Pavement Management System Implementation

Final Report

June 2019

NCE

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Submitted to:

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Executive Summary

Nichols Consulting Engineers Chtd. (NCE) was selected by the Fresno Council of Governments (Fresno COG) to implement a pavement management system for the City of Firebaugh (City). This project included eight other cities (Coalinga, Fowler, Huron, Kingsburg, Mendota, Orange Cove, San Joaquin, and Selma) as well. The purpose of this report is to help inform and educate policy makers on the current condition of the street network and the impact of various funding scenarios on its future condition.

The City is responsible for the maintenance and repair of approximately 20.6 centerline miles of streets. The network's Pavement Condition Index (PCI) is 48. The City utilizes the StreetSaver® pavement management software and collects pavement distresses in compliance with ASTM D6433-16[1].

The following budget scenarios were performed as part of the implementation. The scenarios study the impact of funding on the PCI for a period of ten years.

Scenario 1: City's Existing Budget ($162,500 per year) – The City's anticipated funding for paving projects is approximately $162,500 per year from Measure C, Senate Bill-1 (Road Maintenance and Rehabilitation Account), and the gas tax. At this funding level, the network PCI is expected to decrease from 48 to 37 over the next ten years.

Scenario 2: Maintain PCI at 48 ($510,000 per year) – The City will need to spend approximately $510,000 per year to maintain the current network PCI at 48 over the next ten years.

Scenario 3: Improve PCI to 65 ($1.0 million per year) – At approximately $1.0 million per year, the network PCI will increase to 65, the current statewide average, over the next ten years.

Scenario 4: Improve PCI to 85 ($1.6 million per year) – In order to improve the network PCI to 85 over the next ten years, the City will need to spend approximately $1.6 million per year.

NCE recommends that the City increase the budget to at least $1.0 million per year to improve the pavement network to the same level as the current statewide average PCI of 65.

[1] ASTM. "ASTM D6433-16." Standard Practice for Roads and Parking Lots Pavement Condition Index Inspections.

Background

With the passage of Senate Bill 1 (SB 1), the Fresno Council of Governments (Fresno COG) allocated funds to develop pavement management systems (PMS) for nine cities within the county that currently do not have such a program in place. By assisting these cities with the creation of a PMS, Fresno COG will not only aid those cities in better managing their street networks but will also develop resources for multi-jurisdictional analysis and management.

To achieve this goal, Fresno COG selected NCE to implement a PMS for nine cities, including the City of Firebaugh (City). The other eight cities are Coalinga, Fowler, Huron, Kingsburg, Mendota, Orange Cove, San Joaquin, and Selma.

Broadly, a "… *pavement management system (PMS) is 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*."[2] In other words, a PMS is designed to assist cities with answering questions such as:

- What comprises the City's street network and what are the conditions of the streets?
- How will the condition of the City-maintained streets respond over time to maintenance and rehabilitation (M&R) treatments proposed under the existing funding levels?
- What M&R strategies exist to improve the current street conditions?
- What is the backlog of M&R work that should be done in order to achieve the City's pavement condition goal?
- What are the future M&R needs?
- What are the street repair priorities?
- How much funding is needed in order to improve current pavement conditions?

In order to answer the questions above, Fresno COG selected a PMS software program called StreetSaver®, which was developed by the Metropolitan Transportation Commission (MTC) and is widely used by Californian cities and counties.

[2] AASHTO "Guidelines for Pavement Management Systems". American Association of State Highway and Transportation Officials, Washington DC, July 1990.

Study Objectives

The goal of this project is to implement the StreetSaver® PMS and populate it with current pavement conditions and to perform funding analyses with respect to the City's M&R program.

The objectives of this study were to:

- Establish an inventory of the street network
- Perform pavement condition inspections of the entire street network and determine the PCI of each street section as well as the average network PCI.
- Develop appropriate M&R strategies.
- Perform budgetary analyses and determine the M&R funding needs.
- Present a strategy for the most cost-effective program.

Finally, this report links the recommended repair program costs to the City's current and projected budget alternatives to improve the overall network condition. It also assesses the adequacy of existing revenues to meet the recommended maintenance needs.

Scope of Work

In December 2018, NCE performed pavement condition surveys of the City-maintained streets and alleys. The condition inspections did not address non-pavement issues such as traffic, safety, street hazards, geometric issues, drainage issues, or immediate maintenance needs. As part of this task, a Quality Control Plan was developed and implemented; a copy is included in Appendix A. The pavement distress data were entered into the StreetSaver® database and the pavement condition index (PCI) for each section was calculated.

Upon completion of the data collection activities, NCE discussed and identified appropriate M&R strategies with City staff and estimated corresponding unit costs based on recent bid tabs from the City as well as surrounding agencies. The unit costs represent the overall project cost which includes material costs as well as related construction, engineering and design costs. The decision tree was then entered into the StreetSaver® database in preparation for budgetary analyses.

NCE performed a budget needs analysis using a period of ten years with an annual inflation rate of 3 percent. This identified M&R recommendations for each street section and determined the total M&R requirements over the analysis period under various funding levels. Budget analyses were also performed for four scenarios.

Pavement Network and Current Condition

As previously noted, the City is responsible for the repair and maintenance of approximately 20.6 centerline miles of streets, of which 1.9 miles are arterials, 3.5 miles are collectors, and 15.1 miles are residentials. Streets, or pavements, are one of the City's most valuable assets with an estimated replacement value of $25.8 million. This does not include the value of other non-pavement street components, such as curb and gutters, sidewalks, or drainage. Additionally, there are approximately 0.6 centerline miles of gravel streets but they are not included in the analysis.

The PCI is a measurement of pavement grade or condition and ranges from 0 to 100. A newly constructed street will have a PCI of 100, while a failed street will have a PCI of 25 or less. The pavement condition is primarily affected by climate, traffic loads and volumes, subgrade failure, construction materials and age. Some of the distresses manifested by pavement as it ages or fails are:

Asphalt Concrete (AC) Pavements:

- Alligator (Fatigue) Cracking*
- Bleeding
- Block Cracking
- Bumps and Sags
- Corrugation
- Depression
- Edge Cracking
- Longitudinal/Transverse Cracking
- Joint reflection cracking
- Patching and Utility Cut Patching
- Potholes
- Rutting*
- Shoving*
- Slippage Cracking*
- Raveling
- Weathering

*Indicates load-related distresses

Table 1 and Figure 1 on the next page illustrate the definitions of the pavement condition categories. Streets in "Fair" condition include streets with both non-load-related (e.g., weathering or raveling) and load-related (e.g., alligator cracking) distresses. Because the causes of these distresses are markedly different, the treatments used to address these conditions are also different, as are the costs of these treatments. Generally, streets with load-related distress are more expensive to repair. The two categories of distress are identified by II (non-load related) and III (load related). StreetSaver® assigns the appropriate treatments and costs to streets identified within each category.

Table 1: Pavement Condition Categories

Condition Category		PCI	Pavement Description
(I)	Good	70-100	Pavements which have minimal surface distress which may include some hairline longitudinal/transverse cracks and/or weathering. The pavement structure is sound and minor oxidation may occur.
(II)	Fair, Non-Loaded	50-69	Pavements which have a significant level of distress that are predominantly non-load related such as longitudinal/transverse cracks, bleeding, block cracking, weathering and raveling, etc. The pavement structure is sound, and some oxidation has occurred.
(III)	Fair, Load-Related	50-69	Pavements which have a significant level of distress that are predominantly load related such as alligator cracking and minor rutting, etc. The pavement structure is becoming deficient (minimal base failure).
(IV)	Poor	25-49	The pavement has moderate to severe surface distresses. Extensive weathering or raveling, block cracking, and load-related distresses such as alligator cracking, rutting, and potholes may occur.
(V)	Very Poor	0-24	The pavement has severe weather-related distress as well as large quantities of load-related distresses. The pavement is nearing the end of its service life.

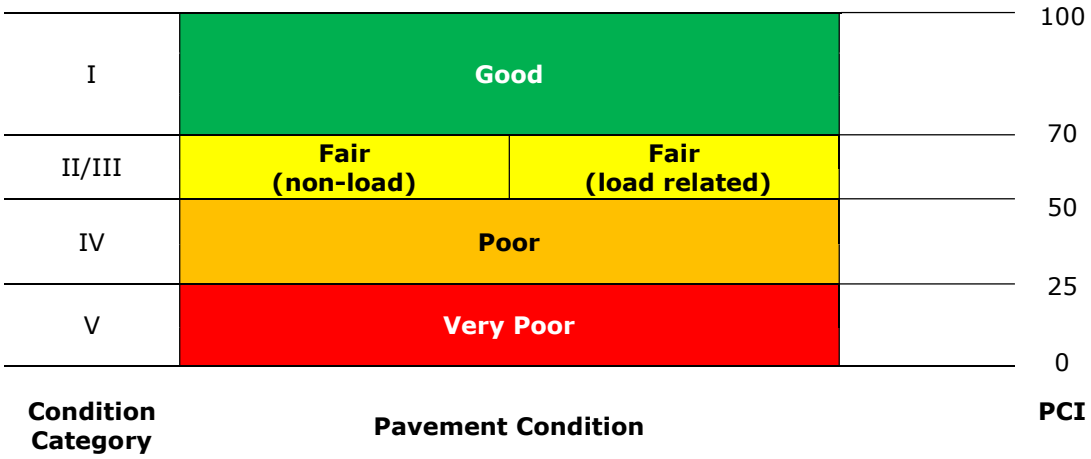

Figure 1: Pavement Condition Categories

The photos in Figure 2 below illustrate streets with a variety of PCI values.

PCI = 97 (Good)

PCI = 75 (Good)

PCI = 53 (Fair)

PCI = 4 (Very Poor)

Figure 2: Examples of Streets with Different PCIs

Based on our December 2018 inspections, the City's average weighted (by area) PCI[3] is 48 which is considered to be in "Poor" condition. However, the average PCI does not completely describe the street network. Table 2 summarizes the City's street network and the PCI by functional classification.

Table 3 summarizes the network condition by condition category. Approximately 33.8 percent of the City's streets are in "Good" condition, 14.8 percent are in "Fair" condition, 15.9 percent are in "Poor" condition, and 35.5 percent are in "Very Poor" condition.

[3] The weighted average PCI is a result of multiplying the area of each street section by the PCI of that section, totaling all sections together and then dividing by the total of the network area or functional classification.

Table 2: Pavement Network and Condition Summary

Functional Class	Centerline Miles	Lane Miles	Pavement Area (sq ft)	% Pavement Area	Average Weighted PCI
Arterial	1.9	4.9	477,911	11.1%	33
Collector	3.5	7.1	796,498	18.5%	32
Residential	15.1	30.8	3,042,409	70.5%	54
Total	**20.6**	**42.7**	**4,316,818**	**100.0%**	**48**
Gravel Streets	0.6	1.3	87,758	N/A	N/A

Table 3: Pavement Condition Breakdown by Functional Class and Condition Category

Condition Category	PCI Range	Arterial	Collector	Residential	Network
Good (I)	70-100	1.9%	2.7%	29.2%	33.8%
Fair (II/III)	50-69	1.2%	3.0%	10.6%	14.8%
Poor (IV)	25-49	1.7%	4.0%	10.2%	15.9%
Very Poor (V)	0-24	6.3%	8.7%	20.5%	35.5%
Total (%)		**11.1%**	**18.5%**	**70.5%**	**100.0%**

The City's average network PCI of 48 is lower than the 2018 statewide average of 65[4] and those of many neighboring agencies (see Figure 3).

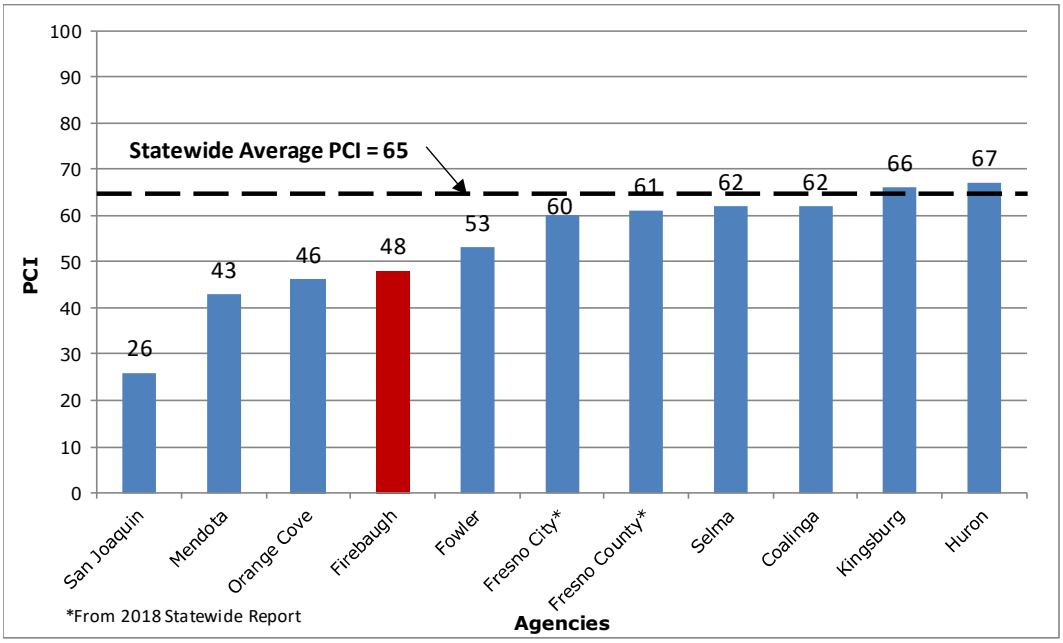

Figure 3: Firebaugh PCI Comparison with Other Agencies

[4] "California Statewide Local Streets and Roads Needs Assessment 2018 Update". Nichols Consulting Engineers Chtd, CA, October 2018

Maintenance and Rehabilitation Strategies

Preventive maintenance treatments such as crack seal and slurry seals are suitable for pavements in the "Good" condition and should be applied every seven years if the pavement condition is appropriate. As the pavement condition deteriorates, hot mix asphalt (HMA) overlays, cold-in-place recycling (CIR), and full-depth reclamation (FDR) are appropriate. These are considered "rehabilitation or reconstruction". Localized base repairs are commonly used as preparatory work prior to applying overlays. A detailed M&R decision tree for the City is provided in Appendix C.

History has shown that it costs less to maintain streets in good condition than to repair ones that have failed. By letting pavements deteriorate, streets that once cost $3.75 per square yard (SY) to slurry seal may, in a few years, cost as much as $43.00/SY to reconstruct. With rising material costs, the timeliness of repairs becomes more critical.

Figure 4 illustrates that pavement maintenance follows the old colloquial saying of "pay now or pay more later". The pavement deterioration curve shown by the blue line illustrates how pavement deteriorates over time. In general, arterials are expected to have a service life of 20 years, while those for residential streets may exceed 30 years.

