



TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

**STUDY OF
PAVEMENT MAINTENANCE TECHNIQUES
USED ON
GREENVILLE COUNTY MAINTAINED ROADS
PHASE 2 REPORT**

June 2005

Submitted to:
Geosynthetic Materials Association

Submitted by:
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A handwritten signature in black ink that reads "C. Joel Sprague". The signature is fluid and cursive, with "C. Joel" on top and "Sprague" on the line below.

C. Joel Sprague
Project Manager



**STUDY OF PAVEMENT MAINTENANCE TECHNIQUES
USED ON
GREENVILLE COUNTY MAINTAINED ROADS
PHASE 2 REPORT
JUNE, 2005**

Executive Summary

Greenville County has over a decade of documented experience with a variety of rehabilitation and resurfacing techniques, including a road improvement program known as “Prescription for Progress (PFP), Paving County Roads” initiated by Greenville County in 1997. This Phase 2 study expands on an earlier Phase 1 study of 34 roads to include all 370 roads receiving maintenance treatments in the first year (1997-98) of the PFP. All roads included in the Phase 2 study received one of the following maintenance treatments: cold mill recycling (full depth rehabilitation) and an overlay; patching followed by paving fabric and an overlay; paving fabric and an overlay; or overlay only.

The Phase 2 study appears to validate the Phase 1 conclusion that the cost-effectiveness and performance-enhancing capability of various treatments is indeed related to the pavement condition at the time of the maintenance treatment. The cost-effectiveness of the various treatment types can be summarized as follows:

- Cold mill recycling/overlay and patching/fabric/overlay strategies are comparably cost-effective and produce the greatest cost-effectiveness of the treatments evaluated when used with pavements that have surface condition ratings below 25 on a 100- point scale.
- When the pavement surface condition rating is between approximately 25 and 50, the use of paving fabric with a 1-1/2 to 2 inch thick overlay appears to provide the greatest cost-effectiveness and reduction in the rate of road degradation.
- When the pavement surface condition rating is above 50, both a simple asphalt overlay and a fabric/overlay system appear to provide comparable performance and cost-effectiveness. Further study of the relative cost-effectiveness of treatments when the existing pavement condition is above 50 is needed because this evaluation included very few roads in this condition as a result of the County’s “worst first” strategy.

It is hoped that this study will encourage more objective maintenance treatment decision-making.



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Background

Greenville County currently maintains approximately 1600 centerline miles of road, and due to significant growth in the County, more mileage is being added every year. Greenville County has over a decade of documented experience with a variety of rehabilitation and resurfacing techniques, including a road improvement program known as “Prescription for Progress (PFP), Paving County Roads” initiated by Greenville County in 1997. In 2002, Greenville County’s Department of Public Works (GCDPW) decided that there was a need for a periodic evaluation of current road improvement methods and proposed an independent study of available information. A desired scope of study was developed by the GCDPW and provided the basis for this investigation. Paving fabric has been commonly used as one of the road improvement techniques in Greenville County. Because of this, the Geosynthetic Materials Association (GMA) was approached and agreed to fund the study. Joel Sprague of TRI/Environmental was retained by the GMA to perform the study.

Because of the uncertainty of the quality and quantity of available data, the GMA agreed to fund the study in phases. Phase 1 of the study included only 34 roads. The Phase 1 study used both “depreciation cost” and “degradation ratio” evaluations. Both evaluations suggested that the cost-effectiveness and performance-enhancing capability of various treatments is related to the pavement condition at the time of the maintenance treatment. This Phase 2 study expanded the evaluation to include all 370 roads receiving maintenance treatments in the first year (1997-98) of the PFP. In this study the term “road” refers to a road or portion of a road receiving a specific maintenance treatment and characterized by a single pavement condition rating.

Scope of Work for Phase 2

All roads included in the Phase 2 study received one of the following maintenance treatments in the first year of the PFP: cold mill recycling (full depth rehabilitation) and an overlay; patching followed by paving fabric and an overlay; paving fabric and an overlay; or overlay only. The Phase 2 study included the following 5 steps.

1. Compile a listing of roads rehabilitated and/or resurfaced in the 1997/98 “Prescription for Progress” (PFP) program, including the actual associated maintenance treatment costs.
2. Add the most recent pavement condition index (PCI) assessment and the associated date.
3. Estimate (project) the actual road condition (i.e. PCI) at the time of 1997/98 maintenance.
4. Calculate a cost-effectiveness value for each road based on the cost of the maintenance treatment used and the amount of degradation occurring between the time of maintenance and the 2003 road evaluation.
5. Identify trends in the data related to performance of the various rehab/resurfacing techniques.



For the comprehensive review, the following sources of information were used:

- Pavement Evaluation Reports by Eckrose/Green for years 1994-1996;
- Characteristic pavement degradation curves for Greenville County roads;
- 1997/98 PFP Data Base;
- Database of 2003 Road Condition Ratings for the roads included in the 1997/98 PFP.

The results of the Phase 2 study were used to assess the performance and cost-effectiveness of currently used road rehabilitation/resurfacing techniques.

Phase 2 Primary Objective – Expanded Data Evaluation

The primary objective of Phase 2 of *The Study Of Pavement Maintenance Techniques Used On Greenville County Maintained Roads* was to expand the data included in the evaluation in order to validate (or refute) the findings of Phase 1. The limited data evaluated in Phase 1 suggested the following:

- Cold mill recycling and an overlay is most cost-effective and produces the greatest reduction in the rate of road degradation when used with pavements that have surface condition ratings below 30 on a 100- point scale.
- When the pavement surface condition rating is between approximately 35 and 65, the use of paving fabric with a minimum 1-1/2 inch overlay appears to provide the greatest cost-effectiveness and reduction in the rate of road degradation.
- When the pavement surface condition rating is above 70, both a simple asphalt overlay and a fabric/overlay system appear to provide comparable performance and cost-effectiveness.

The follow-up Phase 2 study evaluated the entire 1997/98 PFP database of 370 roads, as follows:

- Review and tabulate pavement condition at time of maintenance, selected pavement maintenance technique, subsequent pavement performance, and associated cost information.
- Project known pavement condition to condition existing at time of maintenance.
- Evaluate and draw conclusions based on the tabulated data.

Data Review and Tabulation

The 1997/98 PFP program database provided a detailed record of the type(s) of maintenance treatment used on each road, along with actual cost and quantity data. Several 3-ring binders of pavement condition data generated between 1994 and 1996 provided relatively recent objective measures of actual road conditions. In cases where roads received different treatments at different segments along the road's length as part of the 97/98 program, the different segments were treated as individual roads and assigned different condition ratings, if available. The following information was compiled into detailed tables that are included in the appendix:

- Road Number;
- Pavement maintenance method and costs (1997/98 unit costs are shown in Table 1).
- Road condition rating ('94 to '96 rating);
- Projected road condition rating at the time of the 1997/98 maintenance;
- 2003 road condition rating.

Table 1. Typical Maintenance Treatment Unit Costs

Maintenance Treatment (Material + Labor)	Unit	Unit Price (\$)
*Surface, Type 1, 1c, 3 or Binder	ton	38.90
Full Depth Asphalt Patching	sy	19.38
B S T, Single Treatment, Type 3	sy	0.75
Cold Process Recycling	sy	2.14
Crusher Run For Cold Recycling	ton	11.00
Ashpalt Emulsion CRS-2 For Recycle	gal	0.66
Maintenance Stone	ton	14.55
Set Up Stone Base	sy	3.00
Backfill Material For Shoulders	cy	22.00
Grade Shoulders	ft	0.68
Ditchline Regrading	ft	0.92
Milling, Curb Reveal	sy	4.40
Non Woven Paving Fabric	sy	0.72
AC-20 Asphalt For Paving Fabric	ton	165.00
Paving Markings	ft	0.15
Water Valve Adjustment	ea	25.00
Manhole Adjustment	ea	50.00
18" Rcp, > 24'	ft	69.00
18" Rcp, < 24'	ft	75.00
Seeding	sy	0.45

* Approximate Conversion: 0.1 – 0.11 T/sy (2.25 – 2.5 in)

Data Evaluation

The compiled data facilitated the following evaluations:

- Rate of road surface degradation between the last available road condition survey (Eckrose-Green 1994-1996) and the 1997/98 PFP maintenance;
- Rate of road surface degradation between the 1997/98 PFP maintenance and the comprehensive 2003 road condition surveys;
- Unit cost of each pavement maintenance technique (in 97/98);
- Rate of depreciation of maintenance costs (1997/98-2003) based on road surface degradation.

1997/98 Pre-Maintenance Condition. The County and contractor determined the appropriate maintenance treatment (i.e. recycle/overlay vs. patching/paving fabric/overlay vs. overlay only) based on the condition of the pavement at the time of maintenance. The only available quantitative assessment of the existing pavement condition, and the ratings used to guide the County's selection of roads for the program, is the 1994 – 1996 Eckrose-Green ratings. No maintenance had been performed on these roads since the last condition survey. Unfortunately, this means that as many as four years could have passed since the last quantitative road evaluation. This required the road condition (PCI/OCI) at the time of maintenance to be projected from the known 1994 - 1996 conditions. Assumed degradation rates were used in the Phase 1 study. Characteristic pavement degradation curves specific to Greenville County were used for Phase 2. The characteristic curves were developed by the county engineering office in 1991 as part of an earlier research project. Individual characteristic curves were generated for

“new” roads and for “existing” roads. An average characteristic curve was derived from these two curves for use in Phase 2 study, since it was not known which roads had had previous maintenance. The characteristic pavement degradation curve used to project the 1997/98 pre-maintenance pavement condition from the last available documented condition determined at various times between 1994 and 1996 is shown in Figure 1.

