

INTER-OFFICE MEMORANDUM



TO: Lee R. Feldman, City Manager
Sue Hann, P.E., Deputy City Manager

FROM: Jim Proce, Public Works Director

DATE: November 5, 2009

RE: Pavement Maintenance Plan FY10

Pursuant to the approval of the budget for FY10 the Public Works Department has developed a plan to address road maintenance needs for the City. While the current approved budget of \$2,000,000 is provided for in this plan, a multi-year plan has been developed with the assumptions that similar recurring funding will be available in future years, providing for the ongoing maintenance of a significant portion of the road system over the next decade plus (projected through FY29).

The strategy of this plan does not address the “worst roads first” methodology, which always results in greater long term expense to the entire system. This strategy proposed does specifically employ the principles of sound pavement management. These principles are designed to extend pavement life cycles and reduce long term road maintenance costs, by addressing those roads which can be “saved” if maintained prior to having to employ more expensive treatments. I have provided a graphic to illustrate this point herein.

In looking at the roads selected, the concentration is twofold: Firstly, the collectors have all been identified and programmed over a 10 year span. Secondly, neighborhoods with their associated major locals roads are integrated into the plan using the same maintenance principles. For the purposes of clarification “Collectors” are defined as the roads where generally several of the following conditions, definitions, observations, or projections have been met:

- **Speed limits in excess of 30 MPH;**
- **Right-of-way widths in excess of 50 feet wide (or greater than 60 foot in newer subdivisions);**
- **Designed or existing pavement width in excess of 20 feet wide;**
- **Traffic counts that exceed that of typical local road traffic;**
- **Collectors roads as identified in the Comprehensive Plan or as defined in the Code of Ordinances Chapter 184; (excluding those in PM51, 52, 53);**
- **Multi-lane roads;**
- **Existence of medians, raised, landscaped, or paved;**
- **City maintained.**

A spreadsheet is attached that provides projected applications in a prioritized order, identifying the intended treatment, road or area/unit, miles, estimated cost, and proposed year of treatment.

In the first phase of the program, several treatment methods are being utilized in order to get a good basis for ongoing maintenance. This includes mostly microsurfacing applications but depending upon conditions, other treatments may be employed as deemed necessary.

The second phase provides for the ongoing maintenance of these same roads, applying a similar maintenance application beginning in FY20. The process will basically repeat the first phase, but with less expensive treatments. Long term management of the plan will include annual reports and tracking, and evaluations providing for adjustments as needed for financial or condition related reasons.

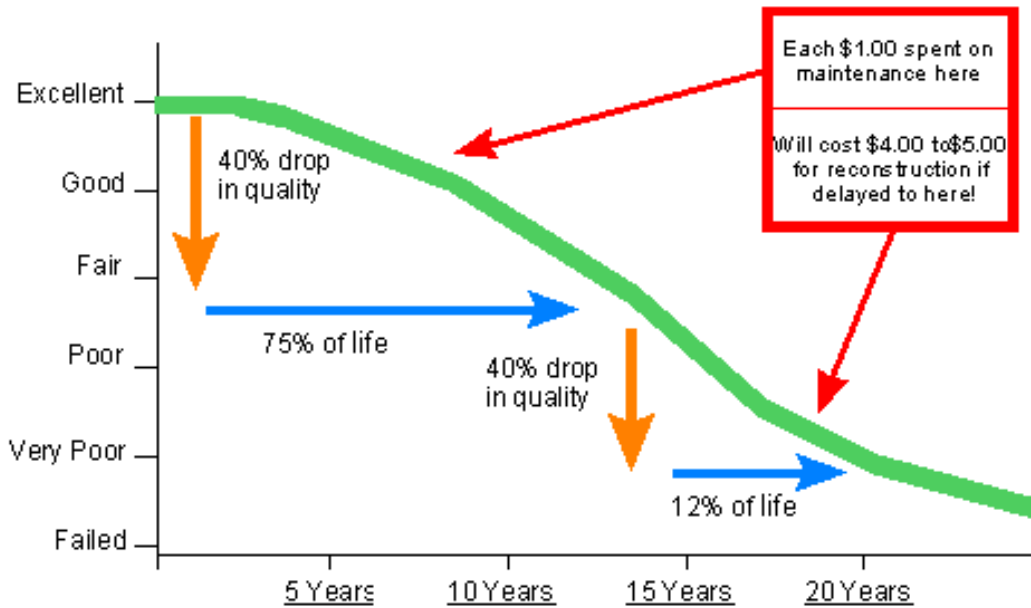
The assumptions for this plan are as follows: recurring funds to provide for no less than \$2,000,000 annually, inflation factor of 3% annually for projecting future costs, and condition projections based upon reasonable pavement life cycles. NOTE: The plan does not address the current infrastructure in need of reconstruction which is approximately 168 miles (and growing) located predominately in the southern areas of the City. Additionally it does not address the areas that are currently considered in fair condition and will ultimately increase the failed list by an additional 225 miles. No funding currently exists for these liabilities.

