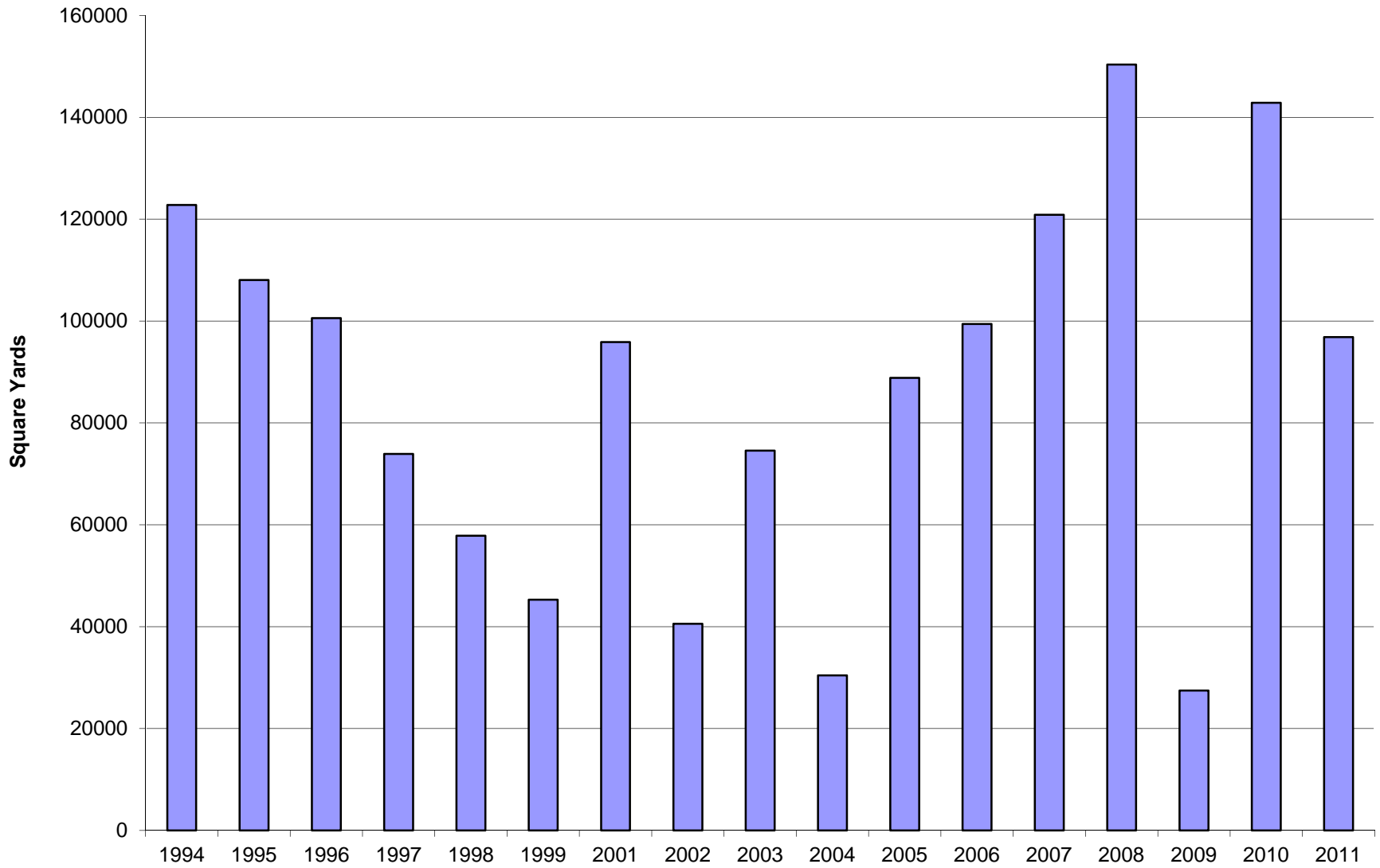
2011 Ratings by Amount of Surface Area



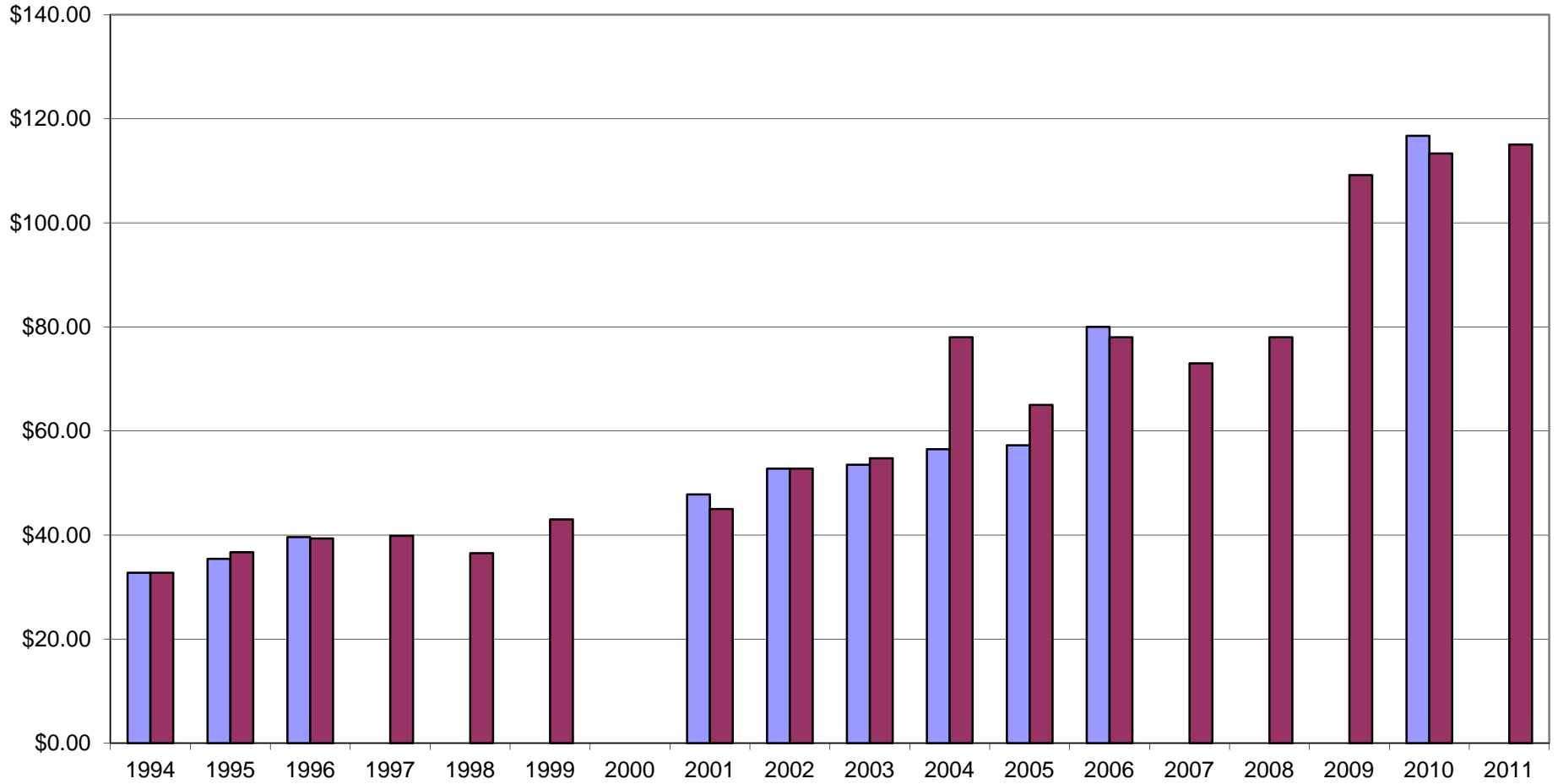
Resurfacing Dollars Spent per Year



Amount Resurfaced per Year



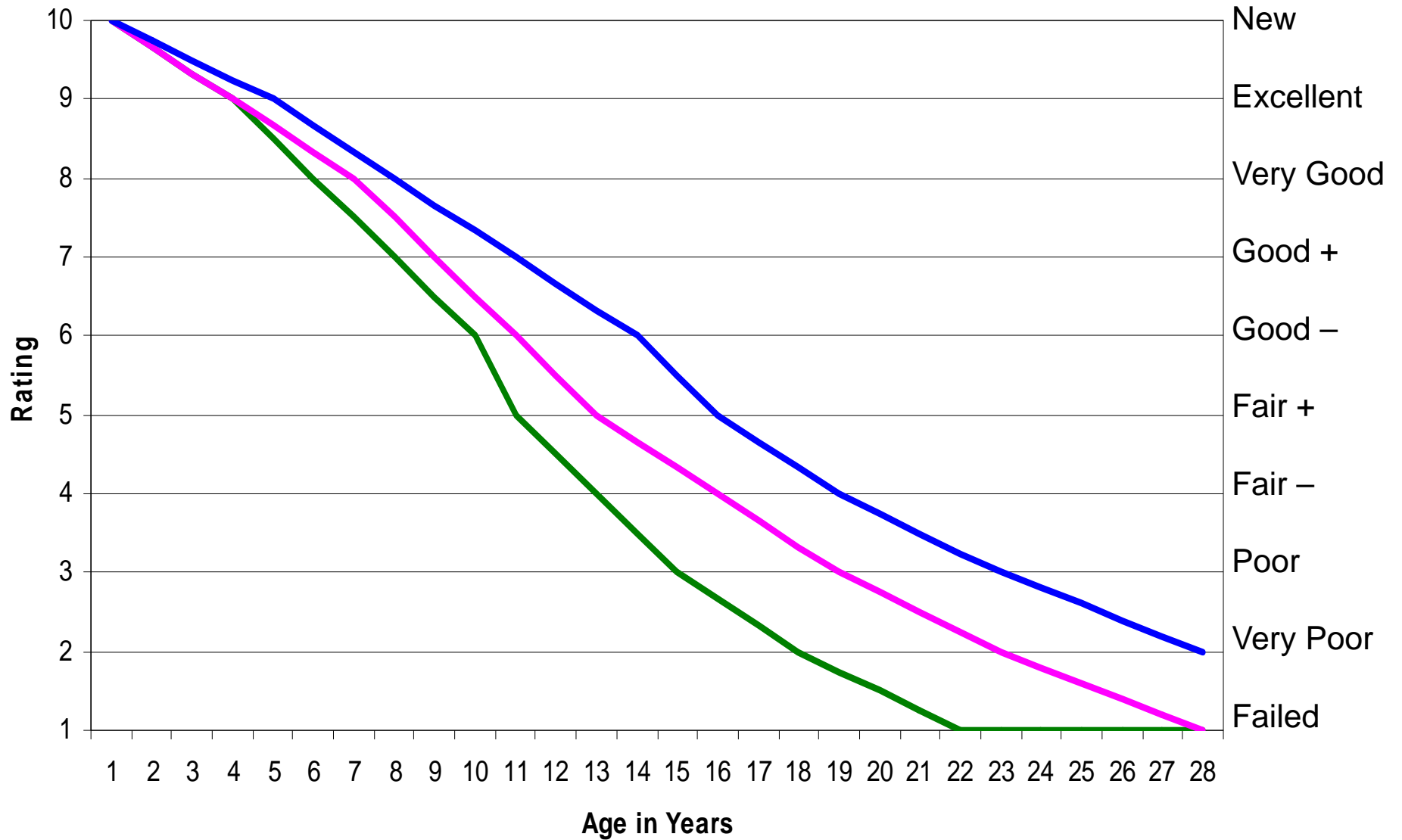
Asphalt Cost per Year per Ton Installed



PAVEMENT CONDITION OVER TIME

PROJECTED CONDITION OF HMA CITY STREETS OVER TIME											
RATINGS BASED ON PASER ASPHALT ROADS MANUAL											
	NEW	EXCEL	V GOOD	GOOD+	GOOD-	FAIR+	FAIR-	POOR	V POOR	FAILED	
							<---- RESURFACE ---->				
CITY ARTERIALS						10 to 12 years	12 to 14 years	14 to 17 years	17 to 21 years		
YEARS	3	2	2	2	1	2	2	3	4	X	
RATING	10	9	8	7	6	5	4	3	2	1	
CITY COLLECTORS						12 to 15 years	15 to 18 years	18 to 22 years	23 to 28 years		
YEARS	3	3	2	2	2	3	3	4	5	X	
RATING	10	9	8	7	6	5	4	3	2	1	
CITY STREETS						15 to 18 years	18 to 22 years	22 to 27 years	28 to 32 years		
YEARS	4	3	3	3	2	3	4	5	5	X	
RATING	10	9	8	7	6	5	4	3	2	1	

