Engineering and Environmental Services
501 Canal Blvd, Suite I
Richmond, CA 94804
Fax (510) 215-2898
Ph (510) 215-3620

A599.02.20

City of Blue Lake

Pavement Management Program
Final Report

Submitted to:

City of Blue Lake

111 Greenwood Ave.
Blue Lake, CA 95525

January 2012

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Executive Summary

The City of Blue Lake maintains approximately 7.1 centerline miles of paved streets. A pavement management system (PMS) is used to maintain this pavement network. Based on the results of a survey completed in Fall 2009, the current (2012) average pavement condition index (PCI) is 57, which is in the "fair" condition category. A breakdown of the percentages of the County's network that fall into each condition category is found in Figure 1 below.

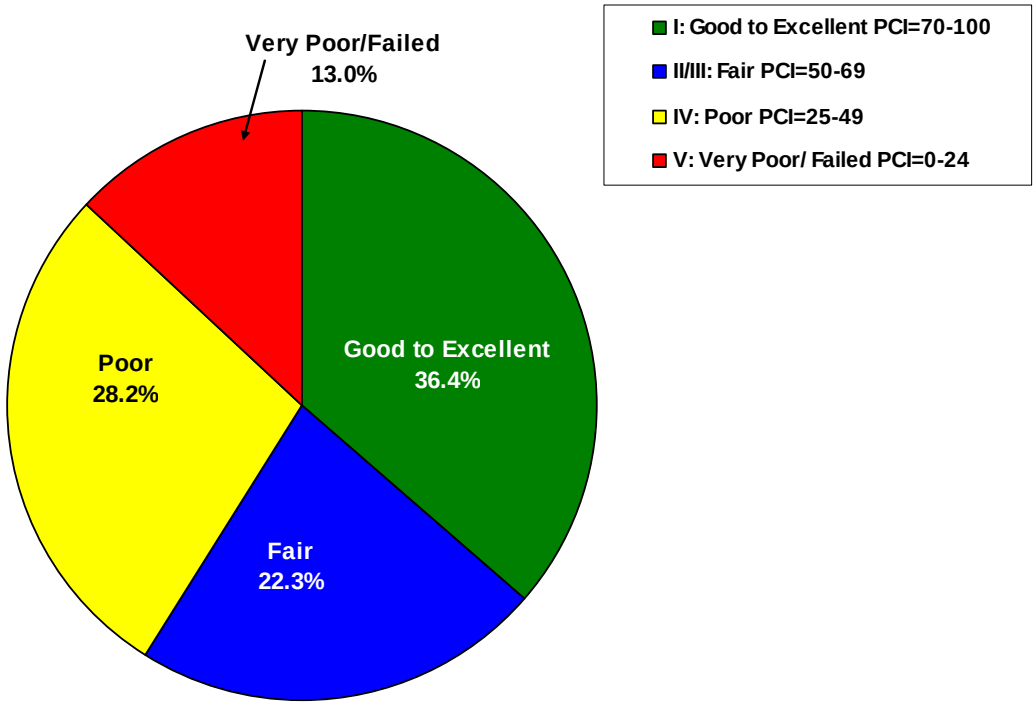

Figure 1. Pavement Condition Summary for City of Blue Lake (2012)

This report is intended to assist HCAOG in making cost-effective decisions in managing and programming funding needs for the pavement network.

The pavement needs analysis shows that more than $2.5M is required over the next ten years to repair all the streets and improve the average PCI to 85 ("good to excellent" condition category). This will also eliminate the maintenance backlog.

Three funding scenarios were analyzed:

1. Maintain Current PCI at 57 – In order to maintain the current PCI at 57, an annual budget of $130k will be needed; however, the maintenance backlog will increase from $1.3M to $2.2M.

2. Improve PCI to 70 – A total budget of $2.2M over ten years will be needed to improve the PCI to 70. The maintenance backlog will slightly increase from $1.2M to approximately $1.4M.

3. Unconstrained Needs Budget – Under this budget scenario, the City's network condition will improve to 85 by 2021

Introduction

In 2009, the Humboldt County Association of Governments (HCAOG) selected Nichols Consulting Engineers (NCE) to implement a regional Pavement Management Program (PMP). This was intended to assist HCAOG member entities and Native American Tribes in determining roadway maintenance, rehabilitation, and reconstruction needs. This will also help to prioritize the pavement needs to maximize the efficient use of limited resources available.

In addition to Humboldt County, the following agencies were participants in this study:

- City of Eureka
- City of Arcata
- City of Blue Lake
- City of Ferndale
- City of Fortuna
- City of Rio Dell
- City of Trinidad
- Tribal Roads of Humboldt County

Background

A Pavement Management Program is designed to assist cities and counties in answering typical questions such as:

- What does the City's pavement network consist of? How many miles of streets are eligible for federal or state funds? How many are subjected to traffic from buses or heavy trucks?
- What is the existing condition of the pavement network? Is this an acceptable level for the City? If not, what is an acceptable level? How much additional funding is needed to achieve an acceptable level?
- Are there streets in specific areas that are much worse than others, and if so, how much worse?
- How will the condition of the pavement network respond over time under existing funding levels?
- What maintenance and rehabilitation strategies exist to improve current pavement conditions? What maintenance activities or treatments have occurred in the past on any given street?
- What impact would either additional funding or a decrease in funding, have on the condition of the overall pavement network?
- What is the backlog of maintenance and rehabilitative work that should be done? What are the future maintenance and rehabilitation needs? Are there different needs for different classes of streets i.e. arterials vs. residentials?
- Under different funding levels, what is the most cost-effective way to implement a multi-year capital improvement program? Maintenance work program?
- What are the street repair priorities, given different budgeting scenarios?

The City owns and maintains approximately 7.1 centerline miles of streets. The table below summarizes the pavement network by functional class.

Table 1. Breakdown of Street Network By Functional Class

Functional Class	Centerline Miles	Lane Miles	# of Sections
Residential/Local	6.7	13.4	72
Rural Major Collector	0.4	0.8	2
Totals	**7.1**	**14.2**	**74**

The cost to replace this street network is estimated at $5M, which represents a portion of the City's investment in transportation infrastructure. This cost includes the replacement of the pavement structure from the subgrade to the wearing surface as well as ancillary items.

A maintenance and rehabilitation strategy was developed after discussions with the City of Rio Dell in spring 2011, and the unit costs were based on the actual construction bids received on paving projects from 2007-2011 that were provided by the City of Rio Dell. Then, a budget needs analysis was performed. In addition, three budgetary scenarios were analyzed. This report presents the results of our analyses.

Purpose

This report links the PMP's recommended repair program costs to the City's projected budget alternatives to improve overall maintenance and rehabilitation strategies. This report assesses the adequacy of projected revenues to meet the maintenance needs recommended by the PMP. It also maximizes the return from expenditures by:

1. implementing a multi-year street rehabilitation and maintenance program;
2. developing a preventative maintenance program; and
3. selecting the most cost effective repairs.

This study examines the overall condition of the street network and highlights options for improving the current network level pavement condition index (PCI). These options are developed by conducting "what if" scenarios using HCAOG's pavement management system database. By varying the budget amounts available for pavement M&R, one can show how different funding strategies can impact the City's streets over the next ten years.

Existing Pavement Condition

The pavement condition index, or PCI, is a measurement of pavement grade or condition and ranges from 0 to 100. A newly constructed street would have a PCI of 100, while a failed street would have a PCI of 10 or less. **City's average 2012 PCI is 57, which is in the "fair" category.** A detailed PCI report which includes all the Streets in City of Blue Lake is presented in Appendix A. A description of the various M&R strategies available for the City follow are listed in Appendix B. Figure 2 illustrates the different pavement condition categories below – these follow industry standards and are widely used throughout California and the United States.

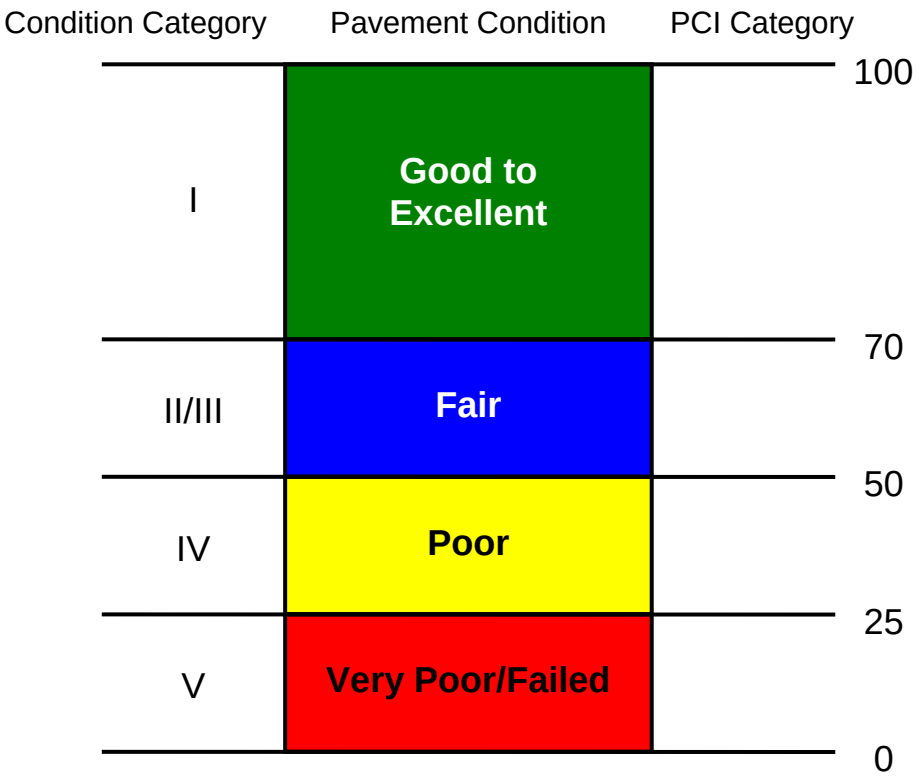

Figure 2. Pavement Condition Categories by PCI

A brief description of each condition category is summarized as follows:

- Category I: Pavements which have little or no distress. A pavement in this category may be described as “excellent” or “very good”. An example in this category is B Street between Greenwood Avenue and Broad Street, which has a PCI of 92.

- Category II: Pavements which have a significant level of distress that are predominantly non-load related. A pavement in this category may be described as “fair”. An example in this category is G Street between Railroad Avenue and 2nd Avenue, which has a PCI of 69.

- Category III: Pavements which have a significant level of distress that are predominantly load related. A pavement in this category may be described as “fair”. An example is H Street between 1st Avenue and 2nd Avenue, which has a PCI of 67.

- Category IV: Pavements which have a major distress. A pavement in this category may be described as “poor”. An example is F Street between Railroad Avenue and 2nd Avenue, which has a PCI of 43.

- Category V: Pavements which have an extensive amount of distress. A pavement in this category may be described as “very poor or failed”. An example is 2nd Avenue between Broad Street and G Street, which has a PCI of 5.

The reason to separate streets with a PCI between 50 and 70 into either Category II or III is because the repair strategies are very different. A Category III repair will usually address structural failures and will cost more than a Category II repair.

Pavement management information from regional agencies was collected to gauge City's condition against the region. PCI data was collected for seven agencies: the Humboldt County, the City of Arcata, Eureka, Ferndale, Fortuna, Rio Dell, and Trinidad. The tribal roads have not yet been included in this part of the study. The PCI comparisons are shown in Figure 3.

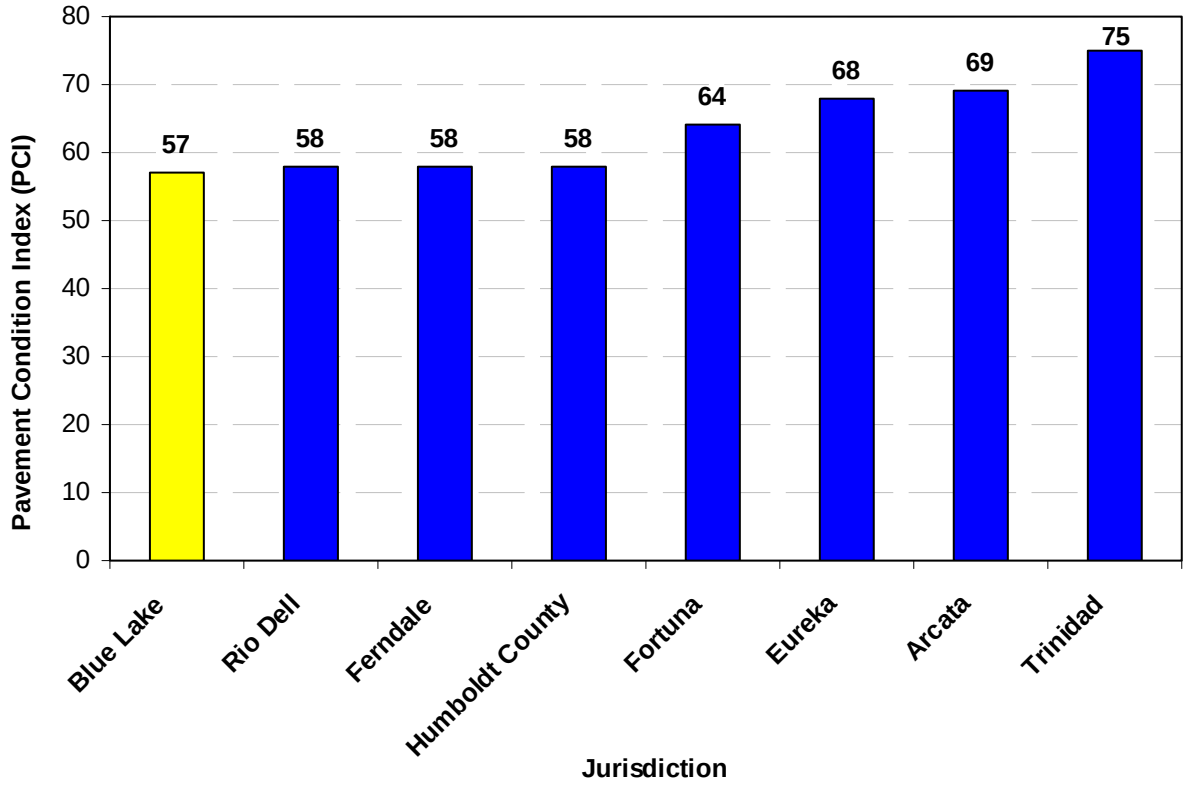

Figure 3. PCI Comparison with Seven Regional Jurisdictions

Approximately 36.4% of the City's pavement area is in the "good to excellent" condition category; about 50.5% of the pavement area falls in the "poor or fair" category and about 13.0% of the network falls in the "failed" category (see Figure 4 below). Detailed PCI results can be found in Appendix A.