Upon approval of the proposed maintenance plan, a construction schedule for FY10 projects will be developed within 2 to 3 weeks, as all contractors, suppliers, and staff resources are in place and ready to proceed. The entire implementation of the funded component of the proposed plan should not take more than 4 months to complete from notice to proceed, this is pending any revisions to the plan, unforeseen weather conditions, unforeseen subsurface conditions, or equipment breakdown.

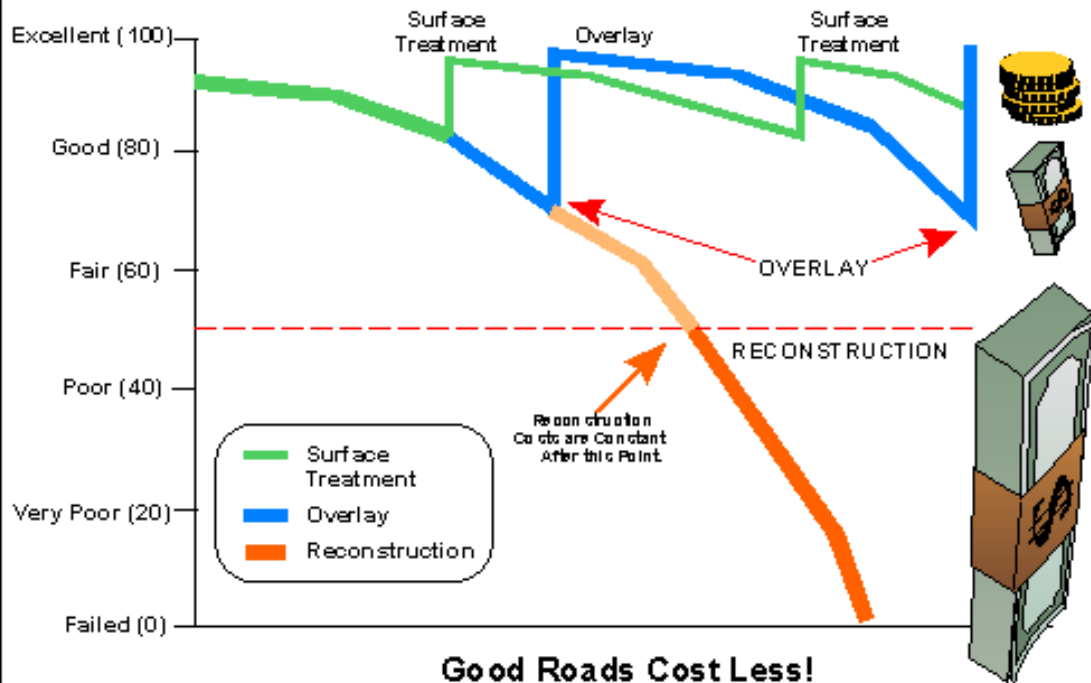
Should you or the City Council have any questions, please advise. I will make myself available to answer questions or provide field visits to illustrate and support my findings and recommendations.

cc: Chad Shultz, Assistant Public Works Director
Terri Lefler, Executive Secretary

Pavement Life Cycle



Asphalt Maintenance Strategies.



