



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 Rio Dell

## Pavement Management Program Final Report



Submitted to:

**City of Rio Dell**

**675 Wildwood Avenue  
Rio Dell, CA 95562**

**January 2011**

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**Pavement Management Program**

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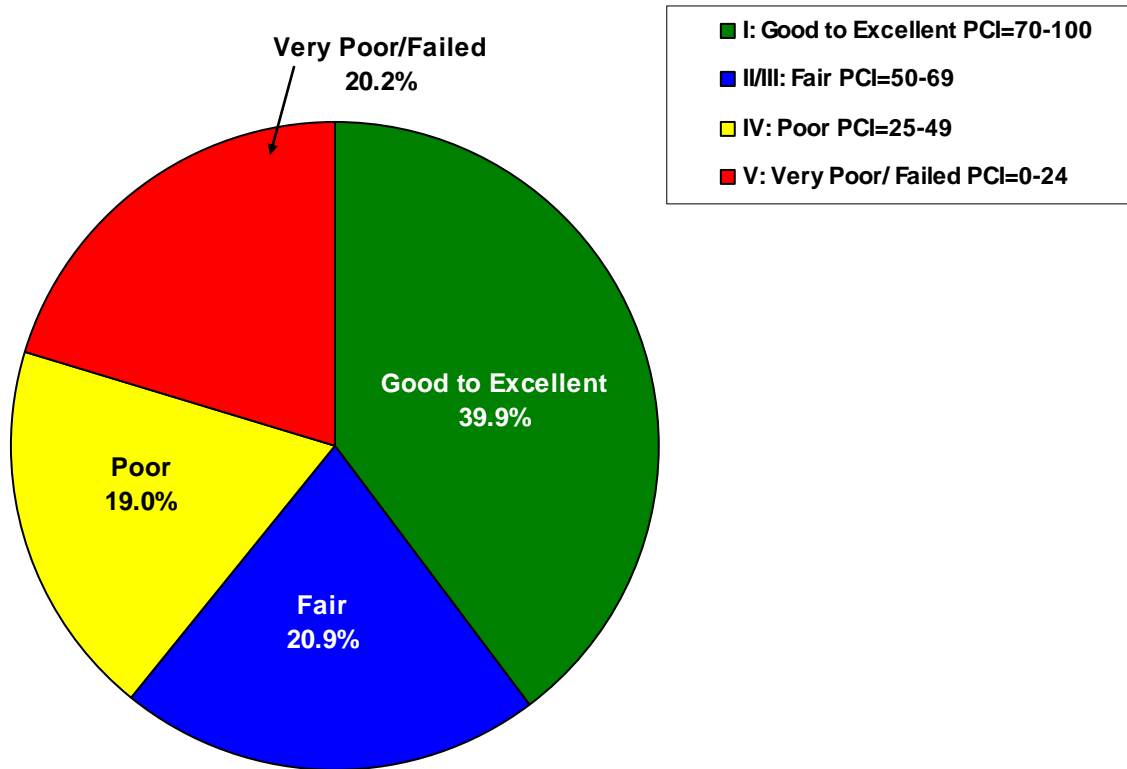
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## Executive Summary

The City of Rio Dell maintains approximately 14.0 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 58, 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 Rio Dell (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 \$4.7M is required over the next ten years to repair all the streets and improve the average PCI to 86 (“good to excellent” condition category). This will also eliminate the maintenance backlog.

Three funding scenarios were analyzed:

1. Maintain Current PCI at 58 – In order to maintain the current PCI at 58, an annual budget of \$250k will be needed; however, the maintenance backlog will increase from \$2.5M to \$4.0M.
2. Improve PCI to 70 – An annual budget of \$390k will be needed to improve the PCI to 70. The maintenance backlog will slightly decrease from \$2.4M to \$2.3M.
3. Unconstrained Needs Budget – Under this budget scenario, the City’s network condition will improve to 86 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. residential?
- 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 14.0 centerline miles of streets. The table below summarizes the pavement network by functional class.

**Table 1. Breakdown of Street Network By Functional Class**

<b>Functional Class</b>	<b>Centerline Miles</b>	<b>Lane Miles</b>	<b># of Sections</b>
Residential/Local	13.0	26.5	105
Rural Major Collector	1.0	2.0	5
<b>Totals</b>	<b>14.0</b>	<b>28.5</b>	<b>110</b>

The cost to replace this street network is estimated at \$9.5M, 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. 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 58, which is in the "fair" category.** A detailed PCI report which includes all the Streets in City of Rio Dell 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.

Condition Category	Pavement Condition	PCI Category
I	Good to Excellent	100
II/III	Fair	70
IV	Poor	50
V	Very Poor/Failed	25
		0

**Figure 2. Pavement Condition Categories by PCI**

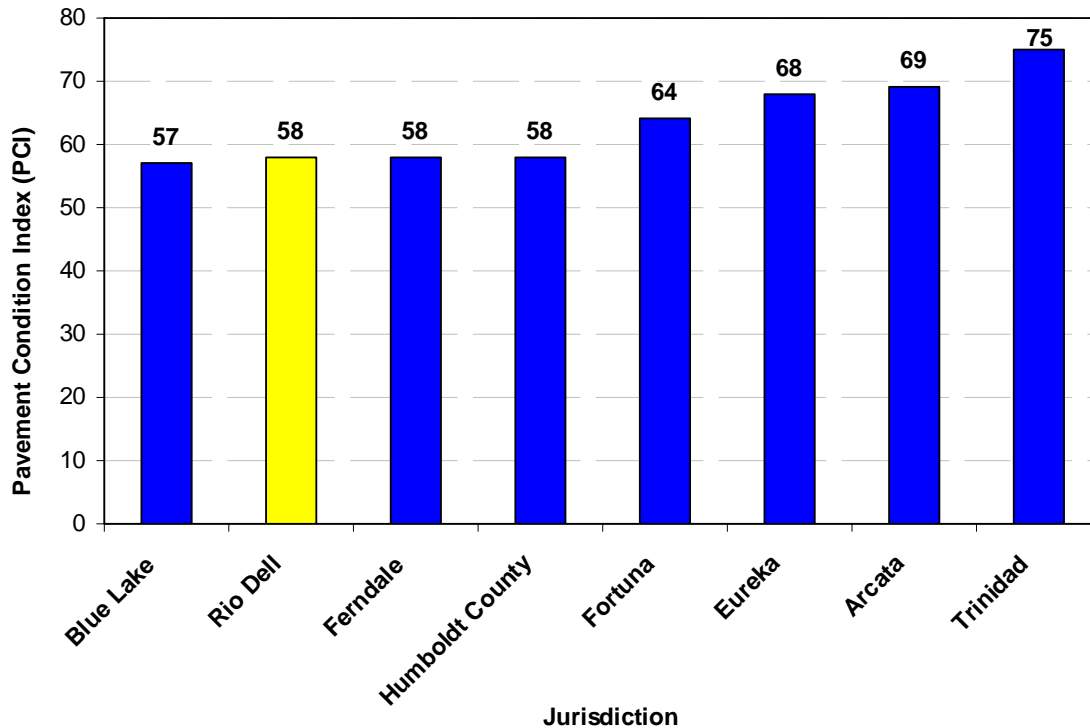
A brief description of each condition category is summarized as follows:

- 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 3rd Avenue beginning at Berkeley Street toward end, which has a PCI of 86.
- 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 Davis Street between Wildwood Avenue and Ireland Street, which has a PCI of 66.
- 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 Bellview Avenue between Woodland Avenue and City Limit, which has a PCI of 54.
- Category IV: Pavements which have a major distress. A pavement in this category may be described as “poor”. An example is Dixie Street beginning at Wildwood Avenue and 3<sup>rd</sup> Avenue, which has a PCI of 31.
- 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 Dixie Street between 4<sup>th</sup> Avenue and Davis Street, which has a PCI of 21.



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, Blue Lake, Fortuna, Ferndale, 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 39.9% of the City's pavement area is in the "good to excellent" condition category; about 39.9% of the pavement area falls in the "poor or fair" category and about 20.2% of the network falls in the "failed" category (see Figure 4 below). Detailed PCI results can be found in Appendix A.

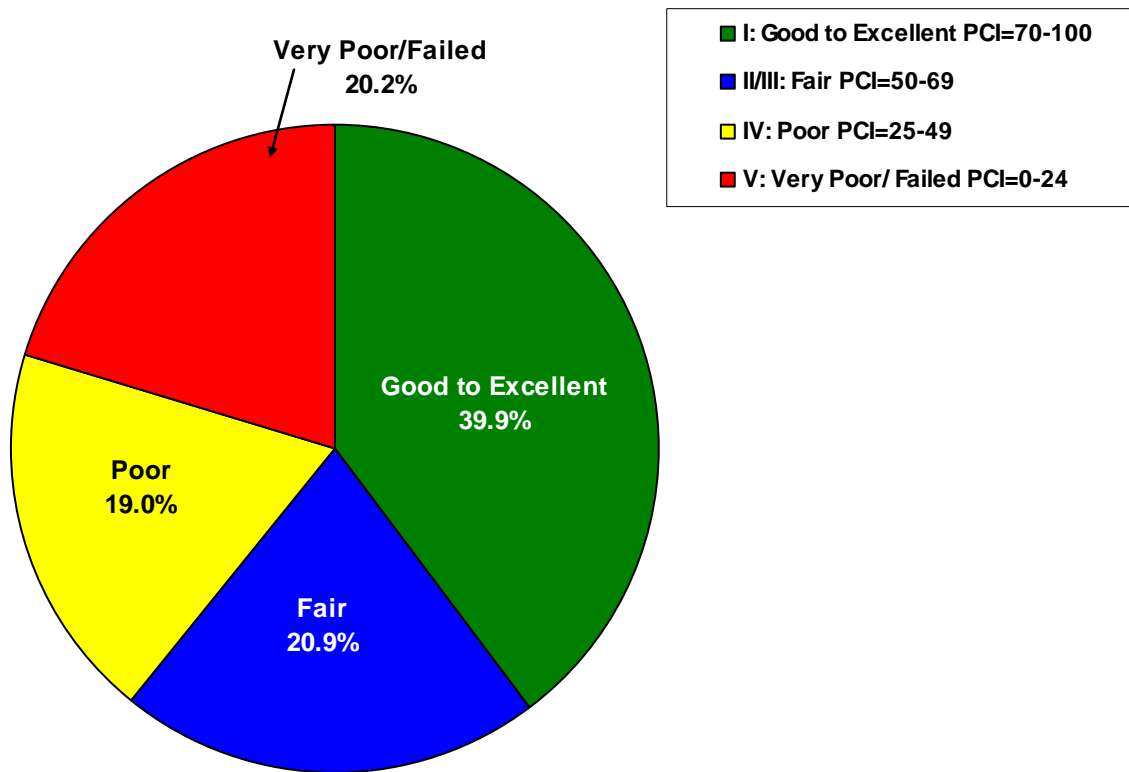


Figure 4. Pavement Condition Summary for City of Rio Dell (2012)

## 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 58**, 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 \$4.7M 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 86. 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	86	85	84	84	84	84
PCI without treatment	57	54	52	50	47	45
Rehabilitation (\$ M)	2.7	0.3	0.2	0.2	0.2	0.3
Preventive Maintenance (\$ M)	0.1	0.0	0.0	0.0	0.0	0.0
<b>Budget Needs (\$ M)</b>	<b>2.8</b>	<b>0.3</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.3</b>

Year	2018	2019	2020	2021	Total
PCI with treatment	84	85	87	86	
PCI without treatment	43	41	39	37	
Rehabilitation (\$ M)	0.1	0.0	0.2	0.0	4.3
Preventive Maintenance (\$ M)	0.0	0.0	0.3	0.0	0.5
<b>Budget Needs (\$ M)</b>	<b>0.1</b>	<b>0.0</b>	<b>0.5</b>	<b>0.0</b>	<b>4.7</b>

The results of the budget needs analysis represent the ideal funding strategy recommended by StreetSaver. Of the \$4.3M in M&R needs shown, approximately \$0.5M (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.

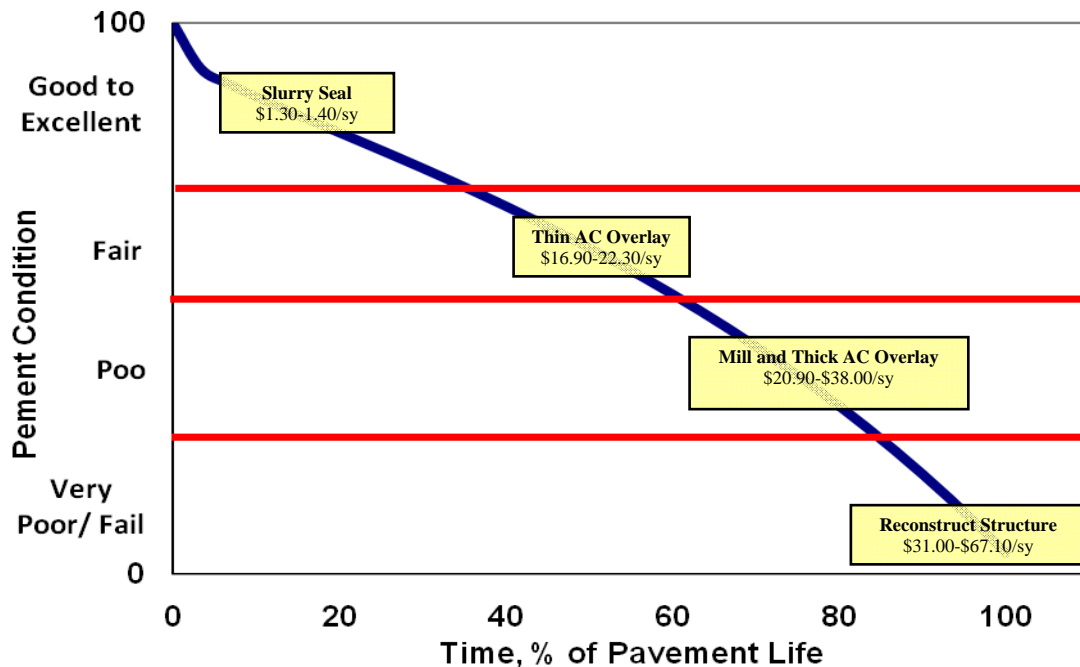


Figure 5. Cost to Maintain a Pavement Over Time

## 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 58 (\$250k per year)** – \$250k per year will be needed in order to maintain the current PCI of the network at 58. The deferred maintenance backlog will increase from \$2.5M to \$4.0M.

**Scenario 2. Improve PCI to 70 (\$390k per year)** – In order to improve the PCI to 70, a budget of \$390k in the next ten years will be needed. In the meantime, the deferred maintenance backlog will slightly decrease from \$2.4M to \$2.3M by 2021.

**Scenario 3. Unconstrained Needs Budget (\$4.7M over ten years)** – In this scenario, this level of funding will eliminate the deferred maintenance backlog and the PCI will reach 86 by 2021.