Projecting the pavement condition at the time of maintenance based on the County’s characteristic degradation curve produced a large number of roads with ratings of zero. This was considered consistent with the PFP’s stated intent to deal with the worst roads first.

Measuring Performance. In the Phase 1 study, two measures of performance were used to evaluate the data. First, a “depreciation cost” was used to determine the cost-effectiveness of each type of treatment and represents the value of the treatment “used up” over the time period. Secondly, a “degradation ratio” was used to evaluate the improved rate of reduction in the pavement condition after the 97/98 treatment as compared to the rate prior to 97/98, and, theoretically, facilitates an assessment of “before vs. after” performance for each treatment technique. The Phase 2 study used only the “depreciation cost” as the measure of performance, since “before” performance proved much less certain to determine. The depreciation cost in \$/sy/yr was calculated as follows:

$$\text{Depr. Cost} = \text{Unit Cost} * (((100 - \text{latest rating})/100) / (\text{latest rating date} - \text{maintenance date}))$$

Summary road performance data have been tabulated in Table 2. The evaluation included dividing the roads that received patching, fabric, and overlay into subsections that received patching along with the fabric and overlay and those that received only fabric and overlay.

Table 2. Summary of All Road Performance Data

Summary Data	Recycle Only Roads	Patch/Fabric/Overlay (P/F/O)		Fabric/Overlay (F/O)			Overlay Only Roads
		Entire P/F/O Roads	P/F/O-only Subsections	F/O-only Subsections	F/O-only Roads	Avg All F/O	
Number of Roads	146	177	177	177	28	205	19
Avg Initial Condition (PCI)	16	20	0	20	23	21	37
Avg Depreciation Cost (\$/sy/yr)	0.18	0.16	0.55	0.11	0.11	0.11	0.10

Depreciation Costs. The relationship for each type of maintenance treatment between the depreciation cost and the initial pavement condition were determined, using the characteristic pavement degradation curve (Figure 1) for projecting the initial pavement condition at the time of the 97/98 maintenance. The depreciation cost for each road versus its initial pavement condition is presented in Figures 2, 3, and 4. A third order polynomial trendline was fitted to the data for each type of maintenance treatment. This type of trendline was found to provide the highest correlation to the data in Phase 1. Figures 3 and 4 remove the data points and present only the trendlines in order to more clearly demonstrate the relative performance of the different maintenance treatments. The much greater size of the database, along with allowing the contractor to choose the maintenance treatment based on a visual (qualitative) assessment, has apparently created greater variability in the Phase 2 data. Still, the chosen trendlines provide a

clear indication that the cost-effectiveness of each treatment is related to the road condition at the time of maintenance, as expected.

Conclusions

The data compiled and evaluated in the Phase 1 study focused on –only 34 roads that had received a maintenance treatment as part of the County's 1997/98 pavement maintenance program. The subsequent Phase 2 study, reported herein, was designed to validate (or refute) the Phase 1 indications by evaluating the entire 1997/98 PFP database of 370 roads.

The Phase 2 study appears to validate the Phase 1 conclusion that the cost-effectiveness and performance-enhancing capability of various treatments is indeed related to the pavement condition at the time of the maintenance treatment. The more extensive data involved in Phase 2 has more clearly defined the cost-effectiveness of the various treatment types as follows, based on Figure 3:

- Cold mill recycling/overlay and patching/fabric/overlay strategies are comparably cost-effective and produce the greatest cost-effectiveness of the treatments evaluated when used with pavements that have surface condition ratings below 25 on a 100- point scale.
- When the pavement surface condition rating is between approximately 25 and 50, the use of paving fabric with a 1-1/2 to 2 inch thick overlay appears to provide the greatest cost-effectiveness and reduction in the rate of road degradation.
- When the pavement surface condition rating is above 50, both a simple asphalt overlay and a fabric/overlay system appear to provide comparable performance and cost-effectiveness. Further study of the relative cost-effectiveness of treatments when the existing pavement condition is above 50 is needed because this evaluation included very few roads in this condition as a result of the County's "worst first" strategy.

Figure 4 breaks out the fabric/overlay subsections from the roads that received local areas of patching along with fabric and an overlay. When this subsection data is combined with that from roads that received only fabric/overlay, the resulting curve fit suggests it may always be more cost-effective to use fabric rather than cold mill recycling when patching is not required.

As can be seen in Figure 2, there is much scatter in the data. Yet, the data may be quite accurate considering that the decision of which maintenance treatment to use was, by contract, left up to the contractor based on his "judgement" and willingness to warrant the results. Another contributor to the scatter in the data may be the uncertainties associated with assigning a pavement condition and, further, with estimating the pavement condition at the time of maintenance. Ideally, an accurate pavement condition survey would be performed immediately prior to maintenance and an objective decision made as to what treatment to use. Finally, it must be noted that, although a target overlay thickness of 2.25 – 2.5 inches (0.1 to 0.11 T/sy) was expected by the County, the actual thickness frequently ranged as low as 1.9 inches (0.85 T/sy), or lower. This wide range in the actual overlay thickness no doubt contributed to the variability in the data and could be expected to significantly affect long-term pavement performance.

It is hoped that this study will encourage more objective maintenance treatment decision-making.



APPENDIX

Figure 1. Greenville County Characteristic Pavement Degradation Curve – Average of New and Existing Roads

Figure 2. 1997/98 – 2003/04 PFP Data and Treatment Trends

Figure 3. 1997/98 – 2003/04 PFP Treatment Trends Only

Figure 4. 1997/98 – 2003/04 PFP Treatment Trends Only (including Subsections)

Table A1: 1997/98 – 2003/04 PFP Data & Performance Calculations

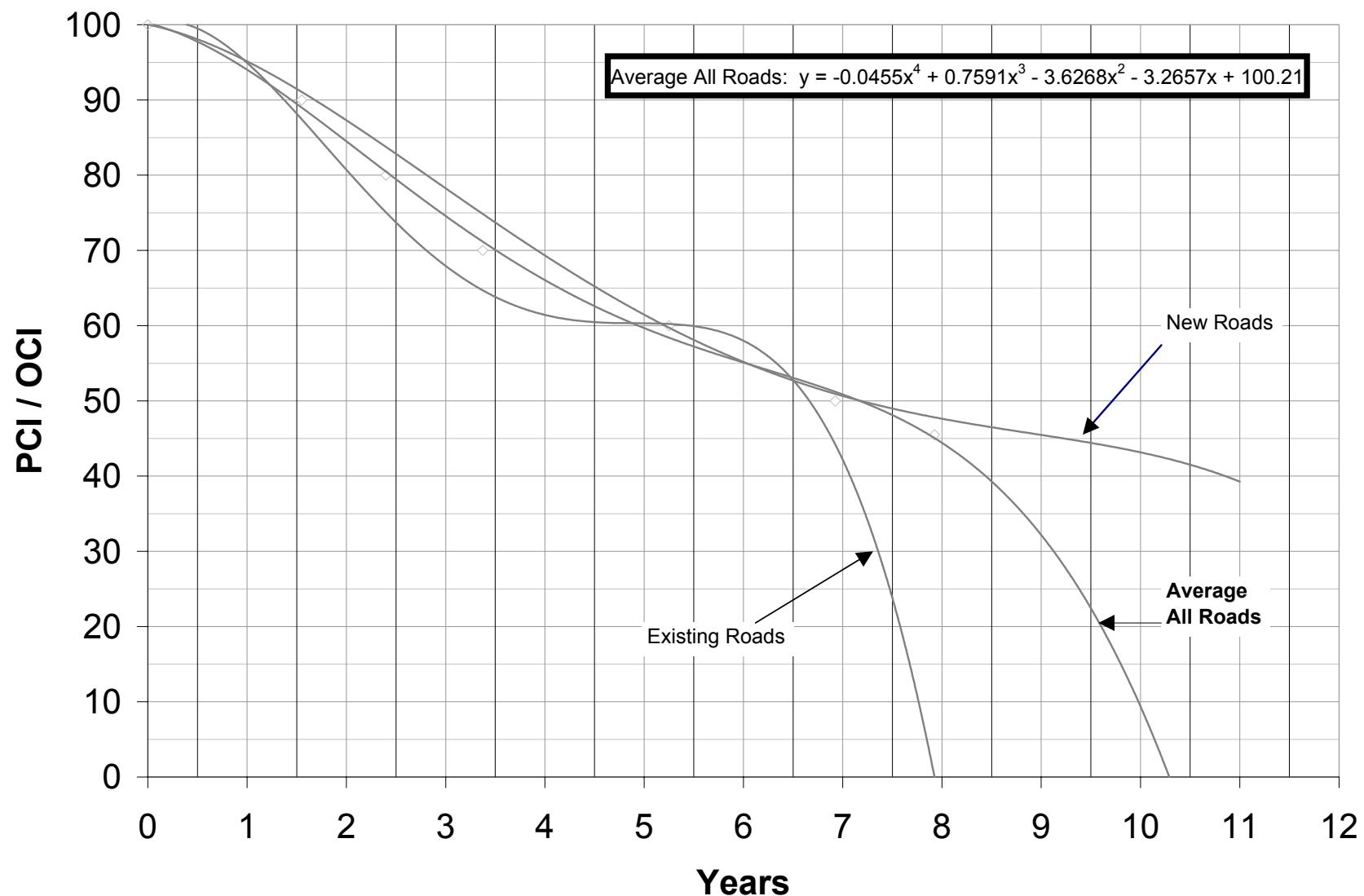


Figure 1. Greenville County Characteristic Pavement Degradation Curve – Average of New and Existing Roads

