

# **Final Report**

# **2021/2022 Pavement Management Program Update**City of Rio Dell

**December 2022** 



# **City of Rio Dell**

Department of Public Works 675 Wildwood Avenue Rio Dell, CA 95562

# **The Humboldt County Association of Governments**

INCE

Richmond, CA

501 Canal Blvd., Suite I Point Richmond, CA 94804

611 I St Suite B Eureka, CA 95501



# **2021/2022 Pavement Management Program Update**City of Rio Dell

December 2022

#### **Prepared for:**

City of Rio Dell
Department of Public Works
675 Wildwood Avenue
Rio Dell, CA 95562

**Humboldt County Association of Governments** 611 I St Suite B Eureka, CA 95501

MenMurter

Prepared

Debaroti Ghosh, Ph.D.

Project Engineer II

Mahdi Saghafi, Ph.D. Project Engineer I

Mei-Hui Lee, Ph.D. P.E. Associate Engineer

**NCE** 

501 Canal Blvd Suite I Point Richmond, CA 94804 (510) 215-3620

NCE Project No. 599.04.55

#### **Executive Summary**

The Humboldt County Association of Governments (HCAOG) is a Joint Powers Agency composed of the seven incorporated cities (Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, Trinidad), and the County of Humboldt. It is the designated Regional Transportation Planning Agency (RTPA) as well as the Service Authority for Freeway Emergencies (SAFE). As a part of this process, in 2021, HCAOG acquired the services of an engineering consultant, Nichols Consulting Engineers, Chtd. (NCE), to provide professional and technical services preparing pavement management program (PMP) updates for the county and the cities under HCOAG.

This report summarizes the results of the 2021/2022 update for the City of Rio Dell (City) and its purpose is to help educate policy makers about the current condition of the pavement network and the impact of various funding scenarios on future network condition.

The City's pavement network consists of 14.3 centerline miles of streets, which represents an investment of approximately \$14.1 million. In 2022, NCE collected pavement condition data using the Metropolitan Transportation Commission's (MTC) modified ASTM survey procedures. The survey data were entered into the StreetSaver® database, which the City uses as a PMP decision-support tool.

Overall, the City's pavement network is currently in "Good" condition with an average pavement condition index (PCI) of 68. Approximately 61.0 percent of the network is in "Good" condition with 14.1 percent in "Fair" condition and 5.7 percent in "Failed" condition.

Based on the budget needs analysis, City needs to spend \$7.6 million over the next ten years to bring the street network to a condition that can be maintained with ongoing preventive maintenance in the most cost-effective way without major rehabilitation. Three alternative budget scenarios were performed to illustrate the impacts of different funding levels. The following table lists each scenario with its corresponding ten-year budget, the PCI and deferred maintenance at the end of the analysis period. Scenario 1 reflects the condition under current available funding; Scenario 2 presents the funding level needed to maintain the current PCI; and Scenario 3 aims to remove deferred maintenance by end of the analysis period.

CITY OF RIO DELL

**Table E1. Summary of Budget Scenarios** 

Scenario	Description	10-Year Budget (\$M)	2032 PCI	2032 Deferred Maintenance (\$M)
1	Existing Budget of \$58K/Year	0.6	53	10.6
2	Maintain PCI at 68	5.0	68	4.9
3	Best Management Practice	8.2	82	0.0

NCE recommends that the City pursue Scenario 2, which will maintain the existing network PCI at 68 throughout the next decade. This scenario will increase the portion of the network in "Good" condition and slow the increase in deferred maintenance. It will require \$5.0 million over the next ten years.

## **Table of Contents**

1	Introduction and Background	1
2	Network Summary	3
3	Pavement Condition	4
3.1	City's Pavement Condition Index	5
3.2	City's Network Condition Breakdown	5
3.3	PCI Comparison with Neighboring Agencies	7
4	Maintenance and Rehabilitation Strategies	8
5	Budget Analyses	9
5.1	Budget Needs Analysis	10
5.2	Scenario 1: Existing Budget (\$0.6M/10Years)	11
5.3	Scenario 2: Maintain PCI at 68 (\$5.0M/10 Years)	12
5.4		
5.5	Scenario Comparisons	14
6	Conclusion and Recommendations	17
	List of Figures	
Figure	e 1. Examples of Streets with Different PCIs	4
Figure	e 2. Historical Network PCI and Pavement Treated Length since 2009	5
Figure	e 3. Network Condition Breakdown by Functional Classification	6
Figure	e 4. Pavement Condition Breakdown Condition Category	6
Figure	e 5. Comparison of Network PCI to Other HCAOG Agencies	7
Figure	e 6. Costs of Maintaining Pavements Over Time	8
Figure	e 7. PCI vs Deferred Maintenance for Scenario 1	11
Figure	e 8. PCI vs Deferred Maintenance for Scenario 2	12
Figure	e 9. PCI vs Deferred Maintenance for Scenario 3	13
Figure	e 10. Comparison of Annual PCI by Scenario	14
Figure	e 11. Comparison of Annual Deferred Maintenance by Scenario	15
Figure	2 12. Comparison of Pavement Condition Breakdown by Scenario	16

#### **List of Tables**

able 1. Network Summary Statistics	3
able 2. Pavement Condition Breakdown by Functional Class	7
able 3. Summary Results for Budget Needs Analysis	10
able 4. Summary Results for Scenario 1	11
able 5. Summary Results for Scenario 2	12
able 6. Summary Results for Scenario 3	13

## **List of Appendices**

#### Appendix A

Section Description Inventory

#### **Appendix B**

Maintenance and Rehabilitation Decision Tree

#### **Appendix C**

**Budget Need Analysis Results** 

#### **Appendix D**

**Budget Scenario Results** 

#### **Appendix E**

**Pavement Condition Maps** 

#### **Appendix F**

Sections Selected for Treatment - Scenario 1

#### 1 Introduction and Background

In 2021, the Humboldt County Association of Governments (HCAOG) solicited interest among its member agencies in participating in a collaborative region-wide pavement management program (PMP) update. The last region wide PMP update was performed in 2017.

The engineering consultant acquired to provide professional and technical services for the PMP updates in the Humboldt region was Nichols Consulting Engineers, Chtd. (NCE). The eight participating member agencies included the Cities of Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, Trinidad, and the County of Humboldt.

In general, PMPs are "designed to provide objective information and useful data for analysis so that... managers can make more consistent, cost effective, and defensible decisions related to the preservation of a pavement network.1"

The goals of the 2021/2022 update were to:

- Update the existing pavement network inventory to include new streets,
- Perform pavement condition surveys,
- Update historical maintenance records (e.g., previously resurfaced pavements),
- Update the maintenance and rehabilitation decision tree and associated costs,
- Perform budgetary analyses and determine funding needs, and
- Prepare a final PMP report documenting the results of the update.

To update the City's PMP, NCE performed walking condition survey using the Metropolitan Transportation Commission's (MTC) modified<sup>2</sup> ASTM D6433<sup>3</sup> survey procedures for entire City's network. Walking surveys were performed by one or two-person crews to record all pavement distresses. The surveys did not include non-pavement issues such as traffic, safety and road hazards, geometric issues, shoulders, sidewalks, curb and gutters, drainage issues, or immediate maintenance needs. All survey data were entered into the City's StreetSaver® database, and pavement condition index (PCI) calculations were performed. NCE coordinated with

<sup>&</sup>lt;sup>1</sup> AASHTO "Guidelines for Pavement Management Systems". American Association of State Highway and Transportation Officials, Washington, DC, July 1990.

<sup>&</sup>lt;sup>2</sup> PCI Distress Identification Manuals (AC 4th Edition, PCC 3rd Edition), Metropolitan Transportation Commission, San Francisco, CA March 2016.

<sup>&</sup>lt;sup>3</sup> ASTM D6433-18 Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys, ASTM International, West Conshohocken, PA, 2018, www.astm.org.

agency representatives and reviewed and updated the City's decision tree including maintenance and rehabilitation (M&R) strategies and treatment unit costs. A budget needs analysis was then performed, and three budget scenarios were analyzed for the street network.

This report answers the following questions for the City of Rio Dell (City):

- What does the City's pavement network include?
- What is the current condition of the pavement network?
- What are the City's current M&R strategies?
- How much finding is required to perform all needed M&R treatments over the next ten years?
- What effect with the City's existing funding have on the network condition and overall deferred maintenance?
- What effect will other funding levels have on the network condition and deferred maintenance?

#### **2 Network Summary**

The City is responsible for maintaining approximately 14.3 centerline miles of streets (or 113 pavement sections). The network is composed entirely of asphalt concrete (AC) pavement. Table 1 summarizes the street network by functional classification.

**Table 1. Network Summary Statistics** 

Functional Class	Number of Sections	Centerline Miles	Lane Miles	Network Area (%)
Rural Major Collector	5	1.0	2.1	7.3
Residentials	108	13.3	27.0	92.7
Total	113	14.3	29.1	100.0

**The street network replacement cost is estimated to be approximately \$14.1 million.** This can be viewed as the value of the pavement network and is the amount needed to fund a reconstruction of the entire paved network. This is approximately 67 percent more than the estimate provided in 2017 PMP update. The replacement cost is calculated by multiplying the total pavement area by the unit cost of reconstruction of the pavement structure. The unit cost of reconstruction has increased by an average of more than 60 percent for all functional classes since the last update due to changes in treatment strategies and increased material costs. As a result, the replacement cost has increased overall. It does not include related infrastructure assets such as sidewalks, signals, markings, signs, or storm drains.

#### 3 Pavement Condition

Pavement condition is typically quantified using the pavement condition index (PCI), which ranges from 100 (best) to 0 (worst). Pavement condition is affected by the environment, traffic loads and volumes, construction materials, and age. Figure 1 shows examples of streets with varying PCIs.

The PCI scale is divided into four general condition categories. Pavements in "Good" condition have a PCI above 70, pavements in "Fair" condition have a PCI between 50 and 69, pavements in "Poor" condition have a PCI between 25 and 49, and finally pavements in "Failed" condition have a PCI below 25.



Figure 1. Examples of Streets with Different PCIs

A list of all sections in the network along with their attributes, including the PCI at the time of last inspection, is provided in Appendix A. For convenience, two versions are provided – one sorted alphabetically by street name and the other sorted by descending PCI.

#### 3.1 CITY'S PAVEMENT CONDITION INDEX

The current average PCI for the City's network is 68 which falls into the "Fair" conditions category. This value is an area-weighted calculation performed in StreetSaver® and is based on the condition survey performed in 2022. As shown in Figure 2, City has conducted treatments on one-fourth of the network over the past three years and it results a significantly PCI improvements since previous update.

Figure 2 illustrates the City's historical network PCI for the streets. There is a downward trend in pavement condition between 2009 and 2016 while the PCI increased significantly in 2022.

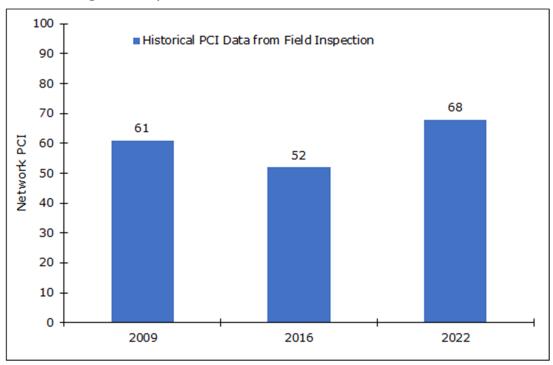


Figure 2. Historical Network PCI and Pavement Treated Length since 2009

#### 3.2 CITY'S NETWORK CONDITION BREAKDOWN

Figure 3 breaks down the current street network PCI by functional classification. The California Road System (CRS) indicates only "Local/Residential" and "Major Collectors" in Rio Dell. Both the residential and major collectors are in "Good" condition. City's residential streets that comprise majority of the network has an PCI of 67. Table 2 and Figure 4 summarize the street network by condition category and functional classification. Approximately 61 percent of the network is in "Good" condition with nearly one-third of street network in "Fair" or "Poor" conditions. The

remaining 5.7 percent of the City's network is in "Failed" condition. Appendix E shows the map of the City's entire network by condition breakdown.

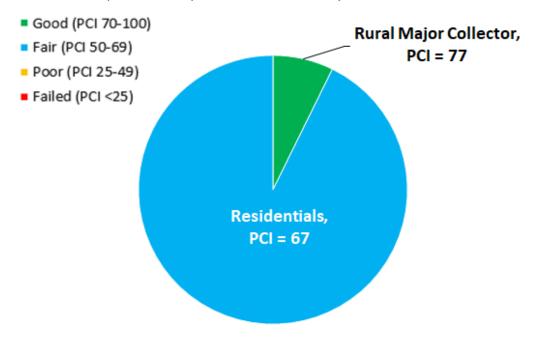


Figure 3. Network Condition Breakdown by Functional Classification

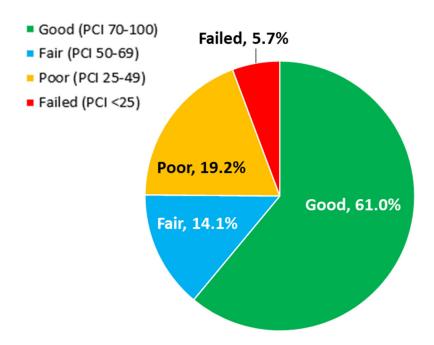


Figure 4. Pavement Condition Breakdown Condition Category

Condition Category	PCI Range	Rural Major Collectors (%)	Residentials (%)	Entire Network (%)
Good	70-100	6.2	57.7	63.9
Fair	50-69	0.0	15.4	15.4
Poor	25-49	1.1	16.6	17.7
Failed	<25	0.0	3.0	3.0
Total	-	7.3	92.7	100.0

Table 2. Pavement Condition Breakdown by Functional Class

#### 3.3 PCI COMPARISON WITH NEIGHBORING AGENCIES

Figure 5 shows the City's average network PCI compared to other HCAOG agencies as well as the statewide average PCI from the 2020 California Statewide Local Streets and Roads Needs Assessment<sup>4</sup>. As illustrated, the City's average network PCI is the highest among the HCAOG agencies and is 2 points greater than the 2020 statewide average.

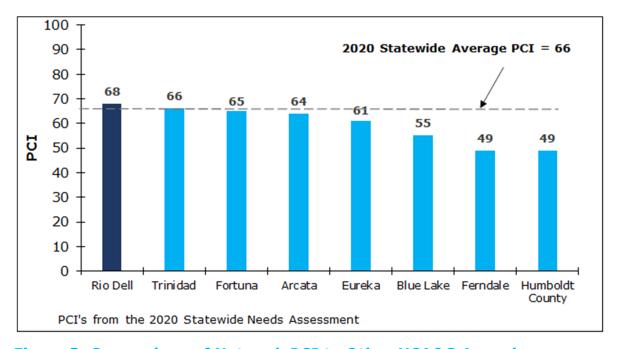


Figure 5. Comparison of Network PCI to Other HCAOG Agencies

<sup>&</sup>lt;sup>4</sup> "California Statewide Local Streets and Roads Needs Assessment 2020 Update". Nichols Consulting Engineers, Chtd., CA, 2021.

#### 4 Maintenance and Rehabilitation Strategies

The City's current M&R strategies include cost-effective preventive treatments. In general, slurry seals will be applied to pavements in "Good" condition; pavements in "Fair" condition will receive a slurry seal with dig-outs or a thin hot mix asphalt (HMA) overlay depending on the presence of the amount of load-related distresses; pavements in "Poor" and "Failed" conditions will receive thick mill and HMA overlay. The City's M&R strategies are formalized into a decision tree<sup>5</sup> (presented in Appendix B), which is instrumental in performing the budget needs analysis and budget scenarios.

Experience and research have shown that it costs much less to maintain pavement in good condition than to repair pavement that has already failed. Figure 6 shows the treatment unit cost for residentials. As shown, by allowing pavements to deteriorate, streets that once cost \$5.25/square yard (SY) to seal may soon cost \$77.75 to overlay. In other words, delaying repairs can significantly increase M&R costs. Note that a slurry seal can be placed on approximately 15 times as many lane miles as those requiring thick HMA overlay for the pavements with failed condition.

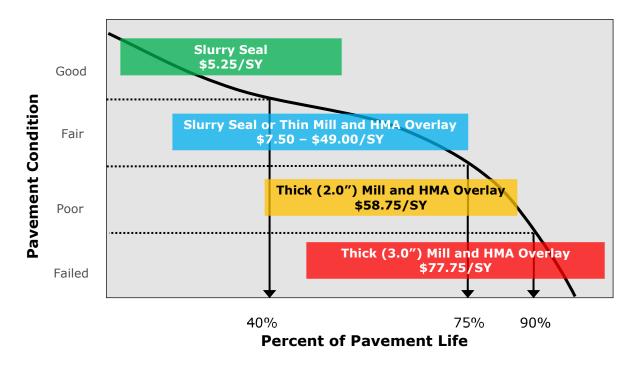


Figure 6. Costs of Maintaining Pavements Over Time

DECEMBER 2022

<sup>&</sup>lt;sup>5</sup> Note: The StreetSaver<sup>®</sup> "Maintenance and Rehabilitation Decision Tree" divides the "Fair" condition category to separate pavements with primarily non-load-related distresses (e.g., longitudinal cracking) from those with load-related distresses (e.g., fatigue cracking).

#### **5** Budget Analyses

Based on the principle that it costs less to maintain streets in good condition than it does to repair those that have failed, cost-effective PMPs employ strategies that eliminate the deferred maintenance<sup>6</sup> and then maintain the network with on-going preventive maintenance. Such strategies bring the network condition to an optimal PCI that can be maintained over time.