### Scenario 1. Maintain Current PCI at 58 (\$250k per year)

In order to maintain the current condition of the network at PCI of 58, \$250k per year will be needed. The deferred maintenance backlog will continue to increase from \$2.5M to \$4.0. Approximately 69.0% of the network will be in the good or excellent condition category, while 31.0% will still remain in the “failed” category. Although the network PCI remains at 58, 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)	250	250	250	250	250	250
Rehabilitation (\$ k)	224	223	237	237	233	235
Preventive Maintenance (\$ k)	0	21	9	8	16	0
Deferred Maintenance (\$ M)	2.5	2.4	2.2	2.3	2.7	3.5
PCI	59	59	58	58	58	57
Year	2018	2019	2020	2021	Total	
Budget (\$ k)	250	250	250	250	2,500	
Rehabilitation (\$ k)	225	218	214	214	2,262	
Preventive Maintenance (\$ k)	15	29	33	34	166	
Deferred Maintenance (\$ M)	3.8	3.7	3.8	4.0		
PCI	57	58	58	58		

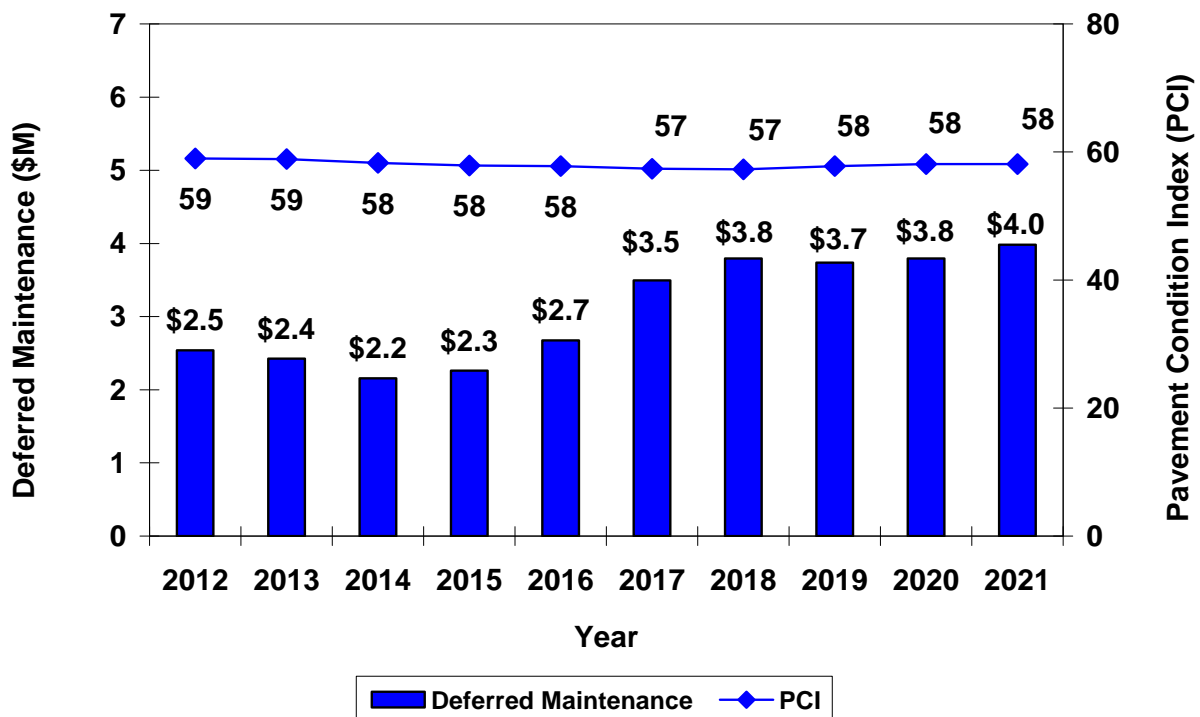


Figure 6. PCI vs. Deferred Maintenance for Scenario 1: Maintain Current PCI

## Scenario 2. Improve PCI to 70 (\$390k per year)

In order to improve the condition of the network PCI to 70, \$390k per year will be needed. The deferred maintenance backlog will slightly decrease from \$2.4 to \$2.3M. Approximately 82.7% of the network will be in the good or excellent condition category, while 17.3% 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)	390	390	390	390	390	390
Rehabilitation (\$ k)	345	348	347	361	371	339
Preventive Maintenance (\$ k)	3	37	39	24	19	0
Deferred Maintenance (\$ M)	2.4	2.3	2.0	2.0	2.2	2.6
PCI	60	61	62	63	65	65
Year	2018	2019	2020	2021	Total	
Budget (\$ k)	390	390	390	390	3,900	
Rehabilitation (\$ k)	372	389	343	214	3,430	
Preventive Maintenance (\$ k)	7	0	41	56	226	
Deferred Maintenance (\$ M)	2.6	2.3	2.2	2.3	-	
PCI	67	68	70	70		

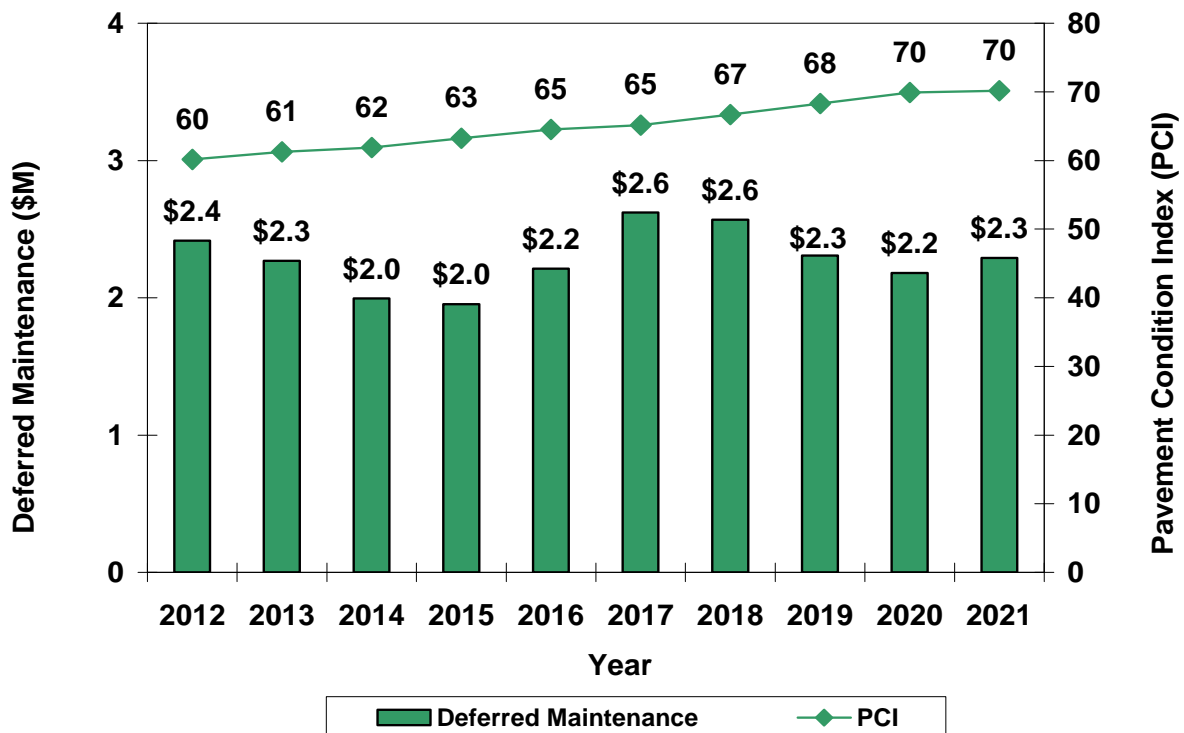


Figure 7. PCI vs. Deferred Maintenance for Scenario 2: Improve PCI to 70 (\$390k per year)

### Scenario 3. Unconstrained Needs Budget (\$4.7M over ten years)

In this scenario, the funding level is approximately \$4.7M over ten years. As a consequence, the City's network condition will increase from the current PCI of 58 to 86 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)	2,763	337	172	243	239	298
Rehabilitation (\$ k)	1,481	533	879	92	684	115
Preventive Maintenance (\$ k)	2,654	337	172	243	239	298
Deferred Maintenance (\$ M)	0.0	0.0	0.0	0.0	0.0	0.0
PCI	86	85	84	84	84	84
Year	2018	2019	2020	2021	Total	
Budget (\$ k)	109	32	511	26	4,731	
Rehabilitation (\$ k)	0	0	104	0	3,889	
Preventive Maintenance (\$ k)	101	0	208	0	4,253	
Deferred Maintenance (\$ M)	0.0	0.0	0.0	0.0		
PCI	84	82	87	86		

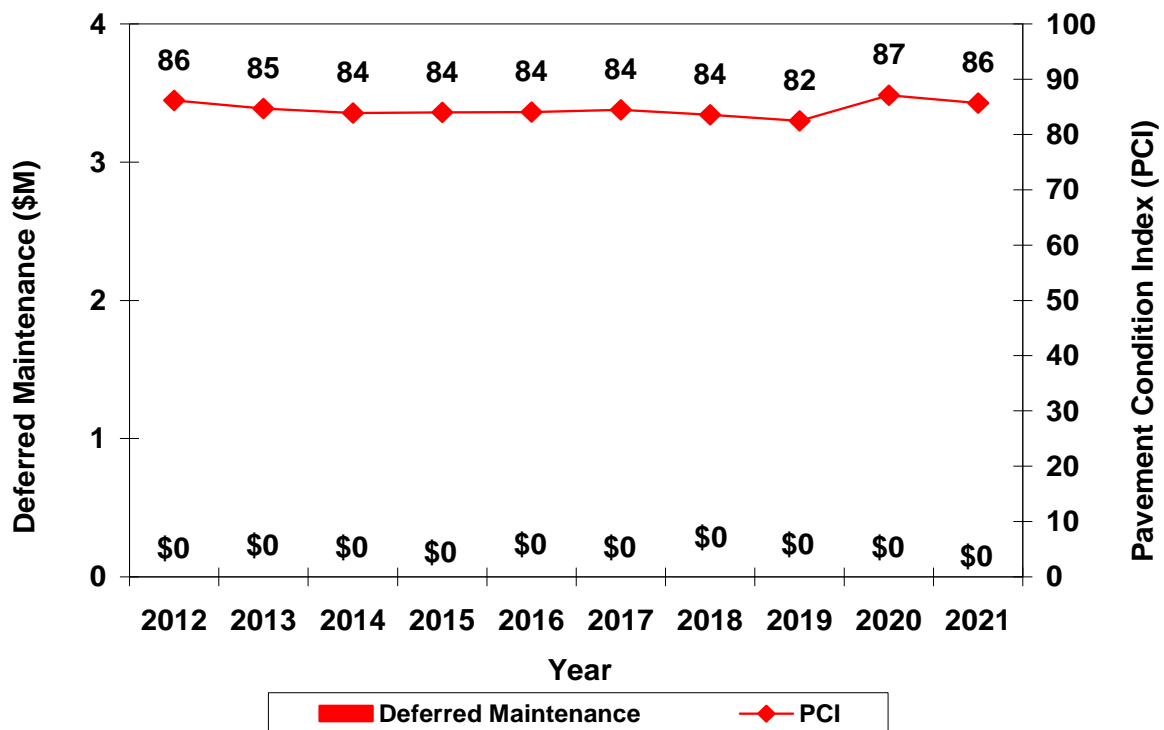


Figure 8. PCI vs. Deferred Maintenance for Scenario 3: Needs Budget (\$4.7M over ten years)



## Discussion

Figure 9 illustrates the change in PCI over time for the different budget scenarios. Note that Scenario 1 (\$250k per year) will maintain the average network PCI at 58 over the next 10 years. Scenario 2 (\$390k per year) will improve the network PCI to 70 over 10 years. Scenario 3 (\$4.7M/10yrs) will see an increase in the PCI to 86 by 2021.

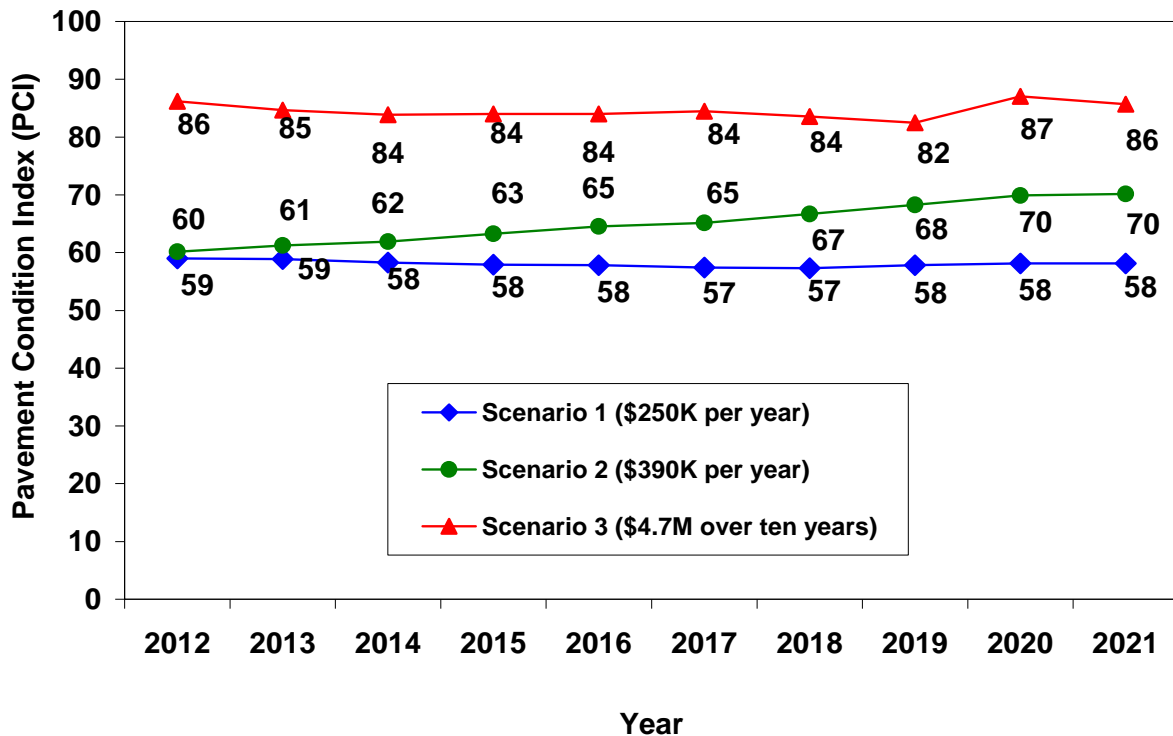


Figure 9. Pavement Condition Index by Scenario by Year

Figure 10 illustrates the change in deferred maintenance over time for the different budget scenarios. Note that Scenario 1 (Maintain PCI at 58) 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.

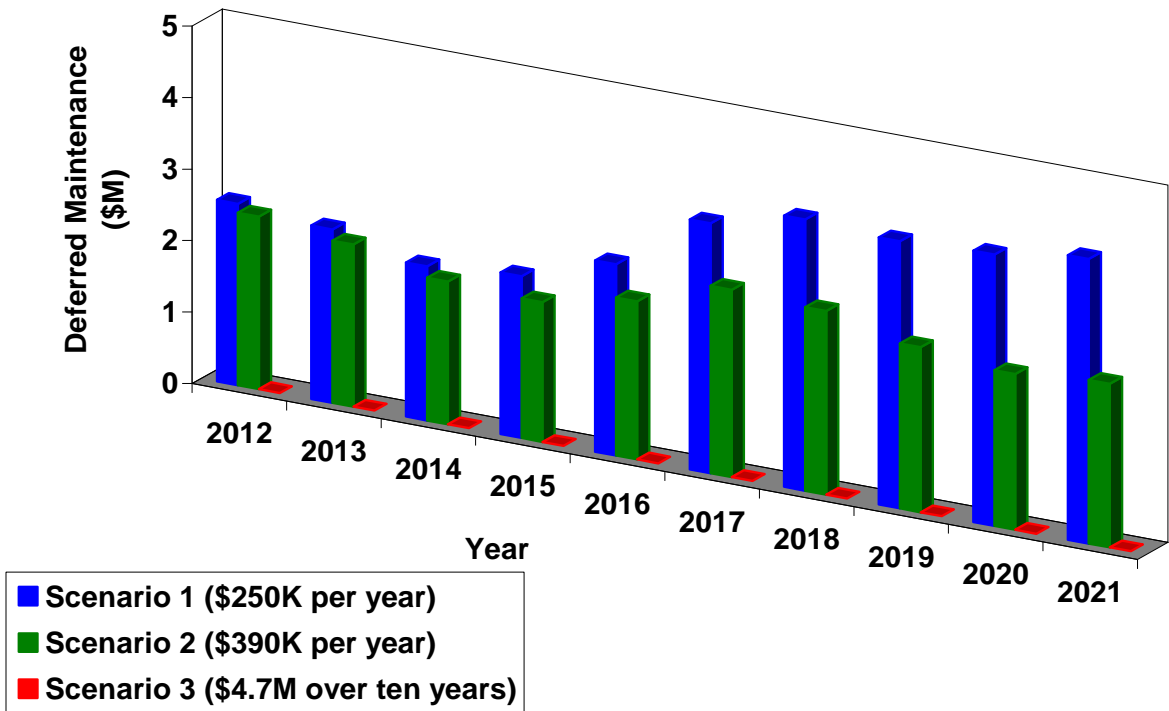


Figure 10. Deferred Maintenance Backlog by Scenario by Year

## Conclusions

The City of Rio Dell currently has a paved street network of 14.0 centerline miles or 28.5 lane miles. Overall, the roadwork network that was surveyed is in “fair” condition with an average PCI of 58. Approximately 39.9% are in the “Good to Excellent” condition category; however, about 39.2% of the network also falls into the poor and failed categories, which require a budget of \$4.7M 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

It is NCE’s understanding that the City is currently exploring additional revenue sources to address the transportations needs.