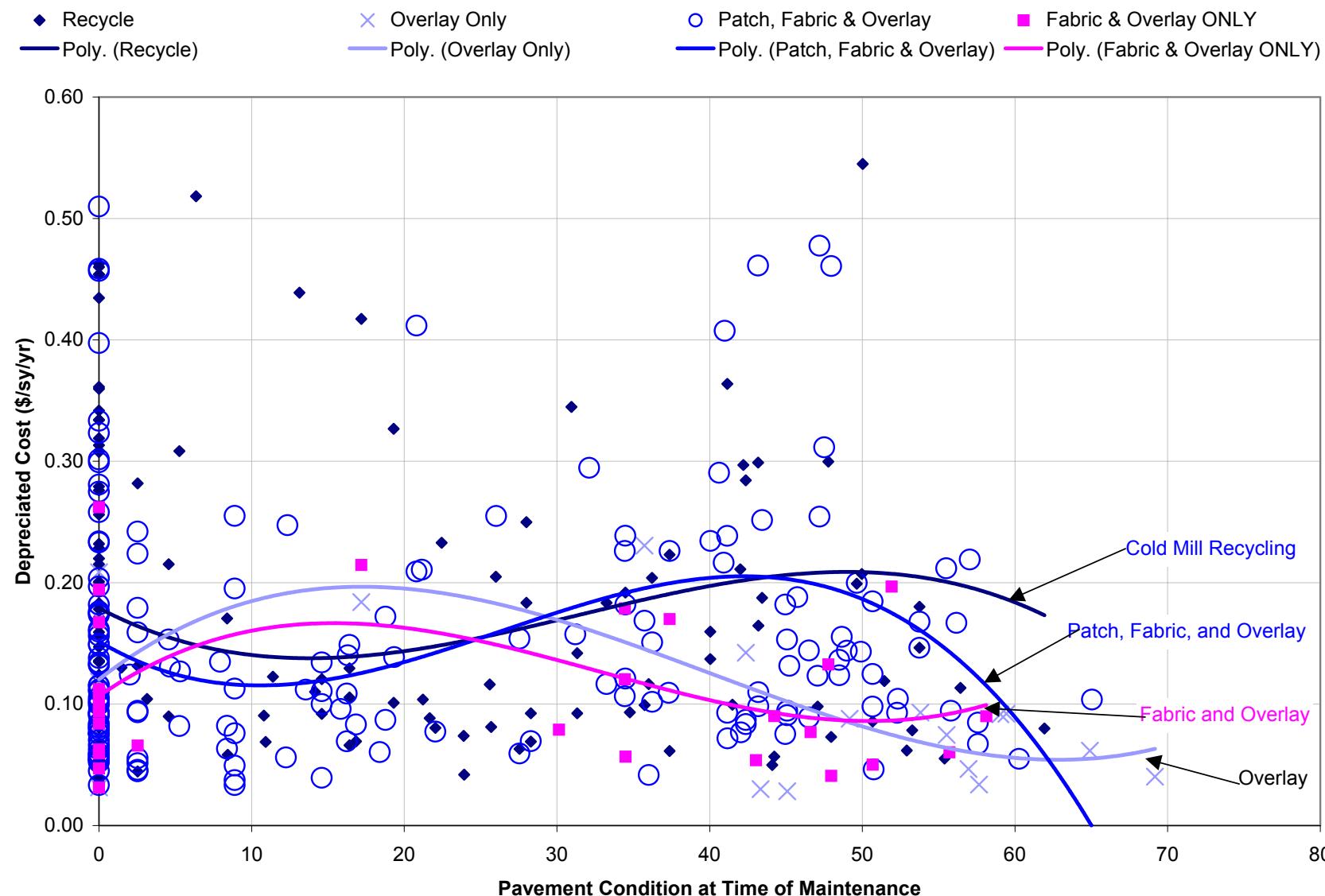


Figure 2. 1997/98 – 2003/04 PFP Data and Treatment Trends

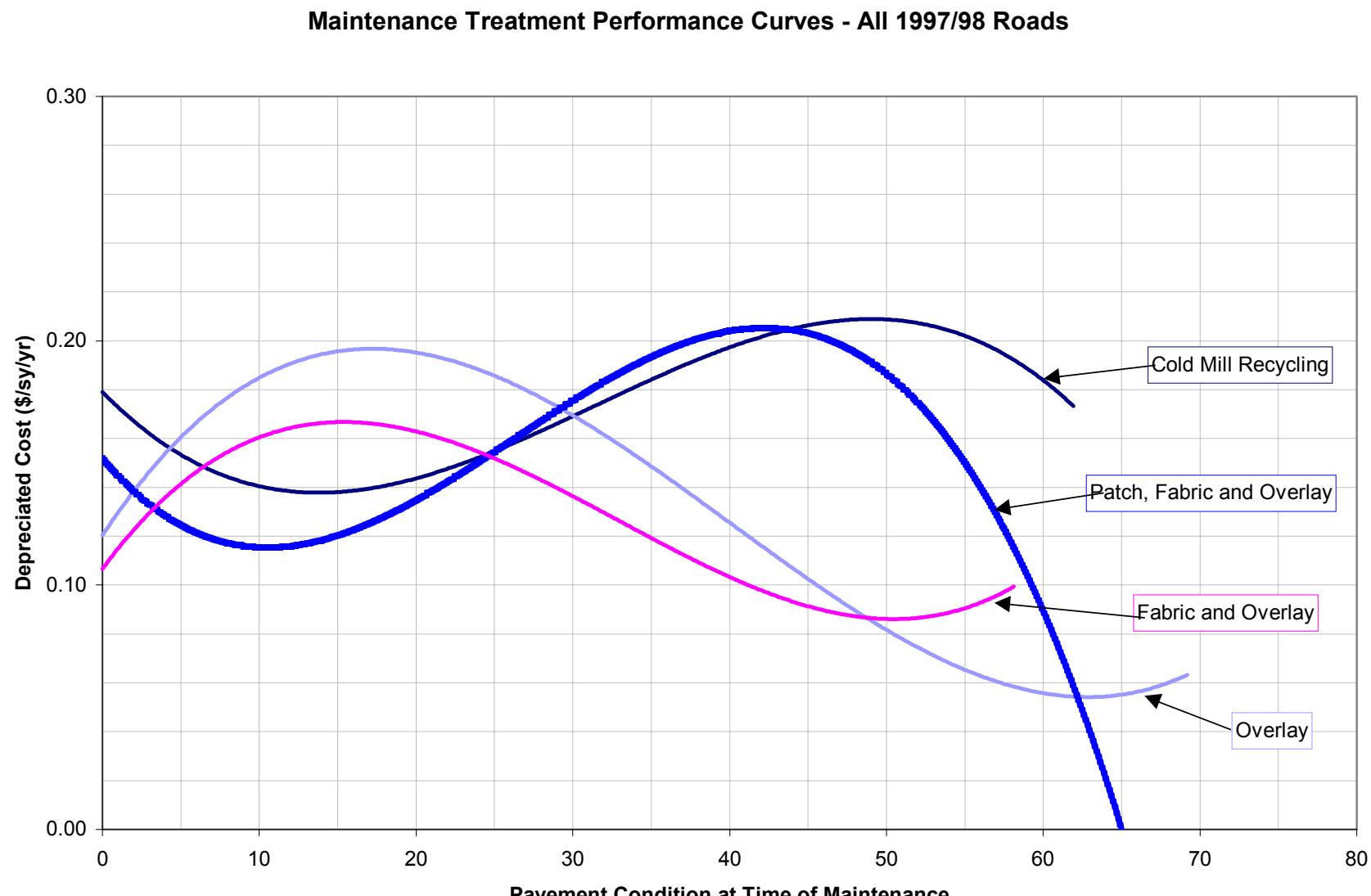


Figure 3. 1997/98 – 2003/04 PFP Treatment Trends Only

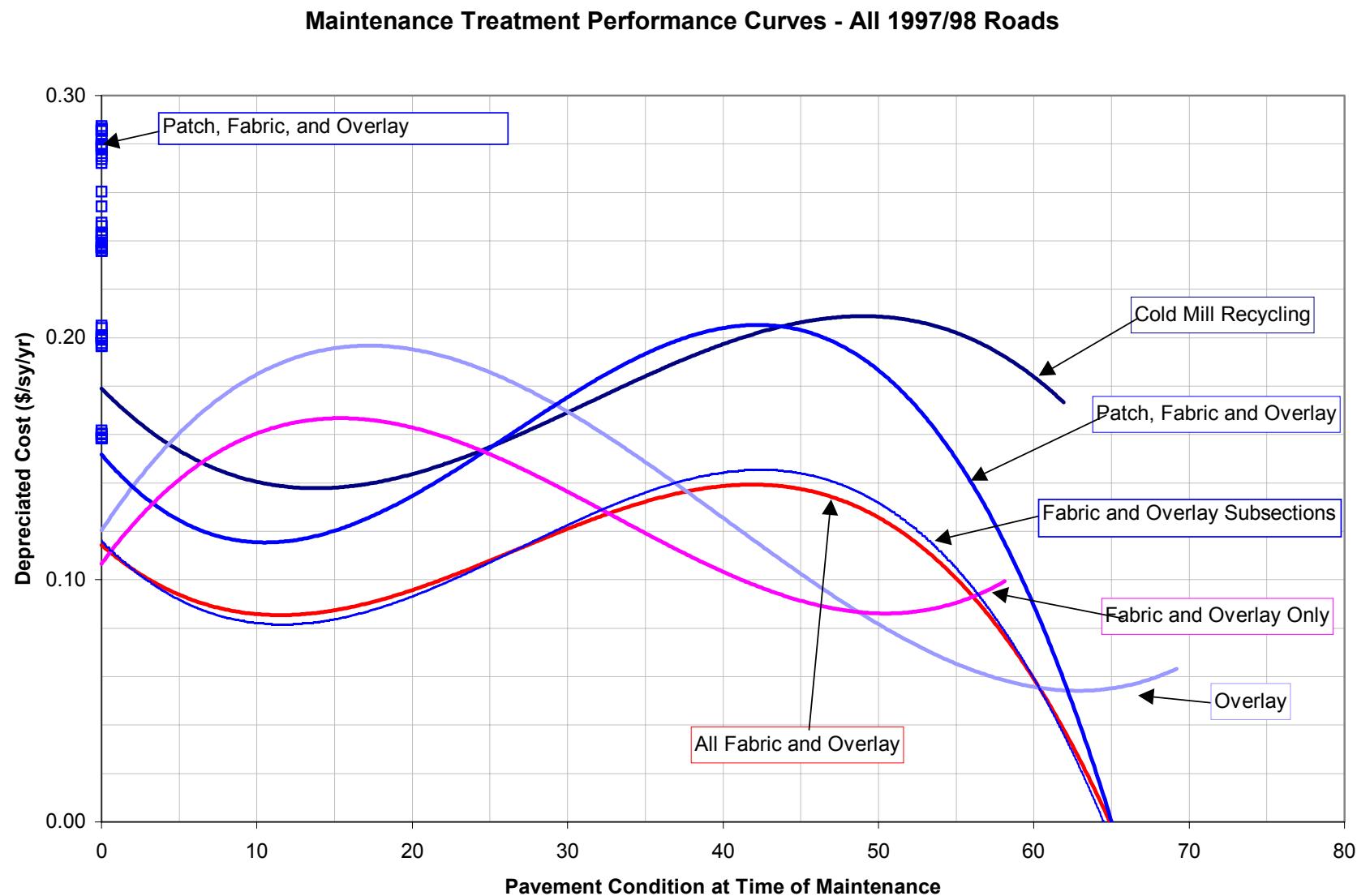


Figure 4. 1997/98 – 2003/04 PFP Treatment Trends Only (including Subsections)

Table A1: 1997/98 – 2003/04 PFP Data & Performance Calculations

Road	Technique	Treatment (Mat'l + Labor)	Surface	Patch	Recycle	Crusher Run	Emulsion	Stone Base Setup	BST	Fabric	AC Tack	D/W tie-ins	Total Cost	Total Area	Unit Cost	Overlay Qty	94-96 Rating Date	94-96 Rating	Est. Age of P'ment (yrs)	Maint. Date	Rating at Time of Maint.	Latest Rating Date	Latest Rating	Depr. Cost	
			T	sy	sy	T	gas	sy	sy	gas	T														
			Unit Price (\$)	38.90	19.38	2.14	11.00	0.66	3.00	0.75	0.72	165.00	38.90												
K61	Overlay	Quantity	798	505	0	0	0	0	0	0	0	0	50	38884	10761	3.61	0.070	Jan-94	65	4.10	Jan-98	43	Jan-04	95	0.03
	Cost	31042	9787	0	0	0	0	0	0	0	0	0	1945												
K61	Patch, Fabric & Overlay	Quantity	748	1378	0	0	0	0	0	0	7400	6	8	61810	7400	8.35	0.100	Jan-94	58	5.20	Jan-98	28	Jan-04	95	0.07
K61	Patch, Fabric & Overlay ONLY	Quantity	139	1378	0	0	0	0	0	0	1378	1	1	33243	1378	24.12	0.100	Jan-94	0	10.30	Jan-98	0	Jan-04	95	0.20
K61	Fabric & Overlay ONLY	Cost	5418	26706	0	0	0	0	0	0	982	184	58	28567	6022	4.74	0.100	Jan-94	58	5.20	Jan-98	28	Jan-04	95	0.04
K61	Fabric & Overlay ONLY	Quantity	609	0	0	0	0	0	0	0	6022	5	7												
K61	Fabric & Overlay ONLY	Cost	23679	0	0	0	0	0	0	0	4336	806	253												
K61	Recycle	Quantity	182	0	1757	217	2450	0	0	0	0	0	6	14610	1757	8.32	0.100	Jan-94	58	5.20	Jan-98	28	Jan-04	95	0.07
K143	Overlay	Quantity	148	0	0	0	0	0	0	0	0	0	2	5679	1533	3.70	0.095	Apr-95	90	1.40	Jan-98	65	Jan-04	90	0.06
K219	Patch, Fabric & Overlay	Quantity	367	516	0	0	0	0	0	0	3253	3	45	25363	3253	7.80	0.099	Mar-96	81	2.30	Jan-98	65	Jan-04	92	0.10
K219	Patch, Fabric & Overlay ONLY	Quantity	58	516	0	0	0	0	0	0	516	0	7	12437	516	24.10	0.099	Mar-96	0	10.30	Jan-98	0	Jan-04	92	0.32
K219	Fabric & Overlay ONLY	Cost	2265	10000	0	0	0	0	0	0	372	79	278												
K219	Fabric & Overlay ONLY	Quantity	309	0	0	0	0	0	0	0	2737	3	38	12926	2737	4.72	0.099	Mar-96	81	2.30	Jan-98	65	Jan-04	92	0.06
K219	Fabric & Overlay ONLY	Cost	12012	0	0	0	0	0	0	0	1971	416	1473												
M87	Recycle	Quantity	951	0	9252	1069	14550	0	0	0	0	0	8	77844	9252	8.41	0.102	Feb-95	53	6.50	Jan-98	24	Jan-04	97	0.04
	Cost	36994	0	19799	11759	9603	0	0	0	0	0	311													
M119	Recycle	Quantity	1306	0	13066	1185	18193	0	0	0	0	0	31	102601	13066	7.85	0.098	Mar-95	45	7.90	Jan-98	0	Jan-04	97	0.04
O33	Recycle	Quantity	270	0	2187	253	3360	0	0	0	0	0	28	19095	2187	8.73	0.111	Feb-95	36	8.70	Jan-98	0	Jan-04	77	0.33
O64	Recycle	Quantity	94	0	722	82	1000	0	0	0	0	0	2	6686	722	9.26	0.127	Apr-95	38	8.60	Jan-98	0	Jan-04	89	0.17
O64	Recycle	Cost	3657	0	1545	902	660	0	0	0	0	0	78												