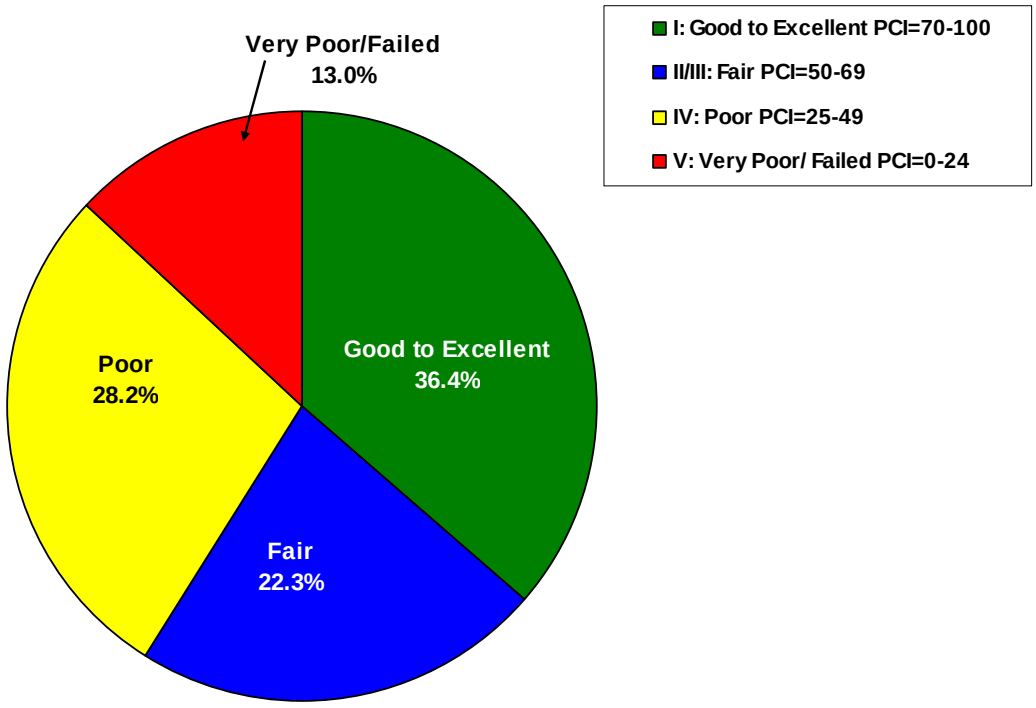

Figure 4. Pavement Condition Summary for City of Blue Lake (2012)

Budget Needs

It is well documented that it costs less to maintain streets in good condition than streets in bad condition. Therefore, the StreetSaver program strives to develop a maintenance and rehabilitation (M&R) strategy that will improve the overall condition of the network to an optimal PCI somewhere around the 80's. The City's current **average network PCI is 57**, and a significant portion of the network suffers from load-related distresses. If these issues are not addressed, the quality of the street network will inevitably decline. In order to correct these deficiencies, a cost-effective funding and M&R strategy should be implemented.

The first step is to determine the maintenance "needs" of the pavement network. Using the budget needs module, the M&R needs over the next ten years were estimated at approximately $2.5M for the City. If the City follows the M&R strategy presented in Appendix B and prioritization strategy recommended in the program, the average network PCI will increase to 85. This is the level at which it is most cost-effective to maintain the pavements with preventive maintenance strategies. If, however, no maintenance or rehabilitation is applied over the next ten years, already distressed streets will continue to deteriorate, and the network PCI will drop to 37. The results of the budget needs analysis are summarized in Table 2 below.

Table 2. Summary of Results from Needs Analysis

Year	2012	2013	2014	2015	2016	2017
PCI with treatment	85	84	84	84	85	84
PCI without treatment	56	54	52	50	47	45
Rehabilitation ($ M)	1.4	0.2	0.2	0.1	0.2	0.1
Preventive Maintenance ($ M)	0.1	0.0	0.0	0.0	0.0	0.0
Budget Needs ($ M)	1.4	0.2	0.2	0.1	0.2	0.1

Year	2018	2019	2020	2021	Total
PCI with treatment	83	82	87	85	
PCI without treatment	43	41	39	37	
Rehabilitation ($ M)	0.0	0.0	0.1	0.0	2.3
Preventive Maintenance ($ M)	0.0	0.0	0.2	0.0	0.2
Budget Needs ($ M)	0.0	0.0	0.3	0.0	2.5

The results of the budget needs analysis represent the ideal funding strategy recommended by StreetSaver. Of the $2.5M in M&R needs shown, approximately $0.2M (10%) is earmarked for preventative maintenance or life-extending treatments, while the rest (90%) is allocated for more costly rehabilitation and reconstruction treatments.

Impacts of Projected Funding Levels

Using the StreetSaver budget scenario modules, both the overall PCI for the pavement network as well as the amount of unfunded maintenance backlog can be evaluated for a given funding level over a period of time. The unfunded backlog consists of pavement M&R that is needed, but cannot be addressed due to lack of funding. Shrinking budgets have forced many cities to defer much-needed street maintenance. By deferring M&R, not only does the frequency of citizens' complaints about the condition of the network increase, but also the cost to repair these streets increases as well.

Figure 5 demonstrates the old colloquial saying of “pay me now, or pay more later”. History has shown that it costs less to maintain streets in good condition than to repair streets that have failed. By allowing pavements to deteriorate, streets that once cost only $1.30 to $1.40 per square yard to surface seal may soon cost $16.90 to $38.00 per square yard to overlay and upwards of $67.10 per square yard to reconstruct.

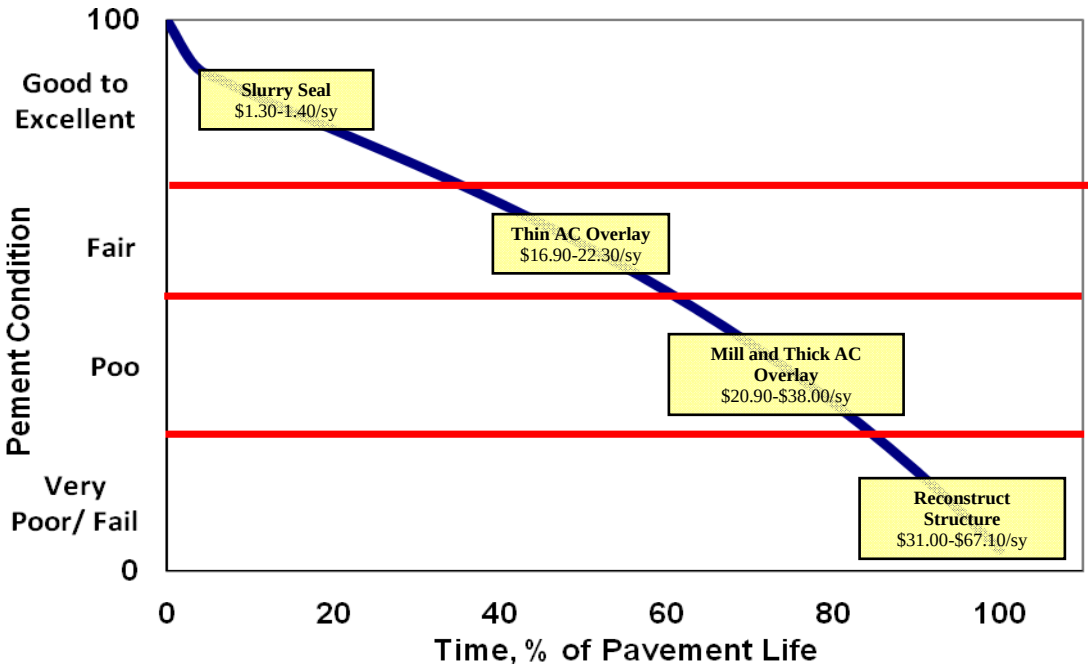

Figure 5. Cost to Maintain a Pavement Over Time

Budget Scenarios

Having determined the maintenance needs of the street network, the next step in developing a cost-effective M&R strategy is to conduct several what-if analyses. Using StreetSaver's budget scenario module, the impacts of various budget scenarios can be evaluated. The program forecasts the effects of the different scenarios on PCI and deferred maintenance (backlog). By examining the effects on these indicators, the advantages and disadvantages of different funding levels and maintenance strategies become clear. The following scenarios were performed for this report at the request of the HCAOG based on current and projected funding programs to ensure that the PMP is a useful document regardless of funding modifications.

Scenario 1. Maintain Current PCI at 57 ($130k per year) – $130k per year will be needed in order to maintain the current PCI of the network at 57. The deferred maintenance backlog will increase from $1.3M to $2.2M.

Scenario 2. Improve PCI to 70 ($220k/year) – In order to improve the PCI to 70, a budget of $2.2M over the next ten years will be needed. In the meantime, the deferred maintenance backlog will slightly increase from $1.2M to $1.4M by 2021.

Scenario 3. Unconstrained Needs Budget ($2.5M over ten years) – In this scenario, this level of funding will eliminate the deferred maintenance backlog and the PCI will reach 85 by 2021.

Scenario 1. Maintain Current PCI at 57 ($130k per year)

In order to maintain the current condition of the network at PCI of 57, $130k per year will be needed. The deferred maintenance backlog will continue to increase from $1.3M to $2.2M. Approximately 57.5% of the network will be in the good or excellent condition category, while 30.9% will still remain in the "failed" category. Although the network PCI remains at 57, it can be seen that the deferred maintenance backlog will still increase. This is because the available budget is only enough to keep good streets in good condition but is not sufficient to also repair those streets that fall into categories IV and V. Candidate streets for maintenance and rehabilitation are listed in Appendix D.

Table 3. Summary of Results for Scenario 1

Year	2012	2013	2014	2015	2016	2017
Budget ($ k)	130	130	130	130	130	130
Rehabilitation ($ k)	110	117	114	118	117	111
Preventive Maintenance ($ k)	1	9	14	10	8	1
Deferred Maintenance ($ k)	1.3	1.3	1.2	1.2	1.3	1.4
PCI	58	59	59	59	58	57
Year	**2018**	**2019**	**2020**	**2021**	**Total**	
Budget ($ k)	130	130	130	130	1,300	
Rehabilitation ($ k)	116	113	111	106	1,133	
Preventive Maintenance ($ k)	2	9	12	16	81	
Deferred Maintenance ($ M)	1.6	1.6	2.0	2.2		
PCI	57	57	57	57		

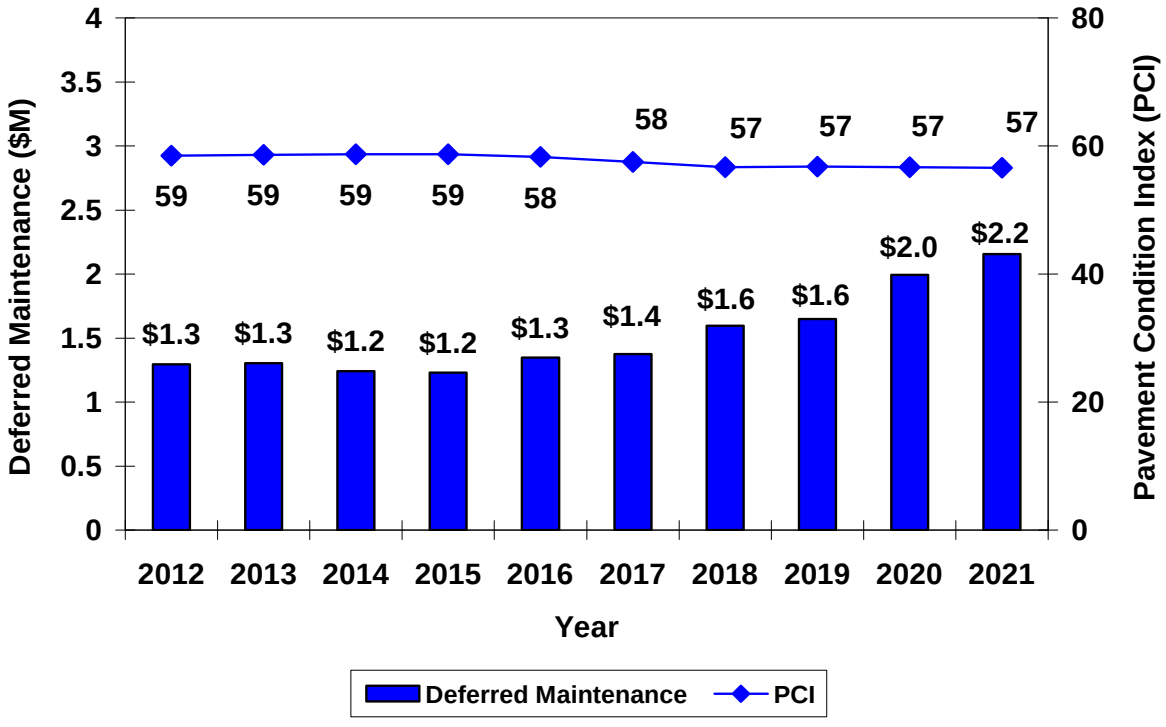

Figure 6. PCI vs. Deferred Maintenance for Scenario 1: Maintain Current PCI

Scenario 2. Improve PCI to 70 ($2.2M/10 years)

In order to improve the condition of the network PCI to 70, $2.2M over ten years will be needed. The deferred maintenance backlog will slightly increase from $1.2M to $1.4M. Approximately 74.5% of the network will be in the good or excellent condition category, while 16.6% will still remain in the "failed" category. Candidate streets for maintenance and rehabilitation are listed in Appendix D.

Table 4. Summary of Results for Scenario 2

Year	2012	2013	2014	2015	2016	2017
Budget ($ k)	220	220	220	220	220	220
Rehabilitation ($ k)	197	197	194	198	209	210
Preventive Maintenance ($ k)	5	19	23	11	0	0
Deferred Maintenance ($ M)	1.2	1.2	1.2	1.0	1.1	1.0
PCI	61	63	65	66	66	67
Year	**2018**	**2019**	**2020**	**2021**	**Total**	
Budget ($ k)	220	220	200	200	2,160	
Rehabilitation ($ k)	203	210	193	139	1,951	
Preventive Maintenance ($ k)	0	3	7	30	97	
Deferred Maintenance ($ M)	0.9	1.0	1.0	1.4		
PCI	69	70	70	70		

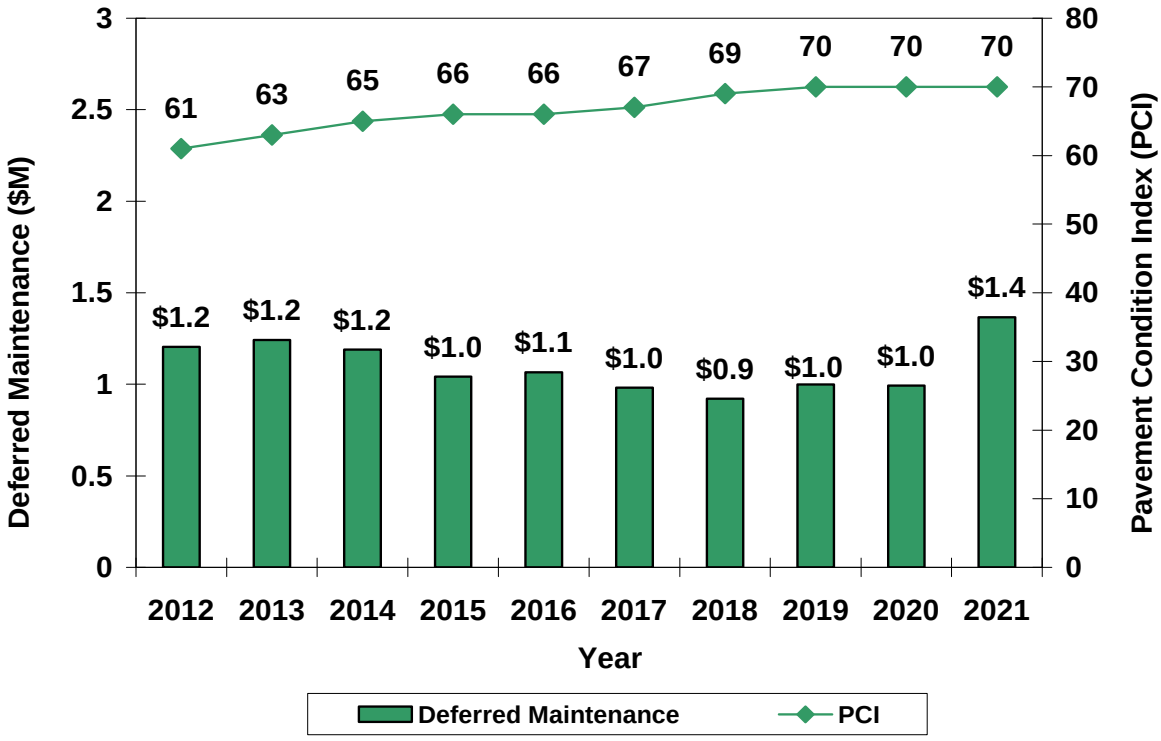

Figure 7. PCI vs. Deferred Maintenance for Scenario 2: Improve PCI to 70 ($2.2M over ten years)

Scenario 3. Unconstrained Needs Budget ($2.5M/10 years)

In this scenario, the funding level is approximately $2.5M over ten years. As a consequence, the City's network condition will increase from the current PCI of 57 to 85 by 2021. Also, the deferred maintenance backlog will be eliminated. Candidate streets for maintenance and rehabilitation are listed in Appendix D.