The first step in developing such a cost-effective strategy is to determine the total maintenance budget needs of the network. The next step is to conduct alternative budget scenario analyses. In consultation with the City, three funding scenarios were selected for analysis and performed using StreetSaver®:

- Scenario 1: Existing Budget of \$58k/Year

   — This scenario assumes the
   City will spend RMRA funding<sup>7</sup> of approximately \$58,000 per year on
   pavement M&R for the next ten years
- **Scenario 2: Maintain PCI** This scenario aims to maintain the existing network PCI of 68 over the next ten years.
- Scenario 3: Best Management Practice This scenario aims to achieve a
  maintainable network over the next ten years by eliminating the deferred
  maintenance by the end of the analysis period.

The budget needs analysis and budget scenarios are presented in the following subsections. The detailed results of the budget needs analysis are provided in Appendix C. The detailed results of the budget scenarios are provided in Appendix D. Additionally, maps illustrating the current pavement condition and the projected 2032 pavement condition for each scenario are provided in Appendix E.

<sup>7</sup> It was mentioned in 2017 PMP update that the City will start receiving RMRA (Road Maintenance and Rehabilitation Account) funding starting FY 2018/19

<sup>&</sup>lt;sup>6</sup> Deferred maintenance is M&R not performed due to insufficient funding.

BUDGET ANALYSES CITY OF RIO DELL

#### **5.1** BUDGET NEEDS ANALYSIS

The total budget needs for the network represents the cost associated with performing M&R treatments at the optimal time – optimal meaning the PCI is maximized and the cost is minimized – over the analysis period. This was done by performing a budget needs analysis in StreetSaver® with an inflation rate of four percent for an analysis period of ten years.

Table 3 shows the results of the budget needs analysis. The total budget needs for the City for the next ten years is estimated to be \$7.6 million. Of the total budget needs, approximately \$1.7 million (22.8 percent) is devoted to preventive maintenance, while the rest is allocated for more costly rehabilitation and reconstruction treatments.

Table 3. Summary Results for Budget Needs Analysis

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Budget Needs (\$K)	4,746	327	169	6	271	70	73	116	1,193	594	7,564
Treated PCI	89	86	85	83	82	81	80	78	81	82	NA
Untreated PCI	68	66	64	62	60	58	56	54	52	50	NA

If the City follows this ideal, cost-effective strategy, the average network PCI will immediately increase as a large amount of deferred maintenance is addressed in the first year, and then stabilize in the low-80s. This type of budget, that addresses all the deferred maintenance in the first year, is known as front-loaded. Alternatively, if no maintenance is performed over the next ten years, the network PCI will drop to 50 by 2032.

BUDGET ANALYSES CITY OF RIO DELL

#### 5.2 Scenario 1: Existing Budget (\$0.6M/10YEARS)

This scenario assumes the City will have approximately \$58,000 per year for pavement M&R for the next ten years. Since the City has a very small annual budget, the StreetSaver® program was not able to spend the entire amount of \$58,000 because of individual high project cost and lack of eligible projects within small amount. Consequently, the budgets that was not used in each fiscal year was accumulated to the following years. As shown in Table 4 and Figure 7, the network PCI will decrease to 53 and the deferred maintenance will be more than double by the end of 2032. Additionally, 24.3 percent of the network will be in "Failed" condition with less than half of the network in "Good" condition. A list of sections selected for treatment are provided in Appendix F.

Table 4. Summary Results for Scenario 1

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Budget (\$K)	57	56	56	57	53	54	64	60	60	60	577
Deferred Maintenance (\$M)	4.7	5.6	6.0	6.4	7.0	7.4	8.0	8.6	9.6	10.6	NA
Treated PCI	68	67	65	63	62	60	58	57	55	53	NA

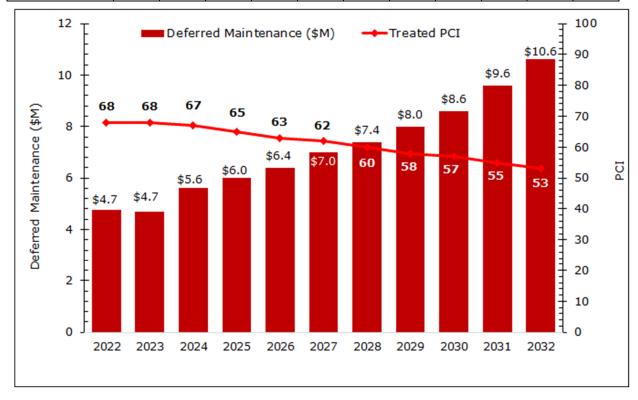


Figure 7. PCI vs Deferred Maintenance for Scenario 1

#### 5.3 SCENARIO 2: MAINTAIN PCI AT 68 (\$5.0M/10 YEARS)

This scenario aims to maintain the existing network PCI at 68 over the analysis period. As shown in Table 5 and Figure 8, the network PCI will be maintained at or around 68 throughout the analysis period and the financial commitment required to accomplish this goal is \$5.0 million over ten years. This will result in 77.6 percent of the network being in "Good" condition with 17.5 percent in "Failed" condition. The deferred maintenance will decrease to approximately \$4.0 by 2028 and will be maintained at approximately \$4.0 million for the rest of analysis period.

Table 5. Summary Results for Scenario 2

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Budget (\$K)	100	359	488	598	585	558	612	557	559	596	5,011
Deferred Maintenance (\$M)	4.6	5.2	5.2	5.0	5.0	4.8	4.7	4.7	4.7	4.9	NA
Treated PCI	68	68	68	68	68	68	68	68	68	68	NA

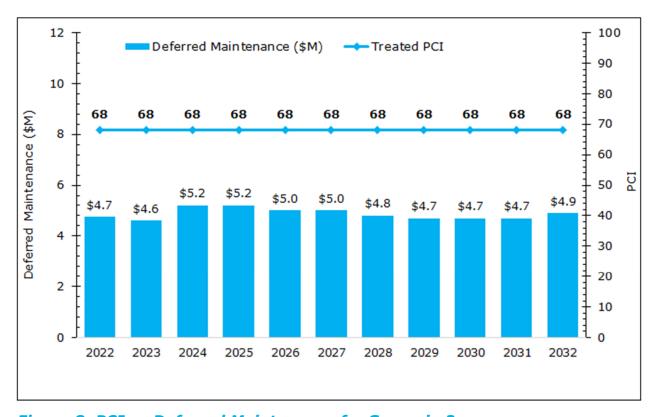


Figure 8. PCI vs Deferred Maintenance for Scenario 2

BUDGET ANALYSES CITY OF RIO DELL

#### 5.4 SCENARIO 3: BEST MANAGEMENT PRACTICE (\$8.2M/10 YEARS)

This scenario aims to eliminate the deferred maintenance over the analysis period. As shown in Table 6 and Figure 9, the financial commitment required for this goal is \$8.2 million over ten years. This will result in 95.1 percent of the network in "Good" condition. The City will not have any streets in "Poor" or "Failed" condition. The network PCI will increase gradually to 82 by the end of analysis period. The deferred maintenance will be eliminated by the year of 2031.

Table 6. Summary Results for Scenario 3

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Budget (\$K)	908	1,085	1,096	1,091	1,043	832	625	704	643	162	8,189
Deferred Maintenance (\$M)	3.8	3.7	2.9	2.2	1.6	1.0	0.6	0.0	0.0	0.0	NA
Treated PCI	72	74	76	77	79	80	80	82	83	82	NA

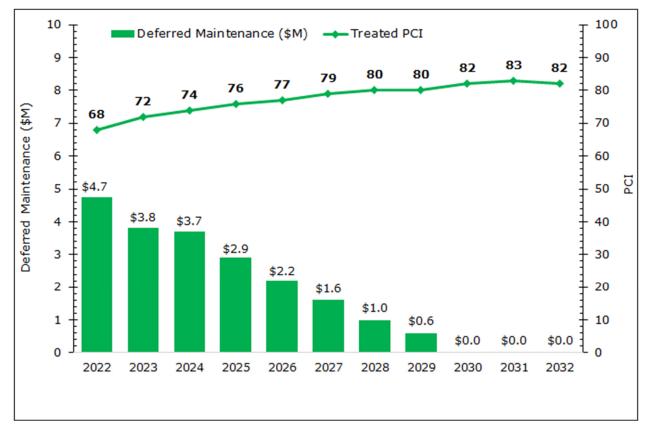


Figure 9. PCI vs Deferred Maintenance for Scenario 3

#### 5.5 SCENARIO COMPARISONS

Figure 10 graphically compares the annual changes in PCI for each of the three scenarios. As previously noted, the average network PCI will decrease to 53 in Scenario 1, be maintained at 68 in Scenario 2 and will increase to 82 in Scenario 3.

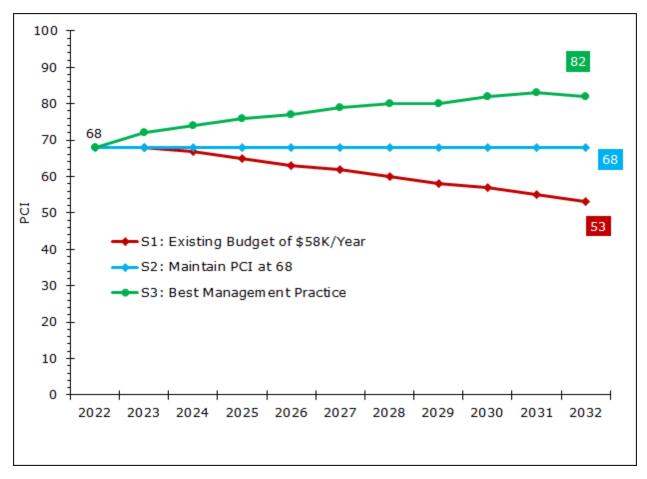


Figure 10. Comparison of Annual PCI by Scenario

Figure 11 illustrates the changes in deferred maintenance over time for each scenario. For Scenario 1, the deferred maintenance will be more than double as \$10.6 million. In Scenario 2 it will be maintained at current level around \$4.7 to \$4.9 million. In Scenario 3, the deferred maintenance will be eliminated by 2030.

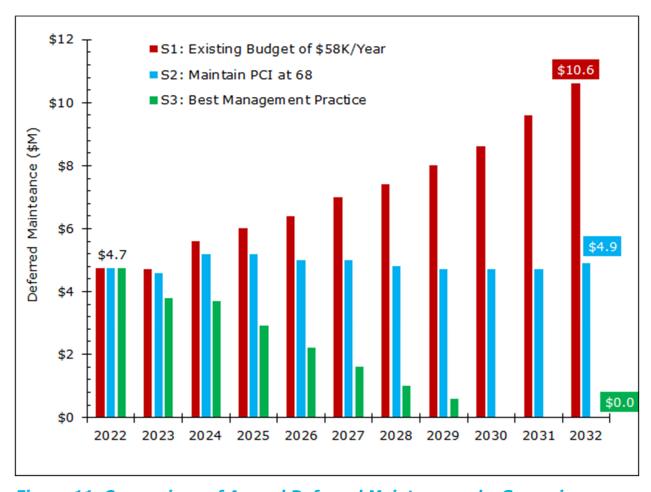


Figure 11. Comparison of Annual Deferred Maintenance by Scenario

BUDGET ANALYSES CITY OF RIO DELL

Figure 12 illustrates the percent change in pavement condition for each scenario. As noted earlier, currently less than two-third of the network is in "Good" condition with 5.7 percent in "Failed" condition. For Scenario 1, the portion of the network in "Good" condition will decrease to less than half of the network, while the portion in "Failed" condition will increase to 24.3 percent. The portion of the network in "Good" condition will increase in both Scenarios 2 and 3. No streets will be in "Poor" or "Failed" condition by 2032 in Scenario 3.

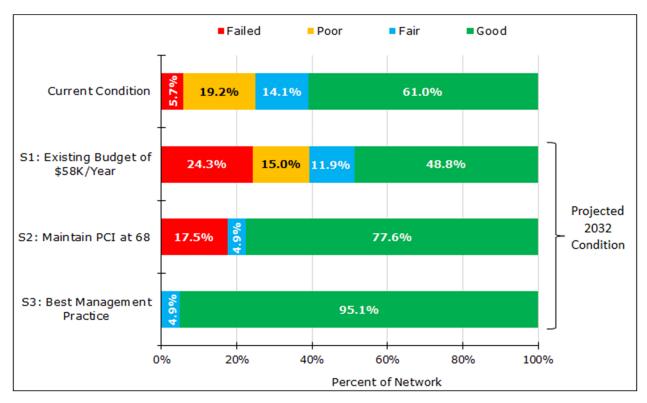


Figure 12. Comparison of Pavement Condition Breakdown by Scenario

#### 6 Conclusion and Recommendations

In summary, the City of Rio Dell has an investment of \$14.1 million in the pavement network. Overall, the City's streets are in "Good" condition with a 2022 average network PCI of 68. Approximately 61.0 percent of the street network is in "Good" condition with 19.2 percent in "Poor" condition and 5.7 percent of the streets in "Failed" condition.

The analyses indicate that the City needs to spend approximately \$7.6 million on maintenance and rehabilitation over the next ten years to optimally repair all pavement sections, thus bringing the network into a condition that can be maintained with on-going preventive maintenance. In the long run, this strategy will save the City money by preventing future pavement deterioration to levels requiring rehabilitation or reconstruction.

Based on the data collected and the scenarios analyzed and presented in this report, NCE offers the following recommendations.

1. Funding - The primary goal of PMPs should be to offer users a safe and functional pavement network without unduly increasing the maintenance burden in the future. With that in mind, the minimum recommended scenario for the City is Scenario 2, which requires approximately \$5.0 million over the next ten years. This budget allocation will maintain the overall network PCI at 68, increase the portion of the network in "Good" condition, and slow the increase in deferred maintenance.

To address the gap between the City's existing funding and the recommended scenario, NCE recommends the City pursue additional funding sources. Potential sources include:

#### Federal Funding Sources

- Bipartisan Infrastructure Investment and Jobs Act (IIJA)
- Regional Surface Transportation Program (RSTP)
- Surface Transportation Program (STP)
- Congestion Mitigation and Air Quality Improvement Program (CMAQ)
- Community Development Block Grants (CDBG)
- Highway Safety Improvement Program (HSIP)
- Federal Emergency Management Agency (FEMA)

#### State Funding Sources

- Active Transportation Program (ATP), which now includes the Bicycle Transportation Account (BTA) and Safe Routes to Schools (SR2S)
- State Transportation Improvement Program (STIP)
- AB 2766 (vehicle surcharge)
- Vehicle License Fees (VLF)

- CalRecycle grants
- State Water Resource Control Board
- Transportation Development Act (TDA)
- Traffic Safety Fund
- Transportation Uniform Mitigation Fee (TUMF)

#### Local/Regional Funding Sources

- Development impact fees
- General funds
- Various assessment districts (lighting, maintenance, flood control, community facilities)
- Traffic impact fees
- Utilities (e.g., stormwater, water, wastewater enterprise funds)
- Parcel/property taxes
- Vehicle registration fees
- Vehicle code fines
- 2. **Pavement Management Strategies** Since a significant portion of the City's streets are currently in "Good" condition (61.0 percent), it is important to maintain that condition to the extent possible. Preservation occurs when streets with PCIs higher than 70 receive treatments such as surface seals (slurry, chip, microsurfacing, etc.). Seals are relatively inexpensive treatments that prevent moisture ingress and thus preserve the integrity of the underlying base material. NCE recommends that the City balance preventive maintenance with rehabilitation and reconstruction projects to preserve pavements in "Good" condition, improve pavements in "Poor" condition, and avoid increasing the deferred maintenance.
- 3. **Reinspection Strategies** In order to make appropriate management decisions based on current data, NCE recommends that the City perform condition inspections on rural major collectors every 2 years and on residentials at least every 4 to 5 years. Additionally, since StreetSaver® and other prediction models do not yet take into account the effect of specialized materials such as asphalt-binders with rubber or polymers, the actual performance of city pavements may not be fully captured in the analysis models. For this additional reason, NCE recommends regular pavement condition surveys to ensure model accuracy and relevance.
- 4. **M&R Decision Tree** NCE recommends that the City annually review and update the M&R treatment strategies and associated unit costs to reflect current construction techniques and changing costs. This will ensure that the results for the budget analyses are reliable and as accurate as possible.

# Appendix A Section Description Inventory

### **Section Description Inventory Report**

This report lists a variety of section description information for each of the City's pavement sections. It lists the street and section identifiers, limits, number of lanes, functional class, surface type, length, width, area, Inspected PCI, and PCI date.

All of the City's pavement sections are included in the report. Two versions of the report are provided. The first is sorted alphabetically by Street Name and Section ID and the second report is sorted by descending PCI. The field descriptions in this report are listed below:

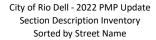
COLUMN	DESCRIPTION
Street ID	Street Identification - A code up to ten characters/digits to identify the street. Generally, the street name is truncated to six characters. The Street ID should be unique for each street.
Section ID	Section Identification - A code up to ten characters/digits to identify the section number. The Section ID must be unique for each section of one street.
Street Name	Street Name - The name of the street as indicated by street signs in the field.
Begin Location	Beginning limit of the section.
End Location	Ending limit of the section.
No. of Lanes	Number of travel lanes.
Functional Class (FC)	Functional Classification: R (Residential/Local), RMaC (Rural Major Collector)
Length (ft)	Length of the section in feet.
Width (ft)	Average width of the section in feet.
Area (sf)	Area of section in square feet.
Surface Type (ST)	Surface Type: AC = Asphalt Concrete
PCI Date	The last inspection date or rehabilitation date.
PCI	Average PCI for the section. The value is based on the last inspection.