O80	Recycle	Quantity	205	0	2061	183	2900	0	0	0	0	0	22	15456	2061	7.50	0.089	Feb-95	59	5.10	Jan-98	44	Jan-04	96	0.05
O91	Recycle	Quantity	689	0	7133	844	13050	0	0	0	0	0	20	59186	7133	8.30	0.094	Feb-95	75	3.00	Jan-98	55	Jan-04	96	0.06
P46	Overlay	Quantity	370	0	0	0	0	0	0	0	0	0	14	13848	3430	4.04	0.104	Apr-95	95	0.85	Jan-98	69	Jan-04	94	0.04
P46	Overlay	Cost	14393	0	0	0	0	0	0	0	0	0	545												
P46	Patch, Fabric & Overlay	Quantity	957	2523	0	0	0	0	0	0	8862	8	29	92696	8862	10.46	0.105	Apr-95	67	3.90	Jan-98	52	Jan-04	94	0.10
P46	Patch, Fabric & Overlay ONLY	Cost	37227	48896	0	0	0	0	0	0	6381	1320	1128												
P46	Fabric & Overlay ONLY	Quantity	272	2523	0	0	0	0	0	0	2523	2	8	61365	2523	24.32	0.105	Apr-95	0	10.30	Jan-98	0	Jan-04	94	0.24
P46	Fabric & Overlay ONLY	Cost	10599	48896	0	0	0	0	0	0	1817	376	321												
P46	Fabric & Overlay ONLY	Quantity	685	0	0	0	0	0	0	0	6339	6	21	31330	6339	4.94	0.105	Apr-95	67	3.90	Jan-98	52	Jan-04	94	0.05
Q11	Recycle	Quantity	146	0	1550	127	1800	0	0	0	0	0	2	11504	1550	7.42	0.093	Aug-96	24	9.40	Jan-98	0	Jan-04	75	0.31
	Cost	5679	0	3317	1397	1188	0	0	0	0	0	78													
Q50	Overlay	Quantity	487	0	0	0	0	0	0	0	0	0	28	17855	3870	4.61	0.119	Mar-95	82	2.20	Jan-98	59	Jan-04	88	0.09
R3	Recycle	Quantity	1281	0	10262	1182	14350	0	0	0	0	0	26	93253	10262	9.09	0.122	Mar-95	39	8.50	Jan-98	0	Jan-04	96	0.06
R45	Overlay	Quantity	114	0	0	0	0	0	0	0	0	0	3	4318	1097	3.94	0.101	Feb-95	82	2.20	Jan-98	59	Jan-04	86	0.09
R45	Patch, Fabric & Overlay	Quantity	1330	1646	0	0	0	0	0	0	11685	10	28	92610	11685	7.93	0.111	Feb-95	65	4.10	Jan-98	51	Jan-04	86	0.18
R45	Patch, Fabric & Overlay ONLY	Quantity	187	1646	0	0	0	0	0	0	1646	1	4	40451	1646	24.58	0.111	Feb-95	0	10.30	Jan-98	0	Jan-04	86	0.57
R45	Fabric & Overlay ONLY	Cost	7288	31899	0	0	0	0	0	0	1185	232	153												
A4	Patch, Fabric & Overlay	Quantity	1143	0	0	0	0	0	0	0	10039	9	24	52159	10039	5.20	0.111	Feb-95	65	4.10	Jan-98	51	Jan-04	86	0.12
A4	Patch, Fabric & Overlay ONLY	Cost	44449	0	0	0	0	0	0	0	7228	1418	936												
A4	Patch, Fabric & Overlay ONLY	Quantity	342	574	0	0	0	0	0	0	3082	3	8	26781	3082	8.69	0.108	Mar-95	37	8.60	Jan-98	0	Jan-04	92	0.12
A4	Patch, Fabric & Overlay ONLY	Cost	13312	11126	0	0	0	0	0	0	2219	435	311												
A4	Fabric & Overlay ONLY	Quantity	64	574	0	0	0	0	0	0	574	1	1	14049	574	24.48	0.108	Mar-95	0	10.30	Jan-98	0	Jan-04	92	0.33
A4	Fabric & Overlay ONLY	Cost	2478	11124	0	0	0	0	0	0	413	92	58												
A4	Fabric & Overlay ONLY	Quantity	278	0	0	0	0	0	0	0	2508	2	7	12781	2508	5.10	0.108	Mar-95	37	8.60	Jan-98	0	Jan-04	92	0.07
A5	Recycle	Quantity	1299	0	12186	1644	17500	0	0	0	0	0	53	104098	12186	8.54	0.102	Dec-93	64	4.20	Jan-98	41	Jan-04	93	0.10
A7	Recycle	Quantity	391	0	3832	447	5625	0	0	0	0	0	20	31277	3832	8.16	0.097	Dec-93	32	9.00	Jan-98	0	Jan-04	90	0.14
A11	Recycle	Quantity	2275	0	22404	2622	29450	0	0	0	0	0	137	179392	22404	8.01	0.095	Jul-96	73	3.10	Jan-98	62	Jan-04	94	0.08
	Cost	88502	0	47945	28838	19437	0	0	0	0	0	5329													