Table 5. Summary of Results for Scenario 3

Year	2012	2013	2014	2015	2016	2017
Budget ($ k)	1,406	195	162	146	180	73
Rehabilitation ($ k)	1,352	195	162	146	180	73
Preventive Maintenance ($ k)	53	0	0	0	0	0
Deferred Maintenance ($ M)	0.0	0.0	0.0	0.0	0.0	0.0
PCI	85	84	84	84	85	84
Year	**2018**	**2019**	**2020**	**2021**	**Total**	
Budget ($ k)	50	13	282	13	2,520	
Rehabilitation ($ k)	50	0	116	0	2,273	
Preventive Maintenance ($ k)	0	13	167	13	246	
Deferred Maintenance ($ M)	0.0	0.0	0.0	0.0		
PCI	83	82	87	85		

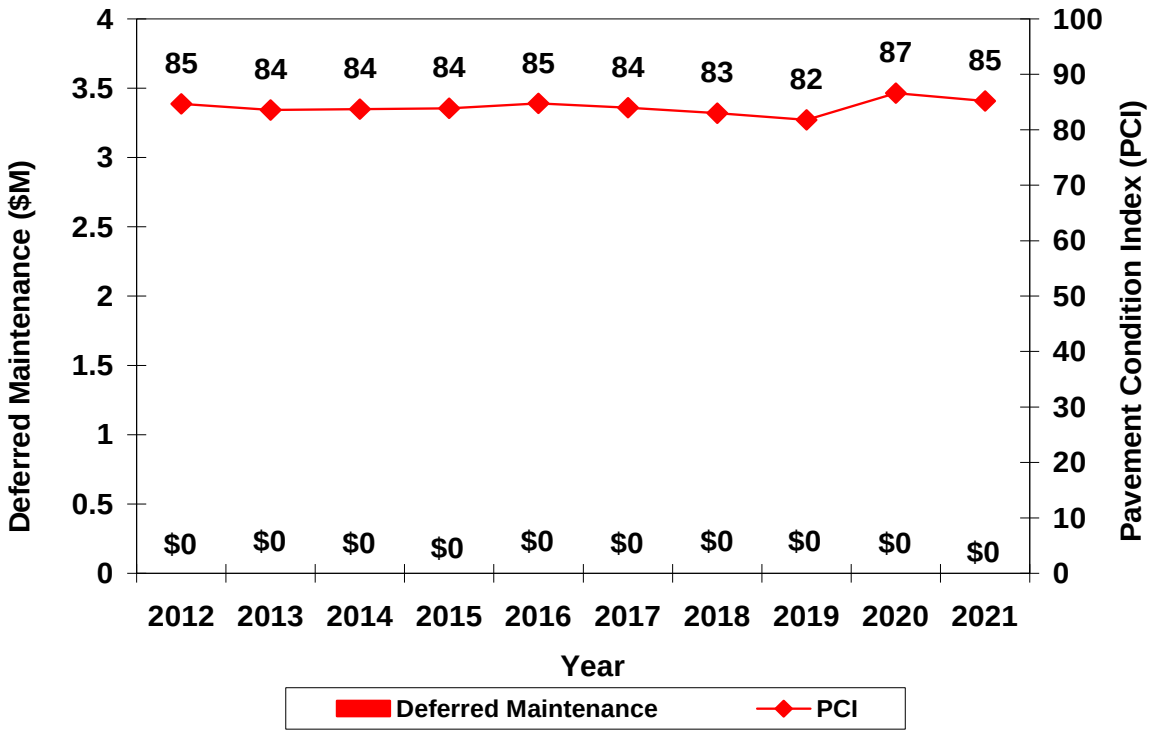

Figure 8. PCI vs. Deferred Maintenance for Scenario 3: Needs Budget ($2.5M over ten years)

Discussion

Figure 9 illustrates the change in PCI over time for the different budget scenarios. Note that Scenario 1 ($130k per year) will maintain the average network PCI at 57 over the next 10 years. Scenario 2 ($2.2M/10 yrs) will improve the network PCI to 70 over 10 years. Scenario 3 ($2.5M/10 yrs) will see increase in the PCI to 85 by 2021.

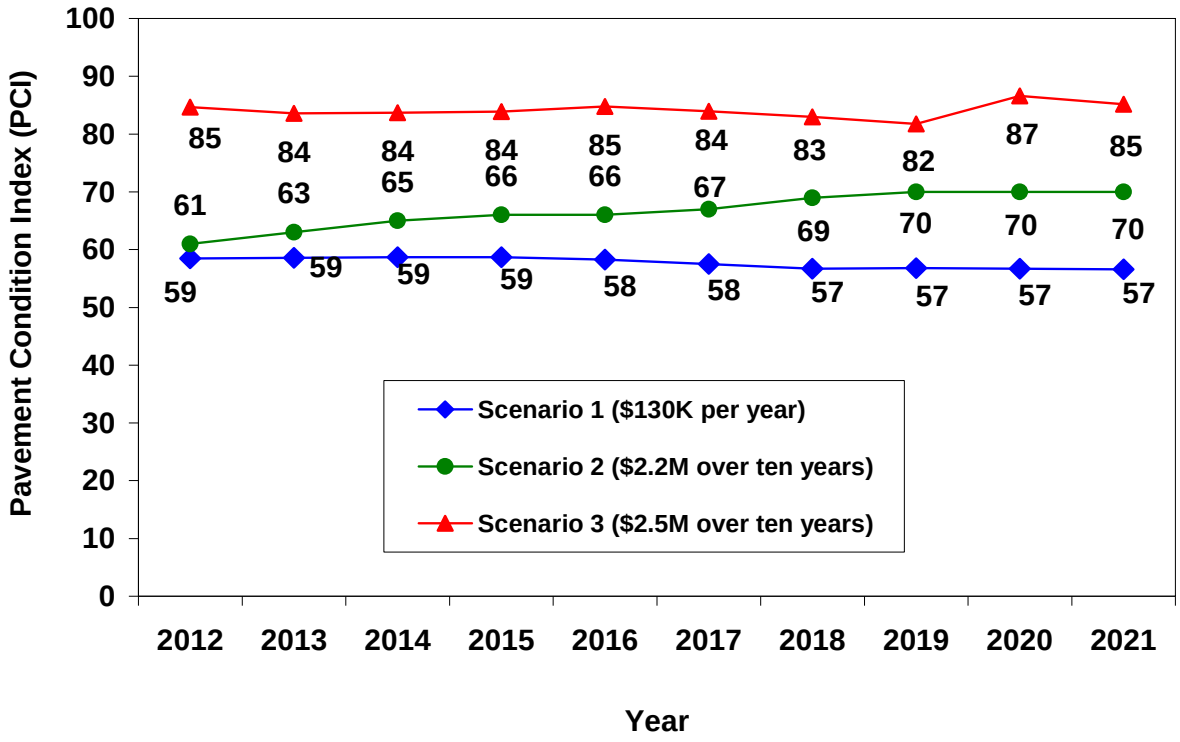

Figure 9. Pavement Condition Index by Scenario by Year

Figure 10 illustrates the change in deferred maintenance over time for the different budget scenarios. Note that Scenario 1 (Maintain PCI at 57) will still see an increase in the deferred maintenance even though the PCI remains about the same. This indicates that a constant PCI does not also mean that the unfunded backlog is stable. The reason is because funds are allocated to preserve all the good streets first (i.e. where the PCI > 70). Any streets with a PCI <70 will continue to deteriorate, and their deferred costs to repair will continue to increase, and the unfunded backlog will continue to grow.

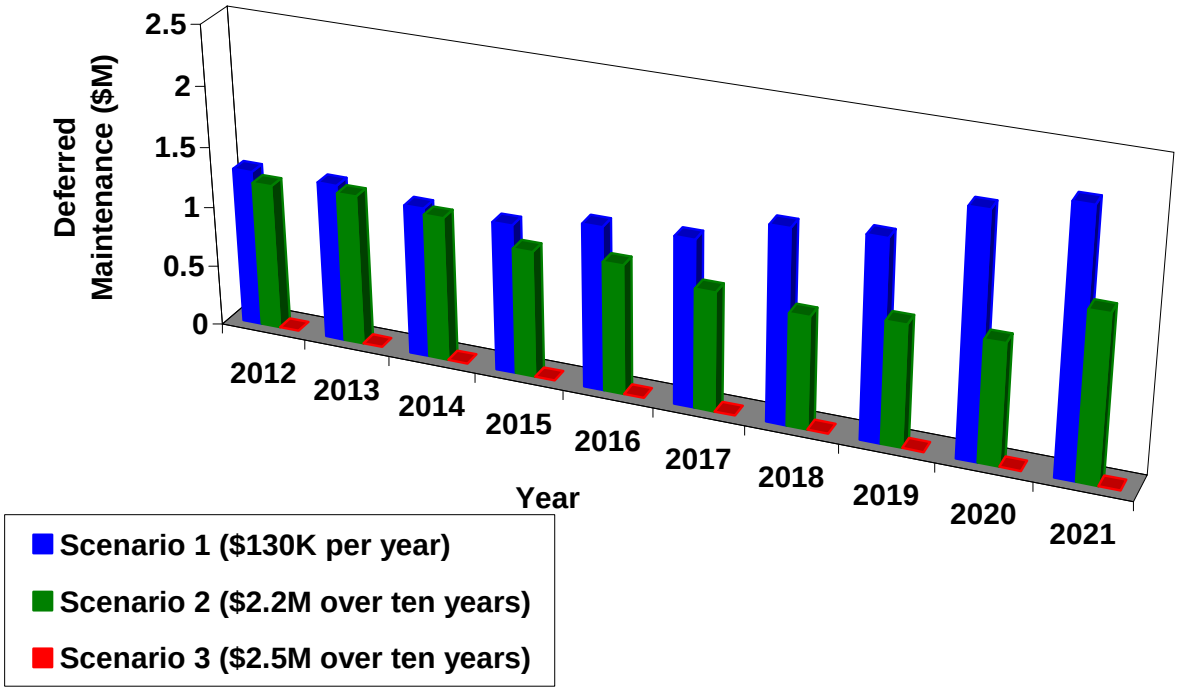

Figure 10. Deferred Maintenance Backlog by Scenario by Year

Conclusions

City of Blue Lake currently has a paved street network of 7.1 centerline miles or 14.2 lane miles. Overall, the roadwork network that was surveyed is in “fair” condition with an average PCI of 57. Approximately 36.4% are in the “Good to Excellent” condition category; however, about 41.2% of the network also falls into the poor and failed categories, which require a budget of $2.5M over the next ten years to restore these pavements.

The level of funding has to be compared with results of this report to make a better policy in next ten years. Obviously, shrinking the budget will not provide sufficient money to meet the City’s needs both in the short and long terms. If more funding is not made available then the City’s streets will only deteriorate further and will only make it that much more difficult to show any signs of improvement.

Statewide, there are a large variety of local funding sources that cities and counties rely on. They include:

- General funds
- Local sales taxes
- Developer impact fees
- Various assessment districts – lighting, special assessment
- Community services districts
- Redevelopment agencies
- Traffic impact fees
- Traffic safety/circulation fees
- Utility taxes/fees
- Transportation mitigation fees
- Parking and various permit fees
- Tribal funds
- Traffic safety fines
- Fines and forfeitures
- Interest income
- Landfill mitigation
- Landscape funding plan
- Local Transportation Fund (LTF)
- Property taxes
- Storm drain fund
- Tolls
- Tobacco settlement funds

The City is strongly encouraged to consider additional source of funding for pavement network.

Glossary

Deferred Maintenance	This is maintenance work that is deferred to a future budget cycle, or postponed until funds are available. The failure to perform needed repair, maintenance, and renewal by normal maintenance management creates deferred maintenance, also called “Backlog”.
Functional Class	Defines the primary function of a particular pavement section. The four classes are: A (Arterial), C (Collector), R (Residential), and O (Other).
Network	All the streets in the City that includes arterial, collector, and residential streets.
PCI	Pavement Condition Index - measured on a scale of 0 (failed) to 100 (excellent), PCIs can be calculated from inspection units and applied maintenance treatments.
PMP	Pavement Management Program
PM%	Percentage of each year’s budget that has been set aside for preventive maintenance activities such as slurry seals.
Preventative Maintenance	These are treatments that are applied to pavements with a PCI greater than 70. They include treatments such as crack seals or slurry seals and are intended to preserve the pavement. However, it does not extend the structural service life of the pavement.
Rehabilitation	These are treatments that are applied for pavements with a PCI less than 70. Typically, they include overlays and reconstruction and are intended to extend the structural life of the pavement.
Replacement Cost	Cost to replace the entire pavement structure *e.g.* asphalt concrete and aggregate base.
Treatment	Repair activities that are applied to restore either the functional or structural deficiencies of the pavement.