	A	B	C	D	E	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK
1	Collector Roads/Subdivisions	Miles	Approx. Date of Latest Treatment	Proposed Cost of Next Treatment	Cummulative Cost of Next Treatment	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
2	Fallon Blvd	1.80	early 90s	\$ 466,973	\$ 466,973	X										X									
3	Americana Blvd	3.68	early 90s	\$ 288,637	\$ 755,610	X										X									
4	Hurley Blvd	1.01	early 90s	\$ 79,191	\$ 834,801	X										X									
5	Wyoming - A (San Filippo - end)	1.20	early 90s	\$ 98,003	\$ 932,804	X										X									
6	Wyoming - B (Babcock - San Filippo)	0.40	early 80s	\$ 100,446	\$ 1,033,250	X										X									
7	Harper Blvd	1.74	early 90s	\$ 135,636	\$ 1,168,885	X										X									
8	Eldron - A (Americana - Bayside Lakes)	4.26	early 90s	\$ 340,261	\$ 1,509,147	X										X									
9	Minton (Malabar - Jupiter)	0.75	early 90s	\$ 62,771	\$ 1,571,918	X										X									
10	Wichita (end - Babcock)	0.79	early 90s	\$ 61,926	\$ 1,633,844	X										X									
11	Walden (Emerson - Wyoming)	0.80	early 90s	\$ 40,462	\$ 1,674,307	X										X									
12	Pace Dr	1.96	late 90s	\$ 153,802	\$ 1,828,109	X										X									
13	PMU 26	6.88	1997	\$ 169,973	\$ 1,998,082	X										X									
14	Malabar - A (I-95 - Walmart)	0.76	late 90s	\$ 123,028	\$ 123,028		X										X								
15	Malabar - B (Walmart to Lehigh) (CIP)	0.65	late 90s	\$ 168,789	\$ 291,817		X										X								
16	Malabar - C (Lehigh to Minton)	1.20	late 90s	\$ 194,254	\$ 486,071		X										X								
17	Malabar - D (Minton - PB West Plaza)	0.26	late 90s	\$ 39,451	\$ 525,521		X										X								
18	Emerson NW - A (Minton-Jupiter)	1.49	late 90s	\$ 269,681	\$ 795,202		X										X								
19	Emerson NW - B (Jupiter to end)	2.00	early 90s	\$ 519,351	\$ 1,314,553		X										X								
20	Eldron - B (end - San Filippo)	0.61	late 90s	\$ 30,730	\$ 1,345,283		X										X								
21	Eldron - C (San Filippo - Babcock)	1.08	early 90s	\$ 290,437	\$ 1,635,720		X										X								
22	PMU 14	13.31	1999	\$ 342,343	\$ 1,978,062		X										X								
23	RJ Conlan Blvd	1.66	early 90s	\$ 190,301	\$ 190,301			X										X							
24	Degroodt - A (Jupiter - Osmosis)	3.27	late 90s	\$ 170,385	\$ 360,687			X										X							