Table A1: 1997/98 – 2003/04 PFP Data & Performance Calculations

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Road	Technique	Treatment (Mat'l + Labor)	Surface	Patch	Recycle	Crusher Run	Emulsion	Stone Base Setup	BST	Fabric	AC Tack	D/W tie-ins	Total Cost	Total Area	Unit Cost	Overlay Qty	94-96 Rating Date	94-96 Rating	Est. Age of P'ment (yrs)	Maint. Date	Rating at Time of Maint.	Latest Rating Date	Latest Rating	Depr. Cost
			T	sy	sy	T	gas	sy	sy	gas	T													
D294	Patch, Fabric & Overlay	Quantity	442	637	0	0	0	0	0	4115	4	53	31024	4115	7.54	0.095	Aug-96	53	6.40	Jan-98	46	Jan-04	85	0.19
		Cost	17198	12341	0	0	0	0	0	2963	584	2062												
D294	Patch, Fabric & Overlay ONLY	Quantity	68	637	0	0	0	0	0	637	1	8	15248	637	23.94	0.095	Aug-96	0	10.30	Jan-98	0	Jan-04	85	0.60
		Cost	2662	12345	0	0	0	0	0	459	102	319												
D294	Fabric & Overlay ONLY	Quantity	374	0	0	0	0	0	0	3478	3	45	15852	3478	4.56	0.095	Aug-96	53	6.40	Jan-98	46	Jan-04	85	0.11
		Cost	14532	0	0	0	0	0	0	2504	558	1743												
D298	Recycle	Quantity	65	0	580	59	900	0	0	0	0	3	4887	580	8.43	0.107	Aug-96	36	8.70	Jan-98	5	Jan-04	78	0.31
		Cost	2518	0	1241	650	594	0	0	0	0	117												
D326	Patch, Fabric & Overlay	Quantity	88	129	0	0	0	0	0	755	1	10	6198	755	8.21	0.103	Aug-96	36	8.70	Jan-98	5	Jan-04	94	0.08
		Cost	3429	2508	0	0	0	0	0	544	106	389												
D326	Patch, Fabric & Overlay ONLY	Quantity	15	129	0	0	0	0	0	129	0	2	3140	129	24.34	0.103	Aug-96	0	10.30	Jan-98	0	Jan-04	94	0.24
		Cost	585	2500	0	0	0	0	0	93	28	66												
D326	Fabric & Overlay ONLY	Quantity	73	0	0	0	0	0	0	626	1	8	3103	626	4.96	0.103	Aug-96	36	8.70	Jan-98	5	Jan-04	94	0.05
		Cost	2838	0	0	0	0	0	0	451	137	323												
E2	Patch, Fabric & Overlay	Quantity	252	130	0	0	0	0	0	2690	2	18	13957	2690	5.19	0.087	Apr-95	51	6.90	Jan-98	18	Jan-04	93	0.06
		Cost	9811	2527	0	0	0	0	0	1937	382	700												
E2	Patch, Fabric & Overlay ONLY	Quantity	12	130	0	0	0	0	0	130	0	1	3069	130	23.61	0.087	Apr-95	0	10.30	Jan-98	0	Jan-04	93	0.27
		Cost	474	2519	0	0	0	0	0	94	16	34												
E2	Fabric & Overlay ONLY	Quantity	240	0	0	0	0	0	0	2560	2	17	10820	2560	4.23	0.087	Apr-95	51	6.90	Jan-98	18	Jan-04	93	0.05
		Cost	9329	0	0	0	0	0	0	1843	314	666												
E4	Recycle	Quantity	847	0	7004	754	9350	0	0	0	0	120	57713	7004	8.24	0.104	Aug-96	50	7.00	Jan-98	40	Jan-04	90	0.14
		Cost	32930	0	14988	8292	6171	0	0	0	0	4668												
E6	Recycle	Quantity	268	0	1900	251	2850	0	0	0	0	92	15559	1900	8.19	0.093	Aug-96	56	5.80	Jan-98	50	Jan-04	60	0.54
		Cost	10425	0	4066	2766	1881	0	0	0	0	3579												
E10	Patch, Fabric & Overlay	Quantity	379	193	0	0	0	0	0	4457	4	44	20618	4457	4.63	0.075	Aug-96	51	6.90	Jan-98	41	Jan-04	69	0.24
		Cost	14758	3733	0	0	0	0	0	3209	630	1712												
E10	Patch, Fabric & Overlay ONLY	Quantity	16	193	0	0	0	0	0	193	0	2	4472	193	23.17	0.075	Aug-96	0	10.30	Jan-98	0	Jan-04	69	1.20
		Cost	638	3740	0	0	0	0	0	139	29	74												
E10	Fabric & Overlay ONLY	Quantity	363	0	0	0	0	0	0	4264	4	42	16169	4264	3.79	0.075	Aug-96	51	6.90	Jan-98	41	Jan-04	69	0.20
		Cost	14105	0	0	0	0	0	0	3070	631	1637												
E107	Recycle	Quantity	524	0	5937	786	10400	0	0	0	0	20	47893	5937	8.07	0.085	Jan-94	54	6.20	Jan-98	3	Jan-04	79	0.28
		Cost	20383	0	12781	8643	6864	0	0	0	0	778												
E107	Patch, Fabric & Overlay	Quantity	505	286	0	0	0	0	0	5728	5	19	29395	5728	5.13	0.085	Jan-94	54	6.20	Jan-98	3	Jan-04	79	0.18
		Cost	19652	5548	0	0	0	0	0	4124	810	739												
E107	Patch, Fabric & Overlay ONLY	Quantity	25	286	0	0	0	0	0	286	0	1	6734	286	23.54	0.085	Jan-94	0	10.30	Jan-98	0	Jan-04	79	0.82
		Cost	981	5543	0	0	0	0	0	206	41	37												
E107	Fabric & Overlay ONLY	Quantity	480	0	0	0	0	0	0	5442	5	18	22663	5442	4.16	0.085	Jan-94	54						