Appendix A: Inventory & PCI Summary

City of Blue Lake
Pavement Management Program
Inventory and PCI Summary

Area	Street ID	Section ID	Street Name	Begin	End	Length	Width	FC	ST	PCI Date	PCI
Blue Lake	B-1STAVE	010	1ST AVEUNE	GREENWOOD RD	G STREET	222	36	R	A	10/14/2009	60
Blue Lake	B-1STAVE	020	1ST AVEUNE	G ST	H ST	300	44	R	A	10/16/2009	75
Blue Lake	B-1STAVE	030	1ST AVEUNE	H ST	I ST	289	44	R	A	10/16/2009	54
Blue Lake	B-1STAVE	040	1ST AVEUNE	I ST	RAILROAD AVE	296	26	R	A	10/16/2009	54
Blue Lake	B-2NDAVE	010	2ND AVENUE	BROAD ST	G ST	286	34	R	A	10/16/2009	5
Blue Lake	B-2NDAVE	020	2ND AVENUE	H STREET	I STREET	286	36	R	A	10/16/2009	37
Blue Lake	B-2NDAVE	030	2ND AVENUE	I STREET	J STREET	287	22	R	A	10/16/2009	47
Blue Lake	B-2NDAVE	040	2ND AVENUE	J STREET	EAST END	258	20	R	A	10/16/2009	37
Blue Lake	B-3RDAVE	010	3RD AVENUE	H STREET	I STREET	279	34	R	A	10/16/2009	44
Blue Lake	B-3RDAVE	020	3RD AVENUE	I STREET	J STREET	289	51	R	A	10/16/2009	69
Blue Lake	B-3RDAVE	030	3RD AVENUE	J STREET	K STREET	371	29	R	A	10/16/2009	46
Blue Lake	B-3RDAVE	040	3RD AVENUE	K STREET	RAILROAD AVENUE	137	40	R	A	10/16/2009	100
Blue Lake	B-4THAVE	010	4TH AVENUE	H ST	K ST	938	32	R	A	10/14/2009	100
Blue Lake	B-5THAVE	010	5TH AVENUE	I ST	K ST	642	29	R	A	10/16/2009	78
Blue Lake	B-AST	010	A STREET	GREENWOOD AVE	HARTMAN ST	1,040	22	R	A	10/16/2009	55
Blue Lake	B-ACACDR	010	ACACIA DRIVE	S END	ACACIA DR	148	36	R	A	10/16/2009	95
Blue Lake	B-ACACDR	020	ACACIA DRIVE	ACACIA DR	PARK AVE	185	34	R	A	10/16/2009	28
Blue Lake	B-ACACDR	030	ACACIA DRIVE	PARK AVE	BLUE LAKE BLVD	857	36	R	A	10/16/2009	21
Blue Lake	B-ACACDR	040	ACACIA DRIVE	ACACIA DR	E CDS	160	28	R	A	10/16/2009	25
Blue Lake	B-BST	010	B STREET	GREENWOOD AVE	BROAD ST	608	26	R	A	10/16/2009	92
Blue Lake	B-BST	020	B STREET	BROAD ST	E END	345	26	R	A	10/16/2009	73
Blue Lake	B-BLKAVE	010	BLUE LAKE AVE	GELY ST	E END	211	22	R	A	10/16/2009	71
Blue Lake	B-BLBLVD	010	BLUE LAKE BOULEVARD	ACACIA DR	371FT N/O RAILROAD AVE	1,598	30	RMaC	A	10/16/2009	87
Blue Lake	B-BLBLVD	020	BLUE LAKE BOULEVARD	783 E/O GREENWOOD DR	HARTMAN ST	503	30	RMaC	A	10/16/2009	92
Blue Lake	B-BROAST	010	BROAD STREET	2ND AVE	B ST	503	36	R	A	10/16/2009	59
Blue Lake	B-BROAST	020	BROAD STREET	B ST	C ST	272	22	R	A	10/16/2009	16
Blue Lake	B-BRODLN	010	BRODERICK LANE	CHARTIN RD	RAILROAD AVE	506	24	R	A	10/16/2009	85
Blue Lake	B-CST	010	C STREET	GREENWOOD AVE	BROAD ST	609	16	R	A	10/16/2009	12
Blue Lake	B-CHARRD	010	CHARTIN ROAD	S END	CHARTIN RD	186	40	R	A	10/16/2009	91
Blue Lake	B-CHARRD	020	CHARTIN ROAD	CHARTIN RD	RANCHERIA RD	674	22	R	A	10/16/2009	92
Blue Lake	B-CHARRD	030	CHARTIN ROAD	RANCHERIA RD	BRODRERIC LN	1,082	28	R	A	10/16/2009	69
Blue Lake	B-CHARRD	040	CHARTIN ROAD	BRODERICK LN	E END	681	34	R	A	10/16/2009	79
Blue Lake	B-EST	010	E STREET	RAILROAD AVE	I ST	319	22	R	A	10/16/2009	30
Blue Lake	B-EVERST	010	EVERGREEN STREET	K ST	ACACIA DR	570	38	R	A	10/16/2009	54
Blue Lake	B-FST	010	F STREET	RAILROAD AVE	2ND AVE	593	25	R	A	10/16/2009	43
Blue Lake	B-GST	010	G STREET	S RAILROAD AVE	RAILROAD AVE	83	48	R	A	10/16/2009	100
Blue Lake	B-GST	020	G STREET	RAILROAD AVE	2ND AVE	599	46	R	A	10/16/2009	69
Blue Lake	B-GST	030	G STREET	2ND AVE	A ST	443	32	R	A	10/16/2009	34

City of Blue Lake
Pavement Management Program
Inventory and PCI Summary

Area	Street ID	Section ID	Street Name	Begin	End	Length	Width	FC	ST	PCI Date	PCI
Blue Lake	B-GELYST	010	GELY STREET	CHARTIN RD	S RAILROAD AVE	302	20	R	A	10/16/2009	73
Blue Lake	B-GRWDRD	010	GREENWOOD ROAD	RAILROAD AVE	BLUE LAKE BLVD	1,330	37	R	A	10/16/2009	50
Blue Lake	B-HST	010	H STREET	RAILROAD AVE	1ST AVE	213	39	R	A	10/16/2009	72
Blue Lake	B-HST	020	H STREET	1ST AVE	2ND AVE	307	43	R	A	10/16/2009	67
Blue Lake	B-HST	030	H STREET	2ND AVE	3RD AVE	306	36	R	A	10/16/2009	80
Blue Lake	B-HST	040	H STREET	3 AVE	4TH AVE	290	15	R	A	10/16/2009	100
Blue Lake	B-HARTST	010	HARTMAN STREET	A ST	BLUE LAKE BLVD	558	22	R	A	10/16/2009	30
Blue Lake	B-HATCRD	010	HATCHERY ROAD	S RAILROAD AVE	BLUE LAKE BLVD	296	40	R	A	10/16/2009	68
Blue Lake	B-HATCRD	020	HATCHERY ROAD	S CITY LIMIT	S RAILROAD AVE	849	37	R	A	10/16/2009	73
Blue Lake	B-IST	010	I STREET	1ST AVE	4TH AVE	891	48	R	A	10/16/2009	60
Blue Lake	B-IST	020	I STREET	4TH AVE	BLUE LAKE BLVD	512	20	R	A	10/16/2009	78
Blue Lake	B-JST	010	J STREET	2ND AVE	BLUE LAKE BLVD	1,274	20	R	A	10/19/2009	47
Blue Lake	B-KST	010	K STREET	3RD AVE	4TH AVE	296	20	R	A	10/19/2009	95
Blue Lake	B-KST	020	K STREET	4TH AVE	5TH AVE	315	41	R	A	10/19/2009	77
Blue Lake	B-KST	030	K STREET	5TH AVE	EVERGREEN ST	142	20	R	A	10/19/2009	76
Blue Lake	B-LEEVCT	010	LEEVERLEN COURT	RAYMAR AVE	E CDS	202	37	R	A	10/19/2009	78
Blue Lake	B-MONWAY	010	MONDA WAY	TAYLOR WAY	N CDS	284	36	R	A	10/19/2009	85
Blue Lake	B-PARAVE	010	PARK AVENNUE	ACACIA DR	ACACIA DR	872	34	R	A	10/19/2009	33
Blue Lake	B-PIEAVE	010	PIERSALL AVENUE	W END	REDWOOD AVE	196	17	R	A	10/19/2009	24
Blue Lake	B-RRDAVE	010	RAILROAD AVENUE	GREENWOOD AVE	G ST	617	37	R	A	10/19/2009	32
Blue Lake	B-RRDAVE	020	RAILROAD AVENUE	G ST	H ST	314	31	R	A	10/19/2009	77
Blue Lake	B-RRDAVE	030	RAILROAD AVENUE	H ST	1ST AVE	645	24	R	A	10/19/2009	30
Blue Lake	B-RRDAVE	040	RAILROAD AVENUE	1ST AVE	400FT E/O 1ST AVE	421	24	R	A	10/19/2009	43
Blue Lake	B-RRDAVE	050	RAILROAD AVENUE	400FT E/O 1ST AVE	E CITY LIMIT	970	28	R	A	10/19/2009	95
Blue Lake	B-RANCLN	010	RANCHERIA LANE	W CITY LIMIT	CHARTIN RD	299	40	R	A	10/19/2009	92
Blue Lake	B-RAYAVE	010	RAYMAR AVENUE	RAILROAD AVE	EVERGREEN ST	490	37	R	A	10/19/2009	41
Blue Lake	B-RAYAVE	020	RAYMAR AVENUE	EVERGREEN ST	BLUE LAKE BLVD	404	37	R	A	10/19/2009	95
Blue Lake	B-RWDAVE	010	REDWOOD AVENUE	PIERSALL AVE	S CDS	449	22	R	A	10/19/2009	64
Blue Lake	B-RWDAVE	020	REDWOOD AVENUE	RAILROAD AVE	PIERSALL AVE	383	19	R	A	10/19/2009	73
Blue Lake	B-ROUSCT	010	ROUSS COURT	RAYMAR AVENUE	EAST CDS	224	37	R	A	10/19/2009	82
Blue Lake	B-SHAMLN	010	SHAMROCK LANE	EAST END	RAILROAD AVE	292	24	R	A	10/19/2009	85
Blue Lake	B-SRRAVE	010	SOUTH RAILROAD AVENUE	CHARTIN RD	G ST	2,390	20	R	A	10/19/2009	47
Blue Lake	B-SRRAVE	020	SOUTH RAILROAD AVENUE	G ST	HATCHERY RD	200	34	R	A	10/19/2009	70
Blue Lake	B-TAYWAY	010	TAYLOR WAY	WEST END	MONDA WAY	747	37	R	A	10/19/2009	79
Blue Lake	B-TAYWAY	020	TAYLOR WAY	MONDA WAY	HATCHERY RD	651	36	R	A	10/19/2009	79
Blue Lake	B-WAHLST	010	WAHL STREET	1ST AVENUE	C STREET	863	21	R	A	10/19/2009	17

Appendix B: M&R Treatment Description

Brief Description of Maintenance and Rehabilitation Treatments

Crack Sealing

Crack Sealing is the placement of polymerized/rubberized asphalt materials into cracks that bond to the crack walls and move with the pavement. This technique is used to fill longitudinal and transverse cracks, including joint reflection cracks from underlying PCC slabs that are 1/8" to ½" wide. The primary purpose of crack sealing in Asphalt Concrete (AC) pavement is to prevent surface water infiltration into the substructure of pavement and to prevent the debris stay in the cracks. It is more cost effective to use this technique as preventative maintenance when the overall pavement condition is in good condition. Sealing cracks on a deteriorated pavement surface is not cost effective and will not provide any structural benefit to the road.

Fog seal

A Fog seal involves the spraying of a light coat of a bituminous material (typically 0.03 to 0.05 gallon per square yard) on the surface of an existing pavement using a distributor. It is used to reduce raveling while also improving waterproofing. Fog seals are especially good for treating pavements that carry light traffic such as parking lots.

Slurry seals

A slurry Seal consists of a graded aggregate, asphalt emulsion, mineral filler, water, and additives. It is a hard wearing surface for pavement preservation. Slurry Seals are used primarily on aged and raveled pavements, filling minor cracks, restoring skid resistance and adding aesthetic appeal. It may be used on low volume streets and parking lots. Larger cracks need to be individually treated before the application of a slurry seal. The surface is smoother than a chip seal treatment and is more "surface friendly". In general, slurry seal can be categorized into three types which depend on the maximum aggregate size in the mix. Type I slurry seals usually contain maximum aggregate size of 1/8"; Type II slurry seals usually contain maximum aggregate size of ¼"; and Type III slurry seals usually contain maximum aggregate size of 3/8".

Scrub seals

A scrub seals are a polymer modified asphalt layer applied to an asphalt pavement surface and scrubbed into the cracks and voids with a broom. A layer of sand or small aggregate is then applied over the asphalt and then scrubbed over again, forcing the mix into the cracks and voids to form a seal. It is used to fill and seal small cracks and voids, as well as to enrich hardened/oxidized asphalt. Many contractors are still unfamiliar with the scrub seal method, so tests may be needed to determine what emulsion or polymer-modified emulsion would work with the brooms.

Chip seal

Chip seals are the application of asphalt and aggregate chips rolled onto the pavement. In the United States, chip seals are typically used on rural roads carrying lower traffic volumes. It is used to seal the surface of a pavement with non-load associated cracks, and to improve surface friction. During the treatment, the roadway can be opened to low-speed traffic just after the application of the aggregate. However, it requires constant attention and frequent adjustment of aggregate application rates to minimize chip loss, loose aggregates, and bleeding. Windshields can be damaged by the loose aggregate

before the excess is removed and dust can be created during the brooming of the loose aggregate. Double chip seals are common for more high volume roads.

Cape Seals

A cape is the application of a chip seal followed by a slurry seal or microsurfacing within a few days of the initial treatment. Cape Seals are used where a chip seal is too rough and when a smooth finish is required e.g. in the residential streets. In instances where cracking is a problem, a polymer or asphalt rubber modified chip seal can alleviate cracking and the slurry provides the smooth surface. It can increase the life of a chip seal by enhancing binding of the chips and by protecting the surface.

Microsurfacing

Microsurfacing consists of graded aggregates, asphalt emulsion, mineral filler, water and other additives. Compare to slurry seal, microsurfacing uses better quality aggregates and a fast setting emulsion of higher stiffness allowing thicker layers to be placed. Thus, it is usually used in the more specialized slurry jobs of rut filling, restoring surface profiles, and for roads that sustain heavy traffic. It also has quicker cure time, but the cost is higher than a slurry or chip seal treatment.

Ultrathin Bonded Wearing Surface

An ultrathin bonded wearing surface is a specially formulated thin asphalt mix overlay. Ultra-thin bonded wearing surface is placed with a specially built machine that places a thick layer of oil and asphalt in a single pass. The heavy oil application seals small cracks in the existing pavement and helps to ensure the adhesion of the asphalt to the underlying pavement. The ultrathin mat, usually ranges from ½ to 3/4 inches thick. The treatment is primarily used to provide a durable, friction resistant surface on existing pavement, without the expense of milling the existing asphalt. But the cost for this application is high, and it needs special construction equipment.

Hot-Mix Asphalt (HMA) Overlay

This technique involves adding an HMA layer to an existing HMA or PCC pavement. It is used to correct or improve the structural capacity or functional requirements such as skid resistance and ride quality. The use of an HMA overlay is usually more economic when the existing pavement is still in good to fair condition. An overlay may be combined with other M&R methods such as cold milling, cold recycling, hot recycling, and heater scarification. The thickness of the new surface will be dependent on the type, severity and extent of the pavement surface distresses, the ride quality and the required structural improvement necessary to accommodate the design traffic.

Rubberized Hot-Mix Asphalt (RHMA)

Rubberized hot-mix asphalt concrete (RHMA) is a road paving material made by blending ground-up recycled tires with asphalt to produce a binder which is then mixed with conventional aggregate materials. This mix is then placed and compacted into a road surface. There are two primary types of binders for RHMA, asphalt-rubber and terminal blend. Asphalt-Rubber is a blend of paving grade asphalt cement, ground recycled tire rubber and other additives, as needed, for use as binder in pavement construction. The rubber shall be blended and interacted in the hot asphalt cement sufficiently to cause swelling of the rubber particles prior to use. The asphalt-rubber binder is field blended (at the hot mix plant) and requires specialized mobile mixing

equipment to produce. Typical crumb rubber modifier (CRM) content for asphalt-rubber ranges from 18-22 percent. The crumb rubber modifier used in asphalt-rubber is in the 10-16 mesh range. Terminal blends. are binder materials that use finely ground (less than 30 mesh) crumb rubber modifier and are typically blended at the asphalt refinery. Historically, terminal blend binders contained 10 percent or less crumb rubber modifier. However, in recent years the crumb rubber modifier content has been increased to 15-20 percent in some projects. The major advantages of using the RHMA are better resistance to reflective cracking and more environmental friendly which help to use recycled tires.