## Glossary

<b>Deferred Maintenance</b>	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”.
<b>Functional Class</b>	Defines the primary function of a particular pavement section. The four classes are: A (Arterial), C (Collector), R (Residential), and O (Other).
<b>Network</b>	All the streets in the City that includes arterial, collector, and residential streets.
<b>PCI</b>	Pavement Condition Index - measured on a scale of 0 (failed) to 100 (excellent), PCIs can be calculated from inspection units and applied maintenance treatments.
<b>PMP</b>	Pavement Management Program
<b>PM%</b>	Percentage of each year’s budget that has been set aside for preventive maintenance activities such as slurry seals.
<b>Preventative Maintenance</b>	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.
<b>Rehabilitation</b>	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.
<b>Replacement Cost</b>	Cost to replace the entire pavement structure e.g. asphalt concrete and aggregate base.
<b>Treatment</b>	Repair activities that are applied to restore either the functional or structural deficiencies of the pavement.

## **Appendix A: Inventory & PCI Summary**

City of Rio Dell  
Pavement Management Program  
Inventory and PCI

12/21/2011

Area	Street ID	Section ID	Street Name	Begin	End	Length	Width	FC	ST	PCI Date	PCI
Rio Dell	R-1STAVE	010	1ST AVENUE	EDWARDS DR	BERKELEY ST	590	21	R	A	10/19/2009	59
Rio Dell	R-1STAVE	020	1ST AVENUE	BERKELEY ST	COLUMBUS ST	728	21	R	A	10/19/2009	79
Rio Dell	R-1STAVE	030	1ST AVENUE	COLUMBUS ST	ELKO ST	1,030	20	R	A	10/19/2009	89
Rio Dell	R-2NDAVE	010	2ND AVENUE	ATLANTA ST	COLUMBUS ST	1,095	29	R	A	10/19/2009	81
Rio Dell	R-2NDAVE	020	2ND AVENUE	COLUMBUS ST	ELKO ST	1,030	31	R	A	10/19/2009	31
Rio Dell	R-2NDAVE	030	2ND AVENUE	ELKO ST	DAVIS ST	181	20	R	A	10/19/2009	22
Rio Dell	R-3RDAVE	010	3RD AVENUE	MEADOW BRIDGE DR	BERKELEY ST	258	27	R	A	10/19/2009	98
Rio Dell	R-3RDAVE	020	3RD AVENUE	BERKELEY ST	N END	146	22	R	A	10/19/2009	86
Rio Dell	R-3RDAVE	030	3RD AVENUE	COLUMBUS ST	DAVIS ST	1,002	26	R	A	10/19/2009	100
Rio Dell	R-4THAVE	010	4TH AVENUE	EAST END OF PAVEMENT	DAVIS ST	759	20	R	A	10/19/2009	100
Rio Dell	R-ALPINE	010	ALPINE	SOUTH END	MONUMENT RD	170	11	R	A	10/19/2009	32
Rio Dell	R-ASHST	010	ASH STREET	PACIFIC AVE	WILDWOOD AVE	840	22	R	A	10/19/2009	90
Rio Dell	R-ATLAST	010	ATLANTA STREET	1ST AVE	2ND AVE	234	12	R	A	10/19/2009	75
Rio Dell	R-BELAVE	010	BELLEVIEW AVENUE	WILDWOOD AVE	1116 E/O RIVER ST	1,337	37	RMaC	A	10/19/2009	57
Rio Dell	R-BELAVE	015	BELLEVIEW AVENUE	1116 E/O RIVER ST	RIVER ST	1,116	37	RMaC	A	10/19/2009	57
Rio Dell	R-BELAVE	020	BELLEVIEW AVENUE	RIVER RD	SPRING ST	825	23	RMaC	A	10/19/2009	34
Rio Dell	R-BELAVE	030	BELLEVIEW AVENUE	SPRING ST	WOODLAND AVE	1,133	22	RMaC	A	10/19/2009	54
Rio Dell	R-BELAVE	035	BELLEVIEW AVENUE	WOODLAND AVE	WEST CITY LIMIT	1,032	22	RMaC	A	10/19/2009	54
Rio Dell	R-BERKST	010	BERKELEY STREET	WILDWOOD AVE	END OF PAVEMENT	814	26	R	A	10/19/2009	76
Rio Dell	R-BIRCST	010	BIRCH STREET	PACIFIC AVE	SEQUOIA AVE	455	29	R	A	10/19/2009	91
Rio Dell	R-BRIDST	010	BRIDGE STREET	WILDWOOD AVE	EDWARDS DR	278	26	R	A	10/19/2009	69
Rio Dell	R-BUTCST	010	BUTCHER STREET	PACIFIC AVE	RIO DELL AVE	303	21	R	A	10/19/2009	24
Rio Dell	R-CEDAST	010	CEDAR STREET	PACIFIC AVE	WILDWOOD AVE	657	28	R	A	10/19/2009	36
Rio Dell	R-CENTST	010	CENTER STREET	WILDWOOD AVE	IRELAND AVE	1,555	29	R	A	10/19/2009	91
Rio Dell	R-CENTST	020	CENTER STREET	IRELAND ST	EAST CDS	127	27	R	A	10/19/2009	69
Rio Dell	R-CENTST	030	CENTER STREET	PAINTER ST	RIGBY AVE	617	26	R	A	10/19/2009	40
Rio Dell	R-CHAAVE	010	CHASE AVENUE	CENTER ST	PAINTER ST	387	18	R	A	10/19/2009	37

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Rio Dell	R-CHERLN	010	CHERRY LANE	MONUMENT RD	ORCHARD PL	782	16	R	A	10/19/2009	39
Rio Dell	R-COLUST	010	COLUMBUS STREET	WILDWOOD AVE	3RD AVE	744	29	R	A	10/19/2009	87
Rio Dell	R-CREEST	010	CREEK STREET	SOUTH END	NALLY LN	347	12	R	A	10/19/2009	72
Rio Dell	R-CURLTN	010	CURTIS LANE	PAINTER ST	NORTH END	743	20	R	A	10/19/2009	79
Rio Dell	R-DAVIST	010	DAVIS STREET	WILDWOOD AVE	IRELAND ST	1,364	37	R	A	10/19/2009	66
Rio Dell	R-DAVIST	020	DAVIS STREET	IRELAND ST	RIGBY AVE	942	26	R	A	10/19/2009	65
Rio Dell	R-DAVIST	030	DAVIS STREET	RIGBY AVE	EAST END	1,584	26	R	A	10/19/2009	34
Rio Dell	R-DIXIST	010	DIXIE STREET	WILDWOOD AVE	3RD AVE	745	17	R	A	10/19/2009	31
Rio Dell	R-DIXIST	020	DIXIE STREET	3RD AVE	4TH AVE	243	24	R	A	10/19/2009	95
Rio Dell	R-DIXIST	030	DIXIE STREET	4TH AVE	DAVIS ST	348	18	R	A	10/19/2009	21
Rio Dell	R-DOUGST	010	DOUGLAS STREET	WESTEND	VIEW AVE	371	17	R	A	10/19/2009	100
Rio Dell	R-DOUGST	020	DOUGLAS STREET	VIEW AVE	PACIFIC ST	248	30	R	A	10/19/2009	89
Rio Dell	R-DOUGST	030	DOUGLAS STREET	PACIFIC ST	WILDWOOD AVE	472	30	R	A	10/19/2009	93
Rio Dell	R-EDWADR	010	EDWARDS DRIVE	WILDWOOD AVE	BRIDGE ST	270	28	R	A	10/19/2009	43
Rio Dell	R-EDWADR	020	EDWARDS DRIVE	BRIDGE ST	END OF PAVEMENT	1,780	24	R	A	10/19/2009	63
Rio Dell	R-EELAVE	010	EEOLO AVENUE	WEST CDS	N PACIFIC DR	1,057	25	R	A	10/19/2009	66
Rio Dell	R-EELAVE	020	EEOLO AVENUE	N PACIFIC DR	SCENIC WAY	676	26	R	A	10/19/2009	40
Rio Dell	R-EELAVE	030	EEOLO AVENUE	SCENIC WAY	FERN ST	869	25	R	A	10/19/2009	44
Rio Dell	R-ELKOST	010	ELKO STREET	WILDWOOD AVE	2ND AVE	574	21	R	A	10/19/2009	78
Rio Dell	R-ELMST	010	ELM STREET	PACIFIC AVE	WILDWOOD AVE	381	20	R	A	10/19/2009	17
Rio Dell	R-FERNST	010	FERN STREET	EEOLO AVE	RIVERSIDE DR	657	21	R	A	10/19/2009	32
Rio Dell	R-FERNST	020	FERN STREET	FERN ST	RIVERSIDE DR	657	21	R	A	10/19/2009	61
Rio Dell	R-GRHERD	010	GRAYLAND HEIGHTS ROAD	S. SEQUOIA AVE	GRAYLAND HEIGHTS RD	1,527	36	R	A	10/19/2009	95
Rio Dell	R-GUNNLN	010	GUNNERSON LANE	S CDS	HILLTOP DR	595	27	R	A	10/19/2009	62
Rio Dell	R-GUNNLN	020	GUNNERSON LANE	HILLTOP DR	DAVIS ST	606	39	R	A	10/19/2009	57
Rio Dell	R-HILLDR	010	HILLTOP DRIVE	GUNNERSON LN	RIO DELL PUBLIC WORKS EXT	397	19	R	A	10/19/2009	100
Rio Dell	R-IREAVE	010	IRELAND AVENUE	DAVIS ST	CENTER ST	1,012	35	R	A	10/19/2009	15

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Rio Dell	R-IREAVE	020	IRELAND AVENUE	CENTER ST	PAINTER ST	386	34	R	A	10/19/2009	16
Rio Dell	R-KELLST	010	KELLEY STREET	VIEW AVE	PACIFIC AVE	244	27	R	A	10/19/2009	95
Rio Dell	R-MARTDR	010	MARTIN DRIVE	RIVERSIDE DR	N CDS	264	34	R	A	10/19/2009	63
Rio Dell	R-MAYAVE	010	MAY AVENUE	PAINTER DT	NORTH ST	539	33	R	A	10/19/2009	100
Rio Dell	R-MEABRDR	010	MEADOW BRIDGE DRIVE	EDWARDS DR	3RD AVE	1,072	35	R	A	10/19/2009	92
Rio Dell	R-MILLCT	010	MILLER COURT	S CDS	RIVERSIDE DR	628	36	R	A	10/19/2009	86
Rio Dell	R-MONURD	010	MONUMENT ROUD	WEST CITY LIMIT	CHERRY LN	1,602	19	R	A	10/19/2009	88
Rio Dell	R-MONURD	020	MONUMENT ROUD	CHERRY LN	PACIFIC ST	305	24	R	A	10/19/2009	95
Rio Dell	R-MONURD	030	MONUMENT ROUD	PACIFIC ST	S SEQUOIA AVE	494	23	R	A	10/19/2009	95
Rio Dell	R-MONURD	040	MONUMENT ROUD	S SEQUOIA AVE	WILDWOOD AVE	783	28	R	A	10/19/2009	46
Rio Dell	R-NALLLN	010	NALLY LANE	WEST END	CREEK ST	121	10	R	A	10/19/2009	62
Rio Dell	R-OGLAVE	010	OGLE AVENUE	BELLEVIEW AVE	TOLMAN PL	1,015	27	R	A	10/19/2009	19
Rio Dell	R-OGLAVE	020	OGLE AVENUE	TOLMAN PL	RIVER RD	1,383	20	R	A	10/19/2009	23
Rio Dell	R-ORCHPL	010	ORCHARD PLACE	CHERRY LN	ORCHARD ST	169	18	R	A	10/19/2009	27
Rio Dell	R-ORCHST	010	ORCHARD STREET	MONUMENT RD	ORCHARD PL	696	26	R	A	10/19/2009	38
Rio Dell	R-PACAVE	010	PACIFIC AVENUE	MONUMENT AVE	KELLY ST	1,256	21	R	A	10/19/2009	65
Rio Dell	R-PACAVE	020	PACIFIC AVENUE	KELLY ST	W DAVIS ST	793	20	R	A	10/19/2009	90
Rio Dell	R-PACAVE	030	PACIFIC AVENUE	W DAVIS ST	W CENTER ST	732	20	R	A	10/19/2009	75
Rio Dell	R-PACAVE	040	PACIFIC AVENUE	W CENTER ST	BELLEVIEW AVE	1,218	25	R	A	10/19/2009	67
Rio Dell	R-PAINST	010	PAINTER STREET	WILDWOOD AVE	CHASE AVE	720	29	R	A	10/19/2009	76
Rio Dell	R-PAINST	020	PAINTER STREET	CHASE AVE	IRELAND AVE	767	28	R	A	10/19/2009	55
Rio Dell	R-PAINST	030	PAINTER STREET	IRELAND ST	CENTER DR	510	38	R	A	10/19/2009	78
Rio Dell	R-PAINST	040	PAINTER STREET	CENTER DR	CURTIS LN	630	38	R	A	10/19/2009	68
Rio Dell	R-PAINST	050	PAINTER STREET	CURTIS LN	E END	1,045	20	R	A	10/19/2009	52
Rio Dell	R-PINEST	010	PINE STREET	W END	MAY AVE	561	31	R	A	10/19/2009	100
Rio Dell	R-RIGAVE	010	RIGBY AVENUE	S END	DAVIS ST	1,184	25	R	A	10/19/2009	67
Rio Dell	R-RIGAVE	020	RIGBY AVENUE	DAVIS ST	CENTER ST	1,036	28	R	A	10/19/2009	19



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Rio Dell	R-RIGAVE	030	RIGBY AVENUE	CENTER ST	PAINTER ST	382	18	R	A	10/19/2009	61
Rio Dell	R-RIDAVE	010	RIO DELL AVENUE	W CENTER ST	TOWNSEND ST	716	18	R	A	10/19/2009	16
Rio Dell	R-RIDAVE	020	RIO DELL AVENUE	TOWNSEND ST	BUTCHER ST	289	15	R	A	10/19/2009	92
Rio Dell	R-RIVEST	010	RIVER STREET	OGLE AVE	BELLEVIEW AVE	230	26	R	A	10/19/2009	27
Rio Dell	R-RIVEDR	010	RIVERSIDE DRIVE	PAINTER ST	EAGLE PRAIRIE RD	610	34	R	A	10/19/2009	72
Rio Dell	R-RIVEDR	020	RIVERSIDE DRIVE	EAGLE PRAIRIE RD	FERN ST	1,337	39	R	A	10/19/2009	33
Rio Dell	R-RIVEDR	030	RIVERSIDE DRIVE	FERN ST	NW CDS	1,056	32	R	A	10/19/2009	52
Rio Dell	R-ROSELN	010	ROSE LANE	MONUMENT RD	N END	160	17	R	A	10/19/2009	87
Rio Dell	R-SCEWAY	010	SCENIC WAY	HIGHWAY 101 NB ON RAMP	EELOA AVE	211	76	R	A		0
Rio Dell	R-SEQUEST	010	SEQUOIA STREET	MONUMENT AVE	CEDAR ST	808	30	R	A	10/19/2009	95
Rio Dell	R-SIDEST	010	SIDE STREET	PACIFIC AVE	WILDWOOD AVE	866	29	R	A	10/19/2009	73
Rio Dell	R-SSEQST	010	SOUTH SEQUOIA STREET	GRAYLAND HEIGHTS RD	MONUMENT RD	514	24	R	A	10/19/2009	91
Rio Dell	R-SPRIST	010	SPRING STREET	OGLE AVE	BELLEVIEW AVE	304	21	R	A	10/19/2009	17
Rio Dell	R-TYMECT	010	TYME COURT	W CDS	MILLER CT	79	40	R	A	10/19/2009	87
Rio Dell	R-VIEWST	010	VIEW STREET	DOUGLAS ST	KELLEY ST	325	21	R	A	10/19/2009	16
Rio Dell	R-WCENST	010	WEST CENTER STREET	PACIFIC AVE	RIO DELL AVE	283	24	R	A	10/19/2009	28
Rio Dell	R-WCENST	020	WEST CENTER STREET	RIO DELL AVE	WILDWOOD AVE	179	25	R	A	10/19/2009	100
Rio Dell	R-WDAVIST	010	WEST DAVIS STREET	PACIFIC AVE	WILDWOOD AVE	363	36	R	A	10/19/2009	65
Rio Dell	R-WPAINST	010	WEST PAINTER STREET	PACIFIC AVE	WILDWOOD AVE	497	17	R	A	10/19/2009	27
Rio Dell	R-WTOWST	010	WEST TOWNSEND STREET	RIO DELL AVE	PACIFIC AVE	288	25	R	A	10/19/2009	29
Rio Dell	R-WILAVE	010	WILDWOOD AVENUE	BRIDGE ST	CEDAR ST	1,207	66	R	A	10/19/2009	26
Rio Dell	R-WILAVE	015	WILDWOOD AVENUE	CEDAR ST	136FT N/O ELM ST	891	66	R	A	10/19/2009	26
Rio Dell	R-WILAVE	020	WILDWOOD AVENUE	136FT NORTH OF ELM ST	DAVIS ST	678	60	R	A	10/19/2009	100
Rio Dell	R-WILAVE	030	WILDWOOD AVENUE	DAVIS ST	PAINTER ST	1,256	38	R	A	10/19/2009	100
Rio Dell	R-WILAVE	040	WILDWOOD AVENUE	PAINTER ST	HIGHWAY 101 NB ON RAMP	1,567	38	R	A	10/19/2009	100