Table A1: 1997/98 – 2003/04 PFP Data & Performance Calculations

Road	Technique	Treatment (Mat'l + Labor)	Surface	Patch	Recycle	Crusher Run	Emulsion	Stone Base Setup	BST	Fabric	AC Tack	D/W tie-ins	Total Cost	Total Area	Unit Cost	Overlay Qty	94-96 Rating Date	94-96 Rating	Est. Age of P'ment (yrs)	Maint. Date	Rating at Time of Maint.	Latest Rating Date	Latest Rating	Depr. Cost	
			T	sy	sy	T	gas	sy	sy	gas	T														
G181	Patch, Fabric & Overlay	Quantity	145	52	0	0	0	0	0	1428	1	7	7582	1428	5.31	0.097	Sep-96	38	8.55	Jan-98	12	Jan-04	72	0.25	
G181	Patch, Fabric & Overlay ONLY	Cost	5622	1002	0	0	0	0	0	1028	202	272													
G181	Patch, Fabric & Overlay ONLY	Quantity	5	52	0	0	0	0	0	52	0	0	1247	52	23.97	0.097	Sep-96	0	10.30	Jan-98	0	Jan-04	72	1.12	
G181	Patch, Fabric & Overlay ONLY	Cost	205	1008	0	0	0	0	0	37	6	10													
G186	Patch, Fabric & Overlay ONLY	Quantity	140	0	0	0	0	0	0	1376	1	7	6322	1376	4.59	0.097	Sep-96	38	8.55	Jan-98	12	Jan-04	72	0.21	
G186	Patch, Fabric & Overlay ONLY	Cost	5435	0	0	0	0	0	0	991	169	262													
G182	Patch & Overlay ONLY	Quantity	53	7	0	0	0	0	0	0	0	2	2120	490	4.33	0.104	Sep-96	32	9.00	Jan-98	0	Jan-04	73	0.19	
G182	Patch & Overlay ONLY	Cost	2058	140	0	0	0	0	0	0	0	78													
G186	Patch, Fabric & Overlay	Quantity	2192	1107	0	0	0	0	0	16330	12	143	110564	16330	6.77	0.125	Aug-96	60	4.90	Jan-98	54	Jan-04	87	0.15	
G186	Patch, Fabric & Overlay	Cost	81114	21312	0	0	0	0	0	11758	1943	5563													
G186	Patch, Fabric & Overlay ONLY	Quantity	149	1107	0	0	0	0	0	1107	1	10	27788	1107	25.10	0.125	Aug-96	0	10.30	Jan-98	0	Jan-04	87	0.54	
G186	Patch, Fabric & Overlay ONLY	Cost	5780	21454	0	0	0	0	0	797	134	377													
G186	Fabric & Overlay ONLY	Quantity	2043	0	0	0	0	0	0	15223	11	133	87109	15223	5.72	0.125	Aug-96	60	4.90	Jan-98	54	Jan-04	87	0.12	
G186	Fabric & Overlay ONLY	Cost	79488	0	0	0	0	0	0	10961	1846	5186													
G186	Recycle	Quantity	372	0	2769	207	3900	0	0	0	0	24	23073	2769	8.33	0.126	Aug-96	60	4.90	Jan-98	54	Jan-04	87	0.18	
G197	Recycle	Cost	13754	0	5814	1865	2574	0	0	0	0	934													
G197	Recycle	Quantity	430	0	4385	691	8350	0	0	0	0	38	37724	4385	8.60	0.089	Sep-96	22	9.50	Jan-98	0	Jan-04	88	0.17	
G207	Recycle	Cost	16710	0	9384	7597	5511	0	0	0	0	1478													
G214	Patch, Fabric & Overlay	Quantity	126	318	0	0	0	0	0	1121	1	2	11936	1121	10.65	0.111	Sep-96	50	7.00	Jan-98	41	Jan-04	77	0.41	
G214	Patch, Fabric & Overlay ONLY	Cost	4885	6163	0	0	0	0	0	807	159	78													
G214	Fabric & Overlay ONLY	Quantity	36	318	0	0	0	0	0	318	0	1	7807	318	24.55	0.111	Sep-96	0	10.30	Jan-98	0	Jan-04	77	0.94	
G214	Fabric & Overlay ONLY	Cost	3511	0	0	0	0	0	578	118	56														
G215	Fabric & Overlay ONLY	Quantity	105	0	0	0	0	0	1060	1	1	4954	1060	4.67	0.098	Mar-95	55	6.00	Jan-98	34	Jan-04	77	0.18		
G215	Fabric & Overlay ONLY	Cost	4081	0	0	0	0	0	763	149	39														
G216	Patch, Fabric & Overlay	Quantity	247	256	0	0	0	0	0	2428	2	4	16500	2428	6.80	0.100	Sep-96	49	7.30	Jan-98	37	Jan-04	80	0.23	
G216	Patch, Fabric & Overlay	Cost	9611	4954	0	0	0	0	0	1748	343	156													
G216	Patch, Fabric & Overlay ONLY	Quantity	26	256	0	0	0	0	0	256	0	0	6177	256	24.13	0.100	Sep-96	0	10.30	Jan-98	0	Jan-04	80	0.80	
G216	Patch, Fabric & Overlay ONLY	Cost	1013	4961	0	0	0	0	0	184	35	16													
G216	Fabric & Overlay ONLY	Quantity	221	0	0	0	0	0	2172	2	4	10315	2172	4.75	0.100	Sep-96	49	7.30	Jan-98	37	Jan-04	80	0.16		
G233	Fabric & Overlay ONLY	Quantity	188	0	0	0	0	0	1918	2	3	8526	1918	4.45	0.096	Sep-96	49	7.30	Jan-98	37	Jan-04	77	0.17		
H5	Recycle	Quantity	742	0	6424	653	9550	0	0	0	0	95	52381	6424	8.15	0.101	Aug-96	31	9.05	Jan-98	0	Jan-04	96	0.05	
H10	Patch, Fabric & Overlay	Quantity	314	151	0	0	0	0	3157	3	18	17171	3157	5.44	0.094	Aug-96	37	8.60	Jan-98	8	Jan-04	93	0.06		
H10	Patch, Fabric & Overlay ONLY	Cost	584	2926	0	0	0	0	109	24	33														
H10	Fabric & Overlay ONLY	Quantity	299	0	0	0	0	0	3006	3	17	13599	3006	4.52	0.094	Aug-96	37	8.60	Jan-98	8	Jan-04	93	0.05		
H10	Fabric & Overlay ONLY	Cost	11630	0	0	0	0	0	2164	471	667														
H15	Recycle	Quantity	2779	0	24233	2927	41950	0	0	0	0	120	215170	24233	8.88	0.110	Aug-96	45	8.00	Jan-98	24	Jan-04	95	0.07	
H16	Recycle	Cost	108095	0	51858	32198	27687	0	0	0	0	4668													
H16	Recycle	Quantity	945	0	9226	1189	15800	0	0	0	0	35	78643	9226	8.52	0.099	Jan-94	66	4.00	Jan-98	44	Jan-04	96	0.06	
H20	Patch, Fabric & Overlay	Quantity	92	27	0	0	0	0	0	913	1	14	4321	913	4.73	0.085	Mar-95	28	9.25	Jan-98	0	Jan-04	75	0.20	
H20	Patch, Fabric & Overlay ONLY	Cost	3561	517	0	0	0	0	657	131	545														
H20	Fabric & Overlay ONLY	Quantity	3	27	0	0	0	0	27	0	0		637	27	23.60	0.085	Mar-95	0	10.30	Jan-98	0	Jan-04	75	0.98	
H20	Fabric & Overlay ONLY	Cost	106	523	0	0	0	0	19	5	16														
H20	Fabric & Overlay ONLY	Quantity	89	0	0	0	0	0	886	1	14	3743	886	4.22	0.085	Mar-95	28	9.25	Jan-98	0	Jan-04	75	0.18		
H22	Fabric & Overlay ONLY	Quantity	99	0	0	0	0	0	878	1	8	4315	878	4.91	0.104	Mar-95	28	9.25	Jan-98	0	Jan-04	88	0.10		
H22	Fabric & Overlay ONLY	Cost	3870	0	0	0	0	0	632	124	311														
H23	Patch, Fabric & Overlay	Quantity	32	125	0	0	0	0	240	1	0		3903	240	16.26	0.133	Mar-95	57	5.50	Jan-98	41	Jan-04	92	0.22	
H23	Patch, Fabric & Overlay ONLY	Cost	1245	2419	0	0	0	0	173	66	0														
H23	Patch, Fabric & Overlay ONLY	Quantity	17	125	0	0	0	0	0	125	1	0		3247	125	25.97	0.133	Mar-95	0	10.30	Jan-98	0	Jan-04	92	0.35
H23	Fabric & Overlay ONLY	Quantity	15	0	0	0	0	0	115	0	0		758	115	6.59	0.133	Mar-95	57	5.50	Jan-98	41	Jan-04	92	0.09	
H24	Recycle	Quantity	360	0	3519	21	4800	0	0	0	0	30	23762	3519	6.75	0.094	Mar-95	49	7.30	Jan-98	5	Jan-04	92	0.09	
H24	Recycle	Cost	14004	0	7531	226	3168	0	0	0	0	1167													