25	Degroodt - B (Osmosis - San Filippo)	1.50	late 90s	\$ 75,867	\$ 436,554			X										X							
26	Bombardier Blvd	1.25	late 90s	\$ 47,670	\$ 484,224			X										X							
27	Foundation (San Filippo - Babcock)	0.75	early 90s	\$ 39,249	\$ 523,473			X										X							
28	Community College Pkwy	2.28	early 90s	\$ 118,606	\$ 642,078			X										X							
29	Bayside Lakes Blvd	2.07	late 90s	\$ 360,345	\$ 1,002,423			X										X							
30	Krassner Dr	1.38	late 90s	\$ 382,263	\$ 1,384,686			X										X							
31	Mariposa Dr	1.44	2002	\$ 77,251	\$ 1,461,937			X										X							
32	Waco (end - Babcock)	1.67	2003	\$ 87,102	\$ 1,549,039			X										X							
33	PMU 20	15.53	1997	\$ 415,210	\$ 1,964,249			X										X							
34	Heild Rd	2.46	late 90s	\$ 132,137	\$ 132,137				X										X						
35	Lowry Blvd	0.81	1972	\$ 217,412	\$ 349,549				X										X						
36	Sarasota Dr	1.29	1972	\$ 346,819	\$ 696,367				X										X						
37	PMU 19	11.36	1998	\$ 315,255	\$ 1,011,622				X										X						
38	PMU 39	6.86	1997	\$ 141,660	\$ 1,153,282				X										X						
39	PMU 7	16.42	1999	\$ 327,516	\$ 1,480,798				X										X						
40	PMU 29	4.30	1999	\$ 85,769	\$ 1,566,566				X										X						
41	PMU 12	19.10	1999	\$ 430,044	\$ 1,996,610				X										X						
42	Garvey Rd	3.50	1975	\$ 980,595	\$ 980,595					X										X					
43	PMU 13	14.70	2001	\$ 437,794	\$ 1,418,388					X										X					
44	PMU 9	13.10	2000	\$ 390,143	\$ 1,808,531					X										X					
45	PMUCC 3	0.49	2000	\$ 10,464	\$ 1,818,994					X										X					
46	Palm Bay Point	1.01	2000	\$ 21,568	\$ 1,840,562					X										X					
47	PMUCC 2	0.90	2001	\$ 19,219	\$ 1,859,781					X										X					
48	PMUCC 4	5.11	2001	\$ 109,120	\$ 1,968,900					X										X					
49	St Andre Blvd	1.50	1979	\$ 428,036	\$ 428,036						X										X				
50	Pt Malabar Blvd	6.20	2006	\$ 843,314	\$ 1,271,350						X										X				
51	Osmosis SW - C (PMU 49)	0.53	1979	\$ 401,239	\$ 1,672,589						X										X				
52	PMUCC 6	0.96	2002	\$ 22,527	\$ 1,695,117						X										X				
53	PMUCC 7	2.54	2002	\$ 59,604	\$ 1,754,721						X										X				
54	PMUCC 8	0.68	2002	\$ 15,957	\$ 1,770,678						X										X				
55	PMU 38	0.65	2004	\$ 15,253	\$ 1,785,931						X										X				