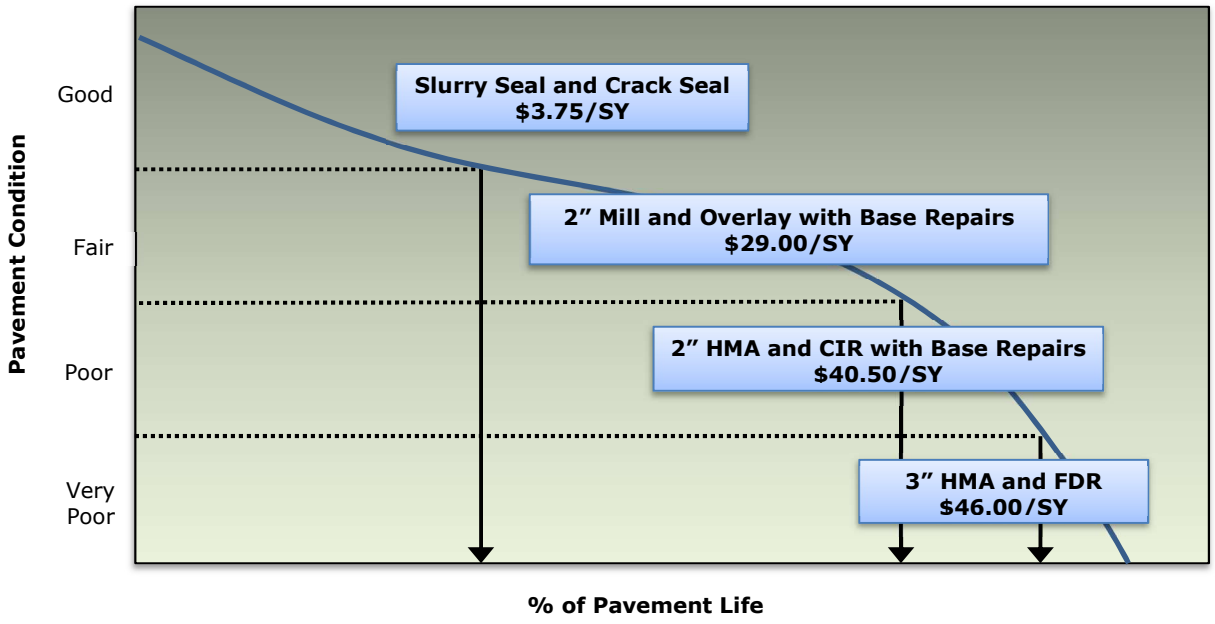

Figure 4: Costs of Maintaining Pavements over Time

Treatment Description

Slurry Seal and Crack Seal – Slurry seal is a very common preventative maintenance treatment used to extend the life of good condition pavements. It fills non-active cracks, seals raveled pavements, prevents against future moisture intrusion into the pavement base and subgrade, and provide a uniform surface texture with aesthetic appeal.

Grind and Overlay with Base Repairs – This process involves removing the top layer of pavement that has taken on distresses and overlay it back with new asphalt concrete. In conjunction with overlays treatments, it is recommended that areas with severe structural distresses receive base repairs before placement of the overlay. Base repairs allow the required overlay thickness to be reduced.

Cold in-Place Recycling and Full-Depth Reclamation – These methods allow the existing pavement materials to be reused in place. Therefore, the amount of virgin aggregate required are less than that of the traditional grind and overlay approach therefore the overall construction cost can be reduced. The reclaimed material is obtained by milling, planning, or crushing of the existing pavement.

It is important to carry out adequate testing and utilize engineering judgement on each specific pavement rehabilitation project in order to develop effective pavement design. The pavement thicknesses shown in Figure 4 are for planning purpose only and should not be apply to all projects.

Budget Needs

Once the pavement condition and the appropriate maintenance strategy has been determined, it is possible to determine the funding needed for maintenance of the City's streets. Simplistically, the StreetSaver® program seeks to answer the following questions:

If funding is not a constraint, how much money is needed to bring streets to a state of good repair?

Therefore, based on the principle that it costs less to maintain streets in good condition, rather than focusing on fixing those in poor condition, StreetSaver® develops a funding strategy that will improve the overall condition of the streets and then maintain it at that level. The condition and functional classification of each street determines the appropriate treatment and cost from the decision tree.

Using this process, the entire street network for the City was evaluated and summed. The resulting maintenance needs is approximately $13.9 million over the next ten years using an annual inflation rate of 3.0 percent. If the City follows the needs funding strategy recommended by the program, the average PCI will increase to 93 in the first year and then stabilize in the mid-to low 80s. If, however, no funding is allocated to street pavement maintenance, the streets will deteriorate and the network PCI will drop to 30 by 2028. The results of the budget needs analysis are summarized in Table 4.

Table 4: Results of Budget Needs 2019 – 2028

Year	Current	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
Budget Needs ($M)	N/A	11.2	0.2	0.3	0.1	0.1	0.2	0.4	1.2	0.1	0.2	13.9
Treated PCI	48	93	89	87	86	84	83	83	85	84	83	N/A
Untreated PCI	48	46	44	42	40	38	36	35	33	32	30	N/A

In this analysis, the total funding needed is "front-loaded;" i.e., it is less expensive to repair the streets in the first year than in subsequent years due to the effect of deferring maintenance and inflation. Although very few agencies can afford this "front-loaded" approach, it highlights the next treatments each street section needs and becomes a reference point for other funding scenarios.

The deferred maintenance in 2019 is $11.2 million. Deferred maintenance consists of pavement maintenance, preservation, and rehabilitation activities that are

needed, but cannot be performed due to lack of funding. It is also referred to as the unfunded backlog. Shrinking budgets have forced many cities and counties to defer much-needed pavement maintenance activities. Deferring these activities results in an increased frequency of citizen complaints about the condition of the pavement network and a higher cost to repair these streets.

These prediction models may be more conservative than actual performance since newer and more cost-effective technologies are not included at this time. For example, if improved materials are utilized, e.g., asphalt-binder with rubber or polymers, the actual performance of these treatments may be under-estimated by the models. However, if the City assesses the pavement conditions regularly, the prediction models will improve.

Budget Scenarios

Having determined the ten-year maintenance needs of the City's street network, the next step in developing a cost-effective M&R strategy is to conduct "what-if" analyses. Using the StreetSaver® budget scenario module, the impacts of the City's budget can be evaluated. This module seeks to answer the following questions:

If funding is constrained, what is the most cost-effective way to spend the funds? What are the consequences on the PCI and deferred maintenance? Which streets will be prioritized for repairs and when will they be repaired?

The program determines the effects of the different funding scenarios on PCI and deferred maintenance. By examining the effects on these performance measures, the advantages and disadvantages of different funding levels and maintenance strategies become clear.

The following scenarios were performed:

Scenario 1: City's Existing Budget ($162,500 per year) – The City's anticipated funding for paving is approximately $162,500 per year from Measure C, Senate Bill-1 (Road Maintenance and Rehabilitation Account), and the gas tax. At this funding level, the network PCI is expected to decrease from 48 to 37 over the next ten years.

Scenario 2: Maintain PCI at 48 ($510,000 per year) – The City will need approximately $510,000 per year to maintain the current network PCI at 48 over the next ten years.

Scenario 3: Improve PCI to 65 ($1.0 million per year) – At approximately $1.0 million per year, the network PCI will increase to 65; this is the same as the current statewide average PCI.

Scenario 4: Improve PCI to 85 ($1.6 million per year) – In order to improve the network PCI to 85 over the next ten years, the City would need to spend approximately $1.6 million per year on street M&R projects.

Summaries of the results of each scenario are provided starting on the next page. Note that "Rehabilitation" includes overlays and reconstruction, while "Preventive Maintenance" includes all surface seal work. Detailed results are presented in Appendices D and E.

Scenario 1: City's Existing Budget ($162,500 per year)

This scenario shows the impact of the City's anticipated paving budget of $162,500 per year over the next ten years. The overall pavement condition will decline to a "Poor" condition category with an average PCI of 37 and the deferred maintenance will increase to $15.8 million over the next ten years. At the end of the analysis period, 37.3 percent of the network will be in "Good" condition, 5.4 percent will be in "Fair" condition, 8.1 percent will be in "Poor" condition, and 49.2 percent will be in "Very Poor" condition. Table 5 and Figure 5 summarize the results from Scenario 1.

Table 5: Summary of Results for Scenario 1

Year	Current	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
Budget ($M)	N/A	0.160	0.162	0.162	0.159	0.160	0.159	0.160	0.162	0.161	0.162	1.61
Rehabilitation ($M)	N/A	0.138	0.138	0.137	0.130	0.135	0.124	0.131	0.124	0.128	0.126	1.31
Preventive Maintenance ($M)	N/A	0.022	0.024	0.026	0.030	0.025	0.035	0.029	0.039	0.033	0.036	0.30
Deferred Maintenance ($M)	11.2	11.0	11.6	12.4	12.9	13.5	13.9	14.3	14.9	15.4	15.8	N/A
Treated PCI	48	47	45	43	42	41	40	39	38	37	37	N/A

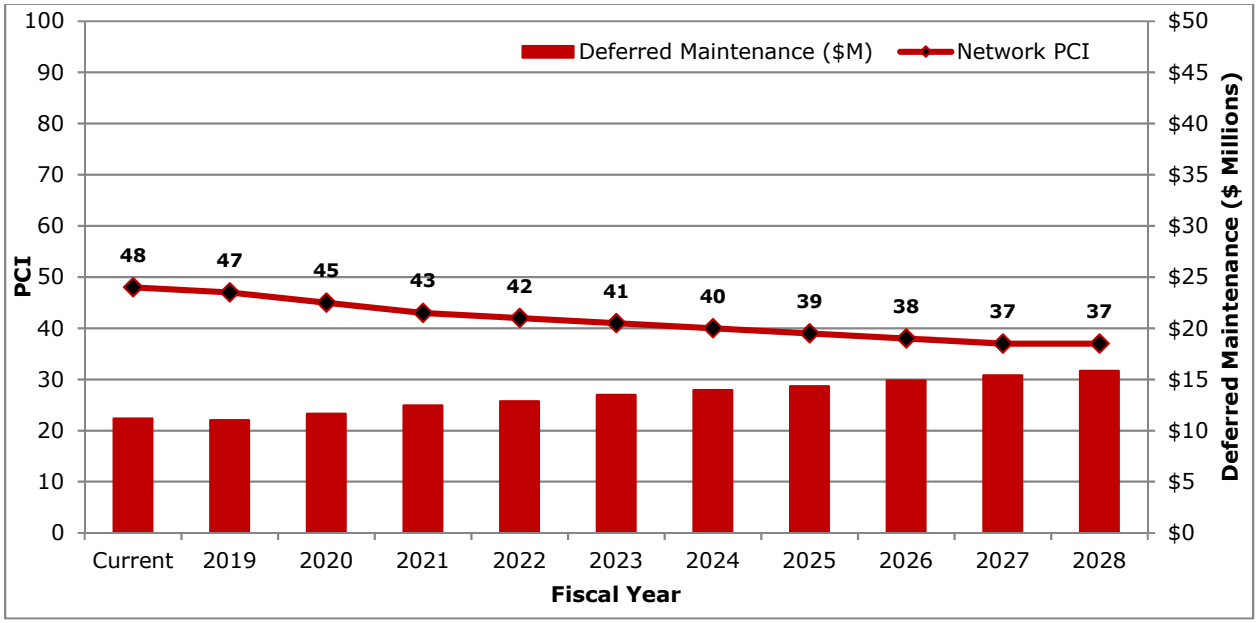

Figure 5: PCI vs. Deferred Maintenance for Scenario 1

Scenario 2: Maintain PCI at 48 ($510,000 per year)

In Scenario 2, an annual budget of approximately $510,000 will be needed to maintain the network PCI at 48 over the next ten years. The deferred maintenance will increase to $12.0 million. Approximately 54.2 percent of the streets will be in "Good" condition, 3.9 percent will be in "Fair" condition, 1.6 percent will be in "Poor" condition, and 40.3 percent will be in "Very Poor" condition. Table 6 and Figure 6 summarize the results from Scenario 2.

Table 6: Summary of Results for Scenario 2

Year	Current	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
Budget ($M)	N/A	0.40	0.70	0.52	0.86	0.30	0.67	0.40	0.37	0.45	0.42	5.10
Rehabilitation ($M)	N/A	0.36	0.63	0.47	0.78	0.28	0.60	0.37	0.36	0.42	0.39	2.93
Preventive Maintenance ($M)	N/A	0.04	0.07	0.05	0.09	0.02	0.07	0.03	0.02	0.03	0.03	0.27
Deferred Maintenance ($M)	11.2	10.8	10.8	11.3	10.9	11.4	11.3	11.4	11.7	11.9	12.0	N/A
Treated PCI	48	48	48	48	48	48	48	48	48	48	48	N/A

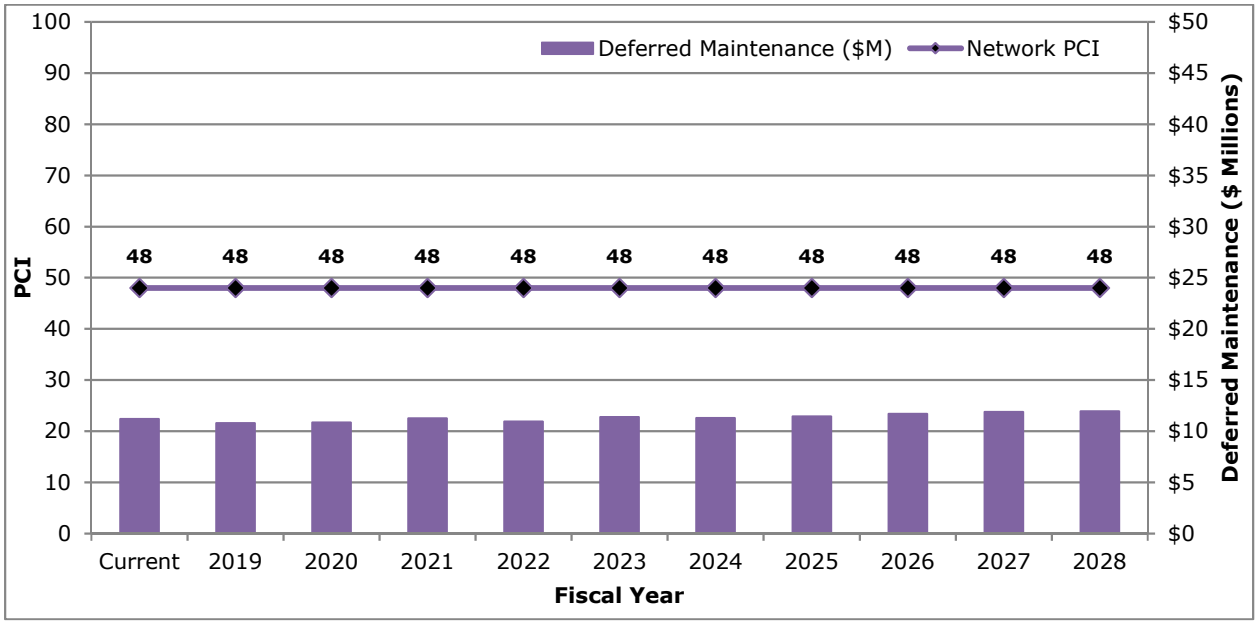

Figure 6: PCI vs. Deferred Maintenance for Scenario 2

Scenario 3: Improve PCI to 65 ($1.0 million per year)

If the City increases the annual budget to $1.0 million per year, the network PCI will improve to 65 over the next ten years. The deferred maintenance will decrease to $6.7 million. Approximately 72.6 percent of the network will be in "Good" condition, 3.9 percent will be in "Fair" condition, and 23.5 percent will be in "Very Poor" condition at the end of the analysis period. Table 7 and Figure 7 summarize the results from Scenario 3.