Pavement Performance by Street Classification



To maintain a
rating of
6 Good -
or better
\$7.8 M per year

Cost to Catch Up

2008 Pavement Condition Rating	Area SY	Projected Resurfacing Cost
1	5,067	\$101,338
2	111,923	\$2,238,458
3	603794.2	\$12,075,884
4	732968.8	\$14,659,376
5	627646.3	\$12,552,926
	<hr/> 2,081,399	<hr/> \$41,627,982

Annual Pavement Needs

Street Classification	City Total Area SY	Expected Life in Years	Area to be Resurfaced per Year	Projected Cost per year
Arterials	1,195,200	10	119,520	\$2,390,400
Collectors	353,500	12	29,458	\$589,167
Locals	3,554,900	15	236,993	\$4,739,867
Alleys	66,750	18	3,708	\$74,167
	<hr/> 5,170,350			<hr/> \$7,793,600

To maintain a rating of **6 Good -** or better \$12 M per year

Cost to Catch Up

2011 Pavement Condition Rating	Area SY	Projected Resurfacing Cost
1	3,401	\$95,228
2	72,096	\$2,018,688
3	563,089	\$15,766,492
4	743,786	\$20,826,008
5	787,621	\$22,053,388
	<u>2,169,993</u>	<u>\$60,759,804</u>

Annual Pavement Needs

Street Classification	City Total Area SY	Expected Life in Years	Area to be Resurfaced per Year	Projected Cost per year
Arterials	1,242,827	10	124,283	\$3,479,917
Collectors	590,596	12	49,216	\$1,378,058
Locals	3,803,104	15	253,540	\$7,099,127
Alleys	89,597	18	4,978	\$139,373
	<u>5,726,124</u>			<u>\$12,096,475</u>

To maintain a
rating of
5 Fair +
or better
\$6.5 M per year

Cost to Catch Up

2008 Pavement Condition Rating	Area SY	Projected Resurfacing Cost
1	5,067	\$101,338
2	111,923	\$2,238,458
3	603794.2	\$12,075,884
4	732968.8	\$14,659,376
	<hr/>	
	1,453,753	\$29,075,056

Annual Pavement Needs

Street Classification	City Total Area SY	Expected Life in Years	Area to be Resurfaced per Year	Projected Cost per year
Arterials	1,195,200	12	99,600	\$1,992,000
Collectors	353,500	15	23,567	\$471,333
Locals	3,554,900	18	197,494	\$3,949,889
Alleys	66,750	21	3,179	\$63,571
	<hr/>			
	5,170,350			\$6,476,794

To maintain a
rating of
5 Fair +
or better
\$10 M per year

Cost to Catch Up

2011 Pavement Condition Rating	Area SY	Projected Resurfacing Cost
1	3,401	\$95,228
2	72,096	\$2,018,688
3	563,089	\$15,766,492
4	743,786	\$20,826,008
	<hr/>	
	1,382,372	\$38,706,416

Annual Pavement Needs

Street Classification	City Total Area SY	Expected Life in Years	Area to be Resurfaced per Year	Projected Cost per year
Arterials	1,242,827	12	103,569	\$2,899,931
Collectors	590,596	15	39,373	\$1,102,446
Locals	3,803,104	18	211,284	\$5,915,940
Alleys	89,597	21	4,267	\$119,463
	<hr/>			
	5,726,125			\$10,037,780

To maintain a
rating of
4 Fair -
or better
\$5.4 M per year

Cost to Catch Up

2008 Pavement Condition Rating	Area SY	Projected Resurfacing Cost
1	5,067	\$101,338
2	111,923	\$2,238,458
3	603794.2	\$12,075,884
	<hr/>	<hr/>
	720,784	\$14,415,680