Table A1: 1997/98 – 2003/04 PFP Data & Performance Calculations

Table A1: 1997/98 – 2003/04 PFP Data & Performance Calculations

Road	Technique	Treatment (Mat'l + Labor)	Surface	Patch	Recycle	Crusher Run	Emul-sion	Stone Base Setup	BST	Fabric	AC Tack	D/W tie-ins	Total Cost	Total Area	Unit Cost	Overlay Qty	94-96 Rating Date	94-96 Rating	Est. Age of P'ment (yrs)	Maint. Date	Rating at Time of Maint.	Latest Rating Date	Latest Rating	Depr. Cost		
			T	sy	sy	T	gas	sy	sy	gas	T															
			Unit Price (\$)	38.90	19.38	2.14	11.00	0.66	3.00	0.75	0.72	165.00	38.90													
J162	Recycle	Quantity	282	0	2373	190	3150	0	0	0	0	25		19243	2373	8.11	0.108	Jan-94	52	6.80	Jan-98	0	Jan-04	90	0.13	
J162	Fabric & Overlay ONLY	Cost	10972	0	5078	2086	2079	0	0	0	0	973														
J163	Recycle	Quantity	95	0	0	0	0	0	0	800	1	9		4038	800	5.05	0.108	Jan-94	52	6.80	Jan-98	0	Jan-04	90	0.08	
J163	Patch, Fabric & Overlay	Cost	3699	0	0	0	0	0	576	113	350															
J163	Patch, Fabric & Overlay	Quantity	657	0	5989	338	7550	0	0	0	0	69		44419	5989	7.42	0.098	Jan-94	37	8.60	Jan-98	0	Jan-04	95	0.06	
J163	Patch, Fabric & Overlay	Cost	25582	0	12816	3722	4983	0	0	0	0	2684														
J163	Patch, Fabric & Overlay	Quantity	335	136	0	0	0	0	3047	3	35			16923	3047	5.55	0.098	Jan-94	75	3.00	Jan-98	51	Jan-04	95	0.05	
J163	Patch, Fabric & Overlay ONLY	Cost	13015	2643	0	0	0	0	2194	432	1362															
J163	Patch, Fabric & Overlay ONLY	Quantity	15	136	0	0	0	0	0	136	0	2		3277	136	24.09	0.098	Jan-94	0	10.30	Jan-98	0	Jan-04	95	0.20	
J163	Fabric & Overlay ONLY	Cost	582	2636	0	0	0	0	0	98	22	61														
J196	Patch, Fabric & Overlay	Quantity	320	0	0	0	0	0	0	2911	3	33		13718	2911	4.71	0.098	Jan-94	75	3.00	Jan-98	51	Jan-04	95	0.04	
J196	Patch, Fabric & Overlay	Cost	12450	0	0	0	0	0	2096	473	1301															
J196	Patch, Fabric & Overlay	Quantity	93	13	0	0	0	0	0	830	1	0		4599	830	5.54	0.112	Jan-94	56	5.80	Jan-98	15	Jan-04	88	0.11	
J196	Patch, Fabric & Overlay ONLY	Cost	3628	256	0	0	0	0	0	598	117	0			321	13	24.66	0.112	Jan-94	0	10.30	Jan-98	0	Jan-04	88	0.49
J196	Fabric & Overlay ONLY	Cost	57	252	0	0	0	0	0	9	3	0														
J196	Fabric & Overlay ONLY	Quantity	92	0	0	0	0	0	0	817	1	0		4312	817	5.28	0.112	Jan-94	56	5.80	Jan-98	15	Jan-04	88	0.11	
J196	Fabric & Overlay ONLY	Cost	3561	0	0	0	0	0	0	588	162	0														
J199	Recycle	Quantity	121	0	1014	21	1400	0	0	0	0	2		7945	1014	7.84	0.117	Sep-96	34	8.85	Jan-98	3	Jan-04	92	0.10	
J199	Recycle	Cost	4703	0	2170	226	924	0	0	0	0	78														
J206	Patch, Fabric & Overlay	Quantity	238	36	0	0	0	0	0	1992	2	12		11199	1992	5.62	0.113	Jan-94	49	7.30	Jan-98	0	Jan-04	84	0.15	
J206	Patch, Fabric & Overlay ONLY	Cost	167	698	0	0	0	0	0	26	6	8			888	36	24.68	0.113	Jan-94	0	10.30	Jan-98	0	Jan-04	84	0.66
J206	Fabric & Overlay ONLY	Cost	9091	0	0	0	0	0	1408	324	458			10365	1956	5.30	0.113	Jan-94	49	7.30	Jan-98	0	Jan-04	84	0.14	
J212	Patch, Fabric & Overlay	Quantity	1176	331	0	0	0	0	0	12490	11	11		62501	12490	5.00	0.093	Jan-94	55	6.00	Jan-98	9	Jan-04	96	0.03	
J212	Patch, Fabric & Overlay ONLY	Cost	45745	6421	0	0	0	0	0	8993	1770	428														
J212	Patch, Fabric & Overlay ONLY	Quantity	31	331	0	0	0	0	0	331	0	0		7902	331	23.87	0.093	Jan-94	0	10.30	Jan-98	0	Jan-04	96	0.16	
J212	Fabric & Overlay ONLY	Cost	1145	0	0	0	0	0	0	12159	11	11			54639	12159	4.49	0.093	Jan-94	55	6.00	Jan-98	9	Jan-04	96	0.03
J213	Patch, Fabric & Overlay	Quantity	776	110	0	0	0	0	0	8251	7	59		37115	8251	4.50	0.087	Jan-94	52	6.80	Jan-98	0	Jan-04	94	0.04	
J213	Patch, Fabric & Overlay ONLY	Cost	30167	2134	0	0	0	0	0	5941	1168	2295														
J213	Fabric & Overlay ONLY	Cost	10	110	0	0	0	0	0	110	0	1		2598	110	23.62	0.087	Jan-94	0	10.30	Jan-98	0	Jan-04	94	0.24	
J213	Fabric & Overlay ONLY	Quantity	766	0	0	0	0	0	0	8141	7	58			34521	8141	4.24	0.087	Jan-94	52	6.80	Jan-98	0	Jan-04	94	0.04
J219	Recycle	Quantity	102	0	1089	48	1366	0	0	0	0	7		7470	1089	6.86	0.087	Jan-94	43	8.10	Jan-98	0	Jan-04	95	0.06	
J219	Recycle	Cost	3980	0	2330	531	902	0	0	0	0	272														
J219	Overlay	Quantity	129	0	0	0	0	0	0	0	0	9		4671	1374	3.40	0.087	Jan-94	67	3.90	Jan-98	45	Jan-04	95	0.03	
J222	Patch, Fabric & Overlay	Quantity	201	110	0	0	0	0	0	2182	2	11		11399	2182	5.22	0.087	Jan-94	52	6.80	Jan-98	0	Jan-04	94	0.05	
J222	Patch, Fabric & Overlay	Cost	7816	2132	0	0	0	0	0	1571	308	428														
J222	Patch, Fabric & Overlay ONLY	Quantity	10	110	0	0	0	0	0	110	0	1		2600	110	23.64	0.087	Jan-94	0	10.30	Jan-98	0	Jan-04	94	0.24	
J222	Fabric & Overlay ONLY	Cost	394	2132	0	0	0	0	0	79	17	22			8824	2072	4.26	0.087	Jan-94	52	6.80	Jan-98	0	Jan-04	94	0.04
J235	Patch, Fabric & Overlay	Quantity	23	250	0	0	0	0	0	2373	2	12			15487	2373	6.53	0.093	Jan-94	55	6.00	Jan-98	9	Jan-04	93	0.08
J235	Patch, Fabric & Overlay ONLY	Cost	955	4845	0	0	0	0	0	250	0	1			5965	250	23.86	0.093	Jan-94	0	10.30	Jan-98	0	Jan-04	93	0.28
J235	Fabric & Overlay ONLY	Quantity	208	0	0	0	0	0	0	2123	2	11			9515	2123	4.48	0.093	Jan-94	55	6.00	Jan-98	9	Jan-04	93	0.05
J248	Patch, Fabric & Overlay	Quantity	522	158	0	0	0	0	0	4883	4	4			27429	4883	5.62	0.106	Jan-94	44	8.00	Jan-98	0	Jan-04	94	0.06
J248	Patch, Fabric & Overlay	Cost	20321	3058	0	0	0	0	0	3516	690	156														
J248	Patch, Fabric & Overlay ONLY	Quantity	17	158	0	0	0	0	0	158	0	0		3849	158	24.36	0.106	Jan-94	0	10.30	Jan-98	0	Jan-04	94	0.24	
J248	Fabric & Overlay ONLY	Cost	657	3062	0	0	0	0	0	114	21	5			23539	4725	4.98	0.106	Jan-94	44	8.00	Jan-98	0	Jan-04	94	0.05
J252	Fabric & Overlay ONLY	Quantity	111	0	0	0	0	0	0	1037	1	2			5135	1037	4.95	0.105	Jan-94	54	6.20	Jan-98	3	Jan-04	92	0.07
J259	Fabric & Overlay ONLY	Quantity	105	0	0	0	0	0	0	1056	1	1			4969	1056	4.71	0.098	Jan-94	50	7.00	Jan-98	0	Jan-04	92	0.06