Table 7: Summary of Results for Scenario 3

Fiscal Year	Current	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
Budget ($M)	N/A	1.00	0.98	1.09	0.99	1.04	0.94	0.97	0.99	0.99	1.00	10.0
Rehabilitation ($M)	N/A	0.85	0.85	0.93	0.94	1.04	0.84	0.83	0.83	0.85	0.82	8.8
Preventive Maintenance ($M)	N/A	0.15	0.14	0.16	0.04	0.00	0.10	0.14	0.16	0.14	0.17	1.2
Deferred Maintenance ($M)	11.2	10.2	9.9	9.8	9.3	8.9	8.5	8.1	7.7	7.2	6.7	N/A
Treated PCI	48	50	51	53	53	55	57	59	61	63	65	N/A

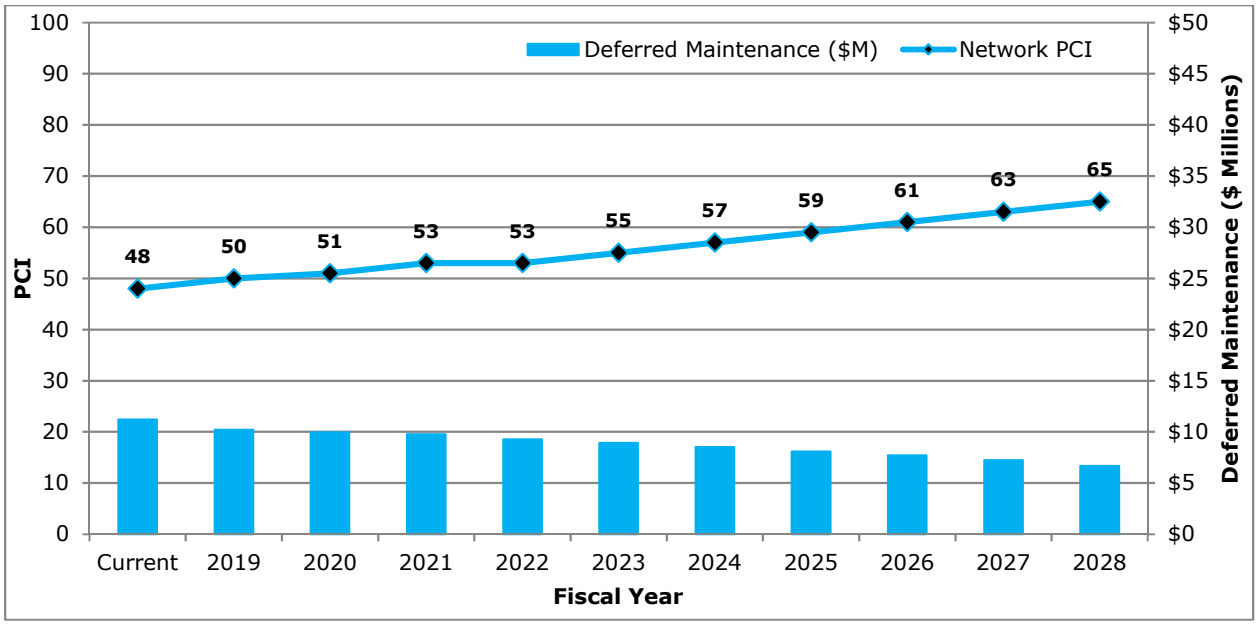

Figure 7: PCI vs. Deferred Maintenance for Scenario 3

Scenario 4: Improve PCI to 85 ($1.6 million per year)

An annual budget of $1.6 million is required to improve the network PCI to 85 over the next ten years. At this funding level, the deferred maintenance will decrease to only $289,000. At the end of the analysis period, 96.8 percent of the network will be in "Good" condition, 2.6 percent will be in "Fai" condition, and 0.6 percent will be in "Very Poor" condition. Table 8 and Figure 8 summarize the results from Scenario 4.

Table 8: Summary of Results for Scenario 4

Fiscal Year	Current	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
Budget ($M)	N/A	1.40	1.70	2.10	1.69	1.39	1.30	1.49	1.69	1.60	1.51	15.9
Rehabilitation ($M)	N/A	1.19	1.66	1.93	1.65	1.39	1.17	1.37	1.43	1.28	1.12	14.2
Preventive Maintenance ($M)	N/A	0.21	0.03	0.17	0.05	0.00	0.13	0.12	0.27	0.32	0.38	1.70
Deferred Maintenance ($M)	11.2	9.8	8.8	7.6	6.4	5.6	4.8	3.7	2.5	1.3	0.3	N/A
Treated PCI	48	52	55	60	64	67	70	74	78	82	85	N/A

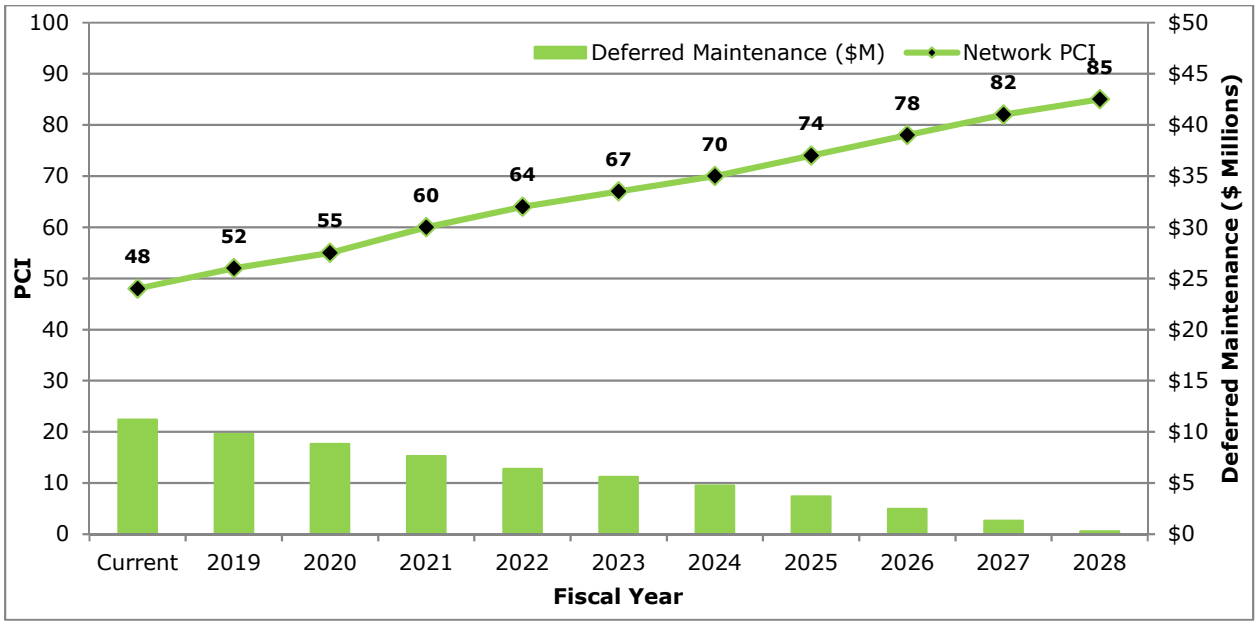

Figure 8: PCI vs. Deferred Maintenance for Scenario 4

Summary

Figures 9 and 10 compare the resulting PCIs and deferred maintenance for all budget scenarios.

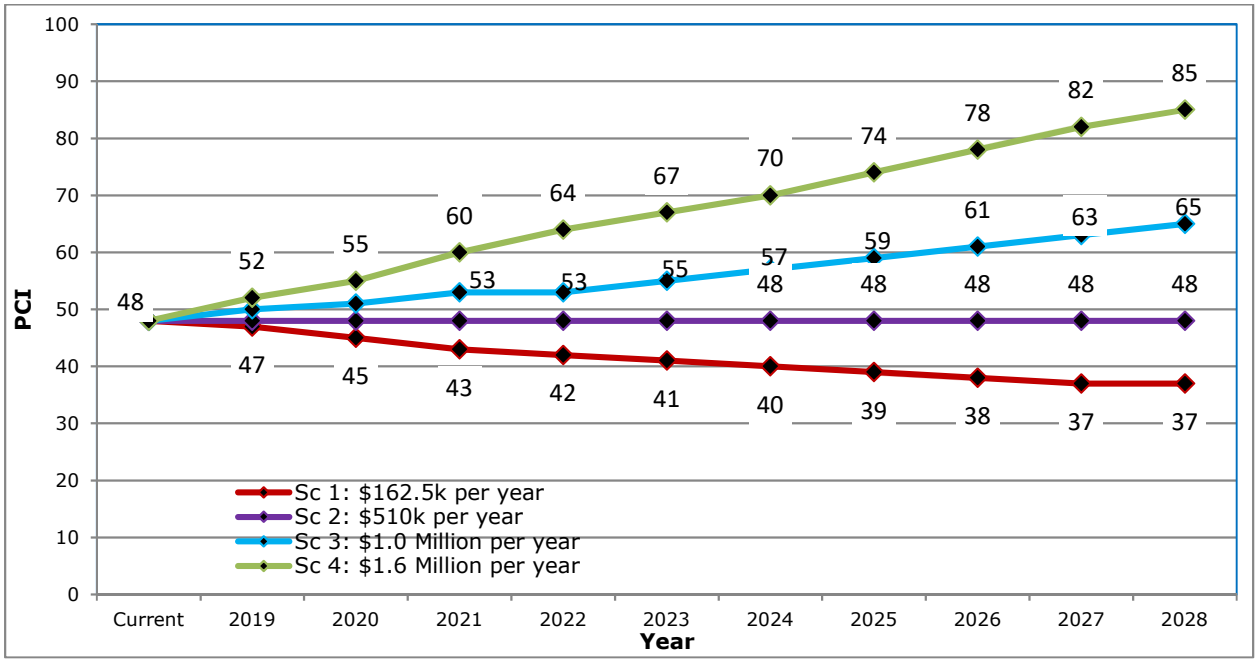

Figure 9: PCI Comparisons between Scenarios

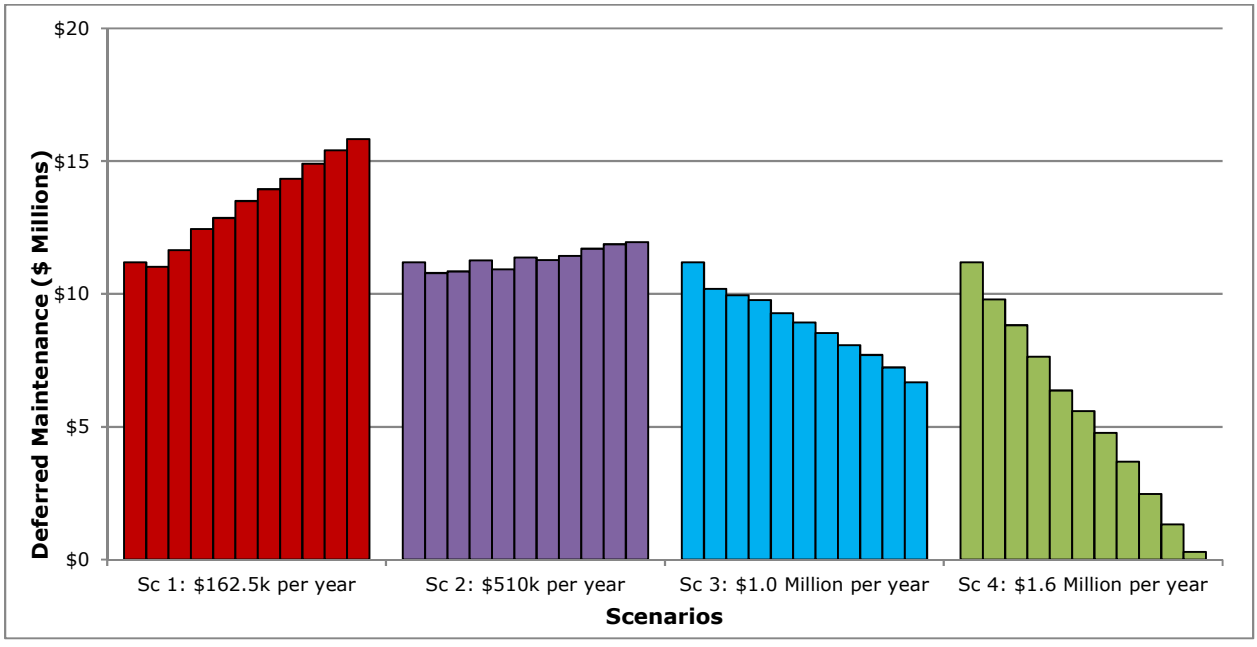

Figure 10: Deferred Maintenance Comparisons between Scenarios

Figure 11 compares the changes in the pavement condition distribution for the four budget scenarios with the current condition.

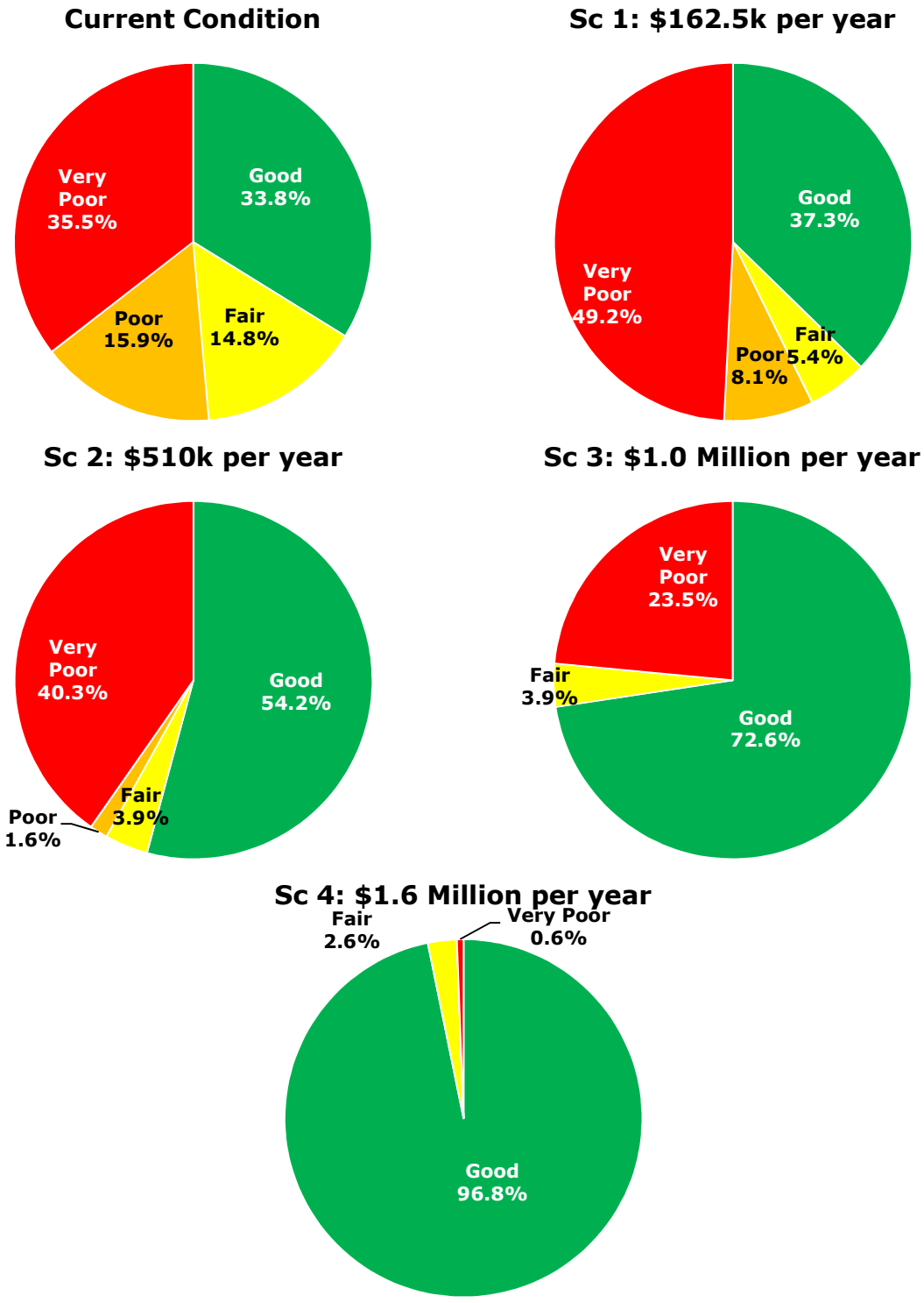

Figure 11: Resulting Pavement Condition Breakdown for Scenarios

Recommendations

The City of Firebaugh has a substantial investment in its street network with an estimated total replacement cost of $25.8 million. Overall, the street network is in the "Fair" condition with a citywide average PCI of 48. Based on the data collected and the scenario analyses, NCE recommends that the City implement the items listed below.