#### City of Rio Dell - 2022 PMP Update Section Description Inventory Sorted by Street Name

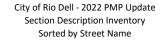


Street ID	Section ID	Street Name	Begin Location	End Location	No. of Lanes	FC	ST	Length (ft)	Width (ft)	Area (sf)	PCI Date	PCI
R-1STAVE	010	1ST AVENUE	EDWARDS DR	BERKELEY ST	2	Residential/Local	AC	590	21	12,390	6/7/2022	59
R-1STAVE	020	1ST AVENUE	BERKELEY ST	COLUMBUS ST	2	Residential/Local	AC	728	21	15,288	6/7/2022	71
R-1STAVE	030	1ST AVENUE	COLUMBUS ST	ELKO ST	2	Residential/Local	AC	1,030	20	20,600	6/7/2022	50
R-2NDAVE	010	2ND AVENUE	ATLANTA ST	COLUMBUS ST	2	Residential/Local	AC	1,095	29	31,755	6/7/2022	72
R-2NDAVE	020	2ND AVENUE	COLUMBUS ST	ELKO ST	2	Residential/Local	AC	1,030	31	31,930	6/7/2022	24
R-2NDAVE	030	2ND AVENUE	ELKO ST	DAVIS ST	2	Residential/Local	AC	181	20	3,620	6/7/2022	19
R-3RDAVE	010	3RD AVENUE	MEADOW BRIDGE DR	BERKELEY ST	2	Residential/Local	AC	258	27	6,966	6/8/2022	79
R-3RDAVE	020	3RD AVENUE	BERKELEY ST	N END	2	Residential/Local	AC	146	22	3,212	6/8/2022	76
R-3RDAVE	030	3RD AVENUE	COLUMBUS ST	DAVIS ST	2	Residential/Local	AC	1,002	26	26,052	12/4/2016	92
R-4THAVE	010	4TH AVENUE	EAST END OF PAVEMENT	DAVIS ST	2	Residential/Local	AC	759	20	15,180	6/7/2022	82
R-ALPINE	010	ALPINE	SOUTH END	MONUMENT RD	2	Residential/Local	AC	170	11	1,870	6/8/2022	22
R-ASHST	010	ASH STREET	PACIFIC AVE	WILDWOOD AVE	2	Residential/Local	AC	840	22	18,480	6/8/2022	79
R-ATLAST	010	ATLANTA STREET	1ST AVE	2ND AVE	2	Residential/Local	AC	234	12	2,808	6/7/2022	58
R-BELAVE	010	BELLEVIEW AVENUE	WILDWOOD AVE	1116 E/O RIVER ST	2	Rural Major Collector (5)	AC	1,337	37	49,469	6/8/2022	88
R-BELAVE	015	BELLEVIEW AVENUE	1116 E/O RIVER ST	RIVER ST	2	Rural Major Collector (5)	AC	1,116	37	41,292	6/8/2022	90
R-BELAVE	020	BELLEVIEW AVENUE	RIVER RD	SPRING ST	2	Rural Major Collector (5)	AC	825	23	18,975	6/8/2022	91
R-BELAVE	030	BELLEVIEW AVENUE	SPRING ST	WOODLAND AVE	2	Rural Major Collector (5)	AC	1,133	22	24,926	6/8/2022	72
R-BELAVE	035	BELLEVIEW AVENUE	WOODLAND AVE	WEST CITY LIMIT	2	Rural Major Collector (5)	AC	1,032	22	22,704	6/8/2022	33
R-BERKST	010	BERKELEY STREET	WILDWOOD AVE	END OF PAVEMENT	2	Residential/Local	AC	814	26	21,164	6/8/2022	66
R-BIRCST	010	BIRCH STREET	PACIFIC AVE	SEQUOIA AVE	2	Residential/Local	AC	455	29	13,195	6/8/2022	64
R-BRIDST	010	BRIDGE STREET	WILDWOOD AVE	EDWARDS DR	2	Residential/Local	AC	278	26	7,228	12/4/2016	63
R-BUTCST	010	BUTCHER STREET	PACIFIC AVE	RIO DELL AVE	2	Residential/Local	AC/AC	303	21	6,363	6/8/2022	100
R-CEDAST	010	CEDAR STREET	PACIFIC AVE	WILDWOOD AVE	2	Residential/Local	AC	657	28	18,396	6/8/2022	69
R-CENTST	010	CENTER STREET	WILDWOOD AVE	IRELAND AVE	2	Residential/Local	AC	1,555	29	45,095	6/7/2022	78
R-CENTST	020	CENTER STREET	IRELAND ST	EAST CDS	2	Residential/Local	AC	127	27	3,429	6/7/2022	54
R-CENTST	030	CENTER STREET	PAINTER ST	RIGBY AVE	2	Residential/Local	AC/AC	617	26	16,042	6/7/2022	71
R-CHAAVE	010	CHASE AVENUE	CENTER ST	PAINTER ST	2	Residential/Local	AC/AC	387	18	6,966	6/7/2022	90
R-CHERLN	010	CHERRY LANE	MONUMENT RD	ORCHARD PL	2	Residential/Local	AC	782	16	12,512	6/8/2022	100
R-COLUST	010	COLUMBUS STREET	WILDWOOD AVE	3RD AVE	2	Residential/Local	AC	744	29	21,576	6/7/2022	71
R-CREEST	010	CREEK STREET	SOUTH END	NALLY LN	2	Residential/Local	AC	347	12	4,164	6/8/2022	58
R-CURTLN	010	CURTIS LANE	PAINTER ST	NORTH END	2	Residential/Local	AC	743	20	14,860	6/7/2022	61
R-DAVIST	010	DAVIS STREET	WILDWOOD AVE	IRELAND ST	2	Residential/Local	AC	1,364	37	50,468	6/7/2022	41
R-DAVIST	020	DAVIS STREET	IRELAND ST	RIGBY AVE	2	Residential/Local	AC	942	26	24,492	6/7/2022	42
R-DAVIST	030	DAVIS STREET	RIGBY AVE	EAST END	2	Residential/Local	AC	1,584	26	41,184	6/7/2022	44
R-DIXIST	010	DIXIE STREET	WILDWOOD AVE	3RD AVE	2	Residential/Local	AC/AC	745	17	12,665	6/7/2022	90
R-DIXIST	020	DIXIE STREET	3RD AVE	4TH AVE	2	Residential/Local	AC	243	24	5,832	6/7/2022	82
R-DIXIST	030	DIXIE STREET	4TH AVE	DAVIS ST	2	Residential/Local	AC/AC	348	18	6,264	6/7/2022	90
R-DOUGST	010	DOUGLAS STREET	WESTEND	VIEW AVE	2	Residential/Local	AC	371	17	6,307	6/8/2022	82
R-DOUGST	020	DOUGLAS STREET	VIEW AVE	PACIFIC ST	2	Residential/Local	AC	248	30	7,440	6/8/2022	67
R-DOUGST	030	DOUGLAS STREET	PACIFIC ST	WILDWOOD AVE	2	Residential/Local	AC	472	30	14,160	6/8/2022	85
R-EDWADR	010	EDWARDS DRIVE	WILDWOOD AVE	BRIDGE ST	2	Residential/Local	AC	270	28	7,560	6/7/2022	74
R-EDWADR	020	EDWARDS DRIVE	BRIDGE ST	END OF PAVEMENT	2	Residential/Local	AC	1,780	24	42,720	6/7/2022	44
R-EELAVE	010	EELOA AVENUE	WEST CDS	N PACIFIC DR	2	Residential/Local	AC	1,057	25	26,425	6/8/2022	46





C)	0 11 15	51 111			No. of		0.77	Length	Width	Area	2012	201
Street ID	Section ID	Street Name	Begin Location	End Location	Lanes	FC	ST	(ft)	(ft)	(sf)	PCI Date	PCI
R-EELAVE	020	EELOA AVENUE	N PACIFIC DR	SCENIC WAY	2	Residential/Local	AC/AC	676	26	17,576	6/8/2022	92
R-EELAVE	030	EELOA AVENUE	SCENIC WAY	FERN ST	2	Residential/Local	AC/AC	869	25	21,725	6/8/2022	87
R-ELKOST	010	ELKO STREET	WILDWOOD AVE	2ND AVE	2	Residential/Local	AC	574	21	12,054	6/7/2022	63
R-ELMST	010	ELM STREET	PACIFIC AVE	WILDWOOD AVE	2	Residential/Local	AC	381	20	7,620	6/8/2022	49
R-FERNST	010	FERN STREET	EELOA AVE	RIVERSIDE DR	2	Residential/Local	AC/AC	657	21	13,797	6/8/2022	92
R-FERNST	020	FERN STREET	FERN ST	RIVERSIDE DR	2	Residential/Local	AC	657	21	13,797	6/8/2022	100
R-GRHERD	010	GRAYLAND HEIGHTS ROAD	S. SEQUOIA AVE	GRAYLAND HEIGHTS RD	2	Residential/Local	AC	1,527	36	54,972	6/8/2022	75
R-GUNNLN	010	GUNNERSON LANE	S CDS	HILLTOP DR	2	Residential/Local	AC	595	27	16,065	6/7/2022	49
R-GUNNLN	020	GUNNERSON LANE	HILLTOP DR	DAVIS ST	2	Residential/Local	AC	606	39	23,634	6/7/2022	53
R-HILDA	010	HILDA COURT	RIVERSIDE DR	N CDS	2	Residential/Local	AC	460	40	18,400	1/10/2017	90
R-HILLDR	010	HILLTOP DRIVE	GUNNERSON LN	RIO DELL PUBLIC WORKS EXT	2	Residential/Local	AC	397	19	7,543	6/8/2022	76
R-IREAVE	010	IRELAND AVENUE	DAVIS ST	CENTER ST	2	Residential/Local	AC	1,012	35	35,420	6/7/2022	88
R-IREAVE	020	IRELAND AVENUE	CENTER ST	PAINTER ST	2	Residential/Local	AC	386	34	13,124	6/7/2022	51
R-KELLST	010	KELLEY STREET	VIEW AVE	PACIFIC AVE	2	Residential/Local	AC	244	27	6,588	6/8/2022	84
R-MARTDR	010	MARTIN DRIVE	RIVERSIDE DR	N CDS	2	Residential/Local	AC	264	34	8,976	6/7/2022	35
R-MAYAVE	010	MAY AVENUE	PAINTER DT	NORTH ST	2	Residential/Local	AC	539	33	17,787	12/4/2016	92
R-MEABRDR	010	MEADOW BRIDGE DRIVE	EDWARDS DR	3RD AVE	2	Residential/Local	AC	1,072	35	37,520	12/4/2016	90
R-MILLCT	010	MILLER COURT	S CDS	RIVERSIDE DR	2	Residential/Local	AC	628	36	22,608	6/7/2022	75
R-MONURD	010	MONUMENT ROUD	WEST CITY LIMIT	CHERRY LN	2	Residential/Local	AC	1,602	19	30,438	6/8/2022	68
R-MONURD	020	MONUMENT ROUD	CHERRY LN	PACIFIC ST	2	Residential/Local	AC	305	24	7,320	6/8/2022	85
R-MONURD	030	MONUMENT ROUD	PACIFIC ST	S SEQUOIA AVE	2	Residential/Local	AC	494	23	11,362	6/8/2022	85
R-MONURD	040	MONUMENT ROUD	S SEQUOIA AVE	WILDWOOD AVE	2	Residential/Local	AC	783	28	21,924	6/8/2022	49
R-NALLLN	010	NALLY LANE	WEST END	CREEK ST	2	Residential/Local	AC	121	10	1,210	6/8/2022	56
R-OGLAVE	010	OGLE AVENUE	BELLEVIEW AVE	TOLMAN PL	2	Residential/Local	AC	1,015	27	27,405	6/8/2022	20
R-OGLAVE	020	OGLE AVENUE	TOLMAN PL	RIVER RD	2	Residential/Local	AC/AC	1,383	20	27,660	6/8/2022	57
R-ORCHPL	010	ORCHARD PLACE	CHERRY LN	ORCHARD ST	2	Residential/Local	AC	169	18	3,042	6/8/2022	29
R-ORCHST	010	ORCHARD STREET	MONUMENT RD	ORCHARD PL	2	Residential/Local	AC	696	26	18,096	6/8/2022	30
R-PACAVE	010	PACIFIC AVENUE	MONUMENT AVE	KELLY ST	2	Residential/Local	AC	1,256	21	26,376	6/7/2022	85
R-PACAVE	020	PACIFIC AVENUE	KELLY ST	W DAVIS ST	2	Residential/Local	AC	793	20	15,860	6/7/2022	83
R-PACAVE	030	PACIFIC AVENUE	W DAVIS ST	W CENTER ST	2	Residential/Local	AC	732	20	14,640	6/7/2022	63
R-PACAVE	040	PACIFIC AVENUE	W CENTER ST	BELLEVIEW AVE	2	Residential/Local	AC	1,218	25	30,450	6/7/2022	57
R-PAINST	010	PAINTER STREET	WILDWOOD AVE	87' W CHASE AVE	2	Residential/Local	AC	622	29	18,038	6/7/2022	66
R-PAINST	010A	PAINTER STREET	PACIFIC AVE	WILDWOOD AVE	2	Residential/Local	AC/AC	450	29	13,050	6/1/2021	100
R-PAINST	020	PAINTER STREET	258' E CHASE AVE	IRELAND ST	2	Residential/Local	AC	545	38	20,710	6/7/2022	85
R-PAINST	025	PAINTER STREET	87' W CHASE AVE	258' E CHASE AVE	2	Residential/Local	AC/AC	320	29	9,280	6/7/2022	83
R-PAINST	030	PAINTER STREET	IRELAND ST	CENTER DR	2	Residential/Local	AC	510	38	19,380	6/7/2022	90
R-PAINST	040	PAINTER STREET	CENTER DR	5' W BLUFF PLACE	2	Residential/Local	AC	480	38	18,240	6/7/2022	88
R-PAINST	050	PAINTER STREET	5' W BUFF PLACE	215' E CURTIS LANE	2	Residential/Local	AC/AC	355	38	13,490	6/7/2022	85
R-PAINST	060	PAINTER STREET	215' E CURTIS LANE	E END	2	Residential/Local	AC	840	38	31,920	6/7/2022	47
R-PINEST	010	PINE STREET	W END	MAY AVE	2	Residential/Local	AC	561	31	17,391	6/7/2022	86
R-RIDAVE	010	RIO DELL AVENUE	W CENTER ST	TOWNSEND ST	2	Residential/Local	AC/AC	716	18	12,888	6/8/2022	92
R-RIDAVE	020	RIO DELL AVENUE	TOWNSEND ST	BUTCHER ST	2	Residential/Local	AC/AC	289	15	4,335	6/8/2022	82
R-RIGAVE	010	RIGBY AVENUE	S END	DAVIS ST	2	Residential/Local	AC	1,184	25	29,600	6/7/2022	44
R-RIGAVE	020	RIGBY AVENUE	DAVIS ST	CENTER ST	2	Residential/Local	AC	1,036	28	29,008	6/7/2022	76
R-RIGAVE	030	RIGBY AVENUE	CENTER ST	PAINTER ST	2	Residential/Local	AC	382	18	6,876	6/7/2022	46
R-RIVEDR	010	RIVERSIDE DRIVE	PAINTER ST	EAGLE PRAIRIE RD	2	Residential/Local	AC/AC	610	34	20,740	6/8/2022	47
R-RIVEDR	020	RIVERSIDE DRIVE	EAGLE PRAIRIE RD	FERN ST	2	Residential/Local	AC	1,337	39	52,143	6/8/2022	100
R-RIVEDR	030	RIVERSIDE DRIVE	FERN ST	NW CDS	2	Residential/Local	AC	1,056	32	33,792	6/8/2022	100





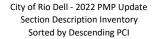
Street ID	Section ID	Street Name	Begin Location	End Location	No. of Lanes	FC	ST	Length (ft)	Width (ft)	Area (sf)	PCI Date	PCI
R-RIVEST	010	RIVER STREET	OGLE AVE	BELLEVIEW AVE	2	Residential/Local	AC/AC	230	26	5,980	6/8/2022	100
R-ROSELN	010	ROSE LANE	MONUMENT RD	N END	2	Residential/Local	AC	160	17	2,720	6/8/2022	67
R-SCEWAY	010	SCENIC WAY	HIGHWAY 101 NB ON RAMP	EELOA AVE	2	Residential/Local	AC/AC	211	76	16,036	6/8/2022	100
R-SEQUST	010	SEQUOIA STREET	MONUMENT AVE	CEDAR ST	2	Residential/Local	AC	808	30	24,240	6/8/2022	82
R-SIDEST	010	SIDE STREET	PACIFIC AVE	WILDWOOD AVE	2	Residential/Local	AC	866	29	25,114	6/8/2022	53
R-SPRIST	010	SPRING STREET	OGLE AVE	BELLEVIEW AVE	2	Residential/Local	AC/AC	304	21	6,384	6/8/2022	100
R-SSEQST	010	SOUTH SEQUOIA STREET	GRAYLAND HEIGHTS RD	MONUMENT RD	2	Residential/Local	AC	514	24	12,336	6/8/2022	82
R-TOWNS	010	TOWNSEND STREET	PACIFIC AVE	WILDWOOD AVE	2	Residential/Local	AC/AC	480	20	9,600	6/1/2021	100
R-TYMECT	010	TYME COURT	W CDS	MILLER CT	2	Residential/Local	AC	79	40	3,160	6/7/2022	73
R-VIEWST	010	VIEW STREET	DOUGLAS ST	KELLEY ST	2	Residential/Local	AC	325	21	6,825	6/8/2022	27
R-WCENST	010	WEST CENTER STREET	PACIFIC AVE	RIO DELL AVE	2	Residential/Local	AC/AC	283	24	6,792	6/8/2022	86
R-WCENST	020	WEST CENTER STREET	RIO DELL AVE	WILDWOOD AVE	2	Residential/Local	AC	179	25	4,475	6/8/2022	72
R-WDAVIST	010	WEST DAVIS STREET	PACIFIC AVE	WILDWOOD AVE	2	Residential/Local	AC	363	36	13,068	6/8/2022	54
R-WILAVE	010	WILDWOOD AVENUE	BRIDGE ST	CEDAR ST	3	Residential/Local	AC	1,207	66	79,662	6/8/2022	89
R-WILAVE	015	WILDWOOD AVENUE	CEDAR ST	136FT N/O ELM ST	3	Residential/Local	AC	891	66	58,806	10/19/2009	26
R-WILAVE	020	WILDWOOD AVENUE	136FT NORTH OF ELM ST	DAVIS ST	3	Residential/Local	AC	678	60	40,680	6/8/2022	82
R-WILAVE	030	WILDWOOD AVENUE	DAVIS ST	PAINTER ST	2	Residential/Local	AC	1,256	38	47,728	6/8/2022	73
R-WILAVE	040	WILDWOOD AVENUE	PAINTER ST	HIGHWAY 101 NB ON RAMP	2	Residential/Local	AC/AC	1,567	38	59,546	6/8/2022	90
R-WPAINST	020	WEST PAINTER STREET	PACIFIC AVE	50' W RIO DELL AVE	2	Residential/Local	AC	285	17	4,845	6/8/2022	100