## **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 1/2" 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 1/4"; 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 ¾ 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.e., 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 an 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 100°F 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:


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- 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>
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**Appendix C: M&R Decision Tree**

# 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	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


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


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			
	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				
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 58 (\$250k per year)**

## Scenarios - Sections Selected for Treatment

Interest: 5.00%

Inflation: 5.00%

Printed: 01/12/2012

Scenario: Rio Dell - Maintain PCI at 58

Year	Budget	PM Amt	Year	Budget	PM Amt	Year	Budget	PM Amt
2012	\$250,000	10%	2013	\$250,000	10%	2014	\$250,000	5%
2015	\$250,000	5%	2016	\$250,000	5%	2017	\$250,000	5%
2018	\$250,000	5%	2019	\$250,000	5%	2020	\$250,000	5%
2021	\$250,000	5%						

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
<b>Year: 2012</b>										
BRIDGE STREET	WILDWOOD AVE	EDWARDS DR	R-BRIDST	010	R	AC	100	\$15,581	13,836	2" AC OVERLAY W/ DIGOUTS
CENTER STREET	IRELAND ST	EAST CDS	R-CENTST	020	R	AC	100	\$7,392	13,836	2" AC OVERLAY W/ DIGOUTS
CREEK STREET	SOUTH END	NALLY LN	R-CREEST	010	R	AC	100	\$8,976	12,930	2" AC OVERLAY W/ DIGOUTS
DAVIS STREET	RIGBY AVE	EAST END	R-DAVIST	030	R	AC	100	\$102,045	15,136	2" AC OVERLAY W/ DIGOUTS
RIVERSIDE DRIVE	FERN ST	NW CDS	R-RIVEDR	030	R	AC	100	\$83,730	14,860	2" AC OVERLAY W/ DIGOUTS
								<b>Treatment Total</b>		
ALPINE	SOUTH END	MONUMENT RD	R-ALPINE	010	R	AC	100	\$6,442	10,969	RECONSTRUCT SURFACE (4" AC)
								<b>Treatment Total</b>		
								<b>Year 2012 Total</b>		<b>\$224,166</b>
<b>Year: 2013</b>										
ATLANTA STREET	1ST AVE	2ND AVE	R-ATLAST	010	R	AC	100	\$6,356	11,884	2" AC OVERLAY W/ DIGOUTS
GUNNERSON LANE	HILLTOP DR	DAVIS ST	R-GUNNLN	020	R	AC	100	\$61,488	13,922	2" AC OVERLAY W/ DIGOUTS
PACIFIC AVENUE	W CENTER ST	BELLEVIEW AVE	R-PACAVE	040	R	AC	100	\$68,919	14,126	2" AC OVERLAY W/ DIGOUTS
RIGBY AVENUE	S END	DAVIS ST	R-RIGAVE	010	R	AC	100	\$66,995	14,126	2" AC OVERLAY W/ DIGOUTS
								<b>Treatment Total</b>		<b>\$203,758</b>

\*\* - Treatment from Project Selection

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
2ND AVENUE	ELKO ST	DAVIS ST	R-2NDAVE	030	R	AC	100	\$13,093	10,447	RECONSTRUCT SURFACE (4" AC)
WEST PAINTER STREET	62' E RIO DELL AVE	WILDWOOD AVE	R-WPAINST	040	R	AC	100	\$6,149	10,447	RECONSTRUCT SURFACE (4" AC)
Treatment Total								\$19,242		
1ST AVENUE	BERKELEY ST	COLUMBUS ST	R-1STAVE	020	R	AC	81	\$2,319	62,367	SLURRY SEAL
2ND AVENUE	ATLANTA ST	COLUMBUS ST	R-2NDAVE	010	R	AC	83	\$4,817	61,719	SLURRY SEAL
3RD AVENUE	BERKELEY ST	N END	R-3RDAVE	020	R	AC	87	\$488	56,645	SLURRY SEAL
CURTIS LANE	PAINTER ST	NORTH END	R-CURTLN	010	R	AC	81	\$2,254	62,367	SLURRY SEAL
ELKO STREET	WILDWOOD AVE	2ND AVE	R-ELKOST	010	R	AC	80	\$1,829	62,609	SLURRY SEAL
PAINTER STREET	WILDWOOD AVE	87' W CHASE AVE	R-PAINST	010	R	AC	81	\$2,736	62,368	SLURRY SEAL
PAINTER STREET	258' E CHASE AVE	IRELAND ST	R-PAINST	020	R	AC	81	\$2,398	62,368	SLURRY SEAL
PAINTER STREET	IRELAND ST	CENTER DR	R-PAINST	030	R	AC	80	\$2,940	62,609	SLURRY SEAL
RIO DELL AVENUE	TOWNSEND ST	BUTCHER ST	R-RIDAVE	020	R	AC	91	\$658	44,612	SLURRY SEAL
ROSE LANE	MONUMENT RD	N END	R-ROSELN	010	R	AC	88	\$413	55,012	SLURRY SEAL
TYME COURT	W CDS	MILLER CT	R-TYMECT	010	R	AC	88	\$480	55,012	SLURRY SEAL
Treatment Total								\$21,332		
Year 2013 Total								\$244,332		

Year: 2014

1ST AVENUE	EDWARDS DR	BERKELEY ST	R-1STAVE	010	R	AC	100	\$33,847	13,257	2" AC OVERLAY W/ DIGOUTS
PACIFIC AVENUE	W DAVIS ST	W CENTER ST	R-PACAVE	030	R	AC	100	\$34,792	11,803	2" AC OVERLAY W/ DIGOUTS
PAINTER STREET	CENTER DR	5' W BLUFF PLACE	R-PAINST	040	R	AC	100	\$43,348	12,921	2" AC OVERLAY W/ DIGOUTS
PAINTER STREET	215' E CURTIS LANE	E END	R-PAINST	060	R	AC	100	\$75,858	12,921	2" AC OVERLAY W/ DIGOUTS
RIVERSIDE DRIVE	PAINTER ST	EAGLE PRAIRIE RD	R-RIVEDR	010	R	AC	100	\$49,289	12,644	2" AC OVERLAY W/ DIGOUTS
Treatment Total								\$237,134		
COLUMBUS STREET	WILDWOOD AVE	3RD AVE	R-COLUST	010	R	AC	87	\$3,436	54,892	SLURRY SEAL
DIXIE STREET	3RD AVE	4TH AVE	R-DIXIST	020	R	AC	91	\$929	43,133	SLURRY SEAL
DOUGLAS STREET	VIEW AVE	PACIFIC ST	R-DOUGST	020	R	AC	88	\$1,185	52,084	SLURRY SEAL
MILLER COURT	S CDS	RIVERSIDE DR	R-MILLCT	010	R	AC	86	\$3,601	56,041	SLURRY SEAL

\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
								Treatment Total	\$9,151	
								Year 2014 Total	\$246,285	
<b>Year: 2015</b>										
BERKELEY STREET	WILDWOOD AVE	END OF PAVEMENT	R-BERKST	010	R	AC	100	\$52,812	11,409	2" AC OVERLAY W/ DIGOUTS
FERN STREET	FERN ST	RIVERSIDE DR	R-FERNST	020	R	AC	100	\$39,575	12,618	2" AC OVERLAY W/ DIGOUTS
RIGBY AVENUE	CENTER ST	PAINTER ST	R-RIGAVE	030	R	AC	100	\$19,723	12,618	2" AC OVERLAY W/ DIGOUTS
SIDE STREET	PACIFIC AVE	WILDWOOD AVE	R-SIDEST	010	R	AC	100	\$62,668	12,207	2" AC OVERLAY W/ DIGOUTS
								Treatment Total	\$174,778	
BUTCHER STREET	PACIFIC AVE	RIO DELL AVE	R-BUTCST	010	R	AC	100	\$25,372	9,475	RECONSTRUCT SURFACE (4" AC)
DIXIE STREET	4TH AVE	DAVIS ST	R-DIXIST	030	R	AC	100	\$24,977	9,475	RECONSTRUCT SURFACE (4" AC)
ORCHARD PLACE	CHERRY LN	ORCHARD ST	R-ORCHPL	010	R	AC	100	\$12,130	9,475	RECONSTRUCT SURFACE (4" AC)
								Treatment Total	\$62,479	
MONUMENT ROUD	WEST CITY LIMIT	CHERRY LN	R-MONURD	010	R	AC	86	\$5,090	53,083	SLURRY SEAL
PACIFIC AVENUE	KELLY ST	W DAVIS ST	R-PACAVE	020	R	AC	87	\$2,652	50,802	SLURRY SEAL
								Treatment Total	\$7,742	
								Year 2015 Total	\$244,999	
<b>Year: 2016</b>										
EDWARDS DRIVE	BRIDGE ST	END OF PAVEMENT	R-EDWADR	020	R	AC	100	\$128,663	12,002	2" AC OVERLAY W/ DIGOUTS
GUNNERSON LANE	S CDS	HILLTOP DR	R-GUNNLN	010	R	AC	100	\$48,384	12,114	2" AC OVERLAY W/ DIGOUTS
MARTIN DRIVE	RIVERSIDE DR	N CDS	R-MARTDR	010	R	AC	100	\$27,034	12,002	2" AC OVERLAY W/ DIGOUTS
NALLY LANE	WEST END	CREEK ST	R-NALLLN	010	R	AC	100	\$3,645	12,114	2" AC OVERLAY W/ DIGOUTS
								Treatment Total	\$207,726	
RIVER STREET	OGLE AVE	BELLEVIEW AVE	R-RIVEST	010	R	AC	100	\$25,037	9,024	RECONSTRUCT SURFACE (4" AC)

\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
								Treatment Total	\$25,037	
1ST AVENUE	COLUMBUS ST	ELKO ST	R-1STAVE	030	R	AC	85	\$3,617	51,280	SLURRY SEAL
ASH STREET	PACIFIC AVE	WILDWOOD AVE	R-ASHST	010	R	AC	86	\$3,245	50,459	SLURRY SEAL
BIRCH STREET	PACIFIC AVE	SEQUOIA AVE	R-BIRCST	010	R	AC	87	\$2,317	49,607	SLURRY SEAL
DOUGLAS STREET	PACIFIC ST	WILDWOOD AVE	R-DOUGST	030	R	AC	88	\$2,487	47,803	SLURRY SEAL
KELLEY STREET	VIEW AVE	PACIFIC AVE	R-KELLST	010	R	AC	88	\$1,157	46,475	SLURRY SEAL
MONUMENT ROUD	CHERRY LN	PACIFIC ST	R-MONURD	020	R	AC	88	\$1,286	46,475	SLURRY SEAL
SOUTH SEQUOIA STREET	GRAYLAND HEIGHTS RD	MONUMENT RD	R-SSEQST	010	R	AC	87	\$2,166	49,607	SLURRY SEAL
								Treatment Total	\$16,275	
								Year 2016 Total	\$249,038	
<b>Year: 2017</b>										
DAVIS STREET	IRELAND ST	RIGBY AVE	R-DAVIST	020	R	AC	100	\$77,453	11,411	2" AC OVERLAY W/ DIGOUTS
PACIFIC AVENUE	MONUMENT AVE	KELLY ST	R-PACAVE	010	R	AC	100	\$83,410	11,411	2" AC OVERLAY W/ DIGOUTS
WEST DAVIS STREET	PACIFIC AVE	WILDWOOD AVE	R-WDAVIST	010	R	AC	100	\$41,326	11,411	2" AC OVERLAY W/ DIGOUTS
								Treatment Total	\$202,189	
EDWARDS DRIVE	WILDWOOD AVE	BRIDGE ST	R-EDWADR	010	R	AC	100	\$33,235	8,594	RECONSTRUCT SURFACE (4" AC)
								Treatment Total	\$33,235	
								Year 2017 Total	\$235,424	
<b>Year: 2018</b>										
DAVIS STREET	WILDWOOD AVE	IRELAND ST	R-DAVIST	010	R	AC	100	\$167,577	10,953	2" AC OVERLAY W/ DIGOUTS
								Treatment Total	\$167,577	
CHERRY LANE	MONUMENT RD	ORCHARD PL	R-CHERLN	010	R	AC	100	\$57,754	8,185	RECONSTRUCT SURFACE (4" AC)
								Treatment Total	\$57,754	
3RD AVENUE	MEADOW BRIDGE DR	BERKELEY ST	R-3RDAVE	010	R	AC	86	\$1,349	45,746	SLURRY SEAL
4TH AVENUE	EAST END OF PAVEMENT	DAVIS ST	R-4THAVE	010	R	AC	86	\$2,939	45,741	SLURRY SEAL

\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
CENTER STREET	WILDWOOD AVE	IRELAND AVE	R-CENTST	010	R	AC	84	\$8,730	47,636	SLURRY SEAL
MONUMENT ROUD	PACIFIC ST	S SEQUOIA AVE	R-MONURD	030	R	AC	86	\$2,200	46,120	SLURRY SEAL
								Treatment Total	\$15,218	
								Year 2018 Total	\$240,549	
<b>Year: 2019</b>										
EELOA AVENUE	WEST CDS	N PACIFIC DR	R-EELAVE	010	R	AC	100	\$92,131	10,603	2" AC OVERLAY W/ DIGOUTS
								Treatment Total	\$92,131	
CEDAR STREET	PACIFIC AVE	WILDWOOD AVE	R-CEDAST	010	R	AC	100	\$89,160	7,795	RECONSTRUCT SURFACE (4" AC)
ELM STREET	PACIFIC AVE	WILDWOOD AVE	R-ELMST	010	R	AC	100	\$36,932	7,795	RECONSTRUCT SURFACE (4" AC)
								Treatment Total	\$126,092	
3RD AVENUE	COLUMBUS ST	DAVIS ST	R-3RDAVE	030	R	AC	85	\$5,296	44,865	SLURRY SEAL
GRAYLAND HEIGHTS ROAD	S. SEQUOIA AVE	GRAYLAND HEIGHTS RD	R-GRHERD	010	R	AC	84	\$11,173	45,140	SLURRY SEAL
MEADOW BRIDGE DRIVE	EDWARDS DR	3RD AVE	R-MEABRDR	010	R	AC	83	\$7,626	45,864	SLURRY SEAL
SEQUOIA STREET	MONUMENT AVE	CEDAR ST	R-SEQUEST	010	R	AC	84	\$4,927	45,140	SLURRY SEAL
WEST PAINTER STREET	50' W RIO DELL AVE	62' E RIO DELL AVE	R-WPAINST	030	R	AC/AC	87	\$387	43,616	SLURRY SEAL
								Treatment Total	\$29,409	
								Year 2019 Total	\$247,632	
<b>Year: 2020</b>										
ELKO STREET	WILDWOOD AVE	2ND AVE	R-ELKOST	010	R	AC	100	\$38,389	8,288	2" AC OVERLAY W/ DIGOUTS
PAINTER STREET	IRELAND ST	CENTER DR	R-PAINST	030	R	AC	100	\$61,721	8,288	2" AC OVERLAY W/ DIGOUTS
								Treatment Total	\$100,110	
CENTER STREET	PAINTER ST	RIGBY AVE	R-CENTST	030	R	AC	100	\$81,638	7,424	RECONSTRUCT SURFACE (4" AC)
SPRING STREET	OGLE AVE	BELLEVIEW AVE	R-SPRIST	010	R	AC	100	\$32,489	7,424	RECONSTRUCT SURFACE (4" AC)
								Treatment Total	\$114,127	
CHASE AVENUE	CENTER ST	PAINTER ST	R-CHAAVE	010	R	AC/AC	86	\$1,487	43,006	SLURRY SEAL