Reconstruction

Reconstruction, which might be considered as the ultimate or extreme rehabilitation treatment, consists of the removal of the pavement structure which can go down to the subgrade, reworking and recompacting the subgrade, and completely replacing the pavement layers with new, or recycled materials, or a combination thereof.

Cold In-Place Recycling

Cold in-place recycling involves cold milling of the pavement surface, addition of emulsified asphalt, Portland cement or other modifiers to improve the properties of the original asphalt concrete mix followed by screeding and compaction of the reprocessed material in one continuous operation. The use of cold in-place recycling can restore old pavement to the desired profile, eliminate existing wheel ruts, restore the crown and cross slope, and eliminate pothole, irregularities and rough areas. It can also eliminate transverse, reflective, and longitudinal cracks. The major advantages for the cold in-place recycling are the potential of cost savings, minimum traffic disruption, ability to retain original profile, reduction of environmental concerns, and a growing concern for depleting petroleum reserves. However, cold in-place recycled pavements require a new wearing surface to be placed as a seal and to restrict moisture intrusion.

Full Depth Reclamation

This rehabilitation technique is often used for pavements exhibiting extensive distress. It involves pulverization of the pavement surface layers and a portion of the granular base for depths of up to 7.8 inches or more. The resulting mixture of asphalt concrete materials and granular or treated (i.3., soil cement) base can then be compacted and used as a granular base or sub-base for the new pavement. It can also be stabilized using bituminous materials, Portland cement, lime and calcium chloride. New granular base material can be added to improve the structural capacity of the pavement followed by the placement of a new riding surface. Advantages of this technique include the reuse of the existing pavement materials and the elimination of potential reflection cracking from and old asphalt concrete layer through the new pavement surface layer.

Perpetual Pavement

Perpetual pavement is defined as an asphalt pavement designed and built to last longer than 50 years without requiring major structural rehabilitation or reconstruction, and needing only periodic surface renewal in response to distresses confined to the top of the pavement. The basic concept is that HMA pavements over a minimum strength are not likely to exhibit structural damage even when subjected to very high traffic flows over long periods of time. Rather, deterioration seems to initiate in the pavement surface as either top-down cracking or rutting. If surface-initiated cracking and rutting can be

detected and remedied before they impact the structural integrity of the pavement, the pavement design life could be greatly increased.

Warm Mix Asphalt

Warm mix asphalt is the same as conventional asphalt except it has lower mixing temperature (30 to 100ºF lower than hot-mix asphalt). This is achieved by various mechanical and chemical methods to reduce the shear resistance of the mix at the construction temperature while reportedly maintaining or improving pavement performance. The major advantage of warm mix asphalt includes lower fumes emissions, lower energy consumption, lower plant wear consumption, decreased binder aging, early site opening, cool weather paving, and compaction aid for stiff mixes. Currently available warm mix technologies include WAM Foam, Zeolite, Sasobit and Evotherm.

Foam Asphalt

Foamed asphalt is formed by combining hot asphalt binder with small amounts of cold water. When the cold water comes in contact with the hot asphalt binder it turns to steam, which becomes trapped in tiny asphalt binder bubbles. The result is a thin-film, high volume asphalt foam that bitumen has a very large surface area and extremely low viscosity making it ideal for mixing with aggregates. The advantages of using foam asphalt includes increases the shear strength and reduces the moisture susceptibility of granular materials, lower binder and transportation costs, saving in time, energy conservation, and wider temperature workability.

Reference:

- Ralph Haas, *Pavement Design and Management Guide*, , Transportation Association of Canada, 1997
- M. Y. Shahin, *Pavement Management for Airports, Roads, and Parking Lots*, Springer Science + Business Media, LLC, 2005
- Muthen, K.M. Foamed Asphalt Mixes-Mix Design Procedure." *Transportation Research Record* 898, pp. 290-296.
- Warm Mix Asphalt Technical Working Group, http://www.warmmixasphalt.com/AboutWma.aspx

Appendix C: M&R Decision Tree

Decision Tree

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Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Arterial	AC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	SLURRY SEAL	$1.40		7	
			Restoration Treatment	2.5" AC OVERLAY	$22.50			2
		II - Good, Non-Load Related		2.5"AC OVERLAY W/ DIGOUTS	$25.10			
		III - Good, Load Related		2.5"AC OVERLAY W/ DIGOUTS	$27.50			
		IV - Poor		3"AC OVERLAY W/ DIGOUTS	$38.00			
		V - Very Poor		RECONSTRUCT SURFACE (8" AC)	$67.10			
	AC/AC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	SLURRY SEAL	$1.40		7	
			Restoration Treatment	2.5"AC OVERLAY W/ DIGOUTS	$22.50			2
		II - Good, Non-Load Related		2.5"AC OVERLAY W/ DIGOUTS	$25.10			
		III - Good, Load Related		2.5"AC OVERLAY W/ DIGOUTS	$27.50			
		IV - Poor		3"AC OVERLAY W/ DIGOUTS	$38.00			
		V - Very Poor		RECONSTRUCT SURFACE (8" AC)	$67.10			
	AC/PCC	I - Very Good	Crack Treatment	SEAL CRACKS	$0.60	3		
			Surface Treatment	SINGLE CHIP SEAL	$0.74		6	
			Restoration Treatment	MILL AND THICK OVERLAY	$7.23			2
		II - Good, Non-Load Related		DOUBLE CHIP SEAL	$1.52			
		III - Good, Load Related		HEATER SCARIFY & OVERLAY	$5.95			
		IV - Poor		HEATER SCARIFY & OVERLAY	$6.14			
		V - Very Poor		RECONSTRUCT SURFACE (AC)	$14.00			
	PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	3		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		DO NOTHING	$1.11			
		III - Good, Load Related		DO NOTHING	$1.51			
		IV - Poor		THICK AC OVERLAY(2.5 INCHES)	$1.92			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	$14.00			

Functional Class and Surface combination not used

Decision Tree

Printed: 01/04/2012

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Arterial	ST	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		SINGLE CHIP SEAL	$1.11			
		III - Good, Load Related		SINGLE CHIP SEAL	$1.51			
		IV - Poor		SINGLE CHIP SEAL	$1.92			
		V - Very Poor		THICK AC OVERLAY(2.5 INCHES)	$7.67			

Functional Class and Surface combination not used

Decision Tree

Printed: 01/04/2012

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Collector	AC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	SLURRY SEAL	$1.30		7	
			Restoration Treatment	2.5"AC OVERLAY W/ DIGOUTS	$20.90			2
		II - Good, Non-Load Related		2.5"AC OVERLAY W/ DIGOUTS	$22.80			
		III - Good, Load Related		2.5"AC OVERLAY W/ DIGOUTS	$24.20			
		IV - Poor		2.5"AC OVERLAY W/ DIGOUTS	$28.60			
		V - Very Poor		RECONSTRUCT SURFACE (6" AC)	$48.40			
	AC/AC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	SLURRY SEAL	$1.30		7	
			Restoration Treatment	2.5"AC OVERLAY W/ DIGOUTS	$20.90			2
		II - Good, Non-Load Related		2.5"AC OVERLAY W/ DIGOUTS	$22.80			
		III - Good, Load Related		2.5"AC OVERLAY W/ DIGOUTS	$24.20			
		IV - Poor		2.5"AC OVERLAY W/ DIGOUTS	$28.60			
		V - Very Poor		RECONSTRUCT SURFACE (6" AC)	$48.40			
	AC/PCC	I - Very Good	Crack Treatment	SEAL CRACKS	$0.60	4		
			Surface Treatment	SINGLE CHIP SEAL	$0.74		7	
			Restoration Treatment	MILL AND THIN OVERLAY	$5.04			3
		II - Good, Non-Load Related		DOUBLE CHIP SEAL	$1.52			
		III - Good, Load Related		HEATER SCARIFY & OVERLAY	$5.95			
		IV - Poor		HEATER SCARIFY & OVERLAY	$6.14			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	$11.38			
	PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		DO NOTHING	$1.11			
		III - Good, Load Related		DO NOTHING	$1.51			
		IV - Poor		THICK AC OVERLAY(2.5 INCHES)	$1.92			
		V - Very Poor		THIN AC OVERLAY(1.5 INCHES)	$7.47			

Functional Class and Surface combination not used

Decision Tree

Printed: 01/04/2012

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Collector	ST	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		SINGLE CHIP SEAL	$1.11			
		III - Good, Load Related		SINGLE CHIP SEAL	$1.51			
		IV - Poor		SINGLE CHIP SEAL	$1.92			
		V - Very Poor		THICK AC OVERLAY(2.5 INCHES)	$7.47			

Functional Class and Surface combination not used

Decision Tree

Printed: 01/04/2012

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Residential/Local	AC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	SLURRY SEAL	$1.30		8	
			Restoration Treatment	2" AC OVERLAY W/ DIGOUTS	$16.90			2
		II - Good, Non-Load Related		2" AC OVERLAY W/ DIGOUTS	$19.40			
		III - Good, Load Related		2" AC OVERLAY W/ DIGOUTS	$19.40			
		IV - Poor		2" AC OVERLAY W/ DIGOUTS	$22.30			
		V - Very Poor		RECONSTRUCT SURFACE (4" AC)	$31.00			
	AC/AC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	SLURRY SEAL	$1.30		8	
			Restoration Treatment	2" AC OVERLAY W/ DIGOUTS	$16.90			2
		II - Good, Non-Load Related		2" AC OVERLAY W/ DIGOUTS	$19.40			
		III - Good, Load Related		2" AC OVERLAY W/ DIGOUTS	$19.40			
		IV - Poor		2" AC OVERLAY W/ DIGOUTS	$22.30			
		V - Very Poor		RECONSTRUCT SURFACE (4" AC)	$31.00			
	AC/PCC	I - Very Good	Crack Treatment	SEAL CRACKS	$0.60	4		
			Surface Treatment	SINGLE CHIP SEAL	$0.74		8	
			Restoration Treatment	MILL AND THIN OVERLAY	$5.04			3
		II - Good, Non-Load Related		DOUBLE CHIP SEAL	$1.52			
		III - Good, Load Related		HEATER SCARIFY & OVERLAY	$5.95			
		IV - Poor		HEATER SCARIFY & OVERLAY	$6.14			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	$8.25			
	PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	4		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		DO NOTHING	$1.11			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		THICK AC OVERLAY(2.5 INCHES)	$1.92			
		V - Very Poor		THICK AC OVERLAY(2.5 INCHES)	$7.27			

Functional Class and Surface combination not used

Decision Tree

Printed: 01/04/2012

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Residential/Local	ST	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		SINGLE CHIP SEAL	$1.11			
		III - Good, Load Related		SINGLE CHIP SEAL	$1.51			
		IV - Poor		SINGLE CHIP SEAL	$1.92			
		V - Very Poor		THICK AC OVERLAY(2.5 INCHES)	$7.27			

Functional Class and Surface combination not used

Decision Tree

Printed: 01/04/2012

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Other	AC	I - Very Good	Crack Treatment	SEAL CRACKS	$1.60	4		
			Surface Treatment	SINGLE CHIP SEAL	$1.74		8	
			Restoration Treatment	MILL AND THIN OVERLAY	$5.04			3
		II - Good, Non-Load Related		SINGLE CHIP SEAL	$1.11			
		III - Good, Load Related		THIN AC OVERLAY(1.5 INCHES)	$3.99			
		IV - Poor		THICK AC OVERLAY(2.5 INCHES)	$5.97			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	$8.75			
	AC/AC	I - Very Good	Crack Treatment	SEAL CRACKS	$1.60	4		
			Surface Treatment	SINGLE CHIP SEAL	$1.74		8	
			Restoration Treatment	MILL AND THIN OVERLAY	$5.04			3
		II - Good, Non-Load Related		DOUBLE CHIP SEAL	$1.52			
		III - Good, Load Related		HEATER SCARIFY & OVERLAY	$5.95			
		IV - Poor		HEATER SCARIFY & OVERLAY	$6.14			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	$8.75			
	AC/PCC	I - Very Good	Crack Treatment	SEAL CRACKS	$1.60	4		
			Surface Treatment	SINGLE CHIP SEAL	$1.74		8	
			Restoration Treatment	MILL AND THIN OVERLAY	$5.04			3
		II - Good, Non-Load Related		DOUBLE CHIP SEAL	$1.52			
		III - Good, Load Related		HEATER SCARIFY & OVERLAY	$5.95			
		IV - Poor		HEATER SCARIFY & OVERLAY	$6.14			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	$8.75			
	PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		DO NOTHING	$1.11			
		III - Good, Load Related		DO NOTHING	$1.51			
		IV - Poor		THICK AC OVERLAY(2.5 INCHES)	$1.92			
		V - Very Poor		THICK AC OVERLAY(2.5 INCHES)	$7.27			

Functional Class and Surface combination not used

Decision Tree

Printed: 01/04/2012

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Other	ST	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		SINGLE CHIP SEAL	$1.11			
		III - Good, Load Related		SINGLE CHIP SEAL	$1.51			
		IV - Poor		SINGLE CHIP SEAL	$1.92			
		V - Very Poor		THICK AC OVERLAY(2.5 INCHES)	$7.27			

Functional Class and Surface combination not used

Appendix D: Candidate Streets for M&R

Scenario 1. Maintain Current PCI at 57 ($130k per year)

Scenarios - Sections Selected for Treatment

Interest: 5.00% Inflation: 5.00% Printed: 01/05/2012

Scenario: Blue Lake - Maintain PCI at 57

Year	Budget	PM Amt	Year	Budget	PM Amt	Year	Budget	PM Amt
2012	$130,000	9%	2013	$130,000	9%	2014	$130,000	9%
2015	$130,000	9%	2016	$130,000	9%	2017	$130,000	9%
2018	$130,000	9%	2019	$130,000	9%	2020	$130,000	9%
2021	$130,000	9%						

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
Year: 2012										
1ST AVEUNE	H ST	I ST	B-1STAVE	030	R	AC	100	$31,508	14,733	2" AC OVERLAY W/ DIGOUTS
2ND AVENUE	I STREET	J STREET	B-2NDAVE	030	R	AC	100	$15,645	15,347	2" AC OVERLAY W/ DIGOUTS
J STREET	2ND AVE	BLUE LAKE BLVD	B-JST	010	R	AC	100	$63,134	15,346	2" AC OVERLAY W/ DIGOUTS
					Treatment Total			$110,287		
LEEVERLEN COURT	RAYMAR AVE	E CDS	B-LEEVCT	010	R	AC	82	$1,080	65,409	SLURRY SEAL
					Treatment Total			$1,080		
					Year 2012 Total			$111,367		
Year: 2013										
1ST AVEUNE	I ST	RAILROAD AVE	B-1STAVE	040	R	AC	100	$20,023	14,256	2" AC OVERLAY W/ DIGOUTS
BLUE LAKE AVE	GELY ST	E END	B-BLKAVE	010	R	AC	100	$10,507	13,096	2" AC OVERLAY W/ DIGOUTS
EVERGREEN STREET	K ST	ACACIA DR	B-EVERST	010	R	AC	100	$56,353	14,256	2" AC OVERLAY W/ DIGOUTS
H STREET	1ST AVE	2ND AVE	B-HST	020	R	AC	100	$29,879	14,129	2" AC OVERLAY W/ DIGOUTS
					Treatment Total			$116,762		
BLUE LAKE BOULEVARD	ACACIA DR	371FT N/O RAILROAD AVE	B-BLBLVD	010	RMaC	AC	86	$7,271	73,236	SLURRY SEAL
I STREET	4TH AVE	BLUE LAKE BLVD	B-IST	020	R	AC	80	$1,554	62,613	SLURRY SEAL