Table A1: 1997/98 – 2003/04 PFP Data & Performance Calculations

Road	Technique	Treatment (Mat'l + Labor)	Surface	Patch	Recycle	Crusher Run	Emulsion	Stone Base Setup	BST	Fabric	AC Tack	D/W tie-ins	Total Cost	Total Area	Unit Cost	Overlay Qty	94-96 Rating Date	94-96 Rating	Est. Age of P'ment (yrs)	Maint. Date	Rating at Time of Maint.	Latest Rating Date	Latest Rating	Depr. Cost	
			T	sy	sy	T	gas	sy	sy	gas	T														
J563	Patch, Fabric & Overlay	Quantity	313	578	0	0	0	0	0	2518	2	4	25396	2518	10.09	0.123	Jan-94	51	6.90	Jan-98	0	Jan-04	92	0.13	
J563	Patch, Fabric & Overlay ONLY	Cost	12180	11198	0	0	0	0	0	1813	361	156													
J563	Patch, Fabric & Overlay ONLY	Quantity	72	578	0	0	0	0	0	578	0	1	14453	578	25.00	0.123	Jan-94	0	10.30	Jan-98	0	Jan-04	92	0.33	
J563	Patch, Fabric & Overlay ONLY	Cost	2795	11202	0	0	0	0	0	416	76	36													
J566	Patch, Fabric & Overlay	Quantity	241	0	0	0	0	0	0	1940	2	3	10912	1940	5.62	0.123	Jan-94	51	6.90	Jan-98	0	Jan-04	92	0.07	
J566	Patch, Fabric & Overlay	Cost	9381	0	0	0	0	0	0	1397	254	120													
J566	Patch, Fabric & Overlay ONLY	Quantity	380	302	0	0	0	0	0	3292	3	7	23215	3292	7.05	0.113	Jan-94	43	8.10	Jan-98	0	Jan-04	94	0.07	
J566	Patch, Fabric & Overlay ONLY	Cost	14789	5861	0	0	0	0	0	2370	467	272													
J573	Patch, Fabric & Overlay	Quantity	35	302	0	0	0	0	0	302	0	1	7447	302	24.66	0.113	Jan-94	0	10.30	Jan-98	0	Jan-04	94	0.25	
J573	Patch, Fabric & Overlay ONLY	Cost	1356	5853	0	0	0	0	0	217	45	25													
J573	Fabric & Overlay ONLY	Quantity	345	0	0	0	0	0	0	2990	3	6	15781	2990	5.28	0.113	Jan-94	43	8.10	Jan-98	0	Jan-04	94	0.05	
J573	Fabric & Overlay ONLY	Cost	13426	0	0	0	0	0	0	2153	450	247													
J573	Patch, Fabric & Overlay	Quantity	227	998	0	0	0	0	0	2150	2	4	29845	2150	13.88	0.104	Jan-94	50	7.00	Jan-98	0	Jan-04	86	0.32	
J573	Patch, Fabric & Overlay ONLY	Cost	8816	19333	0	0	0	0	0	1548	304	156													
J573	Patch, Fabric & Overlay ONLY	Quantity	105	998	0	0	0	0	0	998	1	2	24240	998	24.29	0.104	Jan-94	0	10.30	Jan-98	0	Jan-04	86	0.57	
J573	Fabric & Overlay ONLY	Cost	4099	19341	0	0	0	0	0	719	153	72													
J578	Patch, Fabric & Overlay	Quantity	122	0	0	0	0	0	0	1152	1	2	5654	1152	4.91	0.104	Jan-94	50	7.00	Jan-98	0	Jan-04	86	0.11	
J578	Patch, Fabric & Overlay	Cost	4731	0	0	0	0	0	0	829	177	83													
J578	Patch, Fabric & Overlay ONLY	Quantity	480	111	0	0	0	0	0	4538	4	6	24493	4538	5.40	0.104	Feb-96	18	9.60	Jan-98	0	Jan-04	91	0.08	
J578	Patch, Fabric & Overlay ONLY	Cost	18677	2141	0	0	0	0	0	3267	641	233													
J578	Patch, Fabric & Overlay ONLY	Quantity	12	111	0	0	0	0	0	111	0	0	2698	111	24.31	0.104	Feb-96	0	10.30	Jan-98	0	Jan-04	91	0.36	
J578	Fabric & Overlay ONLY	Cost	457	2151	0	0	0	0	0	80	16	6													
J584	Recycle	Quantity	285	0	2584	255	3400	0	0	0	0	10	21271	2584	8.23	0.106	Jan-94	40	8.40	Jan-98	0	Jan-04	91	0.12	
J586	Recycle	Quantity	106	0	779	43	975	0	0	0	0	6	6665	779	8.56	0.128	Jan-94	36	8.70	Jan-98	0	Jan-04	94	0.09	
J592	Recycle	Quantity	116	0	1011	105	1350	0	0	0	0	1	8681	1011	8.59	0.114	Mar-95	39	8.50	Jan-98	0	Jan-04	93	0.10	
J605	Recycle	Quantity	577	0	4880	561	9000	0	0	0	0	0	45012	4880	9.22	0.118	Jan-94	53	6.40	Jan-98	0	Jan-04	94	0.09	
J606	Fabric & Overlay ONLY	Quantity	111	0	0	0	0	0	0	1352	1	0	5476	1352	4.05	0.082	Sep-96	52	6.80	Jan-98	43	Jan-04	92	0.05	
J620	Fabric & Overlay ONLY	Cost	4312	0	0	0	0	0	0	973	191	0													
J624	Patch, Fabric & Overlay	Quantity	58	0	0	0	0	0	0	581	1	0	2636	581	4.54	0.100	Mar-95	75	3.00	Jan-98	56	Jan-04	92	0.06	
J624	Patch, Fabric & Overlay	Cost	2137	0	0	0	0	0	0	418	81	0													
J624	Patch, Fabric & Overlay ONLY	Quantity	257	240	0	0	0	0	0	2320	2	3	16532	2320	7.13	0.109	Jan-94	45	7.90	Jan-98	0	Jan-04	93	0.08	
J624	Patch, Fabric & Overlay ONLY	Cost	10002	4651	0	0	0	0	0	1670	326	117													
J624	Patch, Fabric & Overlay ONLY	Quantity	27	240	0	0	0	0	0	240	0	0	5880	240	24.50	0.109	Jan-94	0	10.30	Jan-98	0	Jan-04	93	0.29	
J624	Fabric & Overlay ONLY	Cost	1034	4651	0	0	0	0	0	173	34	12													
J625	Patch, Fabric & Overlay	Quantity	230	0	0	0	0	0	0	2080	2	3	10652	2080	5.12	0.109	Jan-94	45	7.90	Jan-98	0	Jan-04	93	0.06	
J625	Patch, Fabric & Overlay	Cost	8963	0	0	0	0	0	0	1498	296	105													
J625	Patch, Fabric & Overlay ONLY	Quantity	933	796	0	0	0	0	0	7526	6	23	57303	7526	7.61	0.121	Jan-94	51	6.90	Jan-98	0	Jan-04	92	0.10	
J625	Patch, Fabric & Overlay ONLY	Cost	36295	15419	0	0	0	0	0	5419	1065	895													
J625	Fabric & Overlay ONLY	Quantity	99	796	0	0	0	0	0	796	1	2	19848	796	24.94	0.121	Jan-94	0	10.30	Jan-98	0	Jan-04	92	0.33	
J625	Fabric & Overlay ONLY	Cost	3839	15426	0	0	0	0	0	573	105	95													
J625	Fabric & Overlay ONLY	Quantity	834	0	0	0	0	0	0	6730	5	21	37386	6730	5.56	0.121	Jan-94	51	6.90	Jan-98	0	Jan-04	92	0.07	
J646	Recycle	Quantity	150	0	1476	102	1900	0	0	0	0	13	10852	1476	7.35	0.093	Feb-96	50	7.00	Jan-98	33	Jan-04	85	0.18	
J660	Recycle	Quantity	351	0	2918	289	3700	0	0	0	0	20	24748	2918	8.48	0.113	Feb-96	49	7.30	Jan-98	28	Jan-04	87	0.18	
J662	Patch, Fabric & Overlay	Quantity	200	80	0	0	0	0	0	1677	1	11	10330	1677	6.16	0.113	Feb-96	53	6.40	Jan-98	41	Jan-04	93	0.07	
J662	Patch, Fabric & Overlay ONLY	Quantity	10	80	0	0	0	0	0	80	0	1	1967	80	24.58	0.113	Feb-96	0	10.30	Jan-98	0	Jan-04	93	0.29	
J662	Fabric & Overlay ONLY	Cost	371	1550	0	0	0	0	0	58	8	20													
J662	Fabric & Overlay ONLY	Quantity	190	0	0	0	0	0	0	1597	1	10	8308	1597	5.20	0.113	Feb-96	53	6.40	Jan-98	41	Jan-04	93	0.06	
J668	Patch, Fabric & Overlay	Quantity	725	1161	0	0	0	0	0	7374	1255	64	52881	7374	7.17	0.090	Jan-94	64	4.20	Jan-98	42	Jan-04	93	0.08	
J668	Patch, Fabric & Overlay ONLY	Cost	26832	22351	0	0	0	0	0	5309	879	2490													
J668	Patch, Fabric & Overlay ONLY	Quantity	114	1161	0	0	0	0	0	1161	198	10	59987	1161	51.67	0.090	Jan-94	0	10.30	Jan-98	0	Jan-04	93	0.60	
J668	Fabric & Overlay ONLY	Cost	4440	22500	0	0	0	0	0	836	32603	392		200610	6213	32.29	0.090	Jan-94	64	4.20	Jan-98	42	Jan-04	93	0.38