\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
DOUGLAS STREET	WESTEND	VIEW AVE	R-DOUGST	010	R	AC	83	\$1,346	43,579	SLURRY SEAL
HILLTOP DRIVE	GUNNERSON LN	RIO DELL PUBLIC WORKS EXT	R-HILLDR	010	R	AC	83	\$1,610	43,579	SLURRY SEAL
MAY AVENUE	PAINTER DT	NORTH ST	R-MAYAVE	010	R	AC	83	\$3,796	43,579	SLURRY SEAL
PINE STREET	W END	MAY AVE	R-PINEST	010	R	AC	83	\$3,712	43,579	SLURRY SEAL
WEST CENTER STREET	PACIFIC AVE	RIO DELL AVE	R-WCENST	010	R	AC/AC	86	\$1,450	43,006	SLURRY SEAL
WEST CENTER STREET	RIO DELL AVE	WILDWOOD AVE	R-WCENST	020	R	AC	83	\$956	43,579	SLURRY SEAL
WILDWOOD AVENUE	136FT NORTH OF ELM ST	DAVIS ST	R-WILAVE	020	R	AC	83	\$8,682	43,579	SLURRY SEAL
WILDWOOD AVENUE	DAVIS ST	PAINTER ST	R-WILAVE	030	R	AC	83	\$10,186	43,579	SLURRY SEAL
Treatment Total								\$33,225		
Year 2020 Total								\$247,462		

Year: 2021

1ST AVENUE	BERKELEY ST	COLUMBUS ST	R-1STAVE	020	R	AC	100	\$51,123	8,043	2" AC OVERLAY W/ DIGOUTS
CURTIS LANE	PAINTER ST	NORTH END	R-CURTLN	010	R	AC	100	\$49,692	8,043	2" AC OVERLAY W/ DIGOUTS
PAINTER STREET	WILDWOOD AVE	87' W CHASE AVE	R-PAINST	010	R	AC	100	\$60,319	8,101	2" AC OVERLAY W/ DIGOUTS
PAINTER STREET	258' E CHASE AVE	IRELAND ST	R-PAINST	020	R	AC	100	\$52,852	8,101	2" AC OVERLAY W/ DIGOUTS
Treatment Total								\$213,986		
2ND AVENUE	ATLANTA ST	COLUMBUS ST	R-2NDAVE	010	R	AC	79	\$7,116	42,345	SLURRY SEAL
2ND AVENUE	ELKO ST	DAVIS ST	R-2NDAVE	030	R	AC	87	\$812	38,301	SLURRY SEAL
3RD AVENUE	BERKELEY ST	N END	R-3RDAVE	020	R	AC	83	\$720	41,805	SLURRY SEAL
ALPINE	SOUTH END	MONUMENT RD	R-ALPINE	010	R	AC	86	\$420	39,803	SLURRY SEAL
ATLANTA STREET	1ST AVE	2ND AVE	R-ATLAST	010	R	AC	88	\$630	37,758	SLURRY SEAL
BRIDGE STREET	WILDWOOD AVE	EDWARDS DR	R-BRIDST	010	R	AC	87	\$1,620	39,561	SLURRY SEAL
CENTER STREET	IRELAND ST	EAST CDS	R-CENTST	020	R	AC	87	\$769	39,561	SLURRY SEAL
CREEK STREET	SOUTH END	NALLY LN	R-CREEST	010	R	AC	87	\$934	39,561	SLURRY SEAL
PAINTER STREET	87' W CHASE AVE	258' E CHASE AVE	R-PAINST	025	R	AC/AC	85	\$2,080	42,081	SLURRY SEAL
PAINTER STREET	5' W BUFF PLACE	215' E CURTIS LANE	R-PAINST	050	R	AC/AC	85	\$3,023	42,081	SLURRY SEAL
RIO DELL AVENUE	TOWNSEND ST	BUTCHER ST	R-RIDAVE	020	R	AC	85	\$972	40,163	SLURRY SEAL
ROSE LANE	MONUMENT RD	N END	R-ROSELN	010	R	AC	83	\$610	41,552	SLURRY SEAL

\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
TYME COURT	W CDS	MILLER CT	R-TYMECT	010	R	AC	83	\$709	41,552	SLURRY SEAL
WILDWOOD AVENUE	PAINTER ST	HIGHWAY 101 NB ON RAMP	R-WILAVE	040	R	AC	82	\$13,344	42,009	SLURRY SEAL
WEST PAINTER STREET	62' E RIO DELL AVE	WILDWOOD AVE	R-WPAINST	040	R	AC	87	\$381	38,301	SLURRY SEAL
Treatment Total								\$34,140		
Year 2021 Total								\$248,126		
Grand Total								\$2,428,013		



**Scenario 2. Improve PCI to 70 (\$390k per year)**

## Scenarios - Sections Selected for Treatment

Interest: 5.00%

Inflation: 5.00%

Printed: 01/12/2012

Scenario: Rio Dell - Increase PCI to 70

Year	Budget	PM Amt	Year	Budget	PM Amt	Year	Budget	PM Amt
2012	\$390,000	10%	2013	\$390,000	10%	2014	\$390,000	10%
2015	\$390,000	6%	2016	\$390,000	1%	2017	\$390,000	10%
2018	\$390,000	3%	2019	\$390,000	0%	2020	\$390,000	10%
2021	\$390,000	10%						

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment	
<b>Year: 2012</b>											
BRIDGE STREET	WILDWOOD AVE	EDWARDS DR	R-BRIDST	010	R	AC	100	\$15,581	13,836	2" AC OVERLAY W/ DIGOUTS	
CENTER STREET	IRELAND ST	EAST CDS	R-CENTST	020	R	AC	100	\$7,392	13,836	2" AC OVERLAY W/ DIGOUTS	
CREEK STREET	SOUTH END	NALLY LN	R-CREEST	010	R	AC	100	\$8,976	12,930	2" AC OVERLAY W/ DIGOUTS	
DAVIS STREET	WILDWOOD AVE	IRELAND ST	R-DAVIST	010	R	AC	100	\$108,787	14,642	2" AC OVERLAY W/ DIGOUTS	
DAVIS STREET	RIGBY AVE	EAST END	R-DAVIST	030	R	AC	100	\$102,045	15,136	2" AC OVERLAY W/ DIGOUTS	
RIVERSIDE DRIVE	FERN ST	NW CDS	R-RIVEDR	030	R	AC	100	\$83,730	14,860	2" AC OVERLAY W/ DIGOUTS	
								<b>Treatment Total</b>	<b>\$326,511</b>		
2ND AVENUE	ELKO ST	DAVIS ST	R-2NDAVE	030	R	AC	100	\$12,469	10,969	RECONSTRUCT SURFACE (4" AC)	
ALPINE	SOUTH END	MONUMENT RD	R-ALPINE	010	R	AC	100	\$6,442	10,969	RECONSTRUCT SURFACE (4" AC)	
								<b>Treatment Total</b>	<b>\$18,911</b>		
3RD AVENUE	BERKELEY ST	N END	R-3RDAVE	020	R	AC	88	\$464	56,454	SLURRY SEAL	
ELKO STREET	WILDWOOD AVE	2ND AVE	R-ELKOST	010	R	AC	82	\$1,742	65,409	SLURRY SEAL	
ROSE LANE	MONUMENT RD	N END	R-ROSELN	010	R	AC	89	\$393	54,132	SLURRY SEAL	
								<b>Treatment Total</b>	<b>\$2,599</b>		
								<b>Year 2012 Total</b>	<b>\$348,021</b>		

### Year: 2013

\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
BELLEVUE AVENUE	1116 E/O RIVER ST	RIVER ST	R-BELAVE	015	RMa C	AC	100	\$137,778	13,828	2.5" AC OVERLAY W/ DIGOUTS
								Treatment Total		\$137,778
ATLANTA STREET	1ST AVE	2ND AVE	R-ATLAST	010	R	AC	100	\$6,356	11,884	2" AC OVERLAY W/ DIGOUTS
GUNNERSON LANE	HILLTOP DR	DAVIS ST	R-GUNNLN	020	R	AC	100	\$61,488	13,922	2" AC OVERLAY W/ DIGOUTS
PACIFIC AVENUE	W CENTER ST	BELLEVUE AVE	R-PACAVE	040	R	AC	100	\$68,919	14,126	2" AC OVERLAY W/ DIGOUTS
RIGBY AVENUE	S END	DAVIS ST	R-RIGAVE	010	R	AC	100	\$66,995	14,126	2" AC OVERLAY W/ DIGOUTS
								Treatment Total		\$203,758
WEST PAINTER STREET	62' E RIO DELL AVE	WILDWOOD AVE	R-WPAINST	040	R	AC	100	\$6,149	10,447	RECONSTRUCT SURFACE (4" AC)
								Treatment Total		\$6,149
1ST AVENUE	BERKELEY ST	COLUMBUS ST	R-1STAVE	020	R	AC	81	\$2,319	62,367	SLURRY SEAL
1ST AVENUE	COLUMBUS ST	ELKO ST	R-1STAVE	030	R	AC	89	\$3,125	51,126	SLURRY SEAL
2ND AVENUE	ATLANTA ST	COLUMBUS ST	R-2NDAVE	010	R	AC	83	\$4,817	61,719	SLURRY SEAL
ASH STREET	PACIFIC AVE	WILDWOOD AVE	R-ASHST	010	R	AC	90	\$2,803	49,013	SLURRY SEAL
COLUMBUS STREET	WILDWOOD AVE	3RD AVE	R-COLUST	010	R	AC	88	\$3,273	55,012	SLURRY SEAL
CURTIS LANE	PAINTER ST	NORTH END	R-CURTLN	010	R	AC	81	\$2,254	62,367	SLURRY SEAL
DOUGLAS STREET	VIEW AVE	PACIFIC ST	R-DOUGST	020	R	AC	89	\$1,129	51,126	SLURRY SEAL
MILLER COURT	S CDS	RIVERSIDE DR	R-MILLCT	010	R	AC	87	\$3,429	56,645	SLURRY SEAL
MONUMENT ROUD	WEST CITY LIMIT	CHERRY LN	R-MONURD	010	R	AC	89	\$4,617	53,174	SLURRY SEAL
PAINTER STREET	WILDWOOD AVE	87' W CHASE AVE	R-PAINST	010	R	AC	81	\$2,736	62,368	SLURRY SEAL
PAINTER STREET	258' E CHASE AVE	IRELAND ST	R-PAINST	020	R	AC	81	\$2,398	62,368	SLURRY SEAL
PAINTER STREET	IRELAND ST	CENTER DR	R-PAINST	030	R	AC	80	\$2,940	62,609	SLURRY SEAL
RIO DELL AVENUE	TOWNSEND ST	BUTCHER ST	R-RIDAVE	020	R	AC	91	\$658	44,612	SLURRY SEAL
TYME COURT	W CDS	MILLER CT	R-TYMECT	010	R	AC	88	\$480	55,012	SLURRY SEAL
								Treatment Total		\$36,978
								Year 2013 Total		\$384,663

Year: 2014

1ST AVENUE	EDWARDS DR	BERKELEY ST	R-1STAVE	010	R	AC	100	\$33,847	13,257	2" AC OVERLAY W/ DIGOUTS
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\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
BERKELEY STREET	WILDWOOD AVE	END OF PAVEMENT	R-BERKST	010	R	AC	100	\$50,297	11,502	2" AC OVERLAY W/ DIGOUTS
PACIFIC AVENUE	W DAVIS ST	W CENTER ST	R-PACAVE	030	R	AC	100	\$34,792	11,803	2" AC OVERLAY W/ DIGOUTS
PAINTER STREET	CENTER DR	5' W BLUFF PLACE	R-PAINST	040	R	AC	100	\$43,348	12,921	2" AC OVERLAY W/ DIGOUTS
PAINTER STREET	215' E CURTIS LANE	E END	R-PAINST	060	R	AC	100	\$75,858	12,921	2" AC OVERLAY W/ DIGOUTS
RIVERSIDE DRIVE	PAINTER ST	EAGLE PRAIRIE RD	R-RIVEDR	010	R	AC	100	\$49,289	12,644	2" AC OVERLAY W/ DIGOUTS
SIDE STREET	PACIFIC AVE	WILDWOOD AVE	R-SIDEST	010	R	AC	100	\$59,684	12,377	2" AC OVERLAY W/ DIGOUTS
Treatment Total								\$347,115		
3RD AVENUE	MEADOW BRIDGE DR	BERKELEY ST	R-3RDAVE	010	R	AC	91	\$1,110	41,817	SLURRY SEAL
4TH AVENUE	EAST END OF PAVEMENT	DAVIS ST	R-4THAVE	010	R	AC	91	\$2,418	41,801	SLURRY SEAL
BIRCH STREET	PACIFIC AVE	SEQUOIA AVE	R-BIRCST	010	R	AC	89	\$2,102	48,756	SLURRY SEAL
CENTER STREET	WILDWOOD AVE	IRELAND AVE	R-CENTST	010	R	AC	89	\$7,182	48,756	SLURRY SEAL
DIXIE STREET	3RD AVE	4TH AVE	R-DIXIST	020	R	AC	91	\$929	43,133	SLURRY SEAL
DOUGLAS STREET	PACIFIC ST	WILDWOOD AVE	R-DOUGST	030	R	AC	90	\$2,255	45,574	SLURRY SEAL
GRAYLAND HEIGHTS ROAD	S. SEQUOIA AVE	GRAYLAND HEIGHTS RD	R-GRHERD	010	R	AC	91	\$8,755	43,133	SLURRY SEAL
KELLEY STREET	VIEW AVE	PACIFIC AVE	R-KELLST	010	R	AC	91	\$1,050	43,133	SLURRY SEAL
MEADOW BRIDGE DRIVE	EDWARDS DR	3RD AVE	R-MEABRDR	010	R	AC	90	\$5,976	47,142	SLURRY SEAL
MONUMENT ROUD	CHERRY LN	PACIFIC ST	R-MONURD	020	R	AC	91	\$1,166	43,133	SLURRY SEAL
MONUMENT ROUD	PACIFIC ST	S SEQUOIA AVE	R-MONURD	030	R	AC	91	\$1,810	43,133	SLURRY SEAL
PACIFIC AVENUE	KELLY ST	W DAVIS ST	R-PACAVE	020	R	AC	89	\$2,526	50,446	SLURRY SEAL
SOUTH SEQUOIA STREET	GRAYLAND HEIGHTS RD	MONUMENT RD	R-SSEQST	010	R	AC	89	\$1,965	48,756	SLURRY SEAL
Treatment Total								\$39,244		
Year 2014 Total								\$386,359		

**Year: 2015**

FERN STREET	FERN ST	RIVERSIDE DR	R-FERNST	020	R	AC	100	\$39,575	12,618	2" AC OVERLAY W/ DIGOUTS
RIGBY AVENUE	CENTER ST	PAINTER ST	R-RIGAVE	030	R	AC	100	\$19,723	12,618	2" AC OVERLAY W/ DIGOUTS