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
						Treatment Total		$8,825		
						Year 2013 Total		$125,587		
Year: 2014										
3RD AVENUE	I STREET	J STREET	B-3RDAVE	020	R	AC	100	$35,028	13,395	2" AC OVERLAY W/ DIGOUTS
A STREET	GREENWOOD AVE	HARTMAN ST	B-AST	010	R	AC	100	$62,503	13,681	2" AC OVERLAY W/ DIGOUTS
SOUTH RAILROAD AVENUE	G ST	HATCHERY RD	B-SRRAVE	020	R	AC	100	$16,161	13,155	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$113,692		
5TH AVENUE	I ST	K ST	B-5THAVE	010	R	AC	79	$2,965	59,672	SLURRY SEAL
BLUE LAKE BOULEVARD	783 E/O GREENWOOD DR	HARTMAN ST	B-BLBLVD	020	RMaC	AC	89	$2,404	69,329	SLURRY SEAL
TAYLOR WAY	WEST END	MONDA WAY	B-TAYWAY	010	R	AC	80	$4,402	59,615	SLURRY SEAL
TAYLOR WAY	MONDA WAY	HATCHERY RD	B-TAYWAY	020	R	AC	80	$3,733	59,615	SLURRY SEAL
						Treatment Total		$13,504		
						Year 2014 Total		$127,196		
Year: 2015										
1ST AVEUNE	GREENWOOD RD	G STREET	B-1STAVE	010	R	AC	100	$22,924	12,733	2" AC OVERLAY W/ DIGOUTS
BROAD STREET	2ND AVE	B ST	B-BROAST	010	R	AC	100	$51,940	12,841	2" AC OVERLAY W/ DIGOUTS
B STREET	BROAD ST	E END	B-BST	020	R	AC	100	$22,384	12,210	2" AC OVERLAY W/ DIGOUTS
H STREET	RAILROAD AVE	1ST AVE	B-HST	010	R	AC	100	$20,729	12,452	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$117,977		
ACACIA DRIVE	S END	ACACIA DR	B-ACACDR	010	R	AC	90	$891	45,406	SLURRY SEAL
BRODERICK LANE	CHARTIN RD	RAILROAD AVE	B-BRODLN	010	R	AC	84	$2,031	55,464	SLURRY SEAL
CHARTIN ROAD	S END	CHARTIN RD	B-CHARRD	010	R	AC	88	$1,245	49,673	SLURRY SEAL
H STREET	2ND AVE	3RD AVE	B-HST	030	R	AC	79	$1,843	56,740	SLURRY SEAL
MONDA WAY	TAYLOR WAY	N CDS	B-MONWAY	010	R	AC	84	$1,710	55,456	SLURRY SEAL
ROUSS COURT	RAYMAR AVENUE	EAST CDS	B-ROUSCT	010	R	AC	81	$1,386	56,570	SLURRY SEAL
SHAMROCK LANE	EAST END	RAILROAD AVE	B-SHAMLN	010	R	AC	84	$1,172	55,456	SLURRY SEAL

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
						Treatment Total		$10,278		
						Year 2015 Total		$128,255		
Year: 2016										
GELY STREET	CHARTIN RD	S RAILROAD AVE	B-GELYST	010	R	AC	100	$15,826	12,008	2" AC OVERLAY W/ DIGOUTS
HATCHERY ROAD	S CITY LIMIT	S RAILROAD AVE	B-HATCRD	020	R	AC	100	$82,305	12,008	2" AC OVERLAY W/ DIGOUTS
REDWOOD AVENUE	RAILROAD AVE	PIERSALL AVE	B-RWDAVE	020	R	AC	100	$19,067	12,006	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$117,198		
B STREET	GREENWOOD AVE	BROAD ST	B-BST	010	R	AC	87	$2,776	48,670	SLURRY SEAL
CHARTIN ROAD	CHARTIN RD	RANCHERIA RD	B-CHARRD	020	R	AC	87	$2,604	48,670	SLURRY SEAL
G STREET	S RAILROAD AVE	RAILROAD AVE	B-GST	010	R	AC	89	$700	45,727	SLURRY SEAL
RANCHERIA LANE	W CITY LIMIT	CHARTIN RD	B-RANCLN	010	R	AC	87	$2,100	48,650	SLURRY SEAL
						Treatment Total		$8,180		
						Year 2016 Total		$125,378		
Year: 2017										
1ST AVEUNE	G ST	H ST	B-1STAVE	020	R	AC	100	$36,315	11,352	2" AC OVERLAY W/ DIGOUTS
K STREET	4TH AVE	5TH AVE	B-KST	020	R	AC	100	$35,531	10,884	2" AC OVERLAY W/ DIGOUTS
K STREET	5TH AVE	EVERGREEN ST	B-KST	030	R	AC	100	$7,814	11,121	2" AC OVERLAY W/ DIGOUTS
REDWOOD AVENUE	PIERSALL AVE	S CDS	B-RWDAVE	010	R	AC	100	$31,238	11,522	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$110,898		
K STREET	3RD AVE	4TH AVE	B-KST	010	R	AC	87	$1,092	46,626	SLURRY SEAL
						Treatment Total		$1,092		
						Year 2017 Total		$111,990		
Year: 2018										
CHARTIN ROAD	BRODERICK LN	E END	B-CHARRD	040	R	AC	100	$66,884	10,270	2" AC OVERLAY W/ DIGOUTS

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
RAILROAD AVENUE	G ST	H ST	B-RRDAVE	020	R	AC	100	$28,119	10,719	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$95,003		
ACACIA DRIVE	ACACIA DR	E CDS	B-ACACDR	040	R	AC	100	$20,680	8,185	RECONSTRUCT SURFACE (4" AC)
						Treatment Total		$20,680		
3RD AVENUE	K STREET	RAILROAD AVENUE	B-3RDAVE	040	R	AC	86	$1,061	45,754	SLURRY SEAL
H STREET	3 AVE	4TH AVE	B-HST	040	R	AC	86	$843	45,754	SLURRY SEAL
						Treatment Total		$1,904		
						Year 2018 Total		$117,587		
Year: 2019										
HATCHERY ROAD	S RAILROAD AVE	BLUE LAKE BLVD	B-HATCRD	010	R	AC	100	$41,280	10,409	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$41,280		
2ND AVENUE	BROAD ST	G ST	B-2NDAVE	010	R	AC	100	$47,130	7,795	RECONSTRUCT SURFACE (4" AC)
2ND AVENUE	J STREET	EAST END	B-2NDAVE	040	R	AC	100	$25,009	7,795	RECONSTRUCT SURFACE (4" AC)
						Treatment Total		$72,139		
RAYMAR AVENUE	EVERGREEN ST	BLUE LAKE BLVD	B-RAYAVE	020	R	AC	84	$3,039	45,140	SLURRY SEAL
RAILROAD AVENUE	400FT E/O 1ST AVE	E CITY LIMIT	B-RRDAVE	050	R	AC	84	$5,521	45,140	SLURRY SEAL
						Treatment Total		$8,560		
						Year 2019 Total		$121,979		
Year: 2020										
CHARTIN ROAD	RANCHERIA RD	BRODRERIC LN	B-CHARRD	030	R	AC	100	$110,908	9,983	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$110,908		
2ND AVENUE	I STREET	J STREET	B-2NDAVE	030	R	AC	88	$1,348	39,646	SLURRY SEAL
BLUE LAKE BOULEVARD	ACACIA DR	371FT N/O RAILROAD AVE	B-BLBLVD	010	RMaC	AC	80	$10,231	48,196	SLURRY SEAL
						Treatment Total		$11,579		
						Year 2020 Total		$122,487		

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
Year: 2021										
G STREET	RAILROAD AVE	2ND AVE	B-GST	020	R	AC	100	$105,914	9,658	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$105,914		
1ST AVEUNE	H ST	I ST	B-1STAVE	030	R	AC	87	$2,850	39,561	SLURRY SEAL
1ST AVEUNE	I ST	RAILROAD AVE	B-1STAVE	040	R	AC	88	$1,725	37,758	SLURRY SEAL
4TH AVENUE	H ST	K ST	B-4THAVE	010	R	AC	82	$6,727	42,017	SLURRY SEAL
BLUE LAKE BOULEVARD	783 E/O GREENWOOD DR	HARTMAN ST	B-BLBLVD	020	RMaC	AC	83	$3,382	48,174	SLURRY SEAL
BLUE LAKE AVE	GELY ST	E END	B-BLKAVE	010	R	AC	88	$1,041	37,758	SLURRY SEAL
						Treatment Total		$15,725		
						Year 2021 Total		$121,639		
						Grand Total		$1,213,465		

Scenario 2. Improve PCI to 70 ($2.2M over ten years)

Scenarios - Sections Selected for Treatment

Interest: 5.00% Inflation: 5.00% Printed: 01/05/2012

Scenario: Blue Lake - Increase PCI to 70

Year	Budget	PM Amt	Year	Budget	PM Amt	Year	Budget	PM Amt
2012	$220,000	10%	2013	$220,000	10%	2014	$220,000	10%
2015	$220,000	5%	2016	$220,000	2%	2017	$220,000	3%
2018	$220,000	2%	2019	$220,000	2%	2020	$200,000	2%
2021	$200,000	10%						

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
Year: 2012										
2ND AVENUE	I STREET	J STREET	B-2NDAVE	030	R	AC	100	$15,645	15,347	2" AC OVERLAY W/ DIGOUTS
J STREET	2ND AVE	BLUE LAKE BLVD	B-JST	010	R	AC	100	$63,134	15,346	2" AC OVERLAY W/ DIGOUTS
SOUTH RAILROAD AVENUE	CHARTIN RD	G ST	B-SRRAVE	010	R	AC	100	$118,438	15,346	2" AC OVERLAY W/ DIGOUTS
					Treatment Total			$197,217		
5TH AVENUE	I ST	K ST	B-5THAVE	010	R	AC	82	$2,690	65,415	SLURRY SEAL
BLUE LAKE BOULEVARD	783 E/O GREENWOOD DR	HARTMAN ST	B-BLBLVD	020	RMaC	AC	92	$2,180	69,589	SLURRY SEAL
					Treatment Total			$4,870		
					Year 2012 Total			$202,087		
Year: 2013										
1ST AVEUNE	H ST	I ST	B-1STAVE	030	R	AC	100	$33,083	14,256	2" AC OVERLAY W/ DIGOUTS
1ST AVEUNE	I ST	RAILROAD AVE	B-1STAVE	040	R	AC	100	$20,023	14,256	2" AC OVERLAY W/ DIGOUTS
GREENWOOD ROAD	RAILROAD AVE	BLUE LAKE BLVD	B-GRWDRD	010	R	AC	100	$128,029	14,546	2" AC OVERLAY W/ DIGOUTS
SOUTH RAILROAD AVENUE	G ST	HATCHERY RD	B-SRRAVE	020	R	AC	100	$15,391	13,369	2" AC OVERLAY W/ DIGOUTS
					Treatment Total			$196,526		
BLUE LAKE BOULEVARD	ACACIA DR	371FT N/O RAILROAD AVE	B-BLBLVD	010	RMaC	AC	86	$7,271	73,236	SLURRY SEAL

** - Treatment from Project Selection

Scenarios Criteria: Area ID = B - Blue Lake

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
CHARTIN ROAD	BRODERICK LN	E END	B-CHARRD	040	R	AC	81	$3,512	62,367	SLURRY SEAL
I STREET	4TH AVE	BLUE LAKE BLVD	B-IST	020	R	AC	80	$1,554	62,613	SLURRY SEAL
LEEVERLEN COURT	RAYMAR AVE	E CDS	B-LEEVCT	010	R	AC	80	$1,134	62,609	SLURRY SEAL
ROUSS COURT	RAYMAR AVENUE	EAST CDS	B-ROUSCT	010	R	AC	84	$1,258	61,002	SLURRY SEAL
TAYLOR WAY	WEST END	MONDA WAY	B-TAYWAY	010	R	AC	81	$4,192	62,367	SLURRY SEAL
						Treatment Total		$18,921		
						Year 2013 Total		$215,447		

Year: 2014

3RD AVENUE	I STREET	J STREET	B-3RDAVE	020	R	AC	100	$35,028	13,395	2" AC OVERLAY W/ DIGOUTS
A STREET	GREENWOOD AVE	HARTMAN ST	B-AST	010	R	AC	100	$62,503	13,681	2" AC OVERLAY W/ DIGOUTS
BLUE LAKE AVE	GELY ST	E END	B-BLKAVE	010	R	AC	100	$11,032	12,908	2" AC OVERLAY W/ DIGOUTS
EVERGREEN STREET	K ST	ACACIA DR	B-EVERST	010	R	AC	100	$59,170	13,767	2" AC OVERLAY W/ DIGOUTS
H STREET	RAILROAD AVE	1ST AVE	B-HST	010	R	AC	100	$19,742	12,648	2" AC OVERLAY W/ DIGOUTS
K STREET	5TH AVE	EVERGREEN ST	B-KST	030	R	AC	100	$6,750	11,502	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$194,225		
3RD AVENUE	K STREET	RAILROAD AVENUE	B-3RDAVE	040	R	AC	91	$873	41,845	SLURRY SEAL
ACACIA DRIVE	S END	ACACIA DR	B-ACACDR	010	R	AC	91	$849	43,176	SLURRY SEAL
BRODERICK LANE	CHARTIN RD	RAILROAD AVE	B-BRODLN	010	R	AC	85	$1,934	57,043	SLURRY SEAL
B STREET	GREENWOOD AVE	BROAD ST	B-BST	010	R	AC	90	$2,518	47,176	SLURRY SEAL
CHARTIN ROAD	S END	CHARTIN RD	B-CHARRD	010	R	AC	89	$1,185	48,783	SLURRY SEAL
CHARTIN ROAD	CHARTIN RD	RANCHERIA RD	B-CHARRD	020	R	AC	90	$2,362	47,176	SLURRY SEAL
H STREET	2ND AVE	3RD AVE	B-HST	030	R	AC	81	$1,755	59,487	SLURRY SEAL
K STREET	3RD AVE	4TH AVE	B-KST	010	R	AC	91	$943	43,133	SLURRY SEAL
MONDA WAY	TAYLOR WAY	N CDS	B-MONWAY	010	R	AC	85	$1,629	57,031	SLURRY SEAL
RANCHERIA LANE	W CITY LIMIT	CHARTIN RD	B-RANCLN	010	R	AC	90	$1,905	47,142	SLURRY SEAL
RAYMAR AVENUE	EVERGREEN ST	BLUE LAKE BLVD	B-RAYAVE	020	R	AC	91	$2,381	43,133	SLURRY SEAL
SHAMROCK LANE	EAST END	RAILROAD AVE	B-SHAMLN	010	R	AC	85	$1,117	57,031	SLURRY SEAL
TAYLOR WAY	MONDA WAY	HATCHERY RD	B-TAYWAY	020	R	AC	80	$3,733	59,615	SLURRY SEAL