1. **Pavement Funding**
   The network PCI will decrease to 30 if left untreated for the next ten years, which means that nearly every street will need to be reconstructed. NCE recommends that the City should implement a paving program of approximately $1.0 million per year (Scenario 3) as it will improve the City's network condition to the same level as the statewide average. At this funding level, the street network will be mostly in the "Good" condition category with 23.5 percent in "Very Poor" condition. Improving the pavement condition to the "Good" category will allow the City to preserve the streets through preventive maintenance methods such as slurry seals which are significantly cheaper than overlays.

2. **Pavement Maintenance Strategies**
   NCE recommends that the City consider alternative treatments such as full-depth reclamation (FDR) and cold-in-place recycling (CIR), which are alternatives to reconstruction and conventional overlays. These treatments could potentially offer cost savings of approximately 20 to 30 percent compared to traditional treatments.

   Due to the relatively small size of each pavement project, NCE recommends that the City investigate the option of combining paving projects with neighboring agencies in order to take advantage of economies of scale.

3. **Re-inspection Strategies**
   In order to monitor future pavement performance and on-going maintenance needs, NCE recommends that the City inspect the arterial and collector network every two years and the residential network and alleys every five to six years.

4. **M&R Decision Tree**
   NCE recommends that the City review and update the M&R decision tree and the associated unit costs annually to reflect new construction techniques and changing costs so the funding analysis will continue to be reliable and accurate.

5. **Additional Funding**

NCE recommends that the City take full advantage of SB-1 and actively pursue additional pavement funding sources if feasible. Some examples of funding sources are listed below:

Federal

- Community Development Block Grants (CDBG)
- Congestion Mitigation & Air Quality Improvement (CMAQ)
- Surface Transportation Block Grant Program (STBG)
- Highway Safety Improvement Program (HSIP)

State

- State Transportation Improvement Program (STIP)
- Active Transportation Program (ATP)
- Vehicle License Fee (VLF)
- CalRecycle grants
- Transportation Development Act (TDA)

Local

- Local sales taxes
- Development impact fees
- Traffic impact and transportation mitigation fees
- Utility tax
- Parking and various permit fees
- Parcel taxes

Appendix A

Quality Control Plan

QC Plan

Pavement Management Program
2018

NCE

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

Fresno COG

Table of Contents

Appendix

1.0 INTRODUCTION

When performing data collection in any field, the need for quality control is paramount. This need for quality data is essential for accurate planning, analysis and design. NCE's "Quality Assurance Management Plan" (QAMP), which was last revised in March 2009, affirms that:

> *"NCE is dedicated to achieving technical and management excellence and to delivering professional engineering and environmental services that meet or exceed our clients' needs. NCE's Quality Assurance (QA) Program is designed to achieve these goals. This QA Management Plan (QAMP) describes NCE's QA Program, which is based on four principles: client satisfaction, employee participation, problem prevention, and continuous quality improvements."*

NCE's QAMP establishes minimum quality standards for performance and procedures for assuring that our clients receive quality service. It requires the participation of employees at every level. It encourages Project Managers and technical staff to take pride in their work and responsibility for ensuring that the work is done correctly the first time. The program is designed to reduce the incidence of problems related to quality and results in implementation, where necessary, of corrective actions and modification of work procedures to minimize the incidence of future problems.

NCE has also prepared detailed and specific Quality Control Plans for projects, and the most notable example is for the **Long Term Pavement Performance (LTPP) – Western Regional Support Contract** for the Federal Highway Administration. This is a 150 page document that covers data collection on highways, including deflection, profile, pavement distresses, traffic, maintenance and rehabilitation history, materials testing and sampling as well as a document control.

1.1 Objectives

This document constitutes a formal Quality Control Plan (QCP) for the Fresno Council of Governments to include The Cities of Colinga, Firebaugh, Fowler, Huron, Kingsburg, Mendota, Orange Grove, San Joaquin and Selma (OCG). Specifically, it is intended for the 2018 Pavement Management Program Update project. The focus is on data collection issues.

1.2 Structure

The following components are addressed in this QC Plan:

- Condition survey procedures used
- Accuracy required for data collection
- Inspector qualifications and experience
- Safety

2.0 QUALITY CONTROL PLAN

2.1 Condition Survey Procedure

The governing documents in performing condition surveys are:

- "PAVER™ Pavement Distress Identification Manual for Asphalt Surfaced Roads and Parking Lots", US Army Corps of Engineers ERDC-CERL June 2009.
- "PAVER™ Pavement Distress Identification Manual for Concrete Surfaced Roads and Parking Lots", US Army Corps of Engineers ERDC-CERL June 2009.

Any exceptions to the above procedures are discussed with the agency before any surveys are performed. These are usually related to distresses or situations that are not covered in the manuals. Examples include slippage cracks, roller check marks or edge cracking on streets with no curbs and gutters. Others include the use of seals or open-graded asphalt concrete mixes. Any modifications must be documented and submitted to the City for approval.

All surveys are performed as ***walking*** surveys, and a minimum 10% sampling rate is utilized. Field crews are typically composed of a one-person crew on residential streets and some collectors, and up to two-person crews for major arterials, depending on traffic volumes and speeds. The safety of field personnel is paramount in all instances.

The sample unit selected must be representative of the entire pavement section. This assumes that the section is homogeneous; if it is not homogeneous, then the section must be split according to the criteria agreed upon by the agency. Typically, the criteria used are:

- Pavement condition
- Construction age, if known
- Maintenance history, if known
- Traffic volumes (or functional classification as a surrogate)
- Surface types e.g. asphalt concrete or Portland cement concrete
- Geometric elements e.g. widths

Any modifications to the section inventory data will be documented and provided to the City.

Typical sample unit dimensions are 100 ft long by the width of the street. Since the maximum size of a sample unit allowed under StreetSaver is 4000 sf, streets that are wider than 40 feet wide will have shorter lengths (generally 50 feet) or if they are divided by a raised median, separate sample units taken in each direction.

Any pavement areas that are not representative of the section will be noted and surveyed as a special sample unit.

2.2 Accuracy Required For Data Collection

The accuracy required for data collection has two components, both of which are further described in the following paragraphs.

- Re-inspections
- PCI comparisons with past surveys

2.2.1 Random and Systematic Re-inspection

A minimum of 5% of the total sample units will be re-inspected and this 5% will be selected based on both a random and a systematic basis. All re-inspections are made by an engineer or inspector other than the original inspector.

Random Re-inspections

Random re-inspections will include a representative selection across the following categories:

- Functional classes i.e. arterials, collectors, locals;
- Surface types e.g. asphalt concrete or Portland cement concrete;
- Pavement conditions e.g. good, fair, poor;
- Inspectors;
- Geographical areas, if applicable.

Systematic Re-inspections

For systematic re-inspections, this could be due to noticed trends such as specific treatment types (e.g. open-graded mixes), a specific inspector or geographical area. In such cases, more than 5% will be re-inspected.

Acceptability Criteria

At the time of re-inspection, the actual distresses will be re-inspected and verified, and any corrections made, if necessary. The following acceptance criteria shall be applied to the re-inspection as required by the Metropolitan Transportation Commission (MTC):

1) At least 50 percent of the PCI values for the re-inspected sections must be within +/- 5 PCI points of the original inspection PCI values.
2) No more than 12 percent of the PCI values for the re-inspected sections can be greater than +/- 15 PCI points of the original inspection PCI values

If the above acceptance criteria are not met then an additional 5% will be re-inspected. This will continue until the re-inspected sections meet the acceptability criteria.

2.2.2 PCI Comparison with Past Surveys

As another level of quality control, the new PCIs are compared with the previous PCI. If they differ by more than ±15 PCI points, these sections are automatically flagged for further investigation.

If PCI is +15 points:

The section is investigated to see if a maintenance and rehabilitation event has occurred since the last survey, but which has not been recorded. This can only be resolved with feedback from the agency. Typically, it may include activities such as:

- Crack sealing activities – changes medium or high severity cracking to low severity
- Patching activities - alligator cracking that has been removed and patched, so that the resultant PCI is increased.
- Surface seals
- Overlays

If PCI is -15points

The section is checked to see if the average deterioration rate (usually 3 to 4 points per year) is exceeded. If the drop in PCI is within the range of what is acceptable, no further action is required. If the drop is more than the acceptable range, a re-inspection will be performed. The default performance curves in the StreetSaver program are the basis for what is acceptable.

2.3 Inspectors Qualification and Experience

All NCE's inspectors are required to attend formal training on condition distress surveys. For example, any of NCE's inspectors working on the LTPP project are required to attend a week-long training workshop every year to maintain their certifications. The Regional Transportation Commission (RTC) of Washoe County requires inspectors to be calibrated prior to performing any work using the ASTM D6433 protocols (also known as the MicroPAVER surveys).

Similarly, in agencies that use the MTC StreetSaver system, NCE's inspectors attend the distress training conducted by MTC. After the formal training, they work with an experienced inspector before they are allowed to work on their own. Within the first month of working on their own, up to 20% of their work is checked weekly. Any necessary corrections are made immediately.

Finally, NCE conducts a one-day training and calibration workshop for all NCE staff involved with data collection. This is conducted once a year.

Resumes of NCE's technicians utilized on this project are included in Appendix A.

3.0 SAFETY PROCEDURE

NCE administers a health and safety program in compliance with the Nevada Occupational Safety and Health act (Section 618.383) and Cal OSHA Title VIII, Section 3203. The program is documented in NCE's *Workplace Safety Program Manual.*

Generally, the safety procedures include:

- Inspectors to wear a safety vest at all times;
- Flashing beacon on all vehicles utilized for surveys; and
- Stopped vehicles to be parked at locations away from moving traffic e.g. nearby parking, shoulders etc.

On streets where there is a high volume of traffic or high speeds, additional measures may be necessary, such as:

- Surveys to occur during off-peak periods or on weekends;
- Additional inspector to watch out for traffic; and
- Traffic flaggers in extreme cases.

In extreme cases where it is not possible to walk on the pavement surface, surveys will be performed from sidewalks or raised medians. However, this is extremely rare for city or county roads/streets; this is most often encountered on state highways, and lane closures are the most likely option at this point.

APPENDIX A

RESUMES OF FIELD INSPECTORS

Franc Escobedo
Engineering Field Technician

Mr. Franc Escobedo has over 15 years of experience as a pavement management technician for NCE. He has performed numerous pavement condition inspections throughout California, Idaho, and Washington. His experience includes distress collection across various Pavement Management Systems including the Metropolitan Transportation Commission StreetSaver, PAVER, Cartegraph, and Hansen systems.

Additionally, Mr. Escobedo has completed both the OCTA PAVER and MTC "Distress Identification" courses for both Asphalt Concrete and Portland Cement Pavements and now assists with the training of agency staff on both courses.

Mr. Escobedo performs all activities relating to pavement data collection using hardcopy forms or tablets. As part of the quality control process, he performs cross-checks of data in the PMS database. He also regularly performs quality control checks of field collected data and pavement maintenance history to ensure that PMS databases are accurate and up-to-date. During this process, he also generates detailed reports, which are necessary to perform his cross-checks of the collected data.

His field experience and expertise are added benefits to agencies during field training. Listed below are a collection of agencies for which Mr. Escobedo has performed condition inspections – they total over 6,000 centerline miles of roads and streets.

Representative Projects

Pavement Management

Pavement Management Inspections | ***Engineering Field Technician***

- Ada County, Idaho
- Agoura Hills
- Anaheim
- Antioch
- Bakersfield
- Bell
- Buena Park
- Camarillo
- Chula Vista
- Commerce
- Corona
- Cudahy
- Dana Point
- Davis
- El Centro
- El Cerrito
- Elk Grove
- Encinitas
- Fairfield
- Fremont
- Fullerton
- Hayward
- Hillsborough
- Humboldt County
- Inyo County
- La Habra
- Lake County
- Lake Forest
- Lemon Grove
- Marin County
- Martinez
- Mendocino County
- Milpitas
- Mission Viejo
- Mono County
- Mountain View
- Newark
- Orange County
- Palm Springs
- Redwood City
- San Clemente
- San Diego County
- San Dimas
- San Ramon
- Santa Cruz County
- Santa Maria
- Seal Beach
- Siskiyou County
- South Lake Tahoe
- Stanislaus County
- Stanton
- Thousand Oaks
- Torrance
- Tulare
- Tuolumne County
- Tustin
- Vallejo
- Vernon
- Vista
- Walnut Creek
- West Covina
- West Sacramento

Projects included various forms of inspections for pavement distress data collection, such as walking, windshield, and/or semi-automated.

Education
Computer Operations Program
Computer Learning Center, Los Angeles, CA, 1983-84
Network Engineering & Administrative Program
Computer Learning Center, Anaheim, CA, 1997
Certified Network Administration
Computer Learning Center, Anaheim, CA 1997

Registrations and Certifications
OCTA PAVER Certification 2016

MTC StreetSaver Rater Certification Program (expires September 2019)

Joined NCE
2004

Total Years of Experience
15

David Bivins
Senior Engineering Technician

Mr. Bivins has over 17 years of experience as a pavement management technician. As a senior technician, his experience extends beyond data collection for pavement distresses. Mr. Bivins is one of NCE's most experienced distress collectors and a primary choice for working with and training of our clients in field data collection activities.

Mr. Bivins performs all functions relating to data collection using paper forms or a tablet. As part of the quality control process, he performs cross-checks of data in the PMS database. He has performed quality control checks of field collected data and pavement maintenance history to ensure that PMS databases are accurate and up-to-date. During this process, Mr. Bivins also generates detailed reports, which are needed to help perform his cross-checks of the collected data.

His field experience and expertise is an added benefit to agencies during field training. Having performed data collection for agencies all over the State of California, Mr. Bivins has a depth of experience related to pavement types and conditions from performing condition surveys on more than 15,000 centerline miles of roads and streets. In addition, Mr. Bivins is proficient and certified in the two most popular distress identification procedures – PAVER and StreetSaver. He attends annual in-house training and assists in training local agencies on distress identification and collection procedures.

Education
Civil Engineering Courses
San Francisco State University, 1994
AutoCAD Advanced Course
CAD Masters, Walnut Creek, CA, 1997

Registrations and Certifications
MTC StreetSaver Rater Certification Program (expires September 2019)

Joined NCE
2011

Total Years of Experience
17 years

Representative Projects

Pavement Management

Pavement Management System Updates | *Senior Field Technician*
Various Cities and Counties, CA

Projects included various forms of surveys for pavement distress data collection, this may have included walking, windshield, and/or semi-automated.

- Ada County, ID
- Alameda County
- Albany
- Buena Park
- Campbell
- Chula Vista
- Citrus Heights
- Danville
- Davis
- East Bay Regional Park District
- Elk Grove
- Fairfield
- Folsom
- Fremont
- Fullerton
- Hayward
- Humboldt County
- Inyo County
- Lafayette
- Lake County
- Los Gatos
- Mammoth Lakes
- Marin County
- Mendocino County
- Mission Viejo
- Modesto
- Newark
- Orinda
- Pebble Beach
- Placer County
- San Bruno
- San Mateo County
- Santa Barbara County
- Santa Cruz
- Santa Cruz County
- Santa Rosa
- Stanislaus County
- Stanton
- Torrance
- West Sacramento

Jacob Rajnowski
Field Technician

Mr. Rajnowski joined NCE in 2016 as a as a pavement management technician and is experienced in collecting distress data and coring samples for pavement management systems. He is currently collecting pavement distress data for the Counties of Sonoma and Lake.

He is certified by the Metropolitan Transportation Commission's (MTC) to perform pavement distress inspections; the certification testing involves passing a rigorous field test.