\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
								Treatment Total		
2ND AVENUE	COLUMBUS ST	ELKO ST	R-2NDAVE	020	R	AC	100	\$127,317	9,475	RECONSTRUCT SURFACE (4" AC)
BUTCHER STREET	PACIFIC AVE	RIO DELL AVE	R-BUTCST	010	R	AC	100	\$25,372	9,475	RECONSTRUCT SURFACE (4" AC)
CEDAR STREET	PACIFIC AVE	WILDWOOD AVE	R-CEDAST	010	R	AC	100	\$73,352	9,475	RECONSTRUCT SURFACE (4" AC)
CENTER STREET	PAINTER ST	RIGBY AVE	R-CENTST	030	R	AC	100	\$63,966	9,475	RECONSTRUCT SURFACE (4" AC)
ORCHARD PLACE	CHERRY LN	ORCHARD ST	R-ORCHPL	010	R	AC	100	\$12,130	9,475	RECONSTRUCT SURFACE (4" AC)
								Treatment Total		
3RD AVENUE	COLUMBUS ST	DAVIS ST	R-3RDAVE	030	R	AC	90	\$4,357	44,387	SLURRY SEAL
DOUGLAS STREET	WESTEND	VIEW AVE	R-DOUGST	010	R	AC	90	\$1,055	44,387	SLURRY SEAL
HILLTOP DRIVE	GUNNERSON LN	RIO DELL PUBLIC WORKS EXT	R-HILLDR	010	R	AC	90	\$1,262	44,387	SLURRY SEAL
MAY AVENUE	PAINTER DT	NORTH ST	R-MAYAVE	010	R	AC	90	\$2,975	44,387	SLURRY SEAL
PINE STREET	W END	MAY AVE	R-PINEST	010	R	AC	90	\$2,908	44,387	SLURRY SEAL
SEQUOIA STREET	MONUMENT AVE	CEDAR ST	R-SEQUEST	010	R	AC	90	\$4,054	45,374	SLURRY SEAL
WEST CENTER STREET	RIO DELL AVE	WILDWOOD AVE	R-WCENST	020	R	AC	90	\$749	44,387	SLURRY SEAL
WILDWOOD AVENUE	136FT NORTH OF ELM ST	DAVIS ST	R-WILAVE	020	R	AC	90	\$6,803	44,387	SLURRY SEAL
								Treatment Total		
								Year 2015 Total		
								Treatment Total		
								Year 2015 Total		
<b>Year: 2016</b>										
EDWARDS DRIVE	BRIDGE ST	END OF PAVEMENT	R-EDWADR	020	R	AC	100	\$128,663	12,002	2" AC OVERLAY W/ DIGOUTS
GUNNERSON LANE	S CDS	HILLTOP DR	R-GUNNLN	010	R	AC	100	\$48,384	12,114	2" AC OVERLAY W/ DIGOUTS
MARTIN DRIVE	RIVERSIDE DR	N CDS	R-MARTDR	010	R	AC	100	\$27,034	12,002	2" AC OVERLAY W/ DIGOUTS
NALLY LANE	WEST END	CREEK ST	R-NALLLN	010	R	AC	100	\$3,645	12,114	2" AC OVERLAY W/ DIGOUTS
								Treatment Total		
CHERRY LANE	MONUMENT RD	ORCHARD PL	R-CHERLN	010	R	AC	100	\$52,385	9,024	RECONSTRUCT SURFACE (4" AC)

\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
DIXIE STREET	WILDWOOD AVE	3RD AVE	R-DIXIST	010	R	AC	100	\$53,026	9,024	RECONSTRUCT SURFACE (4" AC)
DIXIE STREET	4TH AVE	DAVIS ST	R-DIXIST	030	R	AC	100	\$26,226	9,024	RECONSTRUCT SURFACE (4" AC)
EDWARDS DRIVE	WILDWOOD AVE	BRIDGE ST	R-EDWADR	010	R	AC	100	\$31,652	9,024	RECONSTRUCT SURFACE (4" AC)
								Treatment Total	\$163,289	
WILDWOOD AVENUE	DAVIS ST	PAINTER ST	R-WILAVE	030	R	AC	89	\$8,380	45,702	SLURRY SEAL
WILDWOOD AVENUE	PAINTER ST	HIGHWAY 101 NB ON RAMP	R-WILAVE	040	R	AC	89	\$10,455	45,702	SLURRY SEAL
								Treatment Total	\$18,835	
								Year 2016 Total	\$389,850	

**Year: 2017**

DAVIS STREET	IRELAND ST	RIGBY AVE	R-DAVIST	020	R	AC	100	\$77,453	11,411	2" AC OVERLAY W/ DIGOUTS
PACIFIC AVENUE	MONUMENT AVE	KELLY ST	R-PACAVE	010	R	AC	100	\$83,410	11,411	2" AC OVERLAY W/ DIGOUTS
WEST DAVIS STREET	PACIFIC AVE	WILDWOOD AVE	R-WDAVIST	010	R	AC	100	\$41,326	11,411	2" AC OVERLAY W/ DIGOUTS
								Treatment Total	\$202,189	
EEOLOA AVENUE	N PACIFIC DR	SCENIC WAY	R-EELAVE	020	R	AC	100	\$77,266	8,594	RECONSTRUCT SURFACE (4" AC)
ELM STREET	PACIFIC AVE	WILDWOOD AVE	R-ELMST	010	R	AC	100	\$33,499	8,594	RECONSTRUCT SURFACE (4" AC)
RIVER STREET	OGLE AVE	BELLEVIEW AVE	R-RIVEST	010	R	AC	100	\$26,289	8,594	RECONSTRUCT SURFACE (4" AC)
								Treatment Total	\$137,054	
								Year 2017 Total	\$339,243	

**Year: 2018**

EEOLOA AVENUE	WEST CDS	N PACIFIC DR	R-EELAVE	010	R	AC	100	\$87,744	10,953	2" AC OVERLAY W/ DIGOUTS
								Treatment Total	\$87,744	
EEOLOA AVENUE	SCENIC WAY	FERN ST	R-EELAVE	030	R	AC	100	\$100,281	8,185	RECONSTRUCT SURFACE (4" AC)
FERN STREET	EEOLOA AVE	RIVERSIDE DR	R-FERNST	010	R	AC	100	\$63,686	8,185	RECONSTRUCT SURFACE (4" AC)

\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
IRELAND AVENUE	CENTER ST	PAINTER ST	R-IREAVE	020	R	AC	100	\$60,579	8,185	RECONSTRUCT SURFACE (4" AC)
RIO DELL AVENUE	W CENTER ST	TOWNSEND ST	R-RIDAVE	010	R	AC	100	\$59,490	8,185	RECONSTRUCT SURFACE (4" AC)
Treatment Total								\$284,036		
CHASE AVENUE	CENTER ST	PAINTER ST	R-CHAAVE	010	R	AC/AC	88	\$1,349	43,710	SLURRY SEAL
PAINTER STREET	87' W CHASE AVE	258' E CHASE AVE	R-PAINST	025	R	AC/AC	88	\$1,797	43,710	SLURRY SEAL
PAINTER STREET	5' W BUFF PLACE	215' E CURTIS LANE	R-PAINST	050	R	AC/AC	88	\$2,612	43,710	SLURRY SEAL
WEST CENTER STREET	PACIFIC AVE	RIO DELL AVE	R-WCENST	010	R	AC/AC	88	\$1,315	43,710	SLURRY SEAL
WEST PAINTER STREET	50' W RIO DELL AVE	62' E RIO DELL AVE	R-WPAINST	030	R	AC/AC	88	\$369	43,710	SLURRY SEAL
Treatment Total								\$7,442		
Year 2018 Total								\$379,222		

Year: 2019

IRELAND AVENUE	DAVIS ST	CENTER ST	R-IREAVE	010	R	AC	100	\$171,670	7,795	RECONSTRUCT SURFACE (4" AC)
MONUMENT ROUD	S SEQUOIA AVE	WILDWOOD AVE	R-MONURD	040	R	AC	100	\$106,259	7,795	RECONSTRUCT SURFACE (4" AC)
ORCHARD STREET	MONUMENT RD	ORCHARD PL	R-ORCHST	010	R	AC	100	\$87,706	7,795	RECONSTRUCT SURFACE (4" AC)
WEST PAINTER STREET	PACIFIC AVE	50' W RIO DELL AVE	R-WPAINST	020	R	AC	100	\$23,483	7,795	RECONSTRUCT SURFACE (4" AC)
Treatment Total								\$389,118		
Year 2019 Total								\$389,118		

Year: 2020

ELKO STREET	WILDWOOD AVE	2ND AVE	R-ELKOST	010	R	AC	100	\$38,389	8,322	2" AC OVERLAY W/ DIGOUTS
PAINTER STREET	IRELAND ST	CENTER DR	R-PAINST	030	R	AC	100	\$61,721	8,288	2" AC OVERLAY W/ DIGOUTS
Treatment Total								\$100,110		
OGLE AVENUE	BELLEVIEW AVE	TOLMAN PL	R-OGLAVE	010	R	AC	100	\$139,465	7,424	RECONSTRUCT SURFACE (4" AC)
SPRING STREET	OGLE AVE	BELLEVIEW AVE	R-SPRIST	010	R	AC	100	\$32,489	7,424	RECONSTRUCT SURFACE (4" AC)
VIEW STREET	DOUGLAS ST	KELLEY ST	R-VIEWST	010	R	AC	100	\$34,733	7,424	RECONSTRUCT SURFACE (4" AC)

\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
WEST TOWNSEND STREET	RIO DELL AVE	PACIFIC AVE	R-WTOWST	010	R	AC	100	\$36,641	7,424	RECONSTRUCT SURFACE (4" AC)
								Treatment Total	\$243,328	
2ND AVENUE	ELKO ST	DAVIS ST	R-2NDAVE	030	R	AC	87	\$773	40,216	SLURRY SEAL
3RD AVENUE	BERKELEY ST	N END	R-3RDAVE	020	R	AC	84	\$686	43,397	SLURRY SEAL
ALPINE	SOUTH END	MONUMENT RD	R-ALPINE	010	R	AC	87	\$400	40,216	SLURRY SEAL
BELLEVUE AVENUE	1116 E/O RIVER ST	RIVER ST	R-BELAVE	015	RMa C	AC	87	\$8,813	52,994	SLURRY SEAL
BRIDGE STREET	WILDWOOD AVE	EDWARDS DR	R-BRIDST	010	R	AC	88	\$1,543	39,646	SLURRY SEAL
CENTER STREET	IRELAND ST	EAST CDS	R-CENTST	020	R	AC	88	\$732	39,646	SLURRY SEAL
CREEK STREET	SOUTH END	NALLY LN	R-CREEST	010	R	AC	88	\$889	39,646	SLURRY SEAL
DAVIS STREET	WILDWOOD AVE	IRELAND ST	R-DAVIST	010	R	AC	88	\$10,771	39,646	SLURRY SEAL
DAVIS STREET	RIGBY AVE	EAST END	R-DAVIST	030	R	AC	88	\$8,790	39,646	SLURRY SEAL
RIVERSIDE DRIVE	FERN ST	NW CDS	R-RIVEDR	030	R	AC	88	\$7,212	39,646	SLURRY SEAL
ROSE LANE	MONUMENT RD	N END	R-ROSELN	010	R	AC	84	\$581	43,125	SLURRY SEAL
								Treatment Total	\$41,190	
								Year 2020 Total	\$384,628	

Year: 2021

1ST AVENUE	BERKELEY ST	COLUMBUS ST	R-1STAVE	020	R	AC	100	\$51,123	8,043	2" AC OVERLAY W/ DIGOUTS
CURTIS LANE	PAINTER ST	NORTH END	R-CURTLN	010	R	AC	100	\$49,692	8,043	2" AC OVERLAY W/ DIGOUTS
PAINTER STREET	WILDWOOD AVE	87' W CHASE AVE	R-PAINST	010	R	AC	100	\$60,319	8,101	2" AC OVERLAY W/ DIGOUTS
PAINTER STREET	258' E CHASE AVE	IRELAND ST	R-PAINST	020	R	AC	100	\$52,852	8,101	2" AC OVERLAY W/ DIGOUTS
								Treatment Total	\$213,986	
1ST AVENUE	COLUMBUS ST	ELKO ST	R-1STAVE	030	R	AC	84	\$4,617	41,014	SLURRY SEAL
2ND AVENUE	ATLANTA ST	COLUMBUS ST	R-2NDAVE	010	R	AC	79	\$7,116	42,345	SLURRY SEAL
ASH STREET	PACIFIC AVE	WILDWOOD AVE	R-ASHST	010	R	AC	85	\$4,142	40,701	SLURRY SEAL
ATLANTA STREET	1ST AVE	2ND AVE	R-ATLAST	010	R	AC	88	\$630	37,758	SLURRY SEAL
COLUMBUS STREET	WILDWOOD AVE	3RD AVE	R-COLUST	010	R	AC	83	\$4,835	41,552	SLURRY SEAL
DOUGLAS STREET	VIEW AVE	PACIFIC ST	R-DOUGST	020	R	AC	84	\$1,668	41,014	SLURRY SEAL
GUNNERSON LANE	HILLTOP DR	DAVIS ST	R-GUNNLN	020	R	AC	88	\$5,296	37,758	SLURRY SEAL

\*\* - Treatment from Project Selection



Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
MILLER COURT	S CDS	RIVERSIDE DR	R-MILLCT	010	R	AC	83	\$5,067	41,805	SLURRY SEAL
MONUMENT ROUD	WEST CITY LIMIT	CHERRY LN	R-MONURD	010	R	AC	84	\$6,821	41,240	SLURRY SEAL
PACIFIC AVENUE	W CENTER ST	BELLEVIEW AVE	R-PACAVE	040	R	AC	88	\$6,824	37,758	SLURRY SEAL
RIO DELL AVENUE	TOWNSEND ST	BUTCHER ST	R-RIDAVE	020	R	AC	85	\$972	40,163	SLURRY SEAL
RIGBY AVENUE	S END	DAVIS ST	R-RIGAVE	010	R	AC	88	\$6,633	37,758	SLURRY SEAL
TYME COURT	W CDS	MILLER CT	R-TYMECT	010	R	AC	83	\$709	41,552	SLURRY SEAL
WEST PAINTER STREET	62' E RIO DELL AVE	WILDWOOD AVE	R-WPAINST	040	R	AC	87	\$381	38,301	SLURRY SEAL
								Treatment Total	\$55,711	
								Year 2021 Total	\$269,697	
								Grand Total	\$3,656,399	

**Scenario 3. Unconstrained Needs (\$4.7M over ten years)**

## Scenarios - Sections Selected for Treatment

Interest: 5.00%

Inflation: 5.00%

Printed: 01/06/2012

Scenario: Rio Dell - Needs (Unconstrained)

Year	Budget	PM Amt	Year	Budget	PM Amt	Year	Budget	PM Amt
2012	\$2,763,316	\$109,782	2013	\$337,466	\$0	2014	\$172,426	\$0
2015	\$243,238	\$0	2016	\$239,378	\$0	2017	\$297,694	\$0
2018	\$108,641	\$7,442	2019	\$31,987	\$31,987	2020	\$511,273	\$303,381
2021	\$25,635	\$25,635						

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
<b>Year: 2012</b>										
BELLEVUE AVENUE	WILDWOOD AVE	1116 E/O RIVER ST	R-BELAVE	010	RMa C	AC	100	\$157,202	14,268	2.5" AC OVERLAY W/ DIGOUTS
BELLEVUE AVENUE	1116 E/O RIVER ST	RIVER ST	R-BELAVE	015	RMa C	AC	100	\$131,217	14,268	2.5" AC OVERLAY W/ DIGOUTS
BELLEVUE AVENUE	SPRING ST	WOODLAND AVE	R-BELAVE	030	RMa C	AC	100	\$79,210	14,486	2.5" AC OVERLAY W/ DIGOUTS
BELLEVUE AVENUE	WOODLAND AVE	WEST CITY LIMIT	R-BELAVE	035	RMa C	AC	100	\$72,149	14,486	2.5" AC OVERLAY W/ DIGOUTS
<b>Treatment Total</b>								<b>\$439,778</b>		
BRIDGE STREET	WILDWOOD AVE	EDWARDS DR	R-BRIDST	010	R	AC	100	\$15,581	13,836	2" AC OVERLAY W/ DIGOUTS
CENTER STREET	IRELAND ST	EAST CDS	R-CENTST	020	R	AC	100	\$7,392	13,836	2" AC OVERLAY W/ DIGOUTS
CREEK STREET	SOUTH END	NALLY LN	R-CREEST	010	R	AC	100	\$8,976	12,930	2" AC OVERLAY W/ DIGOUTS
DAVIS STREET	WILDWOOD AVE	IRELAND ST	R-DAVIST	010	R	AC	100	\$108,787	14,642	2" AC OVERLAY W/ DIGOUTS
DAVIS STREET	RIGBY AVE	EAST END	R-DAVIST	030	R	AC	100	\$102,045	15,136	2" AC OVERLAY W/ DIGOUTS
EEOA AVENUE	WEST CDS	N PACIFIC DR	R-EELAVE	010	R	AC	100	\$56,961	14,642	2" AC OVERLAY W/ DIGOUTS
PACIFIC AVENUE	W CENTER ST	BELLEVUE AVE	R-PACAVE	040	R	AC	100	\$65,637	14,383	2" AC OVERLAY W/ DIGOUTS
PAINTER STREET	CENTER DR	5' W BLUFF PLACE	R-PAINST	040	R	AC	100	\$39,318	13,263	2" AC OVERLAY W/ DIGOUTS
PAINTER STREET	215' E CURTIS LANE	E END	R-PAINST	060	R	AC	100	\$68,806	13,263	2" AC OVERLAY W/ DIGOUTS