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
						Treatment Total		$23,184		
						Year 2014 Total		$217,409		
Year: 2015										
1ST AVEUNE	GREENWOOD RD	G STREET	B-1STAVE	010	R	AC	100	$22,924	12,733	2" AC OVERLAY W/ DIGOUTS
BROAD STREET	2ND AVE	B ST	B-BROAST	010	R	AC	100	$51,940	12,841	2" AC OVERLAY W/ DIGOUTS
I STREET	1ST AVE	4TH AVE	B-IST	010	R	AC	100	$122,674	12,732	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$197,538		
4TH AVENUE	H ST	K ST	B-4THAVE	010	R	AC	90	$5,020	44,444	SLURRY SEAL
G STREET	S RAILROAD AVE	RAILROAD AVE	B-GST	010	R	AC	90	$667	44,420	SLURRY SEAL
H STREET	3 AVE	4TH AVE	B-HST	040	R	AC	90	$728	44,420	SLURRY SEAL
RAILROAD AVENUE	400FT E/O 1ST AVE	E CITY LIMIT	B-RRDAVE	050	R	AC	90	$4,542	45,374	SLURRY SEAL
						Treatment Total		$10,957		
						Year 2015 Total		$208,495		
Year: 2016										
1ST AVEUNE	G ST	H ST	B-1STAVE	020	R	AC	100	$34,586	11,535	2" AC OVERLAY W/ DIGOUTS
B STREET	BROAD ST	E END	B-BST	020	R	AC	100	$23,503	12,008	2" AC OVERLAY W/ DIGOUTS
GELY STREET	CHARTIN RD	S RAILROAD AVE	B-GELYST	010	R	AC	100	$15,826	12,008	2" AC OVERLAY W/ DIGOUTS
HATCHERY ROAD	S CITY LIMIT	S RAILROAD AVE	B-HATCRD	020	R	AC	100	$82,305	12,008	2" AC OVERLAY W/ DIGOUTS
K STREET	4TH AVE	5TH AVE	B-KST	020	R	AC	100	$33,839	11,020	2" AC OVERLAY W/ DIGOUTS
REDWOOD AVENUE	RAILROAD AVE	PIERSALL AVE	B-RWDAVE	020	R	AC	100	$19,067	12,006	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$209,126		
						Year 2016 Total		$209,126		
Year: 2017										
RAILROAD AVENUE	G ST	H ST	B-RRDAVE	020	R	AC	100	$26,780	10,884	2" AC OVERLAY W/ DIGOUTS

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
REDWOOD AVENUE	PIERSALL AVE	S CDS	B-RWDAVE	010	R	AC	100	$31,238	11,522	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$58,018		
2ND AVENUE	BROAD ST	G ST	B-2NDAVE	010	R	AC	100	$42,748	8,594	RECONSTRUCT SURFACE (4" AC)
2ND AVENUE	H STREET	I STREET	B-2NDAVE	020	R	AC	100	$45,263	8,594	RECONSTRUCT SURFACE (4" AC)
2ND AVENUE	J STREET	EAST END	B-2NDAVE	040	R	AC	100	$22,684	8,594	RECONSTRUCT SURFACE (4" AC)
3RD AVENUE	H STREET	I STREET	B-3RDAVE	010	R	AC	100	$41,702	8,594	RECONSTRUCT SURFACE (4" AC)
						Treatment Total		$152,397		
						Year 2017 Total		$210,415		
Year: 2018										
H STREET	1ST AVE	2ND AVE	B-HST	020	R	AC	100	$43,834	10,844	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$43,834		
3RD AVENUE	J STREET	K STREET	B-3RDAVE	030	R	AC	100	$49,663	8,185	RECONSTRUCT SURFACE (4" AC)
ACACIA DRIVE	ACACIA DR	PARK AVE	B-ACACDR	020	R	AC	100	$29,034	8,185	RECONSTRUCT SURFACE (4" AC)
ACACIA DRIVE	ACACIA DR	E CDS	B-ACACDR	040	R	AC	100	$20,680	8,185	RECONSTRUCT SURFACE (4" AC)
BROAD STREET	B ST	C ST	B-BROAST	020	R	AC	100	$27,622	8,185	RECONSTRUCT SURFACE (4" AC)
E STREET	RAILROAD AVE	I ST	B-EST	010	R	AC	100	$32,395	8,185	RECONSTRUCT SURFACE (4" AC)
						Treatment Total		$159,394		
						Year 2018 Total		$203,228		
Year: 2019										
CHARTIN ROAD	RANCHERIA RD	BRODRERIC LN	B-CHARRD	030	R	AC	100	$105,627	10,298	2" AC OVERLAY W/ DIGOUTS
HATCHERY ROAD	S RAILROAD AVE	BLUE LAKE BLVD	B-HATCRD	010	R	AC	100	$41,280	10,409	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$146,907		
C STREET	GREENWOOD AVE	BROAD ST	B-CST	010	R	AC	100	$47,227	7,795	RECONSTRUCT SURFACE (4" AC)

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
PIERSALL AVENUE	W END	REDWOOD AVE	B-PIEAVE	010	R	AC	100	$16,150	7,795	RECONSTRUCT SURFACE (4" AC)
						Treatment Total		$63,377		
BLUE LAKE BOULEVARD	783 E/O GREENWOOD DR	HARTMAN ST	B-BLBLVD	020	RMaC	AC	86	$3,068	54,555	SLURRY SEAL
						Treatment Total		$3,068		
						Year 2019 Total		$213,352		
Year: 2020										
5TH AVENUE	I ST	K ST	B-5THAVE	010	R	AC	100	$59,294	8,325	2" AC OVERLAY W/ DIGOUTS
G STREET	RAILROAD AVE	2ND AVE	B-GST	020	R	AC	100	$100,870	9,983	2" AC OVERLAY W/ DIGOUTS
I STREET	4TH AVE	BLUE LAKE BLVD	B-IST	020	R	AC	100	$32,612	8,291	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$192,776		
2ND AVENUE	I STREET	J STREET	B-2NDAVE	030	R	AC	88	$1,348	39,646	SLURRY SEAL
J STREET	2ND AVE	BLUE LAKE BLVD	B-JST	010	R	AC	88	$5,438	39,646	SLURRY SEAL
						Treatment Total		$6,786		
						Year 2020 Total		$199,562		
Year: 2021										
CHARTIN ROAD	BRODERICK LN	E END	B-CHARRD	040	R	AC	100	$77,427	8,045	2" AC OVERLAY W/ DIGOUTS
H STREET	2ND AVE	3RD AVE	B-HST	030	R	AC	100	$36,838	7,806	2" AC OVERLAY W/ DIGOUTS
LEEVERLEN COURT	RAYMAR AVE	E CDS	B-LEEVCT	010	R	AC	100	$24,993	8,244	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$139,258		
1ST AVEUNE	H ST	I ST	B-1STAVE	030	R	AC	88	$2,850	37,758	SLURRY SEAL
1ST AVEUNE	I ST	RAILROAD AVE	B-1STAVE	040	R	AC	88	$1,725	37,758	SLURRY SEAL
GREENWOOD ROAD	RAILROAD AVE	BLUE LAKE BLVD	B-GRWDRD	010	R	AC	88	$11,028	37,758	SLURRY SEAL
ROUSS COURT	RAYMAR AVENUE	EAST CDS	B-ROUSCT	010	R	AC	80	$1,858	42,389	SLURRY SEAL
SOUTH RAILROAD AVENUE	CHARTIN RD	G ST	B-SRRAVE	010	R	AC	87	$10,712	39,561	SLURRY SEAL
SOUTH RAILROAD AVENUE	G ST	HATCHERY RD	B-SRRAVE	020	R	AC	88	$1,524	37,758	SLURRY SEAL

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
							Treatment Total	$29,697		
							Year 2021 Total	$168,955		
							Grand Total	$2,048,076		

Scenario 3. Unconstrained Needs ($2.5M over ten years)

Scenarios - Sections Selected for Treatment

Interest: 5.00% Inflation: 5.00% Printed: 01/06/2012

Scenario: Blue Lake - Needs (Unconstrained)

Year	Budget	PM Amt	Year	Budget	PM Amt	Year	Budget	PM Amt
2012	$1,405,597	$53,386	2013	$194,801	$0	2014	$161,989	$0
2015	$145,598	$0	2016	$180,278	$0	2017	$72,940	$0
2018	$49,663	$0	2019	$12,812	$12,812	2020	$282,429	$166,720
2021	$13,416	$13,416						

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
Year: 2012										
1ST AVEUNE	H ST	I ST	B-1STAVE	030	R	AC	100	$31,508	14,733	2" AC OVERLAY W/ DIGOUTS
1ST AVEUNE	I ST	RAILROAD AVE	B-1STAVE	040	R	AC	100	$19,069	14,733	2" AC OVERLAY W/ DIGOUTS
2ND AVENUE	I STREET	J STREET	B-2NDAVE	030	R	AC	100	$15,645	15,347	2" AC OVERLAY W/ DIGOUTS
3RD AVENUE	I STREET	J STREET	B-3RDAVE	020	R	AC	100	$31,771	13,840	2" AC OVERLAY W/ DIGOUTS
A STREET	GREENWOOD AVE	HARTMAN ST	B-AST	010	R	AC	100	$56,692	14,614	2" AC OVERLAY W/ DIGOUTS
BLUE LAKE AVE	GELY ST	E END	B-BLKAVE	010	R	AC	100	$10,007	13,248	2" AC OVERLAY W/ DIGOUTS
B STREET	BROAD ST	E END	B-BST	020	R	AC	100	$19,336	12,613	2" AC OVERLAY W/ DIGOUTS
CHARTIN ROAD	RANCHERIA RD	BRODRERIC LN	B-CHARRD	030	R	AC	100	$65,305	13,840	2" AC OVERLAY W/ DIGOUTS
EVERGREEN STREET	K ST	ACACIA DR	B-EVERST	010	R	AC	100	$53,669	14,733	2" AC OVERLAY W/ DIGOUTS
GELY STREET	CHARTIN RD	S RAILROAD AVE	B-GELYST	010	R	AC	100	$13,020	12,613	2" AC OVERLAY W/ DIGOUTS
GREENWOOD ROAD	RAILROAD AVE	BLUE LAKE BLVD	B-GRWDRD	010	R	AC	100	$121,932	15,080	2" AC OVERLAY W/ DIGOUTS
G STREET	RAILROAD AVE	2ND AVE	B-GST	020	R	AC	100	$59,395	13,840	2" AC OVERLAY W/ DIGOUTS
HATCHERY ROAD	S RAILROAD AVE	BLUE LAKE BLVD	B-HATCRD	010	R	AC	100	$25,522	14,123	2" AC OVERLAY W/ DIGOUTS
HATCHERY ROAD	S CITY LIMIT	S RAILROAD AVE	B-HATCRD	020	R	AC	100	$67,713	12,613	2" AC OVERLAY W/ DIGOUTS

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
H STREET	RAILROAD AVE	1ST AVE	B-HST	010	R	AC	100	$17,907	12,934	2" AC OVERLAY W/ DIGOUTS
H STREET	1ST AVE	2ND AVE	B-HST	020	R	AC	100	$28,456	14,387	2" AC OVERLAY W/ DIGOUTS
J STREET	2ND AVE	BLUE LAKE BLVD	B-JST	010	R	AC	100	$63,134	15,346	2" AC OVERLAY W/ DIGOUTS
REDWOOD AVENUE	RAILROAD AVE	PIERSALL AVE	B-RWDAVE	020	R	AC	100	$15,686	12,608	2" AC OVERLAY W/ DIGOUTS
SOUTH RAILROAD AVENUE	CHARTIN RD	G ST	B-SRRAVE	010	R	AC	100	$118,438	15,346	2" AC OVERLAY W/ DIGOUTS
SOUTH RAILROAD AVENUE	G ST	HATCHERY RD	B-SRRAVE	020	R	AC	100	$14,658	13,548	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$848,863		
2ND AVENUE	BROAD ST	G ST	B-2NDAVE	010	R	AC	100	$33,494	10,969	RECONSTRUCT SURFACE (4" AC)
ACACIA DRIVE	ACACIA DR	PARK AVE	B-ACACDR	020	R	AC	100	$21,666	10,969	RECONSTRUCT SURFACE (4" AC)
ACACIA DRIVE	PARK AVE	BLUE LAKE BLVD	B-ACACDR	030	R	AC	100	$106,268	10,969	RECONSTRUCT SURFACE (4" AC)
ACACIA DRIVE	ACACIA DR	E CDS	B-ACACDR	040	R	AC	100	$15,432	10,969	RECONSTRUCT SURFACE (4" AC)
BROAD STREET	B ST	C ST	B-BROAST	020	R	AC	100	$20,612	10,969	RECONSTRUCT SURFACE (4" AC)
C STREET	GREENWOOD AVE	BROAD ST	B-CST	010	R	AC	100	$33,563	10,969	RECONSTRUCT SURFACE (4" AC)
E STREET	RAILROAD AVE	I ST	B-EST	010	R	AC	100	$24,174	10,969	RECONSTRUCT SURFACE (4" AC)
HARTMAN STREET	A ST	BLUE LAKE BLVD	B-HARTST	010	R	AC	100	$42,284	10,969	RECONSTRUCT SURFACE (4" AC)
PIERSALL AVENUE	W END	REDWOOD AVE	B-PIEAVE	010	R	AC	100	$11,477	10,969	RECONSTRUCT SURFACE (4" AC)
RAILROAD AVENUE	GREENWOOD AVE	G ST	B-RRDAVE	010	R	AC	100	$78,634	10,969	RECONSTRUCT SURFACE (4" AC)
RAILROAD AVENUE	H ST	1ST AVE	B-RRDAVE	030	R	AC	100	$53,320	10,969	RECONSTRUCT SURFACE (4" AC)
WAHL STREET	1ST AVENUE	C STREET	B-WAHLST	010	R	AC	100	$62,424	10,969	RECONSTRUCT SURFACE (4" AC)
						Treatment Total		$503,348		
3RD AVENUE	K STREET	RAILROAD AVENUE	B-3RDAVE	040	R	AC	94	$792	31,764	SLURRY SEAL
4TH AVENUE	H ST	K ST	B-4THAVE	010	R	AC	94	$4,336	31,817	SLURRY SEAL
5TH AVENUE	I ST	K ST	B-5THAVE	010	R	AC	82	$2,690	65,415	SLURRY SEAL