	A	B	C	D	E	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	
1	Collector Roads/Subdivisions	Miles	Approx. Date of Latest Treatment	Proposed Cost of Next Treatment	Cummulative Cost of Next Treatment	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29	
56	PMU 40	3.00	2004	\$ 70,398	\$ 1,856,329						X										X					
57	Riviera Dr	3.10	2006	\$ 175,607	\$ 175,607							X										X				
58	Bianca Dr	3.84	2006	\$ 693,810	\$ 869,417							X										X				
59	Daytona Dr	1.74	2006	\$ 314,383	\$ 1,183,800							X										X				
60	Osmosis SE (reverse)	0.63	2006	\$ 56,238	\$ 1,240,038							X										X				
61	Lamplighter Dr	2.72	2006	\$ 137,148	\$ 1,377,185							X										X				
62	San Filippo (Malabar - Treeland)	0.82	2006	\$ 82,708	\$ 1,459,893							X										X				
63	San Filippo (Treeland - Degroot)	6.85	2006	\$ 464,754	\$ 1,924,647							X										X				
64	Jupiter Blvd	6.75	2006	\$ 548,983	\$ 548,983								X										X			
65	Cogan Dr (San Filippo - Bayside Lakes)	2.52	2007	\$ 110,388	\$ 659,372								X										X			
66	Emerson NE (Minton - Malabar)	2.10	2007	\$ 170,795	\$ 830,166								X										X			
67	Emerson SE (Malabar - Bayside Lakes)	3.00	2007	\$ 488,982	\$ 1,319,148								X										X			
68	PMU 28	4.34	2006	\$ 101,843	\$ 1,420,991								X										X			
69	Driskell Heights	3.04	2006	\$ 71,337	\$ 1,492,328								X										X			
70	PMU 6 a	3.65	2006	\$ 123,527	\$ 1,615,855								X										X			
71	PMU 6 b	9.02	2006	\$ 79,773	\$ 1,695,628								X										X			
72	PMUCC 10	1.48	2007	\$ 34,730	\$ 1,730,358								X										X			
73	PMU 55	3.76	2007	\$ 33,253	\$ 1,763,611								X										X			
74	PMU 32 a	1.72	2007	\$ 40,362	\$ 1,803,973								X										X			
75	PMU 32 b	8.17	2007	\$ 72,255	\$ 1,876,228								X										X			
76	PMUCC 1	1.43	2007	\$ 33,556	\$ 1,909,785								X										X			
77	PMU 11 a	8.33	2007	\$ 290,370	\$ 290,370									X										X		
78	PMU 11 b	6.80	2007	\$ 164,356	\$ 454,726									X										X		
79	PMU 10	10.49	2007	\$ 98,340	\$ 553,066									X										X		
80	PMU 8 a	6.32	2007	\$ 374,446	\$ 927,512									X										X		
81	PMU 8 b	7.12	2007	\$ 66,747	\$ 994,259									X										X		
82	PB Colony	3.32	2007	\$ 31,124	\$ 1,025,383									X										X		
83	PMU 17 a	5.47	2007	\$ 196,229	\$ 1,221,612									X										X		
84	PMU 17 b	7.07	2007	\$ 66,279	\$ 1,287,891									X										X		
85	PMU 18 a	5.82	2007	\$ 208,784	\$ 1,496,675									X										X		
86	PMU 18 b	9.88	2007	\$ 92,621	\$ 1,589,297									X										X		
87	PMU 22 a	5.67	2008	\$ 203,403	\$ 1,792,700									X										X		
88	PMU 22 b	6.96	2008	\$ 65,247	\$ 1,857,947									X										X		
89	PMU 41 a	2.48	2008	\$ 88,967	\$ 1,946,914									X										X		
90	PMU 41 b	4.66	2008	\$ 42,449	\$ 1,989,363									X										X		
91	Malabar - E (PB West Plaza to ROW limit)	2.26	2008	\$ 202,702	\$ 202,702										X										X	
92	Osmosis SW - A (PMU 31)	0.48	2009	\$ 33,439	\$ 236,141										X										X	
93	Osmosis SW - B (E of PMU 31) (DESIGN)	0.56	2010	\$ 39,012	\$ 275,153										X										X	
94	Palm Bay Rd (RJ Conlan - US1) (DESIGN)	0.59	2010	\$ 32,660	\$ 307,813										X										X	
95	Troutman Blvd (ARRA)	1.25	2010	\$ 160,528	\$ 468,341										X										X	
96	Cogan Dr SE (ARRA)	2.00	2010	\$ 139,329	\$ 607,670										X										X	
97																										
98	Total Miles Maintainable	363.33																								
99	Comments/Notes/Assumptions:																									
100	* road deterioration varies; plan is based on projections; no subsurface evaluations were completed in this analysis																									
101	* per mile costs vary due to square yards, road widths, tuning lanes, other geometrics, and nominal drainage																									
102	* date of last treatment is approximate and may vary slightly; some areas done over multiple FY																									
103	* assumes base repairs/crack sealing completed by staff																									
104	* assumes 3% inflation/yr																									
105	* LEGEND: red-reconstruction; gray-milling&resurfacing; orange-cape seal; green-double micro; blue-single micro; purple-rejuvenator																									