\*\* - Treatment from Project Selection

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment	
RIGBY AVENUE	S END	DAVIS ST	R-RIGAVE	010	R	AC	100	\$63,805	14,383	2" AC OVERLAY W/ DIGOUTS	
RIVERSIDE DRIVE	PAINTER ST	EAGLE PRAIRIE RD	R-RIVEDR	010	R	AC	100	\$44,707	12,930	2" AC OVERLAY W/ DIGOUTS	
RIVERSIDE DRIVE	FERN ST	NW CDS	R-RIVEDR	030	R	AC	100	\$83,730	14,860	2" AC OVERLAY W/ DIGOUTS	
SIDE STREET	PACIFIC AVE	WILDWOOD AVE	R-SIDEST	010	R	AC	100	\$54,135	12,608	2" AC OVERLAY W/ DIGOUTS	
								Treatment Total		\$719,880	
BELLEVIEW AVENUE	RIVER RD	SPRING ST	R-BELAVE	020	R Ma C	AC	100	\$102,044	8,869	RECONSTRUCT SURFACE (6" AC)	
								Treatment Total		\$102,044	
2ND AVENUE	COLUMBUS ST	ELKO ST	R-2NDAVE	020	R	AC	100	\$109,982	10,969	RECONSTRUCT SURFACE (4" AC)	
2ND AVENUE	ELKO ST	DAVIS ST	R-2NDAVE	030	R	AC	100	\$12,469	10,969	RECONSTRUCT SURFACE (4" AC)	
ALPINE	SOUTH END	MONUMENT RD	R-ALPINE	010	R	AC	100	\$6,442	10,969	RECONSTRUCT SURFACE (4" AC)	
BUTCHER STREET	PACIFIC AVE	RIO DELL AVE	R-BUTCST	010	R	AC	100	\$21,917	10,969	RECONSTRUCT SURFACE (4" AC)	
DIXIE STREET	WILDWOOD AVE	3RD AVE	R-DIXIST	010	R	AC	100	\$43,624	10,969	RECONSTRUCT SURFACE (4" AC)	
DIXIE STREET	4TH AVE	DAVIS ST	R-DIXIST	030	R	AC	100	\$21,576	10,969	RECONSTRUCT SURFACE (4" AC)	
ELM STREET	PACIFIC AVE	WILDWOOD AVE	R-ELMST	010	R	AC	100	\$26,247	10,969	RECONSTRUCT SURFACE (4" AC)	
FERN STREET	EEOA AVE	RIVERSIDE DR	R-FERNST	010	R	AC	100	\$47,523	10,969	RECONSTRUCT SURFACE (4" AC)	
IRELAND AVENUE	DAVIS ST	CENTER ST	R-IREAVE	010	R	AC	100	\$122,003	10,969	RECONSTRUCT SURFACE (4" AC)	
IRELAND AVENUE	CENTER ST	PAINTER ST	R-IREAVE	020	R	AC	100	\$45,205	10,969	RECONSTRUCT SURFACE (4" AC)	
OGLE AVENUE	BELLEVIEW AVE	TOLMAN PL	R-OGLAVE	010	R	AC	100	\$94,395	10,969	RECONSTRUCT SURFACE (4" AC)	
OGLE AVENUE	TOLMAN PL	RIVER RD	R-OGLAVE	020	R	AC	100	\$95,274	10,969	RECONSTRUCT SURFACE (4" AC)	
ORCHARD PLACE	CHERRY LN	ORCHARD ST	R-ORCHPL	010	R	AC	100	\$10,478	10,969	RECONSTRUCT SURFACE (4" AC)	
RIO DELL AVENUE	W CENTER ST	TOWNSEND ST	R-RIDAVE	010	R	AC	100	\$44,392	10,969	RECONSTRUCT SURFACE (4" AC)	
RIGBY AVENUE	DAVIS ST	CENTER ST	R-RIGAVE	020	R	AC	100	\$99,917	10,969	RECONSTRUCT SURFACE (4" AC)	

\*\* - Treatment from Project Selection  
 Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
RIVER STREET	OGLE AVE	BELLEVIEW AVE	R-RIVEST	010	R	AC	100	\$20,598	10,969	RECONSTRUCT SURFACE (4" AC)
SPRING STREET	OGLE AVE	BELLEVIEW AVE	R-SPRIST	010	R	AC	100	\$21,990	10,969	RECONSTRUCT SURFACE (4" AC)
VIEW STREET	DOUGLAS ST	KELLEY ST	R-VIEWST	010	R	AC	100	\$23,509	10,969	RECONSTRUCT SURFACE (4" AC)
WILDWOOD AVENUE	BRIDGE ST	CEDAR ST	R-WILAVE	010	R	AC	100	\$274,392	10,969	RECONSTRUCT SURFACE (4" AC)
WILDWOOD AVENUE	CEDAR ST	136FT N/O ELM ST	R-WILAVE	015	R	AC	100	\$202,554	10,969	RECONSTRUCT SURFACE (4" AC)
WEST PAINTER STREET	PACIFIC AVE	50' W RIO DELL AVE	R-WPAINST	020	R	AC	100	\$16,689	10,969	RECONSTRUCT SURFACE (4" AC)
WEST PAINTER STREET	62' E RIO DELL AVE	WILDWOOD AVE	R-WPAINST	040	R	AC	100	\$5,856	10,969	RECONSTRUCT SURFACE (4" AC)
WEST TOWNSEND STREET	RIO DELL AVE	PACIFIC AVE	R-WTOWST	010	R	AC	100	\$24,800	10,969	RECONSTRUCT SURFACE (4" AC)
								Treatment Total	\$1,391,832	
1ST AVENUE	BERKELEY ST	COLUMBUS ST	R-1STAVE	020	R	AC	83	\$2,209	64,909	SLURRY SEAL
1ST AVENUE	COLUMBUS ST	ELKO ST	R-1STAVE	030	R	AC	91	\$2,976	49,079	SLURRY SEAL
2ND AVENUE	ATLANTA ST	COLUMBUS ST	R-2NDAVE	010	R	AC	84	\$4,587	63,697	SLURRY SEAL
3RD AVENUE	MEADOW BRIDGE DR	BERKELEY ST	R-3RDAVE	010	R	AC	94	\$1,007	31,720	SLURRY SEAL
3RD AVENUE	BERKELEY ST	N END	R-3RDAVE	020	R	AC	88	\$464	56,454	SLURRY SEAL
3RD AVENUE	COLUMBUS ST	DAVIS ST	R-3RDAVE	030	R	AC	94	\$3,764	31,693	SLURRY SEAL
4TH AVENUE	EAST END OF PAVEMENT	DAVIS ST	R-4THAVE	010	R	AC	94	\$2,193	31,693	SLURRY SEAL
ASH STREET	PACIFIC AVE	WILDWOOD AVE	R-ASHST	010	R	AC	91	\$2,670	46,188	SLURRY SEAL
BIRCH STREET	PACIFIC AVE	SEQUOIA AVE	R-BIRCST	010	R	AC	92	\$1,906	43,345	SLURRY SEAL
CENTER STREET	WILDWOOD AVE	IRELAND AVE	R-CENTST	010	R	AC	92	\$6,514	43,345	SLURRY SEAL
COLUMBUS STREET	WILDWOOD AVE	3RD AVE	R-COLUST	010	R	AC	89	\$3,117	54,132	SLURRY SEAL
CURTIS LANE	PAINTER ST	NORTH END	R-CURTLN	010	R	AC	83	\$2,147	64,909	SLURRY SEAL
DIXIE STREET	3RD AVE	4TH AVE	R-DIXIST	020	R	AC	93	\$843	33,839	SLURRY SEAL
DOUGLAS STREET	WESTEND	VIEW AVE	R-DOUGST	010	R	AC	94	\$912	31,693	SLURRY SEAL
DOUGLAS STREET	VIEW AVE	PACIFIC ST	R-DOUGST	020	R	AC	91	\$1,075	49,079	SLURRY SEAL
DOUGLAS STREET	PACIFIC ST	WILDWOOD AVE	R-DOUGST	030	R	AC	93	\$2,046	37,898	SLURRY SEAL
ELKO STREET	WILDWOOD AVE	2ND AVE	R-ELKOST	010	R	AC	82	\$1,742	65,409	SLURRY SEAL
GRAYLAND HEIGHTS ROAD	S. SEQUOIA AVE	GRAYLAND HEIGHTS RD	R-GRHERD	010	R	AC	93	\$7,941	33,839	SLURRY SEAL

\*\* - Treatment from Project Selection

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
HILLTOP DRIVE	GUNNERSON LN	RIO DELL PUBLIC WORKS EXT	R-HILLDR	010	R	AC	94	\$1,090	31,693	SLURRY SEAL
KELLEY STREET	VIEW AVE	PACIFIC AVE	R-KELLST	010	R	AC	93	\$952	33,839	SLURRY SEAL
MAY AVENUE	PAINTER DT	NORTH ST	R-MAYAVE	010	R	AC	94	\$2,570	31,693	SLURRY SEAL
MEADOW BRIDGE DRIVE	EDWARDS DR	3RD AVE	R-MEABRDR	010	R	AC	92	\$5,420	40,543	SLURRY SEAL
MILLER COURT	S CDS	RIVERSIDE DR	R-MILLCT	010	R	AC	88	\$3,266	56,454	SLURRY SEAL
MONUMENT ROUD	WEST CITY LIMIT	CHERRY LN	R-MONURD	010	R	AC	90	\$4,397	51,727	SLURRY SEAL
MONUMENT ROUD	CHERRY LN	PACIFIC ST	R-MONURD	020	R	AC	93	\$1,058	33,839	SLURRY SEAL
MONUMENT ROUD	PACIFIC ST	S SEQUOIA AVE	R-MONURD	030	R	AC	93	\$1,642	33,839	SLURRY SEAL
PACIFIC AVENUE	KELLY ST	W DAVIS ST	R-PACAVE	020	R	AC	91	\$2,291	46,188	SLURRY SEAL
PAINTER STREET	WILDWOOD AVE	87' W CHASE AVE	R-PAINST	010	R	AC	82	\$2,606	65,017	SLURRY SEAL
PAINTER STREET	258' E CHASE AVE	IRELAND ST	R-PAINST	020	R	AC	82	\$2,283	65,017	SLURRY SEAL
PAINTER STREET	IRELAND ST	CENTER DR	R-PAINST	030	R	AC	82	\$2,800	65,409	SLURRY SEAL
PINE STREET	W END	MAY AVE	R-PINEST	010	R	AC	94	\$2,513	31,693	SLURRY SEAL
RIO DELL AVENUE	TOWNSEND ST	BUTCHER ST	R-RIDAVE	020	R	AC	92	\$627	40,543	SLURRY SEAL
ROSE LANE	MONUMENT RD	N END	R-ROSELN	010	R	AC	89	\$393	54,132	SLURRY SEAL
SEQUOIA STREET	MONUMENT AVE	CEDAR ST	R-SEQUEST	010	R	AC	93	\$3,502	33,839	SLURRY SEAL
SOUTH SEQUOIA STREET	GRAYLAND HEIGHTS RD	MONUMENT RD	R-SSEQST	010	R	AC	92	\$1,782	43,345	SLURRY SEAL
TYME COURT	W CDS	MILLER CT	R-TYMECT	010	R	AC	89	\$457	54,132	SLURRY SEAL
WEST CENTER STREET	RIO DELL AVE	WILDWOOD AVE	R-WCENST	020	R	AC	94	\$647	31,693	SLURRY SEAL
WILDWOOD AVENUE	136FT NORTH OF ELM ST	DAVIS ST	R-WILAVE	020	R	AC	94	\$5,876	31,693	SLURRY SEAL
WILDWOOD AVENUE	DAVIS ST	PAINTER ST	R-WILAVE	030	R	AC	94	\$6,895	31,693	SLURRY SEAL
WILDWOOD AVENUE	PAINTER ST	HIGHWAY 101 NB ON RAMP	R-WILAVE	040	R	AC	94	\$8,602	31,693	SLURRY SEAL

Treatment Total \$109,782

Year 2012 Total \$2,763,316

Year: 2013

ATLANTA STREET	1ST AVE	2ND AVE	R-ATLAST	010	R	AC	100	\$6,356	11,884	2" AC OVERLAY W/ DIGOUTS
BERKELEY STREET	WILDWOOD AVE	END OF PAVEMENT	R-BERKST	010	R	AC	100	\$47,902	11,555	2" AC OVERLAY W/ DIGOUTS
GUNNERSON LANE	HILLTOP DR	DAVIS ST	R-GUNNLN	020	R	AC	100	\$61,488	13,922	2" AC OVERLAY W/ DIGOUTS

\*\* - Treatment from Project Selection

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
PACIFIC AVENUE	W DAVIS ST	W CENTER ST	R-PACAVE	030	R	AC	100	\$33,136	11,884	2" AC OVERLAY W/ DIGOUTS
								Treatment Total	\$148,882	
RIVERSIDE DRIVE	EAGLE PRAIRIE RD	FERN ST	R-RIVEDR	020	R	AC	100	\$188,584	10,447	RECONSTRUCT SURFACE (4" AC)
								Treatment Total	\$188,584	
								Year 2013 Total	\$337,466	
<b>Year: 2014</b>										
1ST AVENUE	EDWARDS DR	BERKELEY ST	R-1STAVE	010	R	AC	100	\$33,847	13,257	2" AC OVERLAY W/ DIGOUTS
								Treatment Total	\$33,847	
CEDAR STREET	PACIFIC AVE	WILDWOOD AVE	R-CEDAST	010	R	AC	100	\$69,859	9,949	RECONSTRUCT SURFACE (4" AC)
ORCHARD STREET	MONUMENT RD	ORCHARD PL	R-ORCHST	010	R	AC	100	\$68,720	9,949	RECONSTRUCT SURFACE (4" AC)
								Treatment Total	\$138,579	
								Year 2014 Total	\$172,426	
<b>Year: 2015</b>										
FERN STREET	FERN ST	RIVERSIDE DR	R-FERNST	020	R	AC	100	\$39,575	12,618	2" AC OVERLAY W/ DIGOUTS
RIGBY AVENUE	CENTER ST	PAINTER ST	R-RIGAVE	030	R	AC	100	\$19,723	12,618	2" AC OVERLAY W/ DIGOUTS
								Treatment Total	\$59,298	
CENTER STREET	PAINTER ST	RIGBY AVE	R-CENTST	030	R	AC	100	\$63,966	9,475	RECONSTRUCT SURFACE (4" AC)
CHERRY LANE	MONUMENT RD	ORCHARD PL	R-CHERLN	010	R	AC	100	\$49,891	9,475	RECONSTRUCT SURFACE (4" AC)
EEOA AVENUE	N PACIFIC DR	SCENIC WAY	R-EELAVE	020	R	AC	100	\$70,083	9,475	RECONSTRUCT SURFACE (4" AC)
								Treatment Total	\$183,940	
								Year 2015 Total	\$243,238	
<b>Year: 2016</b>										
EDWARDS DRIVE	BRIDGE ST	END OF PAVEMENT	R-EDWADR	020	R	AC	100	\$128,663	12,002	2" AC OVERLAY W/ DIGOUTS