Annual Pavement Needs

Street Classification	City Total Area SY	Expected Life in Years	Area to be Resurfaced per Year	Projected Cost per year
Arterials	1,195,200	14	85,371	\$1,707,429
Collectors	353,500	18	19,639	\$392,778
Locals	3,554,900	22	161,586	\$3,231,727
Alleys	66,750	25	2,670	\$53,400
	<hr/>		<hr/>	<hr/>
	5,170,350			\$5,385,334

To maintain a
rating of
4 Fair -
or better
\$8.3 M per year

Cost to Catch Up

2011 Pavement Condition Rating	Area SY	Projected Resurfacing Cost
1	3,401	\$95,228
2	72,096	\$2,018,688
3	563,089	\$14,776,492
	<hr/>	<hr/>
	638,586	\$17,880,408

Annual Pavement Needs

Street Classification	City Total Area SY	Expected Life in Years	Area to be Resurfaced per Year	Projected Cost per year
Arterials	1,242,827	14	88,773	\$2,485,655
Collectors	590,596	18	32,811	\$918,705
Locals	3,803,104	22	172,868	\$4,840,314
Alleys	89,597	25	2,670	\$100,349
	<hr/>		<hr/>	<hr/>
	5,726,124			\$8,345,023

To maintain a
rating of
3 Poor
or better
\$4.4 M per year

Cost to Catch Up

2008 Pavement Condition Rating	Area SY	Projected Resurfacing Cost
1	5,067	\$101,338
2	111,923	\$2,238,458
	<hr/>	<hr/>
	116,990	\$2,339,796

Annual Pavement Needs

Street Classification	City Total Area SY	Expected Life in Years	Area to be Resurfaced per Year	Projected Cost per year
Arterials	1,195,200	17	70,306	\$1,406,118
Collectors	353,500	22	16,068	\$321,364
Locals	3,554,900	27	131,663	\$2,633,259
Alleys	66,750	30	2,225	\$44,500
	<hr/>		<hr/>	<hr/>
	5,170,350			\$4,405,241

To maintain a
rating of
3 Poor
or better
\$6.8 M per year

Cost to Catch Up

2011 Pavement Condition Rating	Area SY	Projected Resurfacing Cost
1	3,401	\$95,228
2	72,096	\$2,018,688
	<hr/>	<hr/>
	75,497	\$2,113,916

Annual Pavement Needs

Street Classification	City Total Area SY	Expected Life in Years	Area to be Resurfaced per Year	Projected Cost per year
Arterials	1,242,827	17	73,107	\$2,047,010
Collectors	590,596	22	26,845	\$751,668
Locals	3,803,104	27	140,856	\$3,943,960
Alleys	89,597	30	2,987	\$83,624
	<hr/>		<hr/>	<hr/>
	5,726,124			\$6,826,261

Annual Resurfacing Costs to Maintain Pavements 2008

Minimum Rating		Catch Up Cost	Annual Cost	Annual + Catch Up Cost Spread Over 10 Years
6	Good -	\$42 M	\$7.8 M	\$12.0 M
5	Fair +	\$29 M	\$6.5 M	\$9.4 M
4	Fair -	\$14 M	\$5.4 M	\$6.8 M
3	Poor	\$2 M	\$4.4 M	\$4.6 M