Apart from conducting field inspections, Mr. Rajnowski performs all functions related to data collection and is an active participant in the QC process, including crosschecks of data in the PMS database, quality control checks of field collected data and pavement maintenance history to ensure that PMS databases are accurate and up to date. During this process, detailed reports are generated to perform crosschecks of the data collected. Additionally, Mr. Rajnowski has completed the OCTA PAVER™ 'Distress Identification' course for Asphalt Concrete and Portland Cement Pavements. He has performed condition surveys at San Francisco since 2016.

Education
Sterling High School, Sterling, IL, 2003

Joined NCE
2016

Registrations and Certifications
OCTA PAVER Certification 2017
MTC Certification 2016

Total Years of Experience
2 years

Representative Projects

Pavement Management

Pavement Management System Updates | ***Field Technician***
Various Cities and Counties, CA
Projects included various forms of surveys for pavement distress data collection, this may have included walking, windshield, and/or semi-automated.

- Ada County, ID
- Buena Park
- Half Moon Bay
- Humboldt County
- Lake County
- Lincoln
- Martinez
- Mission Viejo
- Moreno Valley
- Placer County
- Pleasant Hill
- San Francisco
- Sonoma County
- Stockton
- Trinity County
- Ventura County
- Walnut Creek
- Yolo County

Appendix B

Section Description Inventory
Section PCI Listing – Street Network

I. Sorted by Street Name
II. Sorted by Descending PCI

Section Description Inventory Report

This report lists a variety of section description information for each of the City's street pavement sections. It lists the street and section identifiers, limits, functional class, surface type, number of lanes, lengths, widths, and inspected PCI.

All of the City's vehicular street sections are included in the report. The report is sorted alphabetically by Street Name and Section ID and by descending PCIs. The field descriptions in this report are listed.

Header	Description
STREET ID	Street identification in StreetSaver® unique for each street
STREET NAME	The name of the street as indicated by street signs in the field
SECTION ID	Section identification number in StreetSaver® unique for each section of one street
BEG LOCATION	Beginning limit of the section
END LOCATION	Ending limit of the section
LENGTH (FT)	Length of the section in feet
WIDTH (FT)	Average width of the section in feet
AREA (SF)	Area of the section in square feet
FC	Functional Classification (A – Arterial, C – Collector, R – Residential/Local, O – Other/Alley)
# OF LANES	Number of travel lanes of the section
SURFACE TYPE	Surface Type (AC = Asphalt Concrete Pavement, AC/AC = AC Overlay of AC Pavement, Gravel =)
PCI DATE	Last pavement inspection date
PCI	Average inspected PCI for the section.

Street ID	Section ID	Street Name	Beg Location	End Location	Length (ft)	Width (ft)	Area (sf)	FC	# of Lanes	Surface Type	PCI Date	PCI
ALDER	0100	ALDER WY	ELM ST	OAK ST	522	32	16704	R	2	AC	12/20/2018	85
ALDER	0200	ALDER WY	OAK ST	NORTH CDS	311	32	9952	R	2	AC	12/20/2018	79
ALLARDT	0100	ALLARDT DR	CLYDE FAMMON DR	THOMAS CONBOY DR	1390	32	44480	R	2	AC	12/20/2018	88
ALLARDT	0200	ALLARDT DR	ZOZOYA ST	CLINE ST	442	36	15912	R	2	AC	12/20/2018	11
ASH	0100	ASH ST	ALDER WY	DOGWOOD WY	414	32	13248	R	2	AC	12/20/2018	82
BEEHIVE	0100	BEEHIVE DR	CORREGIDOR AVE	SAIPAN AVE	1067	16	17072	R	2	GRAVEL		
BIRCH	0100	BIRCH DR	HELM CANAL RD	ELM ST	770	30	23100	R	2	AC	12/20/2018	87
BIRCH	0200	BIRCH DR	ELM ST	NORTH CDS	1138	30	34140	R	5	AC	1/5/2019	87
BORBOA	0100	BORBOA LN	CLYDE FANNON DR	GOMES DR	696	36	25056	R	2	AC	12/20/2018	52
BORBON	0100	BORBON ST	FATHER CRAIG ST	GUERRA ST	259	36	9324	R	2	AC	12/20/2018	21
CARDELCTN	0100	CARDELLA CT NORTH	CARDELLA ST	EAST CDS	166	37	6142	R	2	AC	12/20/2018	5
CARDELCTS	0100	CARDELLA CT SOUTH	WEST CDS	CARDELLA ST	260	37	9620	R	2	AC	12/20/2018	9
CARDELLA	0100	CARDELLA ST	MORRIS KYLE DR	TUCCI ST	1130	37	41810	C	2	AC	12/20/2018	2
CARDELLA	0200	CARDELLA ST	TUCCI ST	LANDUCCI DR	1078	37	39886	C	2	AC	12/20/2018	2
CARDELLA	0300	CARDELLA ST	LANDUCCI DR	RIVER LN	677	37	25049	R	2	AC	12/20/2018	100
CARDELLA	0400	CARDELLA ST	RIVER LN	REBECCHI ST	1412	37	52244	R	2	AC	12/20/2018	15
CARDELLA	0500	CARDELLA ST	REBECCHI ST	SOUTH CDS	124	50	6200	R	2	AC	12/20/2018	16
CARDIEL	0100	CARDIEL AVE	VALLE DE PAZ AVE	LEYVA AVE	603	36	21708	R	2	AC	12/20/2018	39
CALRK	0100	CLARK ST	MANES ST	MC CLAIN ST	242	36	8712	R	2	AC	12/20/2018	61
CLINE	0100	CLINE ST	P ST	T ST	1203	37	44511	R	2	AC	12/20/2018	97
CLINE	0200	CLINE ST	T ST	THOMAS CONBOY DR (NORTH EDGE)	878	37	32486	R	2	AC	12/20/2018	88
CLINE	0300	CLINE ST	THOMAS CONBOY DR (NORTH EDGE)	ZOZAYA ST	389	37	14393	R	2	AC	12/20/2018	13
CLYDE	0100	CLYDE FANNON RD	HWY 33	MENDOZA DR	789	44	34716	C	2	AC	12/20/2018	5
CLYDE	0200	CLYDE FANNON RD	MENDOZA DR	END SB	1589	37	58793	C	2	AC	12/20/2018	7
CLYDE	0300	CLYDE FANNON RD	SOUTH END	RABE ST	850	34	28900	C	2	AC	12/20/2018	40
CLYDE	0400	CLYDE FANNON RD	RABE ST	DODDERER ST	285	34	9690	C	2	AC	12/20/2018	8
CLYDE	0500	CLYDE FANNON RD	DODDERER ST	NORTH CITY LIMIT	1002	34	34068	C	2	AC	12/20/2018	59
CORDEL	0100	CORDEL AVE	HWY 33	EAST END	972	37	35964	R	2	AC	12/20/2018	89
CORREG	0100	CORREGIDOR AVE	SAIPAN AVE	CARDELLA ST	1135	37	41995	R	2	AC	12/20/2018	96
CYPRESS	0100	CYPRESS WY	HELMS CANAL RD	SPRUCE CT	158	32	5056	R	2	AC	12/20/2018	63
CYPRESS	0200	CYPRESS WY	SPRUCE CT	MAPLE ST	260	32	8320	R	2	AC	12/20/2018	76
DEBOER	0100	DEBOER CIR	INDART ST	EAST CDS	182	36	6552	R	2	AC	12/20/2018	100
DELRIO	0100	DEL RIO AVE	HWY 33	NO NAME	746	37	27602	R	2	AC	12/20/2018	96
DIAZ	0100	DIAZ ST	CLYDE FANNON DR	EAST END	429	45	19305	R	2	AC	12/20/2018	88
DODDERER	0100	DODDERER ST	CLYDE FANNON DR	ZOZAYA ST	1008	36	36288	R	2	AC	12/20/2018	29
DOGWOOD	0100	DOGWOOD WY	MAPLE ST	ELM ST	236	32	7552	R	2	AC	12/20/2018	87
DOGWOOD	0200	DOGWOOD WY	ELM ST	NORTH CDS	827	32	26464	R	2	AC	12/20/2018	84
8TH	0100	EIGHTH ST	HWY 33	Q ST	1165	54	62910	C	2	AC	12/20/2018	9
8TH	0200	EIGHTH ST	Q ST	SEVENTH ST	530	23	12190	C	2	AC	12/20/2018	5
11TH ST	0100	ELEVENTH ST	WEST END	M ST	320	56	17920	R	2	GRAVEL		
11TH ST	0200	ELEVENTH ST	HWY 33	P ST	740	52	38480	C	2	AC	1/5/2019	70
11TH ST	0300	ELEVENTH ST	P ST	Q ST	317	52	16484	C	2	AC	12/20/2018	29
ELM	0100	ELM ST	WILLOW WY	DOGWOOD WY	991	32	31712	R	2	AC	12/20/2018	92
ELM	0200	ELM ST	DOGWOOD WY	BIRCH DR	243	32	7776	R	2	AC	12/20/2018	84
ENRICO	0100	ENRICO AVE	CARDELLA ST	EAST END	628	37	23236	R	2	AC	12/20/2018	100
ENRICO	0200	ENRICO AVE	CARDELLA ST	CARDELLA ST	1068	37	39516	R	2	AC	12/20/2018	0

Street ID	Section ID	Street Name	Beg Location	End Location	Length (ft)	Width (ft)	Area (sf)	FC	# of Lanes	Surface Type	PCI Date	PCI
FATHERC	0100	FATHER CRAIG ST	BORBON ST	ZOZAYA ST	588	36	21168	R	2	AC	12/20/2018	2
15TH ST	0100	FIFTEENTH ST	HWY 33	Q ST	1140	52	59280	A	2	AC	12/20/2018	3
15TH ST	0200	FIFTEENTH ST	Q ST	S ST	404	52	21008	A	2	AC	12/20/2018	19
14TH ST	0100	FOURTEENTH ST	HWY 33	P ST	746	52	38792	A	3	AC	12/20/2018	0
14TH ST	0200	FOURTEENTH ST	P ST	Q ST	349	52	18148	A	2	AC	12/20/2018	95
GOMES	0100	GOMES AVE	BORBOA LN	MILLER LN	240	36	8640	R	2	AC	12/20/2018	67
GOMES	0200	GOMES AVE	MILLER LN	SIERRAS LN	283	36	10188	R	2	AC	12/20/2018	37
GRAYSON	0100	GRAYSON CIR	INDART ST	EAST CDS	262	36	9432	R	2	AC	12/20/2018	100
GUERRA	0100	GUERRA ST	BORBON ST	ZOZAYA ST	460	36	16560	R	2	AC	12/20/2018	0
HELMCAN	0100	HELM CANAL RD	SOUTH CITY LIMIT	BIRCH DR	1732	23	39836	R	2	AC	12/20/2018	84
HELMCAN	0200	HELM CANAL RD	BIRCH DR	POPLAR WY	1548	37	57276	R	2	AC	12/20/2018	73
HELMCAN	0300	HELM CANAL RD	POPLAR WY	MORRIS KYLE DR	1903	36	68508	R	2	AC	12/20/2018	57
HELMCAN	0400	HELM CANAL RD	MORRIS KYLE DR	HWY 33	410	19	7790	R	1	AC	2/20/2019	59
INDART	0100	INDART ST	ENRICO AVE	LANDUCCI DR	1542	37	57054	R	2	AC	12/20/2018	100
J ST	0100	J ST	TWELFTH ST	END OF PAVEMENT	490	36	17640	R	2	AC	12/20/2018	8
J ST	0200	J ST	END OF PAVEMENT	TENTH ST	570	36	20520	R	2	GRAVEL		
LANDUCCI	0100	LANDUCCI DR	MORRIS KYLE DR	INDART ST	1407	47	66129	C	2	AC	12/20/2018	25
LANDUCCI	0200	LANDUCCI DR	INDART ST	CARDELLA ST	294	47	13818	C	2	AC	12/20/2018	6
LANDUCCI	0300	LANDUCCI DR	CARDELLA AVE	SAIPAN AVE	448	37	16576	C	2	AC	12/20/2018	9
LEYVA	0100	LEYVA AVE	VALLE DE PAZ AVE	CARDIEL AVE	906	36	32616	R	2	AC	12/20/2018	48
LEYVACT	0100	LEYVA CT	WEST CDS	LEYVA AVE	138	36	4968	R	2	AC	12/20/2018	45
LEYVACT	0200	LEYVA CT	LEYVA AVE	CLYDE FANNON RD	150	36	5400	R	2	AC	12/20/2018	7
LOGUE	0100	LOGUE ST	ZOZAYA ST	CLINE ST	330	37	12210	R	2	AC	12/20/2018	12
LOWE	0100	LOWE CT	WEST CDS	ZOZAYA ST	281	36	10116	R	2	AC	12/20/2018	47
LYON	0100	LYON AVE	HWY 33	NORTH END	870	20	17400	R	2	GRAVEL		
M ST	0100	M ST	WEST END	M ST	320	37	11840	R	2	AC	12/20/2018	3
M ST	0200	M ST	M ST	PAVEMENT CHANGE	950	44	41800	R	2	AC	12/20/2018	6
M ST	0300	M ST	PAVEMENT CHANGE	TWELFTH ST	497	56	27832	R	2	AC	12/20/2018	33
M ST	0400	M ST	TWELFTH ST	END OF PAVEMENT	568	56	31808	R	2	AC	12/20/2018	62
MANES	0100	MANES ST	CLYDE FANNON DR	CLARK ST	440	36	15840	R	2	AC	12/20/2018	67
MAPLE	0100	MAPLE ST	POPLAR WY	DOGWOOD WY	910	32	29120	R	2	AC	12/20/2018	64
MCCLAIN	0100	MC CLAIN ST	CLYDE FANNON DR	CLARK ST	440	36	15840	R	2	AC	12/20/2018	61
MENDOZA	0100	MENDOZA DR	CLYDE FANNON DR	EAST CDS	1155	32	36960	R	2	AC	12/20/2018	86
MENDOZA	0200	MENDOZA DR	ZOZOYA ST	CLINE ST	569	36	20484	R	2	AC	2/20/2019	25
MILLER	0100	MILLER LN	GOMES DR	ZOZAYA ST	486	36	17496	R	2	AC	12/20/2018	42
MORRISK	0100	MORRIS KYLE DR	HWY 33	CARDELLA ST	341	40	13640	R	2	AC	1/5/2019	13
MORRISK	0200	MORRIS KYLE DR	CARDELLA ST	LANDUCCI DR	986	49	48314	R	2	AC	12/20/2018	4
MUNUCHA	0100	MUNICHA ST	YIP ST	NW CDS	456	36	16416	R	2	AC	1/5/2019	97
NESS	0100	NESS AVE	WEST CITY LIMIT	J ST	2252	44	99088	A	3	AC	12/20/2018	20
9TH	0100	NINETH ST	HWY 33	O ST	340	54	18360	R	2	AC	12/20/2018	4
9TH	0200	NINETH ST	WEST END	Q ST	528	46	24288	R	2	AC	12/20/2018	11
NOMANE	0100	NO NAME	MENDOZA DR	ALLARDT DR	280	32	8960	R	2	AC	12/20/2018	97
O ST	0100	O ST	SAIPAN AVE	FIFTEENTH ST	1228	52	63856	R	2	AC	12/20/2018	80
O ST	0200	O ST	FIFTEENTH ST	THIRTEENTH ST	926	52	48152	R	2	AC	12/20/2018	40
O ST	0300	O ST	THIRTEENTH ST	TWELFTH ST	459	52	23868	R	2	AC	12/20/2018	44
O ST	0400	O ST	TWELFTH ST	NINTH ST	1402	52	72904	R	2	AC	12/20/2018	55