#### City of Rio Dell - 2022 PMP Update Section Description Inventory Sorted by Descending PCI



Street ID	Section ID	Street Name	Begin Location	End Location	No. of Lanes	FC	ST	Length (ft)	Width (ft)	Area (sf)	PCI Date	PCI
R-BUTCST	010	BUTCHER STREET	PACIFIC AVE	RIO DELL AVE	2	Residential/Local	AC/AC	303	21	6,363	6/8/2022	100
R-CHERLN	010	CHERRY LANE	MONUMENT RD	ORCHARD PL	2	Residential/Local	AC	782	16	12,512	6/8/2022	100
R-FERNST	020	FERN STREET	FERN ST	RIVERSIDE DR	2	Residential/Local	AC	657	21	13,797	6/8/2022	100
R-PAINST	010A	PAINTER STREET	PACIFIC AVE	WILDWOOD AVE	2	Residential/Local	AC/AC	450	29	13,050	6/1/2021	100
R-RIVEDR	020	RIVERSIDE DRIVE	EAGLE PRAIRIE RD	FERN ST	2	Residential/Local	AC	1,337	39	52,143	6/8/2022	100
R-RIVEDR	030	RIVERSIDE DRIVE	FERN ST	NW CDS	2	Residential/Local	AC	1,056	32	33,792	6/8/2022	100
R-RIVEST	010	RIVER STREET	OGLE AVE	BELLEVIEW AVE	2	Residential/Local	AC/AC	230	26	5,980	6/8/2022	100
R-SCEWAY	010	SCENIC WAY	HIGHWAY 101 NB ON RAMP	EELOA AVE	2	Residential/Local	AC/AC	211	76	16,036	6/8/2022	100
R-SPRIST	010	SPRING STREET	OGLE AVE	BELLEVIEW AVE	2	Residential/Local	AC/AC	304	21	6,384	6/8/2022	100
R-TOWNS	010	TOWNSEND STREET	PACIFIC AVE	WILDWOOD AVE	2	Residential/Local	AC/AC	480	20	9,600	6/1/2021	100
R-WPAINST	020	WEST PAINTER STREET	PACIFIC AVE	50' W RIO DELL AVE	2	Residential/Local	AC	285	17	4,845	6/8/2022	100
R-WTOWST	010	WEST TOWNSEND STREET	RIO DELL AVE	PACIFIC AVE	2	Residential/Local	AC	288	25	7,200	6/8/2022	100
R-3RDAVE	030	3RD AVENUE	COLUMBUS ST	DAVIS ST	2	Residential/Local	AC	1,002	26	26,052	12/4/2016	92
R-EELAVE	020	EELOA AVENUE	N PACIFIC DR	SCENIC WAY	2	Residential/Local	AC/AC	676	26	17,576	6/8/2022	92
R-FERNST	010	FERN STREET	EELOA AVE	RIVERSIDE DR	2	Residential/Local	AC/AC	657	21	13,797	6/8/2022	92
R-MAYAVE	010	MAY AVENUE	PAINTER DT	NORTH ST	2	Residential/Local	AC	539	33	17,787	12/4/2016	92
R-RIDAVE	010	RIO DELL AVENUE	W CENTER ST	TOWNSEND ST	2	Residential/Local	AC/AC	716	18	12,888	6/8/2022	92
R-BELAVE	020	BELLEVIEW AVENUE	RIVER RD	SPRING ST	2	Rural Major Collector (5)	AC	825	23	18,975	6/8/2022	91
R-BELAVE	015	BELLEVIEW AVENUE	1116 E/O RIVER ST	RIVER ST	2	Rural Major Collector (5)	AC	1,116	37	41,292	6/8/2022	90
R-CHAAVE	010	CHASE AVENUE	CENTER ST	PAINTER ST	2	Residential/Local	AC/AC	387	18	6,966	6/7/2022	90
R-DIXIST	010	DIXIE STREET	WILDWOOD AVE	3RD AVE	2	Residential/Local	AC/AC	745	17	12,665	6/7/2022	90
R-DIXIST	030	DIXIE STREET	4TH AVE	DAVIS ST	2	Residential/Local	AC/AC	348	18	6,264	6/7/2022	90
R-HILDA	010	HILDA COURT	RIVERSIDE DR	N CDS	2	Residential/Local	AC	460	40	18,400	1/10/2017	90
R-MEABRDR	010	MEADOW BRIDGE DRIVE	EDWARDS DR	3RD AVE	2	Residential/Local	AC	1,072	35	37,520	12/4/2016	90
R-PAINST	030	PAINTER STREET	IRELAND ST	CENTER DR	2	Residential/Local	AC	510	38	19,380	6/7/2022	90
R-WILAVE	040	WILDWOOD AVENUE	PAINTER ST	HIGHWAY 101 NB ON RAMP	2	Residential/Local	AC/AC	1,567	38	59,546	6/8/2022	90
R-WPAINST	030	WEST PAINTER STREET	50' W RIO DELL AVE	62' E RIO DELL AVE	2	Residential/Local	AC/AC	112	17	1,904	6/8/2022	90
R-WPAINST	040	WEST PAINTER STREET	62' E RIO DELL AVE	WILDWOOD AVE	2	Residential/Local	AC	100	17	1,700	6/8/2022	90
R-WILAVE	010	WILDWOOD AVENUE	BRIDGE ST	CEDAR ST	3	Residential/Local	AC	1,207	66	79,662	6/8/2022	89
R-BELAVE	010	BELLEVIEW AVENUE	WILDWOOD AVE	1116 E/O RIVER ST	2	Rural Major Collector (5)	AC	1,337	37	49,469	6/8/2022	88
R-IREAVE	010	IRELAND AVENUE	DAVIS ST	CENTER ST	2	Residential/Local	AC	1,012	35	35,420	6/7/2022	88
R-PAINST	040	PAINTER STREET	CENTER DR	5' W BLUFF PLACE	2	Residential/Local	AC	480	38	18,240	6/7/2022	88
R-EELAVE	030	EELOA AVENUE	SCENIC WAY	FERN ST	2	Residential/Local	AC/AC	869	25	21,725	6/8/2022	87
R-PINEST	010	PINE STREET	W END	MAY AVE	2	Residential/Local	AC	561	31	17,391	6/7/2022	86
R-WCENST	010	WEST CENTER STREET	PACIFIC AVE	RIO DELL AVE	2	Residential/Local	AC/AC	283	24	6,792	6/8/2022	86
R-DOUGST	030	DOUGLAS STREET	PACIFIC ST	WILDWOOD AVE	2	Residential/Local	AC	472	30	14,160	6/8/2022	85
R-MONURD	020	MONUMENT ROUD	CHERRY LN	PACIFIC ST	2	Residential/Local	AC	305	24	7,320	6/8/2022	85
R-MONURD	030	MONUMENT ROUD	PACIFIC ST	S SEQUOIA AVE	2	Residential/Local	AC	494	23	11,362	6/8/2022	85
R-PACAVE	010	PACIFIC AVENUE	MONUMENT AVE	KELLY ST	2	Residential/Local	AC	1,256	21	26,376	6/7/2022	85
R-PAINST	020	PAINTER STREET	258' E CHASE AVE	IRELAND ST	2	Residential/Local	AC	545	38	20,710	6/7/2022	85
R-PAINST	050	PAINTER STREET	5' W BUFF PLACE	215' E CURTIS LANE	2	Residential/Local	AC/AC	355	38	13,490	6/7/2022	85
R-KELLST	010	KELLEY STREET	VIEW AVE	PACIFIC AVE	2	Residential/Local	AC	244	27	6,588	6/8/2022	84
R-PACAVE	020	PACIFIC AVENUE	KELLY ST	W DAVIS ST	2	Residential/Local	AC	793	20	15,860	6/7/2022	83
R-PAINST	025	PAINTER STREET	87' W CHASE AVE	258' E CHASE AVE	2	Residential/Local	AC/AC	320	29	9,280	6/7/2022	83
R-4THAVE	010	4TH AVENUE	EAST END OF PAVEMENT	DAVIS ST	2	Residential/Local	AC	759	20	15,180	6/7/2022	82
R-DIXIST	020	DIXIE STREET	3RD AVE	4TH AVE	2	Residential/Local	AC	243	24	5,832	6/7/2022	82
R-DOUGST	010	DOUGLAS STREET	WESTEND	VIEW AVE	2	Residential/Local	AC	371	17	6,307	6/8/2022	82
R-RIDAVE	020	RIO DELL AVENUE	TOWNSEND ST	BUTCHER ST	2	Residential/Local	AC/AC	289	15	4,335	6/8/2022	82





R-SSEQST 010 R-WILAVE 020 R-3RDAVE 010 R-ASHST 010 R-CENTST 010 R-3RDAVE 020 R-HILLDR 010 R-RIGAVE 020 R-HILLDR 010 R-RIGAVE 020 R-GRHERD 010 R-MILLCT 010 R-EDWADR 010 R-TYMECT 010 R-WILAVE 030	010 010 010 020 010 010 010 010 010 020 010 01	SEQUOIA STREET SOUTH SEQUOIA STREET WILDWOOD AVENUE 3RD AVENUE ASH STREET CENTER STREET 3RD AVENUE HILLTOP DRIVE RIGBY AVENUE GRAYLAND HEIGHTS ROAD MILLER COURT EDWARDS DRIVE	MONUMENT AVE GRAYLAND HEIGHTS RD 136FT NORTH OF ELM ST MEADOW BRIDGE DR PACIFIC AVE WILDWOOD AVE BERKELEY ST GUNNERSON LN DAVIS ST S. SEQUOIA AVE S CDS	CEDAR ST  MONUMENT RD  DAVIS ST  BERKELEY ST  WILDWOOD AVE  IRELAND AVE  N END  RIO DELL PUBLIC WORKS EXT  CENTER ST	2 2 3 2 2 2 2 2	Residential/Local Residential/Local Residential/Local Residential/Local Residential/Local Residential/Local Residential/Local Residential/Local	AC AC AC AC AC AC AC	808 514 678 258 840 1,555	30 24 60 27 22 29	24,240 12,336 40,680 6,966 18,480 45,095	6/8/2022 6/8/2022 6/8/2022 6/8/2022 6/8/2022 6/7/2022	82 82 82 79 79
R-WILAVE 020 R-3RDAVE 010 R-ASHST 010 R-CENTST 010 R-3RDAVE 020 R-HILLDR 010 R-RIGAVE 020 R-GRHERD 010 R-MILLCT 010 R-EDWADR 010 R-TYMECT 010 R-WILAVE 030	020 010 010 010 010 020 010 020 010 01	WILDWOOD AVENUE  3RD AVENUE  ASH STREET  CENTER STREET  3RD AVENUE  HILLTOP DRIVE  RIGBY AVENUE  GRAYLAND HEIGHTS ROAD  MILLER COURT	136FT NORTH OF ELM ST MEADOW BRIDGE DR PACIFIC AVE WILDWOOD AVE BERKELEY ST GUNNERSON LN DAVIS ST S. SEQUOIA AVE	DAVIS ST  BERKELEY ST  WILDWOOD AVE  IRELAND AVE  N END  RIO DELL PUBLIC WORKS EXT  CENTER ST	3 2 2 2 2 2	Residential/Local Residential/Local Residential/Local Residential/Local	AC AC AC	678 258 840 1,555	60 27 22 29	40,680 6,966 18,480 45,095	6/8/2022 6/8/2022 6/8/2022	82 79 79
R-3RDAVE 010 R-ASHST 010 R-CENTST 010 R-3RDAVE 020 R-HILLDR 010 R-RIGAVE 020 R-GRHERD 010 R-MILLCT 010 R-EDWADR 010 R-TYMECT 010 R-WILAVE 030	010	3RD AVENUE ASH STREET CENTER STREET 3RD AVENUE HILLTOP DRIVE RIGBY AVENUE GRAYLAND HEIGHTS ROAD MILLER COURT	MEADOW BRIDGE DR PACIFIC AVE WILDWOOD AVE BERKELEY ST GUNNERSON LN DAVIS ST S. SEQUOIA AVE	BERKELEY ST WILDWOOD AVE IRELAND AVE N END RIO DELL PUBLIC WORKS EXT CENTER ST	2 2 2 2	Residential/Local Residential/Local Residential/Local	AC AC AC	258 840 1,555	27 22 29	6,966 18,480 45,095	6/8/2022 6/8/2022	79 79
R-ASHST 010 R-CENTST 010 R-3RDAVE 020 R-HILLDR 010 R-RIGAVE 020 R-GRHERD 010 R-MILLCT 010 R-EDWADR 010 R-TYMECT 010 R-WILAVE 030	010 010 020 010 020 010 020 010 010 010	ASH STREET CENTER STREET 3RD AVENUE HILLTOP DRIVE RIGBY AVENUE GRAYLAND HEIGHTS ROAD MILLER COURT	PACIFIC AVE WILDWOOD AVE BERKELEY ST GUNNERSON LN DAVIS ST S. SEQUOIA AVE	WILDWOOD AVE IRELAND AVE N END RIO DELL PUBLIC WORKS EXT CENTER ST	2 2 2	Residential/Local Residential/Local	AC AC	840 1,555	22 29	18,480 45,095	6/8/2022	79
R-CENTST 010 R-3RDAVE 020 R-HILLDR 010 R-RIGAVE 020 R-GRHERD 010 R-MILLCT 010 R-EDWADR 010 R-TYMECT 010 R-WILAVE 030	010 020 010 020 010 010 010 010	CENTER STREET  3RD AVENUE  HILLTOP DRIVE  RIGBY AVENUE  GRAYLAND HEIGHTS ROAD  MILLER COURT	WILDWOOD AVE BERKELEY ST GUNNERSON LN DAVIS ST S. SEQUOIA AVE	IRELAND AVE  N END  RIO DELL PUBLIC WORKS EXT  CENTER ST	2	Residential/Local	AC	1,555	29	45,095		
R-3RDAVE 020 R-HILLDR 010 R-RIGAVE 020 R-GRHERD 010 R-MILLCT 010 R-EDWADR 010 R-TYMECT 010 R-WILAVE 030	020 010 020 010 010 010 010	3RD AVENUE HILLTOP DRIVE RIGBY AVENUE GRAYLAND HEIGHTS ROAD MILLER COURT	BERKELEY ST GUNNERSON LN DAVIS ST S. SEQUOIA AVE	N END RIO DELL PUBLIC WORKS EXT CENTER ST	2	,					6/7/2022	
R-HILLDR 010 R-RIGAVE 020 R-GRHERD 010 R-MILLCT 010 R-EDWADR 010 R-TYMECT 010 R-WILAVE 030	010 020 010 010 010 010	HILLTOP DRIVE RIGBY AVENUE GRAYLAND HEIGHTS ROAD MILLER COURT	GUNNERSON LN DAVIS ST S. SEQUOIA AVE	RIO DELL PUBLIC WORKS EXT CENTER ST		Residential/Local	۸۲		22			78
R-RIGAVE 020 R-GRHERD 010 R-MILLCT 010 R-EDWADR 010 R-TYMECT 010 R-WILAVE 030	020 010 010 010 010	RIGBY AVENUE GRAYLAND HEIGHTS ROAD MILLER COURT	DAVIS ST S. SEQUOIA AVE	CENTER ST	2		AC	146	22	3,212	6/8/2022	76
R-GRHERD 010 R-MILLCT 010 R-EDWADR 010 R-TYMECT 010 R-WILAVE 030	010 010 010 010 010	GRAYLAND HEIGHTS ROAD MILLER COURT	S. SEQUOIA AVE		-	Residential/Local	AC	397	19	7,543	6/8/2022	76
R-MILLCT	010 010 010	MILLER COURT	· · · · · · · · · · · · · · · · · · ·		2	Residential/Local	AC	1,036	28	29,008	6/7/2022	76
R-EDWADR   010   R-TYMECT   010   R-WILAVE   030	010 010		c CDC	GRAYLAND HEIGHTS RD	2	Residential/Local	AC	1,527	36	54,972	6/8/2022	75
R-TYMECT 010 R-WILAVE 030	010	EDWARDS DRIVE	3 CD3	RIVERSIDE DR	2	Residential/Local	AC	628	36	22,608	6/7/2022	75
R-WILAVE 030			WILDWOOD AVE	BRIDGE ST	2	Residential/Local	AC	270	28	7,560	6/7/2022	74
		TYME COURT	W CDS	MILLER CT	2	Residential/Local	AC	79	40	3,160	6/7/2022	73
D 011D 41/-	030	WILDWOOD AVENUE	DAVIS ST	PAINTER ST	2	Residential/Local	AC	1,256	38	47,728	6/8/2022	73
R-2NDAVE 010	010	2ND AVENUE	ATLANTA ST	COLUMBUS ST	2	Residential/Local	AC	1,095	29	31,755	6/7/2022	72
R-BELAVE 030	030	BELLEVIEW AVENUE	SPRING ST	WOODLAND AVE	2	Rural Major Collector (5)	AC	1,133	22	24,926	6/8/2022	72
R-WCENST 020	020	WEST CENTER STREET	RIO DELL AVE	WILDWOOD AVE	2	Residential/Local	AC	179	25	4,475	6/8/2022	72
R-1STAVE 020	020	1ST AVENUE	BERKELEY ST	COLUMBUS ST	2	Residential/Local	AC	728	21	15,288	6/7/2022	71
R-CENTST 030	030	CENTER STREET	PAINTER ST	RIGBY AVE	2	Residential/Local	AC/AC	617	26	16,042	6/7/2022	71
	010	COLUMBUS STREET	WILDWOOD AVE	3RD AVE	2	Residential/Local	AC	744	29	21,576	6/7/2022	71
	010	CEDAR STREET	PACIFIC AVE	WILDWOOD AVE	2	Residential/Local	AC	657	28	18,396	6/8/2022	69
	010	MONUMENT ROUD	WEST CITY LIMIT	CHERRY LN	2	Residential/Local	AC	1,602	19	30,438	6/8/2022	68
	020	DOUGLAS STREET	VIEW AVE	PACIFIC ST	2	Residential/Local	AC	248	30	7,440	6/8/2022	67
	010	ROSE LANE	MONUMENT RD	N END	2	Residential/Local	AC	160	17	2,720	6/8/2022	67
	010	BERKELEY STREET	WILDWOOD AVE	END OF PAVEMENT	2	Residential/Local	AC	814	26	21.164	6/8/2022	66
R-PAINST 010	010	PAINTER STREET	WILDWOOD AVE	87' W CHASE AVE	2	Residential/Local	AC	622	29	18,038	6/7/2022	66
R-BIRCST 010	010	BIRCH STREET	PACIFIC AVE	SEQUOIA AVE	2	Residential/Local	AC	455	29	13.195	6/8/2022	64
R-BRIDST 010	010	BRIDGE STREET	WILDWOOD AVE	EDWARDS DR	2	Residential/Local	AC	278	26	7.228	12/4/2016	63
	010	ELKO STREET	WILDWOOD AVE	2ND AVE	2	Residential/Local	AC	574	21	12,054	6/7/2022	63
R-PACAVE 030	030	PACIFIC AVENUE	W DAVIS ST	W CENTER ST	2	Residential/Local	AC	732	20	14,640	6/7/2022	63
R-CURTLN 010	010	CURTIS LANE	PAINTER ST	NORTH END	2	Residential/Local	AC	743	20	14,860	6/7/2022	61
	010	1ST AVENUE	EDWARDS DR	BERKELEY ST	2	Residential/Local	AC	590	21	12,390	6/7/2022	59
	010	ATLANTA STREET	1ST AVE	2ND AVE	2	Residential/Local	AC	234	12	2,808	6/7/2022	58
	010	CREEK STREET	SOUTH END	NALLY LN	2	Residential/Local	AC	347	12	4,164	6/8/2022	58
R-OGLAVE 020	020	OGLE AVENUE	TOLMAN PL	RIVER RD	2	Residential/Local	AC/AC	1,383	20	27.660	6/8/2022	57
R-PACAVE 040	040	PACIFIC AVENUE	W CENTER ST	BELLEVIEW AVE	2	Residential/Local	AC	1,218	25	30,450	6/7/2022	57
R-NALLLN 010	010	NALLY LANE	WEST END	CREEK ST	2	Residential/Local	AC	121	10	1.210	6/8/2022	56
R-CENTST 020	020	CENTER STREET	IRELAND ST	EAST CDS	2	Residential/Local	AC	127	27	3,429	6/7/2022	54
	010	WEST DAVIS STREET	PACIFIC AVE	WILDWOOD AVE	2	Residential/Local	AC	363	36	13,068	6/8/2022	54
	020	GUNNERSON LANE	HILLTOP DR	DAVIS ST	2	Residential/Local	AC	606	39	23,634	6/7/2022	53
	010	SIDE STREET	PACIFIC AVE	WILDWOOD AVE	2	Residential/Local	AC	866	29	25,114	6/8/2022	53
	020	IRELAND AVENUE	CENTER ST	PAINTER ST	2	Residential/Local	AC	386	34	13,124	6/7/2022	51
	030	1ST AVENUE	COLUMBUS ST	ELKO ST	2	Residential/Local	AC	1,030	20	20,600	6/7/2022	50
	010	ELM STREET	PACIFIC AVE	WILDWOOD AVE	2	Residential/Local	AC	381	20	7,620	6/8/2022	49
	010	GUNNERSON LANE	S CDS	HILLTOP DR	2	Residential/Local	AC	595	27	16,065	6/7/2022	49
	040	MONUMENT ROUD	S SEQUOIA AVE	WILDWOOD AVE	2	Residential/Local	AC	783	28	21,924	6/8/2022	49
	060	PAINTER STREET	215' E CURTIS LANE	E END	2	Residential/Local	AC	840	38	31,920	6/7/2022	47
	010	RIVERSIDE DRIVE	PAINTER ST	EAGLE PRAIRIE RD	2	Residential/Local	AC/AC	610	34	20,740	6/8/2022	47