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
ACACIA DRIVE	S END	ACACIA DR	B-ACACDR	010	R	AC	93	$770	33,908	SLURRY SEAL
BLUE LAKE BOULEVARD	ACACIA DR	371FT N/O RAILROAD AVE	B-BLBLVD	010	RMaC	AC	88	$6,925	76,795	SLURRY SEAL
BLUE LAKE BOULEVARD	783 E/O GREENWOOD DR	HARTMAN ST	B-BLBLVD	020	RMaC	AC	92	$2,180	69,589	SLURRY SEAL
BRODERICK LANE	CHARTIN RD	RAILROAD AVE	B-BRODLN	010	R	AC	88	$1,755	58,358	SLURRY SEAL
B STREET	GREENWOOD AVE	BROAD ST	B-BST	010	R	AC	92	$2,284	40,600	SLURRY SEAL
CHARTIN ROAD	S END	CHARTIN RD	B-CHARRD	010	R	AC	92	$1,075	43,394	SLURRY SEAL
CHARTIN ROAD	CHARTIN RD	RANCHERIA RD	B-CHARRD	020	R	AC	92	$2,142	40,600	SLURRY SEAL
CHARTIN ROAD	BRODERICK LN	E END	B-CHARRD	040	R	AC	83	$3,345	64,912	SLURRY SEAL
G STREET	S RAILROAD AVE	RAILROAD AVE	B-GST	010	R	AC	94	$576	31,764	SLURRY SEAL
H STREET	2ND AVE	3RD AVE	B-HST	030	R	AC	83	$1,592	64,405	SLURRY SEAL
H STREET	3 AVE	4TH AVE	B-HST	040	R	AC	94	$629	31,764	SLURRY SEAL
I STREET	4TH AVE	BLUE LAKE BLVD	B-IST	020	R	AC	82	$1,480	65,415	SLURRY SEAL
K STREET	3RD AVE	4TH AVE	B-KST	010	R	AC	93	$856	33,839	SLURRY SEAL
LEEVERLEN COURT	RAYMAR AVE	E CDS	B-LEEVCT	010	R	AC	82	$1,080	65,409	SLURRY SEAL
MONDA WAY	TAYLOR WAY	N CDS	B-MONWAY	010	R	AC	88	$1,477	58,336	SLURRY SEAL
RANCHERIA LANE	W CITY LIMIT	CHARTIN RD	B-RANCLN	010	R	AC	92	$1,728	40,543	SLURRY SEAL
RAYMAR AVENUE	EVERGREEN ST	BLUE LAKE BLVD	B-RAYAVE	020	R	AC	93	$2,160	33,839	SLURRY SEAL
ROUSS COURT	RAYMAR AVENUE	EAST CDS	B-ROUSCT	010	R	AC	85	$1,198	62,683	SLURRY SEAL
RAILROAD AVENUE	400FT E/O 1ST AVE	E CITY LIMIT	B-RRDAVE	050	R	AC	93	$3,924	33,839	SLURRY SEAL
SHAMROCK LANE	EAST END	RAILROAD AVE	B-SHAMLN	010	R	AC	88	$1,013	58,336	SLURRY SEAL
TAYLOR WAY	WEST END	MONDA WAY	B-TAYWAY	010	R	AC	83	$3,993	64,909	SLURRY SEAL
TAYLOR WAY	MONDA WAY	HATCHERY RD	B-TAYWAY	020	R	AC	83	$3,386	64,909	SLURRY SEAL
						Treatment Total		$53,386		
						Year 2012 Total		$1,405,597		

Year: 2013

1ST AVEUNE	G ST	H ST	B-1STAVE	020	R	AC	100	$29,876	11,889	2" AC OVERLAY W/ DIGOUTS
K STREET	5TH AVE	EVERGREEN ST	B-KST	030	R	AC	100	$6,428	11,555	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$36,304		
G STREET	2ND AVE	A ST	B-GST	030	R	AC	100	$51,270	10,447	RECONSTRUCT SURFACE (4" AC)

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
PARK AVENNUE	ACACIA DR	ACACIA DR	B-PARAVE	010	R	AC	100	$107,227	10,447	RECONSTRUCT SURFACE (4" AC)
						Treatment Total		$158,497		
						Year 2013 Total		$194,801		
Year: 2014										
BROAD STREET	2ND AVE	B ST	B-BROAST	010	R	AC	100	$49,467	13,259	2" AC OVERLAY W/ DIGOUTS
K STREET	4TH AVE	5TH AVE	B-KST	020	R	AC	100	$30,693	11,189	2" AC OVERLAY W/ DIGOUTS
RAILROAD AVENUE	G ST	H ST	B-RRDAVE	020	R	AC	100	$23,133	11,189	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$103,293		
2ND AVENUE	H STREET	I STREET	B-2NDAVE	020	R	AC	100	$39,100	9,949	RECONSTRUCT SURFACE (4" AC)
2ND AVENUE	J STREET	EAST END	B-2NDAVE	040	R	AC	100	$19,596	9,949	RECONSTRUCT SURFACE (4" AC)
						Treatment Total		$58,696		
						Year 2014 Total		$161,989		
Year: 2015										
1ST AVEUNE	GREENWOOD RD	G STREET	B-1STAVE	010	R	AC	100	$22,924	12,733	2" AC OVERLAY W/ DIGOUTS
I STREET	1ST AVE	4TH AVE	B-IST	010	R	AC	100	$122,674	12,732	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$145,598		
						Year 2015 Total		$145,598		
Year: 2016										
F STREET	RAILROAD AVE	2ND AVE	B-FST	010	R	AC	100	$62,069	9,024	RECONSTRUCT SURFACE (4" AC)
RAYMAR AVENUE	RAILROAD AVE	EVERGREEN ST	B-RAYAVE	010	R	AC	100	$75,906	9,024	RECONSTRUCT SURFACE (4" AC)
RAILROAD AVENUE	1ST AVE	400FT E/O 1ST AVE	B-RRDAVE	040	R	AC	100	$42,303	9,024	RECONSTRUCT SURFACE (4" AC)
						Treatment Total		$180,278		
						Year 2016 Total		$180,278		

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
Year: 2017										
REDWOOD AVENUE	PIERSALL AVE	S CDS	B-RWDAVE	010	R	AC	100	$31,238	11,522	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$31,238		
3RD AVENUE	H STREET	I STREET	B-3RDAVE	010	R	AC	100	$41,702	8,594	RECONSTRUCT SURFACE (4" AC)
						Treatment Total		$41,702		
						Year 2017 Total		$72,940		
Year: 2018										
3RD AVENUE	J STREET	K STREET	B-3RDAVE	030	R	AC	100	$49,663	8,185	RECONSTRUCT SURFACE (4" AC)
						Treatment Total		$49,663		
						Year 2018 Total		$49,663		
Year: 2019										
BLUE LAKE BOULEVARD	ACACIA DR	371FT N/O RAILROAD AVE	B-BLBLVD	010	RMaC	AC	82	$9,744	52,313	SLURRY SEAL
BLUE LAKE BOULEVARD	783 E/O GREENWOOD DR	HARTMAN ST	B-BLBLVD	020	RMaC	AC	86	$3,068	54,555	SLURRY SEAL
						Treatment Total		$12,812		
						Year 2019 Total		$12,812		
Year: 2020										
5TH AVENUE	I ST	K ST	B-5THAVE	010	R	AC	100	$59,294	8,325	2" AC OVERLAY W/ DIGOUTS
I STREET	4TH AVE	BLUE LAKE BLVD	B-IST	020	R	AC	100	$32,612	8,325	2" AC OVERLAY W/ DIGOUTS
LEEVERLEN COURT	RAYMAR AVE	E CDS	B-LEEVCT	010	R	AC	100	$23,803	8,322	2" AC OVERLAY W/ DIGOUTS
						Treatment Total		$115,709		
1ST AVEUNE	H ST	I ST	B-1STAVE	030	R	AC	88	$2,714	39,646	SLURRY SEAL
1ST AVEUNE	I ST	RAILROAD AVE	B-1STAVE	040	R	AC	88	$1,643	39,646	SLURRY SEAL
2ND AVENUE	BROAD ST	G ST	B-2NDAVE	010	R	AC	87	$2,076	40,216	SLURRY SEAL
2ND AVENUE	I STREET	J STREET	B-2NDAVE	030	R	AC	88	$1,348	39,646	SLURRY SEAL

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
3RD AVENUE	I STREET	J STREET	B-3RDAVE	020	R	AC	88	$3,146	39,646	SLURRY SEAL
3RD AVENUE	K STREET	RAILROAD AVENUE	B-3RDAVE	040	R	AC	87	$1,170	40,945	SLURRY SEAL
4TH AVENUE	H ST	K ST	B-4THAVE	010	R	AC	87	$6,406	40,948	SLURRY SEAL
ACACIA DRIVE	S END	ACACIA DR	B-ACACDR	010	R	AC	87	$1,138	41,066	SLURRY SEAL
ACACIA DRIVE	ACACIA DR	PARK AVE	B-ACACDR	020	R	AC	87	$1,343	40,216	SLURRY SEAL
ACACIA DRIVE	PARK AVE	BLUE LAKE BLVD	B-ACACDR	030	R	AC	87	$6,585	40,216	SLURRY SEAL
ACACIA DRIVE	ACACIA DR	E CDS	B-ACACDR	040	R	AC	87	$957	40,216	SLURRY SEAL
A STREET	GREENWOOD AVE	HARTMAN ST	B-AST	010	R	AC	88	$4,883	39,646	SLURRY SEAL
BLUE LAKE AVE	GELY ST	E END	B-BLKAVE	010	R	AC	88	$991	39,646	SLURRY SEAL
BROAD STREET	B ST	C ST	B-BROAST	020	R	AC	87	$1,278	40,216	SLURRY SEAL
BRODERICK LANE	CHARTIN RD	RAILROAD AVE	B-BRODLN	010	R	AC	83	$2,592	43,746	SLURRY SEAL
B STREET	GREENWOOD AVE	BROAD ST	B-BST	010	R	AC	86	$3,374	41,555	SLURRY SEAL
B STREET	BROAD ST	E END	B-BST	020	R	AC	88	$1,915	39,646	SLURRY SEAL
CHARTIN ROAD	S END	CHARTIN RD	B-CHARRD	010	R	AC	86	$1,588	41,815	SLURRY SEAL
CHARTIN ROAD	CHARTIN RD	RANCHERIA RD	B-CHARRD	020	R	AC	86	$3,165	41,555	SLURRY SEAL
CHARTIN ROAD	RANCHERIA RD	BRODRERIC LN	B-CHARRD	030	R	AC	88	$6,466	39,646	SLURRY SEAL
CHARTIN ROAD	BRODERICK LN	E END	B-CHARRD	040	R	AC	79	$4,942	44,527	SLURRY SEAL
C STREET	GREENWOOD AVE	BROAD ST	B-CST	010	R	AC	87	$2,080	40,216	SLURRY SEAL
E STREET	RAILROAD AVE	I ST	B-EST	010	R	AC	87	$1,498	40,216	SLURRY SEAL
EVERGREEN STREET	K ST	ACACIA DR	B-EVERST	010	R	AC	88	$4,623	39,646	SLURRY SEAL
GELY STREET	CHARTIN RD	S RAILROAD AVE	B-GELYST	010	R	AC	88	$1,289	39,646	SLURRY SEAL
GREENWOOD ROAD	RAILROAD AVE	BLUE LAKE BLVD	B-GRWDRD	010	R	AC	88	$10,502	39,646	SLURRY SEAL
G STREET	S RAILROAD AVE	RAILROAD AVE	B-GST	010	R	AC	87	$851	40,945	SLURRY SEAL
G STREET	RAILROAD AVE	2ND AVE	B-GST	020	R	AC	88	$5,881	39,646	SLURRY SEAL
HARTMAN STREET	A ST	BLUE LAKE BLVD	B-HARTST	010	R	AC	87	$2,620	40,216	SLURRY SEAL
HATCHERY ROAD	S RAILROAD AVE	BLUE LAKE BLVD	B-HATCRD	010	R	AC	88	$2,527	39,646	SLURRY SEAL
HATCHERY ROAD	S CITY LIMIT	S RAILROAD AVE	B-HATCRD	020	R	AC	88	$6,704	39,646	SLURRY SEAL
H STREET	RAILROAD AVE	1ST AVE	B-HST	010	R	AC	88	$1,773	39,646	SLURRY SEAL
H STREET	1ST AVE	2ND AVE	B-HST	020	R	AC	88	$2,818	39,646	SLURRY SEAL
H STREET	2ND AVE	3RD AVE	B-HST	030	R	AC	80	$2,351	44,473	SLURRY SEAL
H STREET	3 AVE	4TH AVE	B-HST	040	R	AC	87	$929	40,945	SLURRY SEAL
J STREET	2ND AVE	BLUE LAKE BLVD	B-JST	010	R	AC	88	$5,438	39,646	SLURRY SEAL
K STREET	3RD AVE	4TH AVE	B-KST	010	R	AC	87	$1,264	41,062	SLURRY SEAL

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
MONDA WAY	TAYLOR WAY	N CDS	B-MONWAY	010	R	AC	83	$2,182	43,742	SLURRY SEAL
PIERSALL AVENUE	W END	REDWOOD AVE	B-PIEAVE	010	R	AC	87	$712	40,216	SLURRY SEAL
RANCHERIA LANE	W CITY LIMIT	CHARTIN RD	B-RANCLN	010	R	AC	86	$2,553	41,550	SLURRY SEAL
RAYMAR AVENUE	EVERGREEN ST	BLUE LAKE BLVD	B-RAYAVE	020	R	AC	87	$3,191	41,062	SLURRY SEAL
ROUSS COURT	RAYMAR AVENUE	EAST CDS	B-ROUSCT	010	R	AC	81	$1,769	44,323	SLURRY SEAL
RAILROAD AVENUE	GREENWOOD AVE	G ST	B-RRDAVE	010	R	AC	87	$4,872	40,216	SLURRY SEAL
RAILROAD AVENUE	H ST	1ST AVE	B-RRDAVE	030	R	AC	87	$3,304	40,216	SLURRY SEAL
RAILROAD AVENUE	400FT E/O 1ST AVE	E CITY LIMIT	B-RRDAVE	050	R	AC	87	$5,797	41,062	SLURRY SEAL
REDWOOD AVENUE	RAILROAD AVE	PIERSALL AVE	B-RWDAVE	020	R	AC	88	$1,553	39,646	SLURRY SEAL
SHAMROCK LANE	EAST END	RAILROAD AVE	B-SHAMLN	010	R	AC	83	$1,496	43,742	SLURRY SEAL
SOUTH RAILROAD AVENUE	CHARTIN RD	G ST	B-SRRAVE	010	R	AC	88	$10,202	39,646	SLURRY SEAL
SOUTH RAILROAD AVENUE	G ST	HATCHERY RD	B-SRRAVE	020	R	AC	88	$1,452	39,646	SLURRY SEAL
TAYLOR WAY	WEST END	MONDA WAY	B-TAYWAY	010	R	AC	79	$5,899	44,525	SLURRY SEAL
TAYLOR WAY	MONDA WAY	HATCHERY RD	B-TAYWAY	020	R	AC	79	$5,002	44,525	SLURRY SEAL
WAHL STREET	1ST AVENUE	C STREET	B-WAHLST	010	R	AC	87	$3,868	40,216	SLURRY SEAL
						Treatment Total		$166,720		
						Year 2020 Total		$282,429		

Year: 2021

1ST AVEUNE	G ST	H ST	B-1STAVE	020	R	AC	88	$2,958	37,758	SLURRY SEAL
G STREET	2ND AVE	A ST	B-GST	030	R	AC	87	$3,177	38,301	SLURRY SEAL
K STREET	5TH AVE	EVERGREEN ST	B-KST	030	R	AC	88	$637	37,758	SLURRY SEAL
PARK AVENNUE	ACACIA DR	ACACIA DR	B-PARAVE	010	R	AC	87	$6,644	38,301	SLURRY SEAL
						Treatment Total		$13,416		
						Year 2021 Total		$13,416		
						Grand Total		$2,519,523		