Annual Resurfacing Costs to Maintain Pavements 2011

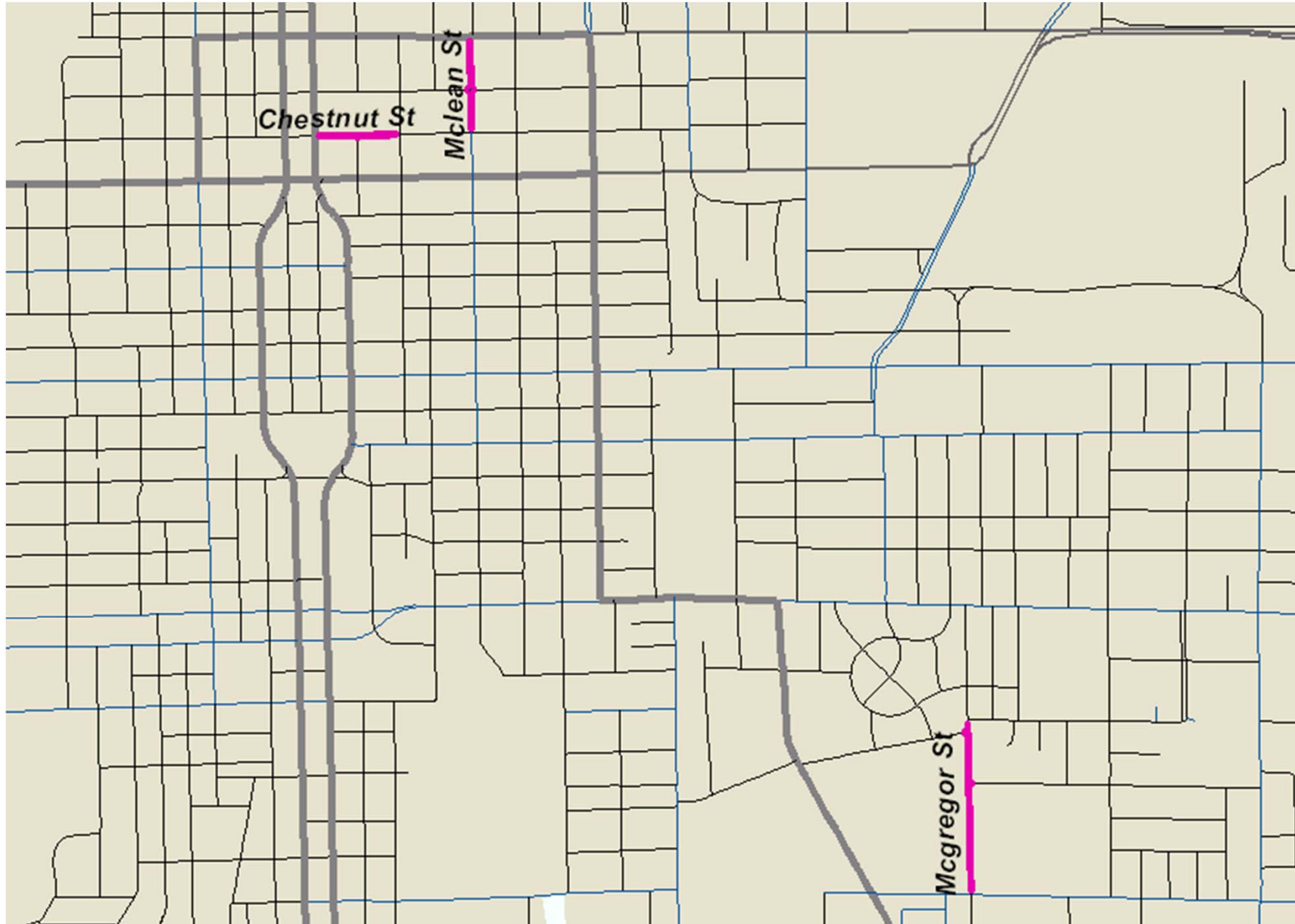
Minimum Rating	Catch Up Cost	Annual Cost	Annual + Catch Up Cost Spread Over 10 Years
6 Good -	\$60 M	\$12.0 M	\$18.0 M
5 Fair +	\$38 M	\$10.0 M	\$13.8 M
4 Fair -	\$18 M	\$8.3 M	\$10.1 M
3 Poor	\$2 M	\$6.8 M	\$7.0 M

Ways to Enhance Pavement Life

- Reclamite Test in July 2007
- Seals the surface of new overlays



Reclamite Test Locations



Reclamite Test Section on Right after 2 months



Untreated overlay 2 years old | Reclamite 2 months old



February 2008

Untreated

Reclamite

Saving on Resurfacing Costs

- Select long continuous sections of street or adjacent blocks in neighborhoods
- Use of adjusting rings



Long Term Cost Performance

- Use of polymer asphalt on arterial streets
- Minimize concrete pavement patching costs by using asphalt overlays

Future Policy Discussion

- What is our goal for the minimum acceptable rating for our streets ?
- How do address the cost to catch up to where we should be?
- What should be our financing strategy ?



CITY OF BLOOMINGTON

Thank you

Questions ?