\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
GUNNERSON LANE	S CDS	HILLTOP DR	R-GUNNLN	010	R	AC	100	\$48,384	12,114	2" AC OVERLAY W/ DIGOUTS
MARTIN DRIVE	RIVERSIDE DR	N CDS	R-MARTDR	010	R	AC	100	\$27,034	12,002	2" AC OVERLAY W/ DIGOUTS
NALLY LANE	WEST END	CREEK ST	R-NALLLN	010	R	AC	100	\$3,645	12,114	2" AC OVERLAY W/ DIGOUTS
								Treatment Total	\$207,726	
EDWARDS DRIVE	WILDWOOD AVE	BRIDGE ST	R-EDWADR	010	R	AC	100	\$31,652	9,024	RECONSTRUCT SURFACE (4" AC)
								Treatment Total	\$31,652	
								Year 2016 Total	\$239,378	
<b>Year: 2017</b>										
DAVIS STREET	IRELAND ST	RIGBY AVE	R-DAVIST	020	R	AC	100	\$77,453	11,411	2" AC OVERLAY W/ DIGOUTS
PACIFIC AVENUE	MONUMENT AVE	KELLY ST	R-PACAVE	010	R	AC	100	\$83,410	11,411	2" AC OVERLAY W/ DIGOUTS
WEST DAVIS STREET	PACIFIC AVE	WILDWOOD AVE	R-WDAVIST	010	R	AC	100	\$41,326	11,411	2" AC OVERLAY W/ DIGOUTS
								Treatment Total	\$202,189	
EELOA AVENUE	SCENIC WAY	FERN ST	R-EELAVE	030	R	AC	100	\$95,505	8,594	RECONSTRUCT SURFACE (4" AC)
								Treatment Total	\$95,505	
								Year 2017 Total	\$297,694	
<b>Year: 2018</b>										
MONUMENT ROUD	S SEQUOIA AVE	WILDWOOD AVE	R-MONURD	040	R	AC	100	\$101,199	8,185	RECONSTRUCT SURFACE (4" AC)
								Treatment Total	\$101,199	
CHASE AVENUE	CENTER ST	PAINTER ST	R-CHAAVE	010	R	AC/AC	88	\$1,349	43,710	SLURRY SEAL
PAINTER STREET	87' W CHASE AVE	258' E CHASE AVE	R-PAINST	025	R	AC/AC	88	\$1,797	43,710	SLURRY SEAL
PAINTER STREET	5' W BUFF PLACE	215' E CURTIS LANE	R-PAINST	050	R	AC/AC	88	\$2,612	43,710	SLURRY SEAL
WEST CENTER STREET	PACIFIC AVE	RIO DELL AVE	R-WCENST	010	R	AC/AC	88	\$1,315	43,710	SLURRY SEAL
WEST PAINTER STREET	50' W RIO DELL AVE	62' E RIO DELL AVE	R-WPAINST	030	R	AC/AC	88	\$369	43,710	SLURRY SEAL
								Treatment Total	\$7,442	

\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell



Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
								Year 2018 Total	\$108,641	
<b>Year: 2019</b>										
BELLEVUE AVENUE	WILDWOOD AVE	1116 E/O RIVER ST	R-BELAVE	010	RMa C	AC	87	\$10,055	55,644	SLURRY SEAL
BELLEVUE AVENUE	1116 E/O RIVER ST	RIVER ST	R-BELAVE	015	RMa C	AC	87	\$8,393	55,644	SLURRY SEAL
BELLEVUE AVENUE	RIVER RD	SPRING ST	R-BELAVE	020	RMa C	AC	90	\$3,857	53,759	SLURRY SEAL
BELLEVUE AVENUE	SPRING ST	WOODLAND AVE	R-BELAVE	030	RMa C	AC	87	\$5,067	55,644	SLURRY SEAL
BELLEVUE AVENUE	WOODLAND AVE	WEST CITY LIMIT	R-BELAVE	035	RMa C	AC	87	\$4,615	55,644	SLURRY SEAL
								Treatment Total	\$31,987	
								Year 2019 Total	\$31,987	
<b>Year: 2020</b>										
ELKO STREET	WILDWOOD AVE	2ND AVE	R-ELKOST	010	R	AC	100	\$38,389	8,322	2" AC OVERLAY W/ DIGOUTS
PAINTER STREET	WILDWOOD AVE	87' W CHASE AVE	R-PAINST	010	R	AC	100	\$57,447	8,170	2" AC OVERLAY W/ DIGOUTS
PAINTER STREET	258' E CHASE AVE	IRELAND ST	R-PAINST	020	R	AC	100	\$50,335	8,170	2" AC OVERLAY W/ DIGOUTS
PAINTER STREET	IRELAND ST	CENTER DR	R-PAINST	030	R	AC	100	\$61,721	8,322	2" AC OVERLAY W/ DIGOUTS
								Treatment Total	\$207,892	
1ST AVENUE	BERKELEY ST	COLUMBUS ST	R-1STAVE	020	R	AC	79	\$3,263	44,525	SLURRY SEAL
1ST AVENUE	COLUMBUS ST	ELKO ST	R-1STAVE	030	R	AC	85	\$4,397	42,424	SLURRY SEAL
2ND AVENUE	ATLANTA ST	COLUMBUS ST	R-2NDAVE	010	R	AC	80	\$6,777	44,454	SLURRY SEAL
2ND AVENUE	COLUMBUS ST	ELKO ST	R-2NDAVE	020	R	AC	87	\$6,815	40,216	SLURRY SEAL
2ND AVENUE	ELKO ST	DAVIS ST	R-2NDAVE	030	R	AC	87	\$773	40,216	SLURRY SEAL
3RD AVENUE	MEADOW BRIDGE DR	BERKELEY ST	R-3RDAVE	010	R	AC	87	\$1,487	40,943	SLURRY SEAL
3RD AVENUE	BERKELEY ST	N END	R-3RDAVE	020	R	AC	84	\$686	43,397	SLURRY SEAL
3RD AVENUE	COLUMBUS ST	DAVIS ST	R-3RDAVE	030	R	AC	87	\$5,560	40,942	SLURRY SEAL
4TH AVENUE	EAST END OF PAVEMENT	DAVIS ST	R-4THAVE	010	R	AC	87	\$3,240	40,942	SLURRY SEAL
ALPINE	SOUTH END	MONUMENT RD	R-ALPINE	010	R	AC	87	\$400	40,216	SLURRY SEAL

\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
ASH STREET	PACIFIC AVE	WILDWOOD AVE	R-ASHST	010	R	AC	86	\$3,944	42,104	SLURRY SEAL
BIRCH STREET	PACIFIC AVE	SEQUOIA AVE	R-BIRCST	010	R	AC	86	\$2,816	41,810	SLURRY SEAL
BRIDGE STREET	WILDWOOD AVE	EDWARDS DR	R-BRIDST	010	R	AC	88	\$1,543	39,646	SLURRY SEAL
BUTCHER STREET	PACIFIC AVE	RIO DELL AVE	R-BUTCST	010	R	AC	87	\$1,358	40,216	SLURRY SEAL
CENTER STREET	WILDWOOD AVE	IRELAND AVE	R-CENTST	010	R	AC	86	\$9,624	41,810	SLURRY SEAL
CENTER STREET	IRELAND ST	EAST CDS	R-CENTST	020	R	AC	88	\$732	39,646	SLURRY SEAL
COLUMBUS STREET	WILDWOOD AVE	3RD AVE	R-COLUST	010	R	AC	84	\$4,605	43,125	SLURRY SEAL
CREEK STREET	SOUTH END	NALLY LN	R-CREEST	010	R	AC	88	\$889	39,646	SLURRY SEAL
CURTIS LANE	PAINTER ST	NORTH END	R-CURTLN	010	R	AC	79	\$3,172	44,525	SLURRY SEAL
DAVIS STREET	WILDWOOD AVE	IRELAND ST	R-DAVIST	010	R	AC	88	\$10,771	39,646	SLURRY SEAL
DAVIS STREET	RIGBY AVE	EAST END	R-DAVIST	030	R	AC	88	\$8,790	39,646	SLURRY SEAL
DIXIE STREET	WILDWOOD AVE	3RD AVE	R-DIXIST	010	R	AC	87	\$2,703	40,216	SLURRY SEAL
DIXIE STREET	3RD AVE	4TH AVE	R-DIXIST	020	R	AC	87	\$1,245	41,062	SLURRY SEAL
DIXIE STREET	4TH AVE	DAVIS ST	R-DIXIST	030	R	AC	87	\$1,337	40,216	SLURRY SEAL
DOUGLAS STREET	WESTEND	VIEW AVE	R-DOUGST	010	R	AC	87	\$1,346	40,942	SLURRY SEAL
DOUGLAS STREET	VIEW AVE	PACIFIC ST	R-DOUGST	020	R	AC	85	\$1,588	42,424	SLURRY SEAL
DOUGLAS STREET	PACIFIC ST	WILDWOOD AVE	R-DOUGST	030	R	AC	86	\$3,022	41,338	SLURRY SEAL
EEOA AVENUE	WEST CDS	N PACIFIC DR	R-EELAVE	010	R	AC	88	\$5,640	39,646	SLURRY SEAL
ELM STREET	PACIFIC AVE	WILDWOOD AVE	R-ELMST	010	R	AC	87	\$1,627	40,216	SLURRY SEAL
FERN STREET	EEOA AVE	RIVERSIDE DR	R-FERNST	010	R	AC	87	\$2,945	40,216	SLURRY SEAL
GRAYLAND HEIGHTS ROAD	S. SEQUOIA AVE	GRAYLAND HEIGHTS RD	R-GRHERD	010	R	AC	87	\$11,732	41,062	SLURRY SEAL
HILLTOP DRIVE	GUNNERSON LN	RIO DELL PUBLIC WORKS EXT	R-HILLDR	010	R	AC	87	\$1,610	40,942	SLURRY SEAL
IRELAND AVENUE	DAVIS ST	CENTER ST	R-IREAVE	010	R	AC	87	\$7,559	40,216	SLURRY SEAL
IRELAND AVENUE	CENTER ST	PAINTER ST	R-IREAVE	020	R	AC	87	\$2,801	40,216	SLURRY SEAL
KELLEY STREET	VIEW AVE	PACIFIC AVE	R-KELLST	010	R	AC	87	\$1,406	41,062	SLURRY SEAL
MAY AVENUE	PAINTER DT	NORTH ST	R-MAYAVE	010	R	AC	87	\$3,796	40,942	SLURRY SEAL
MEADOW BRIDGE DRIVE	EDWARDS DR	3RD AVE	R-MEABRDR	010	R	AC	86	\$8,008	41,550	SLURRY SEAL
MILLER COURT	S CDS	RIVERSIDE DR	R-MILLCT	010	R	AC	84	\$4,825	43,397	SLURRY SEAL
MONUMENT ROUD	WEST CITY LIMIT	CHERRY LN	R-MONURD	010	R	AC	85	\$6,496	42,773	SLURRY SEAL
MONUMENT ROUD	CHERRY LN	PACIFIC ST	R-MONURD	020	R	AC	87	\$1,563	41,062	SLURRY SEAL
MONUMENT ROUD	PACIFIC ST	S SEQUOIA AVE	R-MONURD	030	R	AC	87	\$2,425	41,062	SLURRY SEAL
OGLE AVENUE	BELLEVUE AVE	TOLMAN PL	R-OGLAVE	010	R	AC	87	\$5,849	40,216	SLURRY SEAL

\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
OGLE AVENUE	TOLMAN PL	RIVER RD	R-OGLAVE	020	R	AC	87	\$5,903	40,216	SLURRY SEAL
ORCHARD PLACE	CHERRY LN	ORCHARD ST	R-ORCHPL	010	R	AC	87	\$650	40,216	SLURRY SEAL
PACIFIC AVENUE	KELLY ST	W DAVIS ST	R-PACAVE	020	R	AC	86	\$3,385	42,104	SLURRY SEAL
PACIFIC AVENUE	W CENTER ST	BELLEVIEW AVE	R-PACAVE	040	R	AC	88	\$6,499	39,646	SLURRY SEAL
PAINTER STREET	CENTER DR	5' W BLUFF PLACE	R-PAINST	040	R	AC	88	\$3,893	39,646	SLURRY SEAL
PAINTER STREET	215' E CURTIS LANE	E END	R-PAINST	060	R	AC	88	\$6,813	39,646	SLURRY SEAL
PINE STREET	W END	MAY AVE	R-PINEST	010	R	AC	87	\$3,712	40,942	SLURRY SEAL
RIO DELL AVENUE	W CENTER ST	TOWNSEND ST	R-RIDAVE	010	R	AC	87	\$2,751	40,216	SLURRY SEAL
RIO DELL AVENUE	TOWNSEND ST	BUTCHER ST	R-RIDAVE	020	R	AC	86	\$926	41,550	SLURRY SEAL
RIGBY AVENUE	S END	DAVIS ST	R-RIGAVE	010	R	AC	88	\$6,317	39,646	SLURRY SEAL
RIGBY AVENUE	DAVIS ST	CENTER ST	R-RIGAVE	020	R	AC	87	\$6,191	40,216	SLURRY SEAL
RIVERSIDE DRIVE	PAINTER ST	EAGLE PRAIRIE RD	R-RIVEDR	010	R	AC	88	\$4,427	39,646	SLURRY SEAL
RIVERSIDE DRIVE	FERN ST	NW CDS	R-RIVEDR	030	R	AC	88	\$7,212	39,646	SLURRY SEAL
RIVER STREET	OGLE AVE	BELLEVIEW AVE	R-RIVEST	010	R	AC	87	\$1,277	40,216	SLURRY SEAL
ROSE LANE	MONUMENT RD	N END	R-ROSELN	010	R	AC	84	\$581	43,125	SLURRY SEAL
SEQUOIA STREET	MONUMENT AVE	CEDAR ST	R-SEQUEST	010	R	AC	87	\$5,174	41,062	SLURRY SEAL
SIDE STREET	PACIFIC AVE	WILDWOOD AVE	R-SIDEST	010	R	AC	88	\$5,360	39,646	SLURRY SEAL
SPRING STREET	OGLE AVE	BELLEVIEW AVE	R-SPRIST	010	R	AC	87	\$1,363	40,216	SLURRY SEAL
SOUTH SEQUOIA STREET	GRAYLAND HEIGHTS RD	MONUMENT RD	R-SSEQST	010	R	AC	86	\$2,633	41,810	SLURRY SEAL
TYME COURT	W CDS	MILLER CT	R-TYMECT	010	R	AC	84	\$675	43,125	SLURRY SEAL
VIEW STREET	DOUGLAS ST	KELLEY ST	R-VIEWST	010	R	AC	87	\$1,457	40,216	SLURRY SEAL
WEST CENTER STREET	RIO DELL AVE	WILDWOOD AVE	R-WCENST	020	R	AC	87	\$956	40,942	SLURRY SEAL
WILDWOOD AVENUE	BRIDGE ST	CEDAR ST	R-WILAVE	010	R	AC	87	\$17,001	40,216	SLURRY SEAL
WILDWOOD AVENUE	CEDAR ST	136FT N/O ELM ST	R-WILAVE	015	R	AC	87	\$12,550	40,216	SLURRY SEAL
WILDWOOD AVENUE	136FT NORTH OF ELM ST	DAVIS ST	R-WILAVE	020	R	AC	87	\$8,682	40,942	SLURRY SEAL
WILDWOOD AVENUE	DAVIS ST	PAINTER ST	R-WILAVE	030	R	AC	87	\$10,186	40,942	SLURRY SEAL
WILDWOOD AVENUE	PAINTER ST	HIGHWAY 101 NB ON RAMP	R-WILAVE	040	R	AC	87	\$12,708	40,942	SLURRY SEAL
WEST PAINTER STREET	PACIFIC AVE	50' W RIO DELL AVE	R-WPAINST	020	R	AC	87	\$1,034	40,216	SLURRY SEAL
WEST PAINTER STREET	62' E RIO DELL AVE	WILDWOOD AVE	R-WPAINST	040	R	AC	87	\$363	40,216	SLURRY SEAL
WEST TOWNSEND STREET	RIO DELL AVE	PACIFIC AVE	R-WTOWST	010	R	AC	87	\$1,537	40,216	SLURRY SEAL

\*\* - Treatment from Project Selection

Scenarios Criteria: Area ID = R - Rio Dell

Road Name	Begin Location	End Location	Street ID	Section ID	FC	Surface	PCI	Cost	Rating	Treatment
								Treatment Total	\$303,381	
								Year 2020 Total	\$511,273	
Year: 2021										
ATLANTA STREET	1ST AVE	2ND AVE	R-ATLAST	010	R	AC	88	\$630	37,758	SLURRY SEAL
BERKELEY STREET	WILDWOOD AVE	END OF PAVEMENT	R-BERKST	010	R	AC	88	\$4,743	37,758	SLURRY SEAL
GUNNERSON LANE	HILLTOP DR	DAVIS ST	R-GUNNLN	020	R	AC	88	\$5,296	37,758	SLURRY SEAL
PACIFIC AVENUE	W DAVIS ST	W CENTER ST	R-PACAVE	030	R	AC	88	\$3,281	37,758	SLURRY SEAL
RIVERSIDE DRIVE	EAGLE PRAIRIE RD	FERN ST	R-RIVEDR	020	R	AC	87	\$11,685	38,301	SLURRY SEAL
								Treatment Total	\$25,635	
								Year 2021 Total	\$25,635	
								Grand Total	\$4,731,054	