Street ID	Section ID	Street Name	Beg Location	End Location	Length (ft)	Width (ft)	Area (sf)	FC	# of Lanes	Surface Type	PCI Date	PCI
O ST	0500	O ST	NINTH ST	EIGHTH ST	450	53	23850	R	2	AC	12/20/2018	24
OAK	0100	OAK ST	WEST END	DOGWOOD WY	472	32	15104	R	2	AC	12/20/2018	87
P ST	0100	P ST	SIXTEENTH ST	FIFTEENTH ST	547	62	33914	R	2	AC	12/20/2018	88
P ST	0200	P ST	FIFTEENTH ST	THIRTEENTH ST	960	54	51840	C	2	AC	12/20/2018	88
P ST	0300	P ST	THIRTEENTH ST	ELEVENTH ST	958	52	49816	C	2	AC	12/20/2018	38
P ST	0400	P ST	ELEVENTH ST	NINTH ST	956	52	49712	C	2	AC	12/20/2018	72
P ST	0500	P ST	NINTH ST	EIGHTH ST	494	52	25688	R	2	AC	12/20/2018	42
P ST	0600	P ST	EIGHTH ST	BRIDGE	369	46	16974	R	2	AC	12/20/2018	16
P ST	0700	P ST	BRIDGE	YIP ST	707	52	36764	R	2	AC	12/20/2018	77
P ST	0800	P ST	YIP ST	CLYDE FANNON RD	859	51	43809	R	2	AC	12/20/2018	96
POPLAR	0100	POPLAR WY	HELM CANAL RD	SPRUCE ST	174	32	5568	C	2	AC	12/20/2018	56
POPLAR	0200	POPLAR WY	SPRUCE ST	ELM ST	697	32	22304	C	2	AC	12/20/2018	54
POWERS	0100	POWERS CT	SABLAN AVE	SOUTH EAST CDS	189	36	6804	R	2	AC	12/20/2018	64
QST	0100	Q ST	SAIPAN AVE	SIXTEENTH ST	1080	54	58320	R	2	AC	12/20/2018	11
QST	0200	Q ST	SIXTEENTH ST	FIFTEENTH ST	578	54	31212	R	2	AC	12/20/2018	76
QST	0300	Q ST	FIFTEENTH ST	Q ST	785	54	42390	R	2	AC	12/21/2018	100
QST	0400	Q ST	Q ST	P ST	386	34	13124	R	2	AC	12/21/2018	100
QST	0500	Q ST	ELEVENTH ST	TENTH ST	457	26	11882	R	2	AC	12/20/2018	68
QST	0600	Q ST	TENTH ST	NINTH ST	548	26	14248	R	2	AC	12/20/2018	23
QST	0700	Q ST	NINTH ST	EIGHTH ST	457	36	16452	R	2	AC	12/20/2018	88
QST	0800	Q ST	EIGHTH ST	SEVENTH ST	301	36	10836	R	2	AC	12/20/2018	20
QST	0900	Q ST	CLINE	YIP ST	528	36	19008	R	2	AC	12/20/2018	9
RST	0100	R ST	FITEENTH ST	Q ST	587	36	21132	R	2	AC	12/20/2018	18
RST	0200	R ST	CLINE ST	YIP ST	469	37	17353	R	2	AC	12/20/2018	7
RABE	0100	RABE ST	CLYDE FANNON DR	ZOZAYA ST	1120	36	40320	R	2	AC	12/20/2018	3
RAMIREZCT	0100	RAMIREZ CT	RAMIREZ DR	WEST CDS	94	27	2538	R	2	AC	12/20/2018	30
RAMIREZ	0100	RAMIREZ DR	EIGHTH ST	NORTH WEST CDS	613	27	16551	R	2	AC	12/20/2018	29
REBECCHIC	0100	REBECCHI CIR	INDART ST	EAST CDS	274	37	10138	R	2	AC	12/20/2018	100
REBECCHI	0100	REBECCHI ST	LANDUCCI DR	CARDELLA ST	376	37	13912	R	2	AC	12/20/2018	26
REVKANTOR	0100	REV KANTOR ST	CLYDE FANNON DR	ZOZAYA ST	900	36	32400	R	2	AC	12/20/2018	91
RIVER	0100	RIVER LN	VAZQUEZ DR	CARDELLA ST	1840	41	75440	R	2	AC	12/20/2018	97
SST	0100	S ST	SOUTH END	FIFTEENTH ST	571	26	14846	R	2	GRAVEL		
SABLAN	0100	SABLAN AVE	VALLE DE PAZ AVE	CLYDE FANNON DR	1084	36	39024	R	2	AC	12/20/2018	36
SAIPAN	0100	SAIPAN AVE	HWY 33	O ST	628	40	25120	C	2	AC	12/20/2018	38
SAIPAN	0200	SAIPAN AVE	O ST	Q ST	927	40	37080	C	2	AC	12/20/2018	36
SAIPAN	0300	SAIPAN AVE	Q ST	EAST END	736	40	29440	C	2	AC	12/20/2018	59
SEVENTH	0100	SEVENTH ST	WEST END	P ST	181	30	5430	R	2	AC	12/13/2018	2
SEVENTH	0200	SEVENTH ST	P ST	Q ST	372	24	8928	R	2	AC	12/13/2018	0
SEVENTH	0300	SEVENTH ST	Q ST	EIGHTH ST	450	30	13500	R	2	AC	12/20/2018	38
SEVENTH	0400	SEVENTH ST	EIGHTH ST	NORTH EAST END	650	24	15600	A	2	AC	12/20/2018	0
SIERRAS	0100	SIERRAS LN	GOMES DR	ZOZAYA ST	520	36	18720	R	2	AC	12/20/2018	12
16TH ST	0100	SIXTEENTH ST	O ST	Q ST	759	47	35673	R	2	AC	12/18/2018	68
SPRUCECT	0100	SPRUCE CT	CYPRESS WY	EAST CDS	322	32	10304	R	2	AC	12/20/2018	71
SPRUCE	0100	SPRUCE ST	POPLAR WY	CYPRESS WY	796	32	25472	R	2	AC	12/20/2018	46
SPRUCE	0200	SPRUCE ST	WILLOW WY	POPLAR WY	251	32	8032	R	2	AC	12/20/2018	59
TST	0100	T ST	CLINE ST	ZOZAYA	526	36	18936	R	2	AC	1/5/2019	8

Street ID	Section ID	Street Name	Beg Location	End Location	Length (ft)	Width (ft)	Area (sf)	FC	# of Lanes	Surface Type	PCI Date	PCI
10TH ST	0100	TENTH ST	WEST END	J ST	685	36	24660	R	2	AC	12/20/2018	17
10TH ST	0200	TENTH ST	HWY 33	O ST	320	52	16640	C	2	AC	12/20/2018	51
10TH ST	0300	TENTH ST	O ST	P ST	360	52	18720	C	2	AC	12/20/2018	12
10TH ST	0400	TENTH ST	P ST	Q ST	304	52	15808	C	2	AC	12/20/2018	94
THATCHER	0100	THATCHER DR	Q ST	EAST END	284	33	9372	R	2	AC	12/20/2018	8
13TH ST	0100	THIRTEENTH ST	WEST END	HWY 33	90	24	2160	R	2	AC	12/20/2018	3
13TH ST	0200	THIRTEENTH ST	HWY 33	P ST	757	60	45420	A	3	AC	12/20/2018	76
13TH ST	0300	THIRTEENTH ST	P ST	WEST SIDE BRIDGE	1101	40	44040	A	2	AC	12/20/2018	31
13TH ST	0400	THIRTEENTH ST	EAST EDGE BRIDGE	EAST CITY LIMIT	577	30	17310	A	2	AC	1/5/2019	21
THOMASCON	0100	THOMAS CONBOY AVE	CLYDE FANNON DR	ALLARDT DR	1144	37	42328	R	2	AC	12/20/2018	14
THOMASCON	0200	THOMAS CONBOY AVE	ALLARDT DR	CLINE ST	580	37	21460	R	2	AC	12/20/2018	86
TRICIRCLE	0100	TRI CIRCLE DR	CORREGIDOR AVE	TRI CIRCLE DR	934	32	29888	R	2	AC	12/20/2018	98
TUCCI	0100	TUCCI ST	CARDELLA ST	INDART ST	247	37	9139	R	2	AC	12/20/2018	95
12TH ST	0100	TWEELFTH ST	J ST	CANAL EDGE	650	44	28600	A	3	AC	12/20/2018	51
12TH ST	0200	TWEELFTH ST	CANAL EDGE	HWY 33	843	60	50580	A	3	AC	12/20/2018	59
12TH ST	0300	TWEELFTH ST	HYW 33	O ST	365	57	20805	A	2	AC	12/20/2018	23
12TH ST	0400	TWEELFTH ST	O ST	P ST	370	52	19240	A	2	AC	12/20/2018	80
UNAMED	0100	UN NAMED	WELTY AVE	CORDER AVE	610	37	22570	R	2	AC	12/20/2018	78
VALLEDEP	0100	VALLE DE PAZ AVE	LEYVA AVE	SABLAN AVE	1054	37	38998	R	2	AC	12/20/2018	50
VASQUEZ	0100	VASQUEZ DR	SOUTH CDS	NORTH END	1195	37	44215	R	2	AC	12/20/2018	48
WELTY	0100	WELTY AVE	HWY 33	UN NAMED	708	37	26196	R	2	AC	12/20/2018	87
WILLOW	0100	WILLOW WY	SPRUCE ST	ELM ST	701	32	22432	R	2	AC	12/20/2018	72
YIP	0100	YIP ST	HWY 33	P ST	776	36	27936	R	2	AC	12/20/2018	52
YIP	0200	YIP ST	P ST	R ST	594	36	21384	R	2	AC	12/20/2018	9
ZOZAYA	0100	ZOZAYA ST	HWY 33	EAST END	210	36	7560	R	2	AC	12/20/2018	96
ZOZAYA	0200	ZOZAYA ST	R ST	THOMAS CONBOY AVE	997	37	36889	R	2	AC	12/20/2018	10
ZOZAYA	0300	ZOZAYA ST	THOMAS CONBOY AVE	CLINE ST	268	37	9916	R	2	AC	12/20/2018	7
ZOZAYA	0400	ZOZAYA ST	CLINE ST	FATHER CRAIG ST	463	45	20835	R	2	AC	12/20/2018	11
ZOZAYA	0500	ZOZAYA ST	FATHER CRAIG ST	MILLER LN	797	45	35865	R	2	AC	12/20/2018	63
ZOZAYA	0600	ZOZAYA ST	MILLER LN	RABE ST	580	45	26100	R	2	AC	12/20/2018	16
ZOZAYA	0700	ZOZAYA ST	RABE ST	NORTH END	685	45	30825	R	2	AC	12/20/2018	57

Street ID	Section ID	Street Name	Beg Location	End Location	Length (ft)	Width (ft)	Area (sf)	FC	# of Lanes	Surface Type	PCI Date	PCI
CARDELLA	0300	CARDELLA ST	LANDUCCI DR	RIVER LN	677	37	25049	R	2	AC	12/20/2018	100
DEBOER	0100	DEBOER CIR	INDART ST	EAST CDS	182	36	6552	R	2	AC	12/20/2018	100
ENRICO	0100	ENRICO AVE	CARDELLA ST	EAST END	628	37	23236	R	2	AC	12/20/2018	100
GRAYSON	0100	GRAYSON CIR	INDART ST	EAST CDS	262	36	9432	R	2	AC	12/20/2018	100
INDART	0100	INDART ST	ENRICO AVE	LANDUCCI DR	1542	37	57054	R	2	AC	12/20/2018	100
QST	0300	Q ST	FIFTEENTH ST	Q ST	785	54	42390	R	2	AC	12/21/2018	100
QST	0400	Q ST	Q ST	P ST	386	34	13124	R	2	AC	12/21/2018	100
REBECCHIC	0100	REBECCHI CIR	INDART ST	EAST CDS	274	37	10138	R	2	AC	12/20/2018	100
TRICIRCLE	0100	TRI CIRCLE DR	CORREGIDOR AVE	TRI CIRCLE DR	934	32	29888	R	2	AC	12/20/2018	98
CLINE	0100	CLINE ST	P ST	T ST	1203	37	44511	R	2	AC	12/20/2018	97
MUNUCHA	0100	MUNICHA ST	YIP ST	NW CDS	456	36	16416	R	2	AC	1/5/2019	97
NOMANE	0100	NO NAME	MENDOZA DR	ALLARDT DR	280	32	8960	R	2	AC	12/20/2018	97
RIVER	0100	RIVER LN	VAZQUEZ DR	CARDELLA ST	1840	41	75440	R	2	AC	12/20/2018	97
CORREG	0100	CORREGIDOR AVE	SAIPAN AVE	CARDELLA ST	1135	37	41995	R	2	AC	12/20/2018	96
DELRIO	0100	DEL RIO AVE	HWY 33	NO NAME	746	37	27602	R	2	AC	12/20/2018	96
P ST	0800	P ST	YIP ST	CLYDE FANNON RD	859	51	43809	R	2	AC	12/20/2018	96
ZOZAYA	0100	ZOZAYA ST	HWY 33	EAST END	210	36	7560	R	2	AC	12/20/2018	96
14TH ST	0200	FOURTEENTH ST	P ST	Q ST	349	52	18148	A	2	AC	12/20/2018	95
TUCCI	0100	TUCCI ST	CARDELLA ST	INDART ST	247	37	9139	R	2	AC	12/20/2018	95
10TH ST	0400	TENTH ST	P ST	Q ST	304	52	15808	C	2	AC	12/20/2018	94
ELM	0100	ELM ST	WILLOW WY	DOGWOOD WY	991	32	31712	R	2	AC	12/20/2018	92
REVKANTOR	0100	REV KANTOR ST	CLYDE FANNON DR	ZOZAYA ST	900	36	32400	R	2	AC	12/20/2018	91
CORDEL	0100	CORDEL AVE	HWY 33	EAST END	972	37	35964	R	2	AC	12/20/2018	89
ALLARDT	0100	ALLARDT DR	CLYDE FAMMON DR	THOMAS CONBOY DR	1390	32	44480	R	2	AC	12/20/2018	88
CLINE	0200	CLINE ST	T ST	THOMAS CONBOY DR (NORTH EDGE)	878	37	32486	R	2	AC	12/20/2018	88
DIAZ	0100	DIAZ ST	CLYDE FANNON DR	EAST END	429	45	19305	R	2	AC	12/20/2018	88
P ST	0100	P ST	SIXTEENTH ST	FIFTEENTH ST	547	62	33914	R	2	AC	12/20/2018	88
P ST	0200	P ST	FIFTEENTH ST	THIRTEENTH ST	960	54	51840	C	2	AC	12/20/2018	88
QST	0700	Q ST	NINTH ST	EIGHTH ST	457	36	16452	R	2	AC	12/20/2018	88
BIRCH	0100	BIRCH DR	HELM CANAL RD	ELM ST	770	30	23100	R	2	AC	12/20/2018	87
BIRCH	0200	BIRCH DR	ELM ST	NORTH CDS	1138	30	34140	R	5	AC	1/5/2019	87
DOGWOOD	0100	DOGWOOD WY	MAPLE ST	ELM ST	236	32	7552	R	2	AC	12/20/2018	87
OAK	0100	OAK ST	WEST END	DOGWOOD WY	472	32	15104	R	2	AC	12/20/2018	87
WELTY	0100	WELTY AVE	HWY 33	UN NAMED	708	37	26196	R	2	AC	12/20/2018	87
MENDOZA	0100	MENDOZA DR	CLYDE FANNON DR	EAST CDS	1155	32	36960	R	2	AC	12/20/2018	86
THOMASCON	0200	THOMAS CONBOY AVE	ALLARDT DR	CLINE ST	580	37	21460	R	2	AC	12/20/2018	86
ALDER	0100	ALDER WY	ELM ST	OAK ST	522	32	16704	R	2	AC	12/20/2018	85
DOGWOOD	0200	DOGWOOD WY	ELM ST	NORTH CDS	827	32	26464	R	2	AC	12/20/2018	84
ELM	0200	ELM ST	DOGWOOD WY	BIRCH DR	243	32	7776	R	2	AC	12/20/2018	84
HELMCAN	0100	HELM CANAL RD	SOUTH CITY LIMIT	BIRCH DR	1732	23	39836	R	2	AC	12/20/2018	84
ASH	0100	ASH ST	ALDER WY	DOGWOOD WY	414	32	13248	R	2	AC	12/20/2018	82
O ST	0100	O ST	SAIPAN AVE	FIFTEENTH ST	1228	52	63856	R	2	AC	12/20/2018	80
12TH ST	0400	TWEELFTH ST	O ST	P ST	370	52	19240	A	2	AC	12/20/2018	80
ALDER	0200	ALDER WY	OAK ST	NORTH CDS	311	32	9952	R	2	AC	12/20/2018	79
UNAMED	0100	UN NAMED	WELTY AVE	CORDER AVE	610	37	22570	R	2	AC	12/20/2018	78
P ST	0700	P ST	BRIDGE	YIP ST	707	52	36764	R	2	AC	12/20/2018	77