#### City of Rio Dell - 2022 PMP Update Section Description Inventory Sorted by Descending PCI



Street ID	Section ID	Street Name	Begin Location	End Location	No. of Lanes	FC	ST	Length (ft)	Width (ft)	Area (sf)	PCI Date	PCI
R-EELAVE	010	EELOA AVENUE	WEST CDS	N PACIFIC DR	2	Residential/Local	AC	1,057	25	26,425	6/8/2022	46
R-RIGAVE	030	RIGBY AVENUE	CENTER ST	PAINTER ST	2	Residential/Local	AC	382	18	6,876	6/7/2022	46
R-DAVIST	030	DAVIS STREET	RIGBY AVE	EAST END	2	Residential/Local	AC	1,584	26	41,184	6/7/2022	44
R-EDWADR	020	EDWARDS DRIVE	BRIDGE ST	END OF PAVEMENT	2	Residential/Local	AC	1,780	24	42,720	6/7/2022	44
R-RIGAVE	010	RIGBY AVENUE	S END	DAVIS ST	2	Residential/Local	AC	1,184	25	29,600	6/7/2022	44
R-DAVIST	020	DAVIS STREET	IRELAND ST	RIGBY AVE	2	Residential/Local	AC	942	26	24,492	6/7/2022	42
R-DAVIST	010	DAVIS STREET	WILDWOOD AVE	IRELAND ST	2	Residential/Local	AC	1,364	37	50,468	6/7/2022	41
R-MARTDR	010	MARTIN DRIVE	RIVERSIDE DR	N CDS	2	Residential/Local	AC	264	34	8,976	6/7/2022	35
R-BELAVE	035	BELLEVIEW AVENUE	WOODLAND AVE	WEST CITY LIMIT	2	Rural Major Collector (5)	AC	1,032	22	22,704	6/8/2022	33
R-ORCHST	010	ORCHARD STREET	MONUMENT RD	ORCHARD PL	2	Residential/Local	AC	696	26	18,096	6/8/2022	30
R-ORCHPL	010	ORCHARD PLACE	CHERRY LN	ORCHARD ST	2	Residential/Local	AC	169	18	3,042	6/8/2022	29
R-VIEWST	010	VIEW STREET	DOUGLAS ST	KELLEY ST	2	Residential/Local	AC	325	21	6,825	6/8/2022	27
R-WILAVE	015	WILDWOOD AVENUE	CEDAR ST	136FT N/O ELM ST	3	Residential/Local	AC	891	66	58,806	10/19/2009	26
R-2NDAVE	020	2ND AVENUE	COLUMBUS ST	ELKO ST	2	Residential/Local	AC	1,030	31	31,930	6/7/2022	24
R-ALPINE	010	ALPINE	SOUTH END	MONUMENT RD	2	Residential/Local	AC	170	11	1,870	6/8/2022	22
R-OGLAVE	010	OGLE AVENUE	BELLEVIEW AVE	TOLMAN PL	2	Residential/Local	AC	1,015	27	27,405	6/8/2022	20
R-2NDAVE	030	2ND AVENUE	ELKO ST	DAVIS ST	2	Residential/Local	AC	181	20	3,620	6/7/2022	19



#### Maintenance and Rehabilitation (M&R) Decision Tree

This report presents the current maintenance and rehabilitation decision tree that exists in the database. The decision tree forms the basis for all of the budgetary computations included in this report. *Changes to the decision tree will make the results in the budget reports invalid.* All pavement treatment unit costs relevant to the road types in the database were updated.

The decision tree lists the treatments and costs selected for preventive maintenance and rehabilitation activities. Each line represents a specific combination of functional classification and surface type.

The preventive maintenance portion of the report is identified as Condition Category I – Very Good. All preventive maintenance treatment listings are assigned only to sections in Condition Category I where the  $PCI \ge 70$ . Sections with PCI values less than 70 are assigned to treatments listed in Categories II through V

In the preventive maintenance category ( $PCI \ge 70$ ), a time sequence is used to identify the appropriate treatment and cost. Each preventive maintenance treatment description consists of three parts: 1) a CRACK treatment, 2) a SURFACE treatment, and 3) a RESTORATION treatment. These three parts allow the user to specify one of three different preventive maintenance treatments depending on the prior maintenance history of the section.

- 1. The CRACK treatment part can be used to specify the most frequent type of preventive maintenance activity planned (typically crack seals).
- 2. The SURFACE treatment part can be used to specify more extensive and less frequent preventive maintenance activities, such as chip seals or slurry seals. For example, a crack seal can be specified on a 3-year cycle with a slurry seal specified after 5 years.
- 3. The RESTORATION part can be used to specify a surface restoration treatment (such as an overlay) to be performed after a specified number of surface treatments. For example, after a certain number of successive slurry seals, an overlay can be specified instead of another slurry seal.

Rehabilitation treatments are assigned to sections in Condition Categories II through V (PCI less than 70). Each line is defined by a specific combination of functional classification, surface type, and condition category.

COLUMN	DESCRIPTION
Functional Class	Functional Classification identifying the branch
Surface	Surface Type identifying the branch number.
Condition Category	Condition Category (I through V).
Treatment Type	First Row (Crack Treatment) indicates localized treatment (e.g., crack sealing). Second Row (Surface Treatment) indicates surface treatment (e.g., slurry sealing). Third Row (Restoration Treatment) indicates surface restoration (e.g., overlay).
Treatment	Name of treatments from the "Treatment Descriptions" report.
Yrs. Between Crack Seals	First Row - number of years between successive treatment applications specified in the first row (i.e. CRACK treatment).

COLUMN	DESCRIPTION
Yrs. Between Surface Seals	Second Row - number of years between successive treatment applications specified in the second row (i.e., SURFACE treatment).
Number of Sequential Seals	Number of times that the treatment application in the second row (i.e., SURFACE treatment) will be performed prior to performing the treatment application in the third row.

Note that the treatments assigned to each section should not be blindly followed in preparing a road maintenance program. Engineering judgment and project level analysis should be applied to ensure that the treatment is appropriate and cost effective for the section.

# **Decision Tree**

Printed: 9/13/2022

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	\$5.50		7	
			Restoration Treatment	DO NOTHING	\$0.00			99
		II - Good, Non-Load Related		SLURRY SEAL W/ DIGOUTS	\$8.25		7	
		III - Good, Load Related		1.5" AC OVERLAY W/ DIGOUTS	\$55.50			
		IV - Poor		2" AC OVERLAY W/ DIGOUTS	\$66.50			
		V - Very Poor		3"AC OVERLAY W/ DIGOUTS	\$91.75			
	AC/AC	I - Very Good	Crack Treatment	DO NOTHING	\$0.00	9		
			Surface Treatment	SLURRY SEAL	\$5.50		7	
			Restoration Treatment	DO NOTHING	\$0.00			99
		II - Good, Non-Load Related		SLURRY SEAL W/ DIGOUTS	\$8.25		7	
		III - Good, Load Related		1.5" AC OVERLAY W/ DIGOUTS	\$55.50			
		IV - Poor		2" AC OVERLAY W/ DIGOUTS	\$66.50			
		V - Very Poor		3"AC OVERLAY W/ DIGOUTS	\$91.75			
	AC/PCC	I - Very Good	Crack Treatment	DO NOTHING	\$0.00	4		
			Surface Treatment	SLURRY SEAL	\$2.50		7	
			Restoration Treatment	DO NOTHING	\$0.00			3
		II - Good, Non-Load Related		SLURRY SEAL W/ DIGOUTS	\$4.00			
		III - Good, Load Related		SLURRY SEAL W/ DIGOUTS	\$6.00			
		IV - Poor		2" AC OVERLAY W/ DIGOUTS	\$40.00			
		V - Very Poor		THICK AC OVERLAY(2.5 INCHES)	\$57.00			
	PCC	I - Very Good	Crack Treatment	DO NOTHING	\$0.00	9		
			Surface Treatment	DO NOTHING	\$0.00		15	
			Restoration Treatment	DO NOTHING	\$0.00			99
		II - Good, Non-Load Related		DO NOTHING	\$0.00			
		III - Good, Load Related		DO NOTHING	\$0.00			
		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

Selected Treatment is not a Surface Seal

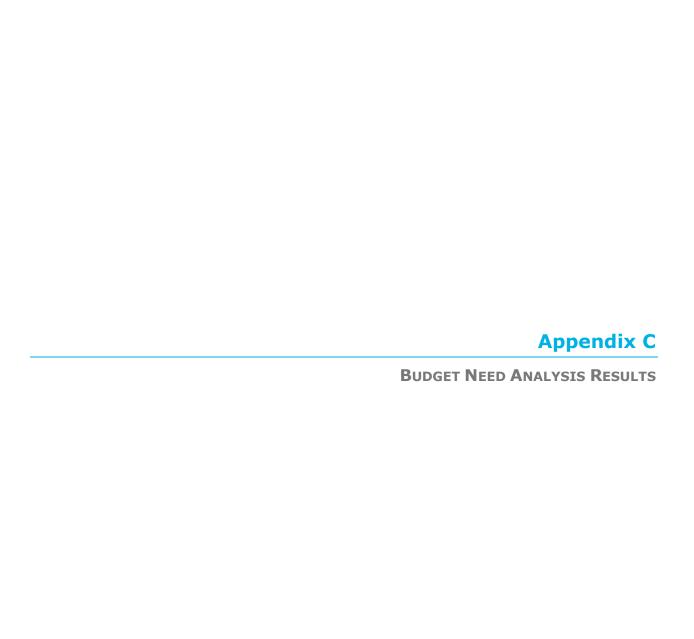
# **Decision Tree**

Printed: 9/13/2022

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:		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	\$5.25		8	
			Restoration Treatment	DO NOTHING	\$0.00			99
		II - Good, Non-Load Related		SLURRY SEAL W/ DIGOUTS	\$7.50		8	
		III - Good, Load Related		1.5" AC OVERLAY W/ DIGOUTS	\$49.00			
		IV - Poor		2" AC OVERLAY W/ DIGOUTS	\$58.75			
		V - Very Poor		3"AC OVERLAY W/ DIGOUTS	\$77.75			
	AC/AC	I - Very Good	Crack Treatment	DO NOTHING	\$0.00	9		
			Surface Treatment	SLURRY SEAL	\$5.25		8	
			Restoration Treatment	DO NOTHING	\$0.00			99
		II - Good, Non-Load Related		SLURRY SEAL W/ DIGOUTS	\$7.50		8	
		III - Good, Load Related		1.5" AC OVERLAY W/ DIGOUTS	\$49.00			
		IV - Poor		2" AC OVERLAY W/ DIGOUTS	\$58.75			
		V - Very Poor		3"AC OVERLAY W/ DIGOUTS	\$77.75			
	AC/PCC	I - Very Good	Crack Treatment	DO NOTHING	\$0.00	4		
			Surface Treatment	SLURRY SEAL	\$2.50		8	
			Restoration Treatment	DO NOTHING	\$0.00			3
		II - Good, Non-Load Related		SLURRY SEAL W/ DIGOUTS	\$4.00			
		III - Good, Load Related		SLURRY SEAL W/ DIGOUTS	\$5.00			
		IV - Poor		SURFACE TREATMENT (CAPE OR SLURRY)	\$10.00			
		V - Very Poor		2" AC OVERLAY W/ DIGOUTS	\$40.00			

Functional Class and Surface combination not used

Selected Treatment is not a Surface Seal



#### **Budget Needs Reports**

The purpose of this section is to answer the question: If the City had all the money in the world, what sections should be fixed and how much will it cost? Based on the Maintenance & Rehabilitation (M&R) decision tree and the PCIs of the sections, the program will then select a maintenance or rehabilitation action and compute the total costs over the analysis period. The Budget Needs represents the "ideal world" funding levels, while the Budget Scenario reports in the next section represent the most "cost effective" prioritization possible for the actual funding levels.

A budget needs analysis has been performed. The summary results from the analysis are provided. An interest rate of 4% and an inflation factor of 4% were used to project the costs for the analysis period. This report shows the total ten-year budget that would be required to meet the City's standards as exemplified in the M&R decision tree.