Street ID	Section ID	Street Name	Beg Location	End Location	Length (ft)	Width (ft)	Area (sf)	FC	# of Lanes	Surface Type	PCI Date	PCI
CYPRESS	0200	CYPRESS WY	SPRUCE CT	MAPLE ST	260	32	8320	R	2	AC	12/20/2018	76
QST	0200	Q ST	SIXTEENTH ST	FIFTEENTH ST	578	54	31212	R	2	AC	12/20/2018	76
13TH ST	0200	THIRTEENTH ST	HWY 33	P ST	757	60	45420	A	3	AC	12/20/2018	76
HELMCAN	0200	HELM CANAL RD	BIRCH DR	POPLAR WY	1548	37	57276	R	2	AC	12/20/2018	73
P ST	0400	P ST	ELEVENTH ST	NINTH ST	956	52	49712	C	2	AC	12/20/2018	72
WILLOW	0100	WILLOW WY	SPRUCE ST	ELM ST	701	32	22432	R	2	AC	12/20/2018	72
SPRUCECT	0100	SPRUCE CT	CYPRESS WY	EAST CDS	322	32	10304	R	2	AC	12/20/2018	71
11TH ST	0200	ELEVENTH ST	HWY 33	P ST	740	52	38480	C	2	AC	1/5/2019	70
QST	0500	Q ST	ELEVENTH ST	TENTH ST	457	26	11882	R	2	AC	12/20/2018	68
16TH ST	0100	SIXTEENTH ST	O ST	Q ST	759	47	35673	R	2	AC	12/18/2018	68
GOMES	0100	GOMES AVE	BORBOA LN	MILLER LN	240	36	8640	R	2	AC	12/20/2018	67
MANES	0100	MANES ST	CLYDE FANNON DR	CLARK ST	440	36	15840	R	2	AC	12/20/2018	67
MAPLE	0100	MAPLE ST	POPLAR WY	DOGWOOD WY	910	32	29120	R	2	AC	12/20/2018	64
POWERS	0100	POWERS CT	SABLAN AVE	SOUTH EAST CDS	189	36	6804	R	2	AC	12/20/2018	64
CYPRESS	0100	CYPRESS WY	HELMS CANAL RD	SPRUCE CT	158	32	5056	R	2	AC	12/20/2018	63
ZOZAYA	0500	ZOZAYA ST	FATHER CRAIG ST	MILLER LN	797	45	35865	R	2	AC	12/20/2018	63
M ST	0400	M ST	TWELFTH ST	END OF PAVEMENT	568	56	31808	R	2	AC	12/20/2018	62
CALRK	0100	CLARK ST	MANES ST	MC CLAIN ST	242	36	8712	R	2	AC	12/20/2018	61
MCCLAIN	0100	MC CLAIN ST	CLYDE FANNON DR	CLARK ST	440	36	15840	R	2	AC	12/20/2018	61
CLYDE	0500	CLYDE FANNON RD	DODDERER ST	NORTH CITY LIMIT	1002	34	34068	C	2	AC	12/20/2018	59
HELMCAN	0400	HELM CANAL RD	MORRIS KYLE DR	HWY 33	410	19	7790	R	1	AC	2/20/2019	59
SAIPAN	0300	SAIPAN AVE	Q ST	EAST END	736	40	29440	C	2	AC	12/20/2018	59
SPRUCE	0200	SPRUCE ST	WILLOW WY	POPLAR WY	251	32	8032	R	2	AC	12/20/2018	59
12TH ST	0200	TWEELFTH ST	CANAL EDGE	HWY 33	843	60	50580	A	3	AC	12/20/2018	59
HELMCAN	0300	HELM CANAL RD	POPLAR WY	MORRIS KYLE DR	1903	36	68508	R	2	AC	12/20/2018	57
ZOZAYA	0700	ZOZAYA ST	RABE ST	NORTH END	685	45	30825	R	2	AC	12/20/2018	57
POPLAR	0100	POPLAR WY	HELM CANAL RD	SPRUCE ST	174	32	5568	C	2	AC	12/20/2018	56
O ST	0400	O ST	TWELFTH ST	NINTH ST	1402	52	72904	R	2	AC	12/20/2018	55
POPLAR	0200	POPLAR WY	SPRUCE ST	ELM ST	697	32	22304	C	2	AC	12/20/2018	54
BORBOA	0100	BORBOA LN	CLYDE FANNON DR	GOMES DR	696	36	25056	R	2	AC	12/20/2018	52
YIP	0100	YIP ST	HWY 33	P ST	776	36	27936	R	2	AC	12/20/2018	52
10TH ST	0200	TENTH ST	HWY 33	O ST	320	52	16640	C	2	AC	12/20/2018	51
12TH ST	0100	TWEELFTH ST	J ST	CANAL EDGE	650	44	28600	A	3	AC	12/20/2018	51
VALLEDEP	0100	VALLE DE PAZ AVE	LEYVA AVE	SABLAN AVE	1054	37	38998	R	2	AC	12/20/2018	50
LEYVA	0100	LEYVA AVE	VALLE DE PAZ AVE	CARDIEL AVE	906	36	32616	R	2	AC	12/20/2018	48
VASQUEZ	0100	VASQUEZ DR	SOUTH CDS	NORTH END	1195	37	44215	R	2	AC	12/20/2018	48
LOWE	0100	LOWE CT	WEST CDS	ZOZAYA ST	281	36	10116	R	2	AC	12/20/2018	47
SPRUCE	0100	SPRUCE ST	POPLAR WY	CYPRESS WY	796	32	25472	R	2	AC	12/20/2018	46
LEYVACT	0100	LEYVA CT	WEST CDS	LEYVA AVE	138	36	4968	R	2	AC	12/20/2018	45
O ST	0300	O ST	THIRTEENTH ST	TWELFTH ST	459	52	23868	R	2	AC	12/20/2018	44
MILLER	0100	MILLER LN	GOMES DR	ZOZAYA ST	486	36	17496	R	2	AC	12/20/2018	42
P ST	0500	P ST	NINTH ST	EIGHTH ST	494	52	25688	R	2	AC	12/20/2018	42
CLYDE	0300	CLYDE FANNON RD	SOUTH END	RABE ST	850	34	28900	C	2	AC	12/20/2018	40
O ST	0200	O ST	FIFTEENTH ST	THIRTEENTH ST	926	52	48152	R	2	AC	12/20/2018	40
CARDIEL	0100	CARDIEL AVE	VALLE DE PAZ AVE	LEYVA AVE	603	36	21708	R	2	AC	12/20/2018	39
P ST	0300	P ST	THIRTEENTH ST	ELEVENTH ST	958	52	49816	C	2	AC	12/20/2018	38

Street ID	Section ID	Street Name	Beg Location	End Location	Length (ft)	Width (ft)	Area (sf)	FC	# of Lanes	Surface Type	PCI Date	PCI
SAIPAN	0100	SAIPAN AVE	HWY 33	O ST	628	40	25120	C	2	AC	12/20/2018	38
SEVENTH	0300	SEVENTH ST	Q ST	EIGHTH ST	450	30	13500	R	2	AC	12/20/2018	38
GOMES	0200	GOMES AVE	MILLER LN	SIERRAS LN	283	36	10188	R	2	AC	12/20/2018	37
SABLAN	0100	SABLAN AVE	VALLE DE PAZ AVE	CLYDE FANNON DR	1084	36	39024	R	2	AC	12/20/2018	36
SAIPAN	0200	SAIPAN AVE	O ST	Q ST	927	40	37080	C	2	AC	12/20/2018	36
M ST	0300	M ST	PAVEMENT CHANGE	TWELFTH ST	497	56	27832	R	2	AC	12/20/2018	33
13TH ST	0300	THIRTEENTH ST	P ST	WEST SIDE BRIDGE	1101	40	44040	A	2	AC	12/20/2018	31
RAMIREZCT	0100	RAMIREZ CT	RAMIREZ DR	WEST CDS	94	27	2538	R	2	AC	12/20/2018	30
DODDERER	0100	DODDERER ST	CLYDE FANNON DR	ZOZAYA ST	1008	36	36288	R	2	AC	12/20/2018	29
11TH ST	0300	ELEVENTH ST	P ST	Q ST	317	52	16484	C	2	AC	12/20/2018	29
RAMIREZ	0100	RAMIREZ DR	EIGHTH ST	NORTH WEST CDS	613	27	16551	R	2	AC	12/20/2018	29
REBECCHI	0100	REBECCHI ST	LANDUCCI DR	CARDELLA ST	376	37	13912	R	2	AC	12/20/2018	26
LANDUCCI	0100	LANDUCCI DR	MORRIS KYLE DR	INDART ST	1407	47	66129	C	2	AC	12/20/2018	25
MENDOZA	0200	MENDOZA DR	ZOZOYA ST	CLINE ST	569	36	20484	R	2	AC	2/20/2019	25
O ST	0500	O ST	NINTH ST	EIGHTH ST	450	53	23850	R	2	AC	12/20/2018	24
QST	0600	Q ST	TENTH ST	NINTH ST	548	26	14248	R	2	AC	12/20/2018	23
12TH ST	0300	TWEELFTH ST	HYW 33	O ST	365	57	20805	A	2	AC	12/20/2018	23
BORBON	0100	BORBON ST	FATHER CRAIG ST	GUERRA ST	259	36	9324	R	2	AC	12/20/2018	21
13TH ST	0400	THIRTEENTH ST	EAST EDGE BRIDGE	EAST CITY LIMIT	577	30	17310	A	2	AC	1/5/2019	21
NESS	0100	NESS AVE	WEST CITY LIMIT	J ST	2252	44	99088	A	3	AC	12/20/2018	20
QST	0800	Q ST	EIGHTH ST	SEVENTH ST	301	36	10836	R	2	AC	12/20/2018	20
15TH ST	0200	FIFTEENTH ST	Q ST	S ST	404	52	21008	A	2	AC	12/20/2018	19
RST	0100	R ST	FITEENTH ST	Q ST	587	36	21132	R	2	AC	12/20/2018	18
10TH ST	0100	TENTH ST	WEST END	J ST	685	36	24660	R	2	AC	12/20/2018	17
CARDELLA	0500	CARDELLA ST	REBECCHI ST	SOUTH CDS	124	50	6200	R	2	AC	12/20/2018	16
P ST	0600	P ST	EIGHTH ST	BRIDGE	369	46	16974	R	2	AC	12/20/2018	16
ZOZAYA	0600	ZOZAYA ST	MILLER LN	RABE ST	580	45	26100	R	2	AC	12/20/2018	16
CARDELLA	0400	CARDELLA ST	RIVER LN	REBECCHI ST	1412	37	52244	R	2	AC	12/20/2018	15
THOMASCON	0100	THOMAS CONBOY AVE	CLYDE FANNON DR	ALLARDT DR	1144	37	42328	R	2	AC	12/20/2018	14
CLINE	0300	CLINE ST	THOMAS CONBOY DR (NORTH EDGE)	ZOZAYA ST	389	37	14393	R	2	AC	12/20/2018	13
MORRISK	0100	MORRIS KYLE DR	HWY 33	CARDELLA ST	341	40	13640	R	2	AC	1/5/2019	13
LOGUE	0100	LOGUE ST	ZOZAYA ST	CLINE ST	330	37	12210	R	2	AC	12/20/2018	12
SIERRAS	0100	SIERRAS LN	GOMES DR	ZOZAYA ST	520	36	18720	R	2	AC	12/20/2018	12
10TH ST	0300	TENTH ST	O ST	P ST	360	52	18720	C	2	AC	12/20/2018	12
ALLARDT	0200	ALLARDT DR	ZOZOYA ST	CLINE ST	442	36	15912	R	2	AC	12/20/2018	11
9TH	0200	NINETH ST	WEST END	Q ST	528	46	24288	R	2	AC	12/20/2018	11
QST	0100	Q ST	SAIPAN AVE	SIXTEENTH ST	1080	54	58320	R	2	AC	12/20/2018	11
ZOZAYA	0400	ZOZAYA ST	CLINE ST	FATHER CRAIG ST	463	45	20835	R	2	AC	12/20/2018	11
ZOZAYA	0200	ZOZAYA ST	R ST	THOMAS CONBOY AVE	997	37	36889	R	2	AC	12/20/2018	10
CARDELCTS	0100	CARDELLA CT SOUTH	WEST CDS	CARDELLA ST	260	37	9620	R	2	AC	12/20/2018	9
8TH	0100	EIGHTH ST	HWY 33	Q ST	1165	54	62910	C	2	AC	12/20/2018	9
LANDUCCI	0300	LANDUCCI DR	CARDELLA AVE	SAIPAN AVE	448	37	16576	C	2	AC	12/20/2018	9
QST	0900	Q ST	CLINE	YIP ST	528	36	19008	R	2	AC	12/20/2018	9
YIP	0200	YIP ST	P ST	R ST	594	36	21384	R	2	AC	12/20/2018	9
CLYDE	0400	CLYDE FANNON RD	RABE ST	DODDERER ST	285	34	9690	C	2	AC	12/20/2018	8
J ST	0100	J ST	TWELFTH ST	END OF PAVEMENT	490	36	17640	R	2	AC	12/20/2018	8