Budget Needs reports included in this appendix are listed below:

- Projected PCI/Cost Summary
- Preventive Maintenance Treatment/Cost Summary
- Rehabilitation Treatment/Cost Summary

#### **Budget Needs Reports**

The purpose of this section is to answer the question: If the City had all the money in the world, what sections should be fixed and how much will it cost? Based on the Maintenance & Rehabilitation (M&R) decision tree and the PCIs of the sections, the program will then select a maintenance or rehabilitation action and compute the total costs over the analysis period. The Budget Needs represents the "ideal world" funding levels, while the Budget Scenario reports in the next section represent the most "cost effective" prioritization possible for the actual funding levels.

A budget needs analysis has been performed. The summary results from the analysis are provided. An interest rate of 4% and an inflation factor of 4% were used to project the costs for the analysis period. This report shows the total ten-year budget that would be required to meet the City's standards as exemplified in the M&R decision tree.

Budget Needs reports included in this appendix are listed below:

- Projected PCI/Cost Summary
- Preventive Maintenance Treatment/Cost Summary
- Rehabilitation Treatment/Cost Summary

# Needs - Projected PCI/Cost Summary

				Interest: 4.00%	Inflation: 4.00%	Printed: 12/19/2022
Ye	ar I	PCI Treated	PCI Untreated	PM Cost	Rehab Cost	Cost
20	23 8	39	68	\$368,064	\$4,378,269	\$4,746,334
20	24 8	36	66	\$0	\$326,676	\$326,676
20	25 8	35	64	\$78,418	\$90,386	\$168,804
20	26 8	33	62	\$6,089	\$0	\$6,089
20	27 8	32	60	\$59,537	\$211,228	\$270,765
20	28 8	31	58	\$69,802	\$0	\$69,802
20	29 8	30	56	\$72,963	\$0	\$72,963
20	30	78	54	\$53,666	\$62,089	\$115,755
20	31 8	31	52	\$480,716	\$712,668	\$1,193,384
20	32 8	32	50	\$532,478	\$61,105	\$593,583
			% PM	PM Total Cost	Rehab Total Cost	Total Cost
			22.76%	\$1,721,733	\$5,842,422	\$7,564,154

## **Needs - Preventive Maintenance Treatment/Cost Summary**

This report summarizes each preventive maintenance treatment type, quantity of pavement affected, and total costs over the analysis period. It also summarizes the total quantities and costs over the next ten years.

COLUMN	DESCRIPTION
Treatment	Type of preventive maintenance treatments needed.
Year	Year in the analysis period (i.e., 2023, 2024, 2025, etc.).
Area Treated	Quantities in linear feet (Seal Cracks) or square yard (Slurry Seal).
Cost	Maintenance treatment cost.

## Needs - Preventive Maintenance Treatment/Cost Summary

Interest: 4.00% Inflation: 4.00% Printed: 12/19/2022

Treatment	Year	Area Treated	Cost
SLURRY SEAL	2023	70,107.44 sq. yd.	\$368,064
	2025	13,809.89 sq. yd.	\$78,418
	2026	1,031.11 sq. yd.	\$6,089
	2027	9,432.11 sq. yd.	\$59,537
	2028	10,609.11 sq. yd.	\$69,802
	2029	10,983.56 sq. yd.	\$72,963
	2030	7,647.78 sq. yd.	\$53,666
	2031	66,773.67 sq. yd.	\$480,716
	2032	71,259.44 sq. yd.	\$532,478
	Total	261,654.11	\$1,721,733
	Total Quantity	261,654.11	\$1,721,733

## **Needs - Rehabilitation Treatment/Cost Summary**

This report summarizes each rehabilitation treatment type, quantity of pavement affected, and total costs over the analysis period. It also summarizes the total quantities and costs over the next ten years.

COLUMN	DESCRIPTION
Treatment	Type of rehabilitation treatments needed.
Year	Year in the analysis period (i.e., 2023, 2024, 2025, etc.).
Area Treated	Quantities in square yard.
Cost	Rehabilitation treatment cost.

## Needs - Rehabilitation Treatment/Cost Summary

Interest: 4.00% Inflation: 4.00% Printed: 12/19/2022

Treatment	Year	Area Treated	Cost
1.5" AC OVERLAY W/ DIGOUTS	2023	8,716.33 sq.yd.	\$427,100
	2024	5,166.89 sq.yd.	\$282,027
	2025	840 sq.yd.	\$44,519
	Total	14,723.22 sq.yd.	\$753,646
2" AC OVERLAY W/ DIGOUTS	2023	45,933.44 sq.yd.	\$2,718,141
	2027	3,073.33 sq.yd.	\$211,228
	2030	803.11 sq.yd.	\$62,089
	2031	5,797.44 sq.yd.	\$466,134
	Total	55,607.33 sq.yd.	\$3,457,592
B"AC OVERLAY W/ DIGOUTS	2023	13,736.78 sq.yd.	\$1,068,034
	Total	13,736.78 sq.yd.	\$1,068,034
SLURRY SEAL W/ DIGOUTS	2023	21,999.22 sq.yd.	\$164,994
	2024	5,724.22 sq.yd.	\$44,649
	2025	5,654.22 sq.yd.	\$45,867
	2031	24,018.67 sq.yd.	\$246,534
	2032	5,724.22 sq.yd.	\$61,105
	Total	63,120.56 sq.yd.	\$563,149
		Total Cost	\$5,842,422

# **Appendix D**

**BUDGET SCENARIO RESULTS** 

# Scenario 1: Existing Budget of \$58K/Year **Cost Summary Report Network Condition Summary Report** Nichols Consulting Engineers, Chtd.

# Scenarios - Cost Summary

Interest: 4.00%

Inflation: 4.00%

Printed: 12/19/2022

Scenario: Rio-Dell\_SC1: Existing Budget of 58K/Year

Stop Gap		Deferred	Surplus PM	eventative aintenance		Rehabilitation	Budget	PM	Year
\$(	Funded	\$4,689,750	\$16	\$56,584	Non-	II \$0	\$56,600	100%	2023
\$23,434	Unmet	ψ .,σσσ,. σσ	<b>4.0</b>	φου,σο.	Project	III \$0	ψου,σου	.0070	2023
Ψ23,434	Omnet			\$0	Project	IV \$0			
						V \$0			
						otal \$0	To		
						ect \$0	Proje		
\$0	Funded	\$5,567,260	\$33	\$56,167	Non-	II \$0	\$56,200	100%	2024
\$1,472	Unmet				Project	III \$0			
				\$0	Project	IV \$0 V \$0			
							_		
						otal \$0			
		<b>AF 000 000</b>	<b>4505</b>	A55 575			Proje	1000/	
\$0	Funded	\$5,980,930	\$525	\$55,575	Non- Project	II \$0 III \$0	\$56,100	100%	2025
\$1,412	Unmet			\$0	Project	IV \$0			
				ΨΟ	1 10,000	V \$0			
						otal \$0	To		
							Proje		
\$0	Funded	\$6,393,587	\$18	\$56,782	Non-	II \$0	\$56,800	100%	2026
\$0	Unmet	φο,σσο,σσι	Ψ10	ψου, ι οΣ	Project	III \$0	ψου,σου	10070	2020
φι	Onnet			\$0	Project	IV \$0			
						V \$0			
						otal \$0	To		
							Proje		
\$0	Funded	\$6,958,326	\$3,556	\$53,144	Non-	II \$0	\$56,700	100%	2027
\$719	Unmet				Project	III \$0			
				\$0	Project	IV \$0			
						V \$0	_		
						otal \$0			
•		<b>^-</b>		<b>A54.000</b>			Proje		
\$0	Funded	\$7,355,030	\$17	\$54,383	Non- Project	II \$0 III \$0	\$54,400	100%	2028
\$34,496	Unmet			\$0	Project	IV \$0			
				Ψ	1 10,001	V \$0			
						otal \$0	To		
							Proje		
\$0	Funded	\$7,980,232	\$1,094	\$64,206	Non-	II \$0	\$65,300	100%	2029
\$1,791	Unmet	**,***,===	* 1,000	<b>4</b> 0 1,= 0 0	Project	III \$0	<b>4 ,</b>		2023
Ψ1,751	Omnet			\$0	Project	IV \$0			
						V\$0			
						otal \$0	To		
							Proj		
\$0	Funded	\$8,649,401	\$1,329	\$59,671	Non-	II \$0	\$61,000	100%	2030
\$1,717	Unmet				Project	III \$0			
				\$0	Project	IV \$0			
						V \$0	_		
						otal \$0			
						ect \$0	Proj		

Year	PM	Budget	Reh	abilitation		reventative Iaintenance	Surplus PM	Deferred		Stop Gap
2031	100%	\$61,000	II	\$0	Non-	\$59,924	\$1,076	\$9,551,465	Funded	\$0
			Ш	\$0	Project				Unmet	\$1,534
		IV \$0 Project \$0	ψ1,001							
			V	\$0						
		To	otal	\$0						
		Pro	ject	\$0						
2032	100%	\$61,000	II	\$0	Non-	\$60,161	\$839	\$10,563,941	Funded	\$0
			III	\$0	Project				Unmet	\$1,471
			IV	\$0	Project	\$0			Omnot	Ψ.,
			V	\$0						
		To	otal	\$0						
		Pro	ject	\$0						

Summary				
			Funded	Unmet
Functional Class	Rehabilitation	Prev. Maint.	Stop Gap	Stop Gap
Collector	\$0	\$80,175	\$0	\$3,729
Residential/Local	\$0	\$496,422	\$0	\$64,318
Grand Total:	\$0	\$576,597	\$0	\$68,047

## Scenarios - Network Condition Summary

Interest: 4.00%

Inflation: 4.00% Printed: 12/19/2022

Scenario: Rio-Dell\_SC1: Existing Budget of

58K/Year

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2023	\$56,600	100%	2027	\$56,700	100%	2031	\$61,000	100%
2024	\$56,200	100%	2028	\$54,400	100%	2032	\$61,000	100%
2025	\$56,100	100%	2029	\$65,300	100%			
2026	\$56,800	100%	2030	\$61,000	100%			

#### Projected Network Average PCI by Year **Never Treated** With Selected Treatment Year Treated Centerline Treated Lane Miles Miles 2023 68 68 0.58 1.16 2024 66 67 0.65 1.30 2025 64 65 0.60 1.21 2026 62 63 0.44 1.01 2027 60 62 0.44 0.89 2028 58 60 0.87 0.43 2029 56 58 0.71 1.42 2030 54 57 0.50 1.01 2031 52 55 1.05 0.52 2032 50 53 0.57 1.13

#### Percent Network Area by Functional Class and Condition Category

Condition in base year 2023, prior to applying treatments.

	•				
Condition	Arterial	Collector	Res/Loc	Other	Total
1	0.0%	6.2%	54.8%	0.0%	61.0%
II / III	0.0%	0.0%	14.1%	0.0%	14.1%
IV	0.0%	1.1%	18.1%	0.0%	19.2%
V	0.0%	0.0%	5.7%	0.0%	5.7%
Total	0.0%	7.3%	92.7%	0.0%	100.0%

#### Condition in year 2023 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	0.0%	6.2%	54.8%	0.0%	61.0%
II / III	0.0%	0.0%	14.1%	0.0%	14.1%
IV	0.0%	1.1%	18.1%	0.0%	19.2%
V	0.0%	0.0%	5.7%	0.0%	5.7%
Total	0.0%	7.3%	92.7%	0.0%	100.0%

#### Condition in year 2032 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
1	0.0%	5.1%	43.8%	0.0%	48.8%
II / III	0.0%	0.0%	11.9%	0.0%	11.9%
IV	0.0%	1.2%	13.8%	0.0%	15.0%
V	0.0%	1.1%	23.2%	0.0%	24.3%
Total	0.0%	7.3%	92.7%	0.0%	100.0%

Scenarios Criteria: Area ID = R - Rio Dell

# Scenario 2: Maintain PCI at 68 **Cost Summary Report Network Condition Summary Report** Nichols Consulting Engineers, Chtd.

# Scenarios - Cost Summary

Interest: 4.00%

Inflation: 4.00%

Printed: 12/19/2022

Scenario: Rio-Dell\_SC2: Maintain PCI at 68

Year	PM	Budget	Re	habilitation		reventative laintenance	Surplus PM	Deferred		Stop Gap
2023	100%	\$100,000	II	\$0	Non-	\$99,811	\$189	\$4,646,523	Funded	\$(
2023	10070	Ψ100,000	iii	\$0	Project	ψου,στι	Ψ100	ψ-1,0-10,020	Unmet	
			IV	\$0	Project	\$0			Onnet	\$23,434
			V	\$0	•					
		Т	otal	\$0						
		Pro	ject	\$0						
2024	80%	\$400,000	II	\$79,728	Non-	\$278,984	\$41,016	\$5,219,759	Funded	\$0
			Ш	\$0	Project				Unmet	\$699
			IV	\$0	Project	\$0				
			V	\$0						
			otal	\$79,728						
			ject	\$0						
2025	16%	\$489,000	Ш	\$81,201	Non-	\$78,418	\$0	\$5,186,782	Funded	\$0
			III	\$182,270	Project				Unmet	\$118
			IV V	\$146,434	Project	\$0				
		_		\$0						
			otal	\$409,905						
	407		ject 	\$0			•	<b>^-</b>		
2026	1%	\$598,000	II III	\$0 \$0	Non- Project	\$6,089	\$0	\$5,026,950	Funded	\$0
			III IV	\$0 \$591,416	Project	\$0			Unmet	\$0
			V	\$391,410	riojeci	φυ				
		т	otal							
				\$591,416 \$0						
0007	10%	\$600,000	ject II	\$0 \$0	Non-	\$59,537	\$463	\$5,004,838	Funded	\$0
2027	10 /6	\$600,000	III	\$0 \$0	Project	φυθ,υυ1	φ403	φ5,004,636		
			IV	\$506,893	Project	\$0			Unmet	\$719
			V	\$18,899	•					
		Т	otal	\$525,792						
			ject	\$0						
2028	12%	\$587,000	II	\$0	Non-	\$69,802	\$638	\$4,819,443	Funded	\$0
2020			Ш	\$142,919	Project				Unmet	\$27,702
			IV	\$345,622	Project	\$0				<b>4</b> =1,1.4=
			V	\$0						
		Т	otal	\$488,541						
			ject	\$0						
2029	12%	\$616,000	П	\$0	Non-	\$72,963	\$957	\$4,690,105	Funded	\$0
			III	\$52,081	Project	•			Unmet	\$0
			IV	\$453,541	Project	\$0				
		_	V	\$33,252						
			otal	\$538,874						
			ject	\$0		<b>A</b> 0 = 101	<b>*</b>	<b>0.1.022.27</b>		*-
2030	6%	\$590,000	II III	\$0 \$0	Non- Project	\$35,408	\$0	\$4,690,373	Funded	\$0
			III IV	\$0 \$216,892	Project	\$0			Unmet	\$0
			V	\$216,692 \$304,579	FIUJECT	ΦΟ				
		т	otal	\$521,470						
				\$521,470 \$0						
		Pro	ject	ΦU						

Year	PM	Budget	Rel	nabilitation		reventative laintenance	Surplus PM	Deferred		Stop Gap
2031	15%	\$595,000	II	\$88,478	Non-	\$92,745	\$0	\$4,688,919	Funded	\$0
			Ш	\$0	Project				Unmet	\$0
			IV	\$0	Project	\$0			Omnot	Ψο
			V	\$377,506						
		Т	otal	\$465,984						
		Pro	ject	\$0						
2032	34%	\$600,000	II	\$91,749	Non-	\$221,491	\$0	\$4,880,287	Funded	\$0
			Ш	\$0	Project				Unmet	\$301
			IV	\$282,801	Project	\$0			Omnot	φοσι
			V	\$0						
		Т	otal	\$374,550						
		Pro	ject	\$0						

Summary				
Functional Class	Rehabilitation	Prev. Maint.	Funded Stop Gap	Unmet Stop Gap
Collector	\$470,832	\$101,856	\$0	\$3,273
Residential/Local	\$3,525,429	\$913,393	\$0	\$49,699
Grand Total:	\$3,996,261	\$1,015,249	\$0	\$52,972

## Scenarios - Network Condition Summary

Interest: 4.00%

Inflation: 4.00% Printed: 12/19/2022

Scenario: Rio-Dell\_SC2: Maintain PCI at 68

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2023	\$100,000	100%	2027	\$600,000	10%	2031	\$595,000	15%
2024	\$400,000	80%	2028	\$587,000	12%	2032	\$600,000	34%
2025	\$489,000	16%	2029	\$616,000	12%			
2026	\$598,000	1%	2030	\$590,000	6%			

## Projected Network Average PCI by Year

Year	Never Treated	With Selected Treatment	Treated Centerline Miles	Treated Lane Miles	
2023	68	68	1.07	2.14	
2024	66	68	3.37	7.10	
2025	64	68	1.72	3.44	
2026	62	68	0.68	1.37	
2027	60	68	0.94	1.89	
2028	58	68	1.04	2.08	
2029	56	68	1.27	2.55	
2030	54	68	0.80	1.60	
2031	52	68	1.44	2.88	
2032	50	68	2.68	5.49	

#### Percent Network Area by Functional Class and Condition Category

#### Condition in base year 2023, prior to applying treatments.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	0.0%	6.2%	54.8%	0.0%	61.0%
II / III	0.0%	0.0%	14.1%	0.0%	14.1%
IV	0.0%	1.1%	18.1%	0.0%	19.2%
V	0.0%	0.0%	5.7%	0.0%	5.7%
Total	0.0%	7.3%	92.7%	0.0%	100.0%

#### Condition in year 2023 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	0.0%	6.2%	54.8%	0.0%	61.0%
II / III	0.0%	0.0%	14.1%	0.0%	14.1%
IV	0.0%	1.1%	18.1%	0.0%	19.2%
V	0.0%	0.0%	5.7%	0.0%	5.7%
Total	0.0%	7.3%	92.7%	0.0%	100.0%

#### Condition in year 2032 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	0.0%	7.3%	70.4%	0.0%	77.7%
II / III	0.0%	0.0%	4.9%	0.0%	4.9%
V	0.0%	0.0%	17.5%	0.0%	17.5%
Total	0.0%	7.3%	92.7%	0.0%	100.0%

# **Scenario 3: Best Management Practice Cost Summary Report Network Condition Summary Report** Nichols Consulting Engineers, Chtd.

# Scenarios - Cost Summary

Interest: 4.00%

Inflation: 4.00%

Printed: 12/19/2022

Scenario: Rio-Dell\_SC3: Unconstrained Budget

04 0		Deferred	Orana la car DM	reventative		L = L :	Decidenat D	DM	V
Stop Gap		Deferred	Surplus PM	aintenance		habilitation		PM	Year
\$0	Funded	\$3,838,268	\$181,936	\$368,064	Non- Project	\$66,398 \$0	\$1,100,000 II III	50%	2023
\$20,670	Unmet			\$0	Project	\$473,603	IV		
				ΨΟ	1 10,000	\$0	V		
						\$540,002	Total		
						\$0	Project		
\$0	Funded	\$3,652,911	\$0	\$0	Non-	\$44,649	\$1,100,000 II	0%	2024
\$324	Unmet				Project	\$318,225	III		2021
**-				\$0	Project	\$722,100	IV		
						\$0	V		
						\$1,084,975	Total		
						\$0	Project		
\$0	Funded	\$2,949,271	\$2,445	\$52,555	Non-	\$45,867	\$1,100,000 II	5%	2025
\$0	Unmet			Φ0	Project	\$44,519	III		
				\$0	Project	\$953,372 \$0	IV V		
						\$1,043,758	Total		
\$0	Funded	¢2 206 479	\$13	#22.007	Non	\$0 \$0	Project \$1,100,000 II	3%	0000
		\$2,206,178	\$13	\$32,987	Non- Project	\$0 \$318,547	\$1,100,000 II III	3%	2026
\$0	Unmet			\$0	Project	\$686,381	IV		
				ΨΟ	1 10,000	\$53,349	V		
						\$1,058,278	Total		
						\$0	Project		
\$0	Funded	\$1,613,734	\$6,463	\$59,537	Non-	\$0	\$1,100,000 II	6%	2027
\$0	Unmet				Project	\$0	III		2021
•	• • • • • • • • • • • • • • • • • • • •			\$0	Project	\$359,087	IV		
						\$624,206	V		
						\$983,293	Total		
						\$0	Project		
\$0	Funded	\$1,018,901	\$7,198	\$69,802	Non-	\$0	\$1,100,000 II	7%	2028
\$7,565	Unmet			Φ0	Project	\$0	III		
				\$0	Project	\$118,019 \$644,316	IV V		
						\$762,335 \$0	Total Project		
\$0	Funded	\$642,805	\$15,037	\$72,963	Non-	\$0	\$1,100,000 II	8%	2020
		\$042,003	\$13,037	\$72,903	Project	\$0 \$0	φ1,100,000 II	0 /0	2029
\$0	Unmet			\$0	Project	\$0	IV		
					•	\$551,663	V		
						\$551,663	Total		
						\$0	Project		
\$0	Funded	\$0	\$19,592	\$35,408	Non-	\$0	\$1,100,000 II	5%	2030
\$0	Unmet				Project	\$0	III		
,				\$0	Project	\$0	IV		
						\$668,518	V		
						\$668,518	Total		
						\$0	Project		

Year	PM	Budget	Rel	nabilitation		reventative laintenance	Surplus PM	Deferred	S	top Gap
2031	44%	\$1,100,000	II	\$162,652	Non-	\$480,716	\$3,284	\$16,697	Funded	\$0
	2001		Ш	\$0 Project					Unmet	\$289
			IV	\$0	Project	\$0			Omnot	Ψ200
			V	\$0						
		Т	otal	\$162,652						
		Pro	ject	\$0						
2032	10%	\$1,100,000	II	\$61,105	Non-	\$100,555	\$9,445	\$17,364	Funded	\$0
			Ш	\$0	Project				Unmet	\$0
			IV	\$0	Project	\$0			Omnot	ΨΟ
			V	\$0	·					
		Т	otal	\$61,105						
		Pro	ject	\$0						

Summary				
			Funded	Unmet
Functional Class	Rehabilitation	Prev. Maint.	Stop Gap	Stop Gap
Collector	\$430,628	\$101,022	\$0	\$505
Residential/Local	\$6,485,951	\$1,171,565	\$0	\$28,345
Grand Total:	\$6,916,579	\$1,272,587	\$0	\$28,849

## Scenarios - Network Condition Summary

Interest: 4.00% Inflation: 4.00% Printed: 12/19/2022

Scenario: Rio-Dell\_SC3: Unconstrained Budget

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2023	\$1,100,000	50%	2027	\$1,100,000	6%	2031	\$1,100,000	44%
2024	\$1,100,000	0%	2028	\$1,100,000	7%	2032	\$1,100,000	10%
2025	\$1,100,000	5%	2029	\$1,100,000	8%			
2026	\$1,100,000	3%	2030	\$1,100,000	5%			

#### Projected Network Average PCI by Year **Never Treated** With Selected Treatment Year Treated Centerline Treated Lane Miles Miles 2023 68 72 4.88 10.12 74 2024 66 1.65 3.31 2025 64 76 1.76 3.53 2026 62 77 1.43 2.85 2027 60 79 1.35 2.70 58 80 2028 1.18 2.35 2029 80 0.93 1.87 56 2030 54 82 0.58 1.33 2031 52 83 4.58 9.53 82 2032 50 1.25 2.51

#### Percent Network Area by Functional Class and Condition Category

Condition in base year 2023, prior to applying tre	Condition in base v	vear 2023.	prior to	applying	treatments.
--	---------------------	------------	----------	----------	-------------

Condition	Arterial	Collector	Res/Loc	Other	Total
I	0.0%	6.2%	54.8%	0.0%	61.0%
II / III	0.0%	0.0%	14.1%	0.0%	14.1%
IV	0.0%	1.1%	18.1%	0.0%	19.2%
V	0.0%	0.0%	5.7%	0.0%	5.7%
Total	0.0%	7.3%	92.7%	0.0%	100.0%

#### Condition in year 2023 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	0.0%	6.2%	61.8%	0.0%	68.1%
II / III	0.0%	0.0%	10.4%	0.0%	10.4%
IV	0.0%	1.1%	14.7%	0.0%	15.8%
V	0.0%	0.0%	5.7%	0.0%	5.7%
Total	0.0%	7.3%	92.7%	0.0%	100.0%

#### Condition in year 2032 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	0.0%	7.3%	87.9%	0.0%	95.1%
II / III	0.0%	0.0%	4.9%	0.0%	4.9%
Total	0.0%	7.3%	92.7%	0.0%	100.0%



**PAVEMENT CONDITION MAPS** 



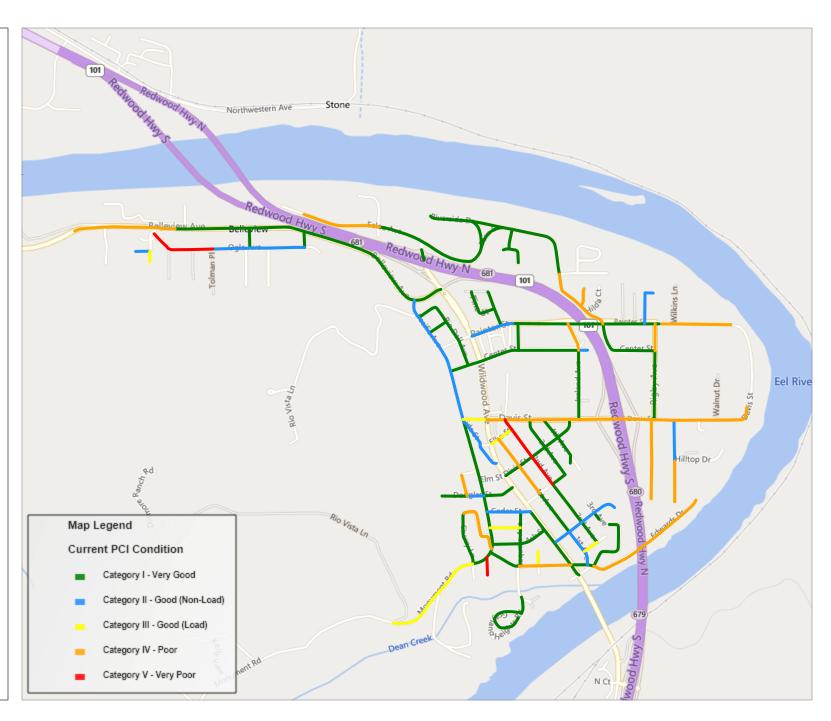


HCAOG

# **Current PCI Condition**

Printed: 12/22/2022





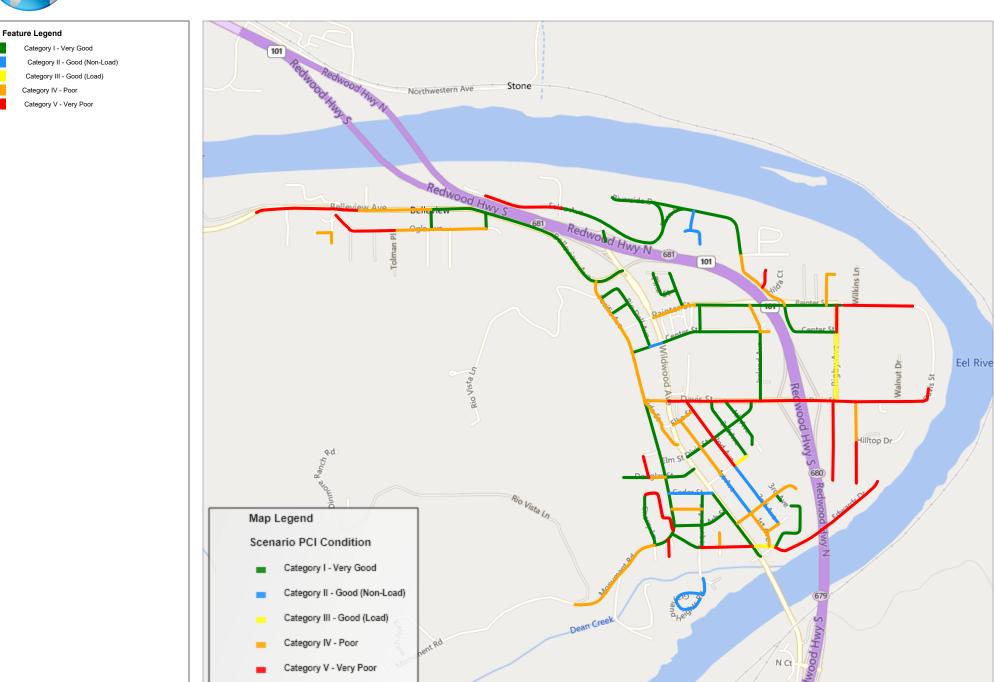


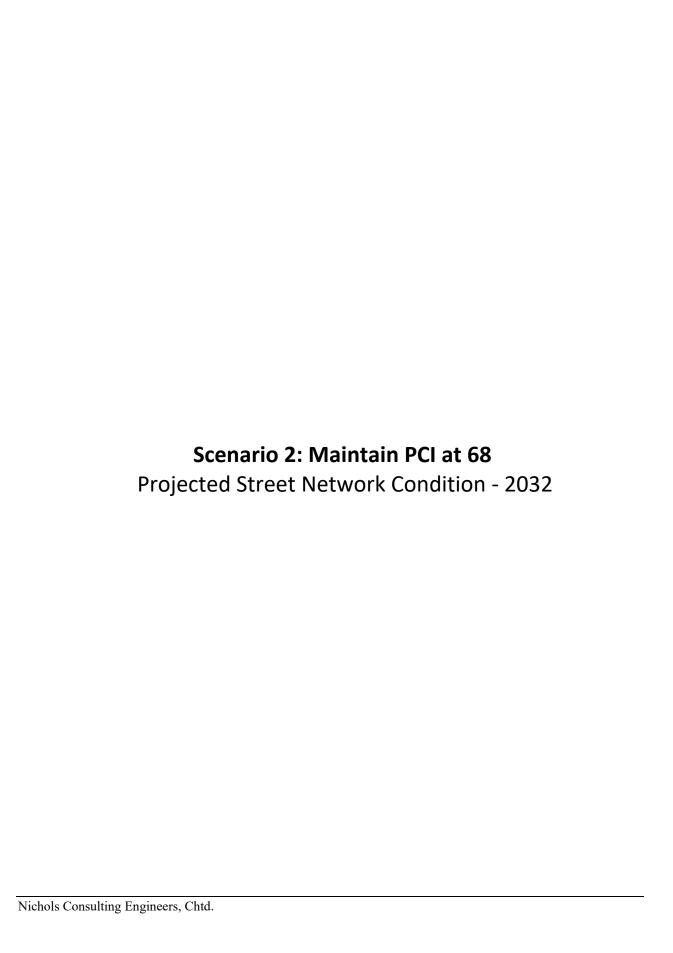


HCAOG

## **Scenario PCI Condition**

Rio-Dell\_SC1: Existing Budget of 58K/Year - 2032 Project Period - Total Rehab for 2032: \$0 - Printed: 12/22/2022







Feature Legend

Category I - Very Good

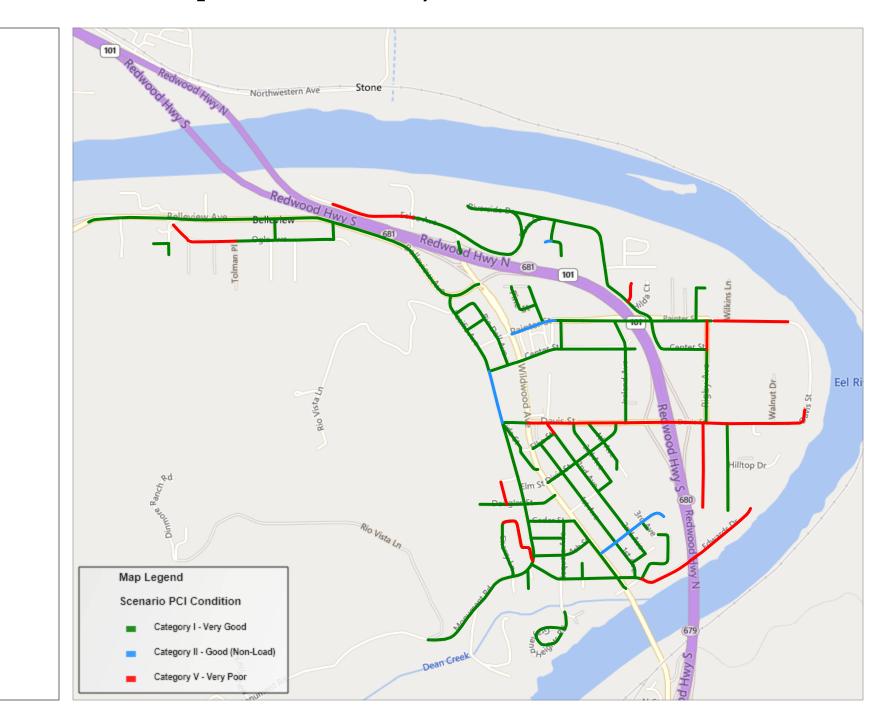
Category II - Good (Non-Load)

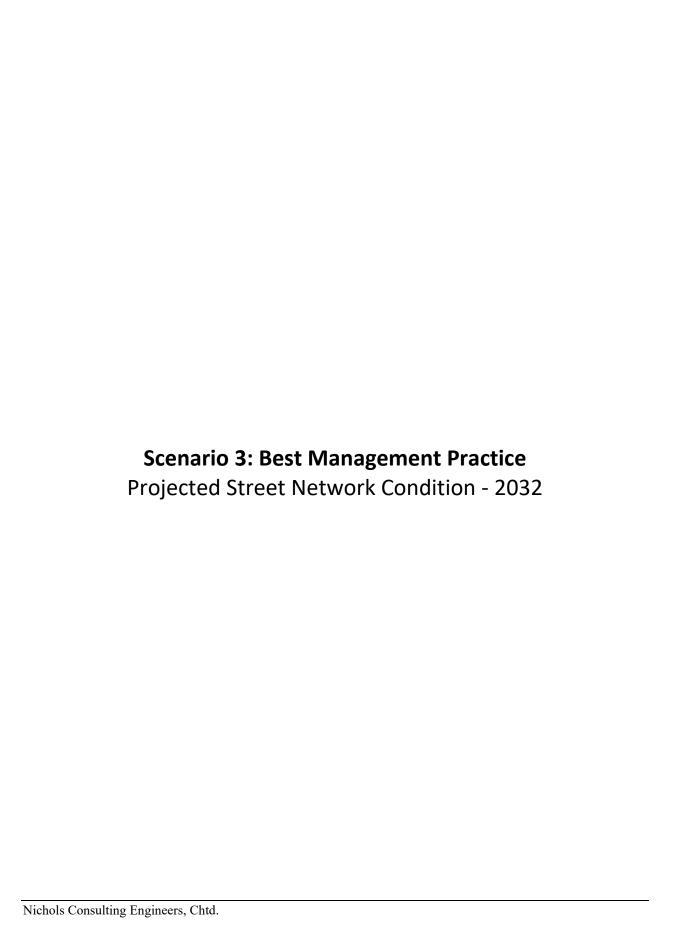
Category V - Very Poor

HCAOG

# **Scenario PCI Condition**

Rio-Dell\_SC2: Maintain PCI at 68 - 2032 Project Period - Total Rehab for 2032: \$0 - Printed: 12/22/2022