Street ID	Section ID	Street Name	Beg Location	End Location	Length (ft)	Width (ft)	Area (sf)	FC	# of Lanes	Surface Type	PCI Date	PCI
TST	0100	T ST	CLINE ST	ZOZAYA	526	36	18936	R	2	AC	1/5/2019	8
THATCHER	0100	THATCHER DR	Q ST	EAST END	284	33	9372	R	2	AC	12/20/2018	8
CLYDE	0200	CLYDE FANNON RD	MENDOZA DR	END SB	1589	37	58793	C	2	AC	12/20/2018	7
LEYVACT	0200	LEYVA CT	LEYVA AVE	CLYDE FANNON RD	150	36	5400	R	2	AC	12/20/2018	7
RST	0200	R ST	CLINE ST	YIP ST	469	37	17353	R	2	AC	12/20/2018	7
ZOZAYA	0300	ZOZAYA ST	THOMAS CONBOY AVE	CLINE ST	268	37	9916	R	2	AC	12/20/2018	7
LANDUCCI	0200	LANDUCCI DR	INDART ST	CARDELLA ST	294	47	13818	C	2	AC	12/20/2018	6
M ST	0200	M ST	M ST	PAVEMENT CHANGE	950	44	41800	R	2	AC	12/20/2018	6
CARDELCTN	0100	CARDELLA CT NORTH	CARDELLA ST	EAST CDS	166	37	6142	R	2	AC	12/20/2018	5
CLYDE	0100	CLYDE FANNON RD	HWY 33	MENDOZA DR	789	44	34716	C	2	AC	12/20/2018	5
8TH	0200	EIGHTH ST	Q ST	SEVENTH ST	530	23	12190	C	2	AC	12/20/2018	5
MORRISK	0200	MORRIS KYLE DR	CARDELLA ST	LANDUCCI DR	986	49	48314	R	2	AC	12/20/2018	4
9TH	0100	NINETH ST	HWY 33	O ST	340	54	18360	R	2	AC	12/20/2018	4
15TH ST	0100	FIFTEENTH ST	HWY 33	Q ST	1140	52	59280	A	2	AC	12/20/2018	3
M ST	0100	M ST	WEST END	M ST	320	37	11840	R	2	AC	12/20/2018	3
RABE	0100	RABE ST	CLYDE FANNON DR	ZOZAYA ST	1120	36	40320	R	2	AC	12/20/2018	3
13TH ST	0100	THIRTEENTH ST	WEST END	HWY 33	90	24	2160	R	2	AC	12/20/2018	3
CARDELLA	0100	CARDELLA ST	MORRIS KYLE DR	TUCCI ST	1130	37	41810	C	2	AC	12/20/2018	2
CARDELLA	0200	CARDELLA ST	TUCCI ST	LANDUCCI DR	1078	37	39886	C	2	AC	12/20/2018	2
FATHERC	0100	FATHER CRAIG ST	BORBON ST	ZOZAYA ST	588	36	21168	R	2	AC	12/20/2018	2
SEVENTH	0100	SEVENTH ST	WEST END	P ST	181	30	5430	R	2	AC	12/13/2018	2
ENRICO	0200	ENRICO AVE	CARDELLA ST	CARDELLA ST	1068	37	39516	R	2	AC	12/20/2018	0
14TH ST	0100	FOURTEENTH ST	HWY 33	P ST	746	52	38792	A	3	AC	12/20/2018	0
GUERRA	0100	GUERRA ST	BORBON ST	ZOZAYA ST	460	36	16560	R	2	AC	12/20/2018	0
SEVENTH	0200	SEVENTH ST	P ST	Q ST	372	24	8928	R	2	AC	12/13/2018	0
SEVENTH	0400	SEVENTH ST	EIGHTH ST	NORTH EAST END	650	24	15600	A	2	AC	12/20/2018	0
BEEHIVE	0100	BEEHIVE DR	CORREGIDOR AVE	SAIPAN AVE	1067	16	17072	R	2	GRAVEL		
11TH ST	0100	ELEVENTH ST	WEST END	M ST	320	56	17920	R	2	GRAVEL		
J ST	0200	J ST	END OF PAVEMENT	TENTH ST	570	36	20520	R	2	GRAVEL		
LYON	0100	LYON AVE	HWY 33	NORTH END	870	20	17400	R	2	GRAVEL		
SST	0100	S ST	SOUTH END	FIFTEENTH ST	571	26	14846	R	2	GRAVEL		

Appendix C

Maintenance and Rehabilitation (M&R) Decision Tree

Maintenance and Rehabilitation Decision Tree

This report presents the current maintenance and rehabilitation (M&R) decision tree that exists in the database. The decision tree forms the basis for all of the budgetary computations that are included in this volume. ***Changes to the decision tree will make the results in the budget reports invalid.*** All pavement treatment unit costs relevant to the street 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 – Good. All preventive maintenance treatment listings are assigned only to sections in Condition Category I. Street sections with PCI values under this range are assigned to treatments listed in Categories II through V.

In the preventive maintenance category, 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 seven 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 three 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. 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 number.
Surface	Surface Type identifying the branch number. Surface Type (AC Pavement, AC/AC = AC Overlay of AC Pavement, AC/PCC = AC Overlay of PCC Pavement, PCC = PCC Pavement, ST = Surface treatment over gravel base/subgrade).
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. microsurfacing). Third Row (Restoration Treatment) indicates surface restoration (e.g. overlay).
Treatment	Name of treatments from the "Treatment Descriptions" report.
Cost/SqYd, except Seal Cracks in LF	Average unit cost per square yard for each treatment except for "SEAL CRACKS" which is cost per linear feet.
Yrs. Between Crack Seals	First Row - number of years between successive treatment applications specified in the first row (i.e. CRACK treatment).
Yrs. Between Surface Seals	Second Row - number of years between successive treatment applications specified in the second row (i.e. SURFACE treatment).
# of Surface Seals before Overlay	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.

Treatments highlighted in yellow indicated that a specific functional class and surface combination does not exist within the City (i.e. an AC overlay of PCC pavement arterial street, a surface treatment over gravel base/subgrade pavement residential street, etc.). Therefore, treatments for these functional class and surface combination will be "Do Nothing".

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

City of Firebaugh
133 P Street
Firebaugh, CA 93622

Decision Tree

Printed: 04/18/2019

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Arterial	AC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	5		
			Surface Treatment	CRACK SEAL & SLURRY SEAL	$3.75		5	
			Restoration Treatment	DO NOTHING	$0.00			5
		II - Good, Non-Load Related		1.5" MILL & HMA OVERLAY	$18.00			
		III - Good, Load Related		2" MILL & HMA OVERLAY	$29.00			
		IV - Poor		CIR w/ 2" HMA OVERLAY	$40.50			
		V - Very Poor		FDR w/ 3" HMA OVERLAY	$46.00			
	AC/AC	I - Very Good	Crack Treatment	SEAL CRACKS	$0.00	5		
			Surface Treatment	CRACK SEAL & SLURRY SEAL	$3.75		5	
			Restoration Treatment	DO NOTHING	$0.00			5
		II - Good, Non-Load Related		1.5" MILL & HMA OVERLAY	$18.00			
		III - Good, Load Related		2" MILL & HMA OVERLAY	$29.00			
		IV - Poor		CIR w/ 2" HMA OVERLAY	$40.50			
		V - Very Poor		FDR w/ 3" HMA OVERLAY	$46.00			
	AC/PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	5		
			Surface Treatment	DO NOTHING	$0.00		5	
			Restoration Treatment	DO NOTHING	$0.00			5
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		DO NOTHING	$0.00			
		V - Very Poor		DO NOTHING	$0.00			
	PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	5		
			Surface Treatment	DO NOTHING	$0.00		5	
			Restoration Treatment	DO NOTHING	$0.00			5
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		DO NOTHING	$0.00			
		V - Very Poor		DO NOTHING	$0.00			

Functional Class and Surface combination not used

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Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Arterial	ST	I - Very Good	Crack Treatment	DO NOTHING	$0.00	5		
			Surface Treatment	DO NOTHING	$0.00		5	
			Restoration Treatment	DO NOTHING	$0.00			5
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		DO NOTHING	$0.00			
		V - Very Poor		DO NOTHING	$0.00			

Functional Class and Surface combination not used

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133 P Street
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Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Collector	AC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	6		
			Surface Treatment	CRACK SEAL & SLURRY SEAL	$3.75		6	
			Restoration Treatment	DO NOTHING	$0.00			6
		II - Good, Non-Load Related		1.5" MILL & HMA OVERLAY	$18.00			
		III - Good, Load Related		2" MILL & HMA OVERLAY	$29.00			
		IV - Poor		CIR w/ 2" HMA OVERLAY	$40.50			
		V - Very Poor		FDR w/ 3" HMA OVERLAY	$43.00			
	AC/AC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	6		
			Surface Treatment	CHIP SEAL AND SLURRY SEAL	$3.75		6	
			Restoration Treatment	DO NOTHING	$0.00			6
		II - Good, Non-Load Related		1.5" MILL & HMA OVERLAY	$18.00			
		III - Good, Load Related		2" MILL & HMA OVERLAY	$29.00			
		IV - Poor		CIR w/ 2" HMA OVERLAY	$40.50			
		V - Very Poor		FDR w/ 3" HMA OVERLAY	$43.00			
	AC/PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	6		
			Surface Treatment	DO NOTHING	$0.00		6	
			Restoration Treatment	DO NOTHING	$0.00			6
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		DO NOTHING	$0.00			
		V - Very Poor		DO NOTHING	$0.00			
	PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	6		
			Surface Treatment	DO NOTHING	$0.00		6	
			Restoration Treatment	DO NOTHING	$0.00			6
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		DO NOTHING	$0.00			
		V - Very Poor		DO NOTHING	$0.00			

Functional Class and Surface combination not used

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Firebaugh, CA 93622

Decision Tree

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Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Collector	ST	I - Very Good	Crack Treatment	DO NOTHING	$0.00	6		
			Surface Treatment	DO NOTHING	$0.00		6	
			Restoration Treatment	DO NOTHING	$0.00			6
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		DO NOTHING	$0.00			
		V - Very Poor		DO NOTHING	$0.00			

Functional Class and Surface combination not used

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Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Residential/Local	AC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	7		
			Surface Treatment	CRACK SEAL & SLURRY SEAL	$3.75		7	
			Restoration Treatment	DO NOTHING	$0.00			7
		II - Good, Non-Load Related		CRACK SEAL & SLURRY SEAL	$3.75		7	
		III - Good, Load Related		CRACK SEAL & SLURRY SEAL	$9.25			
		IV - Poor		2" MILL & HMA OVERLAY	$33.50			
		V - Very Poor		FDR w/ 3" HMA OVERLAY	$43.00			
	AC/AC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	7		
			Surface Treatment	CRACK SEAL & SLURRY SEAL	$3.75		7	
			Restoration Treatment	DO NOTHING	$0.00			7
		II - Good, Non-Load Related		CRACK SEAL & SLURRY SEAL	$3.75		7	
		III - Good, Load Related		CRACK SEAL & SLURRY SEAL	$9.25		7	
		IV - Poor		2" MILL & HMA OVERLAY	$33.50			
		V - Very Poor		FDR w/ 3" HMA OVERLAY	$43.00			
	AC/PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	7		
			Surface Treatment	DO NOTHING	$0.00		7	
			Restoration Treatment	DO NOTHING	$0.00			7
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		DO NOTHING	$0.00			
		V - Very Poor		DO NOTHING	$0.00			
	PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	7		
			Surface Treatment	DO NOTHING	$0.00		7	
			Restoration Treatment	DO NOTHING	$0.00			7
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		DO NOTHING	$0.00			
		V - Very Poor		DO NOTHING	$0.00			

Functional Class and Surface combination not used

City of Firebaugh
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Firebaugh, CA 93622

Decision Tree

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

Functional Class and Surface combination not used

City of Firebaugh
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Firebaugh, CA 93622

Decision Tree

Printed: 04/18/2019

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Other	AC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	DO NOTHING	$0.00		9	
			Restoration Treatment	DO NOTHING	$0.00			9
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		DO NOTHING	$0.00			
		V - Very Poor		DO NOTHING	$0.00			
	AC/AC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	DO NOTHING	$0.00		9	
			Restoration Treatment	DO NOTHING	$0.00			9
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		DO NOTHING	$0.00			
		V - Very Poor		DO NOTHING	$0.00			
	AC/PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	DO NOTHING	$0.00		9	
			Restoration Treatment	DO NOTHING	$0.00			9
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		DO NOTHING	$0.00			
		V - Very Poor		DO NOTHING	$0.00			
	PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	DO NOTHING	$0.00		9	
			Restoration Treatment	DO NOTHING	$0.00			9
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		DO NOTHING	$0.00			
		V - Very Poor		DO NOTHING	$0.00			

Functional Class and Surface combination not used

City of Firebaugh
133 P Street
Firebaugh, CA 93622

Decision Tree

Printed: 04/18/2019

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Other	ST	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	DO NOTHING	$0.00		9	
			Restoration Treatment	DO NOTHING	$0.00			9
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		DO NOTHING	$0.00			
		V - Very Poor		DO NOTHING	$0.00			

Functional Class and Surface combination not used

Appendix D

Budget Needs

I. Projected PCI/Cost Summary
II. Preventive Maintenance Treatment/Cost Summary
III. Rehabilitation Treatment/Cost Summary

Budget Needs Reports

The purpose of this module 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 a period of ten years. The Budget Needs represents the "ideal world" funding levels, while the Budget Scenarios 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 shown below. An interest rate of 3% and an inflation factor of 3% were used to project the costs for the next ten years. 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.

As indicated in the report, with a budget of $13.9 million over the next ten years the PCI of the street network will improve from the current level of 48 to 83 by 2028. If no treatments are applied, the weighted average PCI is projected to deteriorate to 30 by 2028.

Budget Needs reports included in this volume are listed below:

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

Needs - Projected PCI/Cost Summary

This report summarizes and projects the City's network PCI values over a ten-year period, both with and without treatments applied. These costs are based on those in the M&R decision tree. It also projects the costs over a ten-year period.

COLUMN	DESCRIPTION
Year	Year in the analysis period.
PCI Treated	Projected network average PCI with all needed treatments applied.
PCI Untreated	Projected network average PCI without any treatments applied.
PM Cost	Total preventive maintenance treatment cost.
Rehab Cost	Total rehabilitation treatment cost.
Cost	The budget required for each year in the analysis period to meet the City's standard as shown on the M&R decision tree.
Total Cost	Total budget required over a ten-year period.

Needs - Preventive Maintenance Treatment/Cost Summary

This report summarizes each preventive maintenance treatment type, quantity of pavement affected, and total costs over the ten-year 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. 2019, 2021, 2022, etc).
Area Treated	Quantities in linear feet (Seal Cracks) or square yard (Slurry Seal).
Cost	Maintenance treatment cost.

Needs - Rehabilitation Treatment/Cost Summary

This report summarizes each rehabilitation treatment type, quantity of pavement affected, and total costs over the ten-year 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. 2019, 2021, 2022 etc).
Area Treated	Quantities in square yard.
Cost	Rehabilitation treatment cost.

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Needs - Projected PCI/Cost Summary

Inflation Rate = **3.00** **%** Printed: 04/15/2019

Year	PCI Treated	PCI Untreated	PM Cost	Rehab Cost	Cost
2019	93	46	$268,228	$10,919,430	$11,187,658
2020	89	44	$13,610	$191,010	$204,620
2021	87	42	$156,416	$101,560	$257,976
2022	86	40	$43,285	$40,064	$83,349
2023	84	38	$0	$56,056	$56,056
2024	83	36	$222,086	$0	$222,086
2025	83	35	$403,771	$37,830	$441,601
2026	85	33	$984,438	$220,979	$1,205,417
2027	84	32	$81,928	$11,841	$93,769
2028	83	30	$193,408	$0	$193,408

% PM	PM Total Cost	Rehab Total Cost	Total Cost
16.97%	**$2,367,170**	**$11,578,770**	**$13,945,940**

City of Firebaugh
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Needs - Preventive Maintenance Treatment/Cost Summary

Inflation Rate = **3.00 %** Printed: 04/15/2019

Treatment	Year	Area Treated		Cost
CHIP SEAL AND SLURRY SEAL	2025	33,766.67	sq.yd.	$151,203
	2026	5,523.56	sq.yd.	$25,475
	Total	39,290.22		$176,678
CRACK SEAL & SLURRY SEAL	2019	71,525.89	sq.yd.	$268,228
	2020	3,523.56	sq.yd.	$13,610
	2021	39,314.67	sq.yd.	$156,416
	2022	10,563.11	sq.yd.	$43,285
	2024	51,084.78	sq.yd.	$222,086
	2025	56,404.56	sq.yd.	$252,568
	2026	207,918.33	sq.yd.	$958,963
	2027	17,246.22	sq.yd.	$81,928
	2028	39,526.78	sq.yd.	$193,408
	Total	497,107.89		$2,190,492
	Total Quantity	536,398.11		$2,367,170

City of Firebaugh
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Needs - Rehabilitation Treatment/Cost Summary

Inflation Rate = **3.00 %** Printed: 04/15/2019

Treatment	Year		Area Treated		Cost
1.5" MILL & HMA OVERLAY	2019		7,372.44	sq.yd.