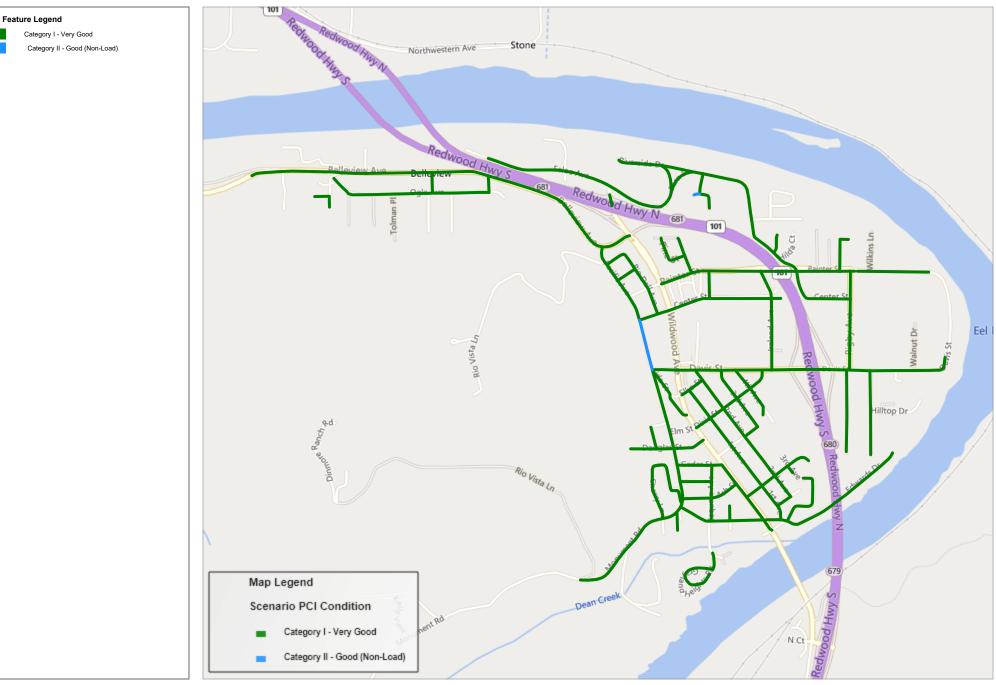




**HCAOG** 

# **Scenario PCI Condition**

Rio-Dell\_SC3: Unconstrained Budget - 2032 Project Period - Total Rehab for 2032: \$374,550 - Printed: 12/22/2022





Interest: 4.00%

Inflation: 4.00%

Printed: 12/19/2022

Scenario: Rio-Dell\_SC1: Existing Budget of

58K/Year

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2023	\$56,600	100%	2027	\$56,700	100%	2031	\$61,000	100%
2024	\$56,200	100%	2028	\$54,400	100%	2032	\$61,000	100%
2025	\$56,100	100%	2029	\$65,300	100%			
2026	\$56,800	100%	2030	\$61,000	100%			

Year: 2023

									Surface		Current	Treatm PCI	ent PCI		
Road Name	Begin Location	<b>End Location</b>	Street ID	Section ID	Length	Width	Area	FC	Type	Area ID	PCI	Before		Cost	Rating Treatment
3RD AVENUE	MEADOW BRIDGE DR	BERKELEY ST	R-3RDAVE	010	258	27	6,966	R	AC	R - Rio Dell	78	78	86	\$4,064	17,472 SLURRY SEAL
3RD AVENUE	BERKELEY ST	N END	R-3RDAVE	020	146	22	3,212	R	AC	R - Rio Dell	75	75	83	\$1,874	18,126 SLURRY SEAL
GRAYLAND HEIGHTS ROAD	S. SEQUOIA AVE	GRAYLAND HEIGHTS RD	R-GRHERD	010	1,527	36	54,972	R	AC	R - Rio Dell	74	74	83	\$32,067	18,199 SLURRY SEAL
HILLTOP DRIVE	GUNNERSON LN	RIO DELL PUBLIC WORKS EXT	R-HILLDR	010	397	19	7,543	R	AC	R - Rio Dell	75	75	83	\$4,400	18,126 SLURRY SEAL
MILLER COURT	S CDS	RIVERSIDE DR	R-MILLCT	010	628	36	22,608	R	AC	R - Rio Dell	74	74	83	\$13,188	18,200 SLURRY SEAL
WEST PAINTER STREET	62' E RIO DELL AVE	WILDWOOD AVE	R-WPAINST	040	100	17	1,700	R	AC	R - Rio Dell	89	89	94	\$992	8,493 SLURRY SEAL
										_	Treatme	ent Tota		\$56,584	
				Ye	ar 2023 /	Area To	tal		97,001		Year 202	3 Total		\$56,584	

Year: 2024

												Treatm	ent		
Road Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surface Type	Area ID	Current PCI	PCI Before	PCI After	Cost	Rating Treatment
ASH STREET	PACIFIC AVE	WILDWOOD AVE	R-ASHST	010	840	22	18,480	R	AC	R - Rio Dell	78	77	85	\$11,211	17,190 SLURRY SEAL
CENTER STREET	WILDWOOD AVE	IRELAND AVE	R-CENTST	010	1,555	29	45,095	R	AC	R - Rio Dell	77	76	84	\$27,358	17,359 SLURRY SEAL
RIGBY AVENUE	DAVIS ST	CENTER ST	R-RIGAVE	020	1,036	28	29,008	R	AC	R - Rio Dell	75	73	82	\$17,598	17,567 SLURRY SEAL
											Treatme	ent Total		\$56,167	
				Ye	ear 2024 <i>i</i>	Area To	tal		92,583		Year 202	4 Total		\$56,167	

									Treatment						
									Surface		Current	PCI	PCI		
Road Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Type	Area ID	PCI	Before	After	Cost	Rating Treatment
4TH AVENUE	EAST END OF PAVEMENT	DAVIS ST	R-4THAVE	010	759	20	15,180	R	AC	R - Rio Dell	81	78	86	\$9,578	16,190 SLURRY SEAL
DIXIE STREET	3RD AVE	4TH AVE	R-DIXIST	020	243	24	5,832	R	AC	R - Rio Dell	81	78	86	\$3,680	16,190 SLURRY SEAL

<sup>\*\* -</sup> Treatment from Project Selection

Interest: 4.00%

Inflation: 4.00%

Printed: 12/19/2022

Scenario: Rio-Dell\_SC1: Existing Budget of

58K/Year

Yea	ar:	20	)25

												Treatm	ent			
Road Name	Begin Location	End Location	Street ID	Section II	) Length	Width	Area	FC	Surface Type	Area ID	Current PCI	PCI Before	PCI	Cost	Pating	Treatment
DOUGLAS STREET	WESTEND	VIEW AVE	R-DOUGST		371	17	6,307		AC	R - Rio Dell	81	78	86	\$3,979	Ū	SLURRY SEAL
HILDA COURT	RIVERSIDE DR	N CDS	R-HILDA	010	460	40	18,400	R	AC	R - Rio Dell	80	77	85	\$11,609	16,310	SLURRY SEAL
MEADOW BRIDGE DRIVE	EDWARDS DR	3RD AVE	R-MEABRDR	010	1,072	35	37,520	R	AC	R - Rio Dell	80	77	85	\$23,673	16,499	SLURRY SEAL
WEST PAINTER STREET	PACIFIC AVE	50' W RIO DELL AVE	R-WPAINST	020	285	17	4,845	R	AC	R - Rio Dell	94	89	94	\$3,057	7,811	SLURRY SEAL
										_	Treatme	ent Total		\$55,575		
				Y	ear 2025 <i>F</i>	Area To	tal		88,084		Year 202	5 Total		\$55,575		

#### Year: 2026

												Treatm	nent			
									Surface		Current	PCI				
Road Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Type	Area ID	PCI	Before	After	Cost	Rating	Treatment
PAINTER STREET	87' W CHASE AVE	258' E CHASE AVE	R-PAINST	025	320	29	9,280	R	AC/AC	R - Rio Dell	82	79	87	\$6,089	20,502	SLURRY SEAL
SEQUOIA STREET	MONUMENT AVE	CEDAR ST	R-SEQUST	010	808	30	24,240	R	AC	R - Rio Dell	81	76	85	\$15,906	15,906	SLURRY SEAL
SOUTH SEQUOIA STREET	GRAYLAND HEIGHTS RD	MONUMENT RD	R-SSEQST	010	514	24	12,336	R	AC	R - Rio Dell	81	76	85	\$8,095	15,906	SLURRY SEAL
WILDWOOD AVENUE	136FT NORTH OF ELM ST	DAVIS ST	R-WILAVE	020	678	60	40,680	R	AC	R - Rio Dell	81	76	85	\$26,693	15,906	SLURRY SEAL
											Treatme	ent Tota		\$56,782		
				Ye	ar 2026 <i>l</i>	Area To	tal		86,536		Year 202	6 Total		\$56,782		

												Treatm	nent				
Road Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surface Type	Area ID	Current PCI	PCI Before	PCI After	Cost	Rating	Treatment	
3RD AVENUE	COLUMBUS ST	DAVIS ST	R-3RDAVE	030	1,002	26	26,052	R	AC	R - Rio Dell	81	75	83	\$17,778	15,504	SLURRY SEAL	
BELLEVIEW AVENUE	WILDWOOD AVE	1116 E/O RIVER ST	R-BELAVE	010	1,337	37	49,469 I	RMaC	AC	R - Rio Dell	87	79	86	\$35,366	17,038	SLURRY SEAL	
											Treatme	ent Tota	l	\$53,144			
				Ye	ar 2027 <i>F</i>	Area To	tal	7	75,521		Year 202	7 Total		\$53,144			

Interest: 4.00%

Inflation: 4.00%

Printed: 12/19/2022

Scenario: Rio-Dell\_SC1: Existing Budget of

58K/Year

Yea	r:	2028	

											Treatm	ent		
Road Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area F	Surface C Type	Area ID	Current PCI	PCI Before	PCI After	Cost	Rating Treatment
BELLEVIEW AVENUE	1116 E/O RIVER S	ΓRIVER ST	R-BELAVE	015	1,116	37	41,292 RM	aC AC	R - Rio Dell	89		87	\$30,701	16,378 SLURRY SEAL
BELLEVIEW AVENUE	RIVER RD	SPRING ST	R-BELAVE	020	825	23	18,975 RM	aC AC	R - Rio Dell	90	80	88	\$14,108	16,477 SLURRY SEAL
PAINTER STREET	5' W BUFF PLACE	215' E CURTIS LANE	R-PAINST	050	355	38	13,490 F	R AC/AC	R - Rio Dell	85	80	88	\$9,574	20,323 SLURRY SEAL
										Treatme	ent Total		\$54,383	
				Υe	ear 2028 <i>A</i>	Area To	al	73,757		Year 202	28 Total		\$54,383	

#### Year: 2029

												Treatn	nent		
									Surface		Current	PCI	PCI		
Road Name	Begin Location	End Location	Street ID	Section ID	) Length	Width	Area	FC	Type	Area ID	PCI	Before	After	Cost	Rating Treatment
CENTER STREET	PAINTER ST	RIGBY AVE	R-CENTST	030	617	26	16,042	R	AC/AC	R - Rio Dell	70	61	71	\$11,841	14,625 SLURRY SEAL
KELLEY STREET	VIEW AVE	PACIFIC AVE	R-KELLST	010	244	27	6,588	R	AC	R - Rio Dell	83	74	82	\$4,863	14,426 SLURRY SEAL
MAY AVENUE	PAINTER DT	NORTH ST	R-MAYAVE	010	539	33	17,787	R	AC	R - Rio Dell	81	72	81	\$13,129	14,468 SLURRY SEAL
PACIFIC AVENUE	MONUMENT AVE	KELLY ST	R-PACAVE	010	1,256	21	26,376	R	AC	R - Rio Dell	84	75	83	\$19,468	14,344 SLURRY SEAL
PACIFIC AVENUE	KELLY ST	W DAVIS ST	R-PACAVE	020	793	20	15,860	R	AC	R - Rio Dell	82	73	81	\$11,706	14,430 SLURRY SEAL
RIO DELL AVENUE	TOWNSEND ST	BUTCHER ST	R-RIDAVE	020	289	15	4,335	R	AC/AC	R - Rio Dell	81	73	81	\$3,200	15,113 SLURRY SEAL
											Treatme	ent Tota	I	\$64,206	
				Y	ear 2029 A	Area To	tal		86,988		Year 202	9 Total	l	\$64,206	

									Surface		Current	Treatm PCI				
Road Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Туре	Area ID				Cost	Rating	Treatment
DOUGLAS STREET	PACIFIC ST	WILDWOOD AVE	R-DOUGST	030	472	30	14,160	R	AC	R - Rio Dell	84	73	82	\$10,870	13,880	SLURRY SEAL
MONUMENT ROUD	CHERRY LN	PACIFIC ST	R-MONURD	020	305	24	7,320	R	AC	R - Rio Dell	84	73	82	\$5,619	13,880	SLURRY SEAL
MONUMENT ROUD	PACIFIC ST	S SEQUOIA AVE	R-MONURD	030	494	23	11,362	R	AC	R - Rio Dell	84	73	82	\$8,722	13,880	SLURRY SEAL
PAINTER STREET	258' E CHASE AVE	IRELAND ST	R-PAINST	020	545	38	20,710	R	AC	R - Rio Dell	84	73	82	\$15,898	13,880	SLURRY SEAL
PINE STREET	W END	MAY AVE	R-PINEST	010	561	31	17,391	R	AC	R - Rio Dell	85	74	83	\$13,350	13,839	SLURRY SEAL
WEST CENTER STREET	PACIFIC AVE	RIO DELL AVE	R-WCENST	010	283	24	6,792	R	AC/AC	R - Rio Dell	86	79	87	\$5,214	19,572	SLURRY SEAL
										_	Treatme	ent Total		\$59,671		
				Ye	ar 2030 A	Area To	tal		77,735		Year 203	0 Total		\$59,671		

Interest: 4.00%

Inflation: 4.00%

Printed: 12/19/2022

Scenario: Rio-Dell\_SC1: Existing Budget of

58K/Year

Year: 2031

												Treatm	ent			
									Surface		Current	PCI				
Road Name	Begin Location	<b>End Location</b>	Street ID	Section ID	Length	Width	Area	FC	Type	Area ID	PCI	Before	After	Cost	Rating	Treatment
3RD AVENUE	MEADOW BRIDGE DR	BERKELEY ST	R-3RDAVE	010	258	27	6,966	R	AC	R - Rio Dell	78	73	82	\$5,561	13,351	SLURRY SEAL
3RD AVENUE	BERKELEY ST	N END	R-3RDAVE	020	146	22	3,212	R	AC	R - Rio Dell	75	71	80	\$2,564	13,336	SLURRY SEAL
CHASE AVENUE	CENTER ST	PAINTER ST	R-CHAAVE	010	387	18	6,966	R	AC/AC	R - Rio Dell	89	77	85	\$5,561	13,484	SLURRY SEAL
HILLTOP DRIVE	GUNNERSON LN	RIO DELL PUBLIC WORKS EXT	R-HILLDR	010	397	19	7,543	R	AC	R - Rio Dell	75	71	80	\$6,022	13,336	SLURRY SEAL
IRELAND AVENUE	DAVIS ST	CENTER ST	R-IREAVE	010	1,012	35	35,420	R	AC	R - Rio Dell	87	74	83	\$28,277	13,283	SLURRY SEAL
PAINTER STREET	PACIFIC AVE	WILDWOOD AVI	R-PAINST	010A	450	29	13,050	R	AC/AC	R - Rio Dell	92	79	87	\$10,418	13,011	SLURRY SEAL
WEST PAINTER STREET	50' W RIO DELL AVE	62' E RIO DELL AVE	R-WPAINST	030	112	17	1,904	R	AC/AC	R - Rio Dell	89	77	85	\$1,520	13,483	SLURRY SEAL
											Treatme	ent Tota		\$59,924		
				Υe	ar 2031 A	Area To	tal		75,061		Year 203	1 Total		\$59,924		

												Treatm	ent		
									Surface		Current	PCI	PCI		
Road Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Type	Area ID	PCI	Before	After	Cost	Rating Treatment
ASH STREET	PACIFIC AVE	WILDWOOD AVE	R-ASHST	010	840	22	18,480	R	AC	R - Rio Dell	78	72	81	\$15,343	12,856 SLURRY SEAL
BUTCHER STREET	PACIFIC AVE	RIO DELL AVE	R-BUTCST	010	303	21	6,363	R	AC/AC	R - Rio Dell	94	79	87	\$5,283	12,504 SLURRY SEAL
FERN STREET	EELOA AVE	RIVERSIDE DR	R-FERNST	010	657	21	13,797	R	AC/AC	R - Rio Dell	91	80	88	\$11,455	14,049 SLURRY SEAL
PAINTER STREET	CENTER DR	5' W BLUFF PLACE	R-PAINST	040	480	38	18,240	R	AC	R - Rio Dell	87	73	81	\$15,144	12,826 SLURRY SEAL
RIVER STREET	OGLE AVE	BELLEVIEW AVE	R-RIVEST	010	230	26	5,980	R	AC/AC	R - Rio Dell	94	79	87	\$4,965	12,504 SLURRY SEAL
TOWNSEND STREET	PACIFIC AVE	WILDWOOD AVE	R-TOWNS	010	480	20	9,600	R	AC/AC	R - Rio Dell	92	78	86	\$7,971	12,866 SLURRY SEAL
											Treatme	nt Total		\$60,161	
				Yea	ar 2032 <i>A</i>	Area To	tal		72,460		Year 203	2 Total		\$60,161	
				Grand To	otal Sec	tion Are	ea:	8	25,726		Grand	d Total		\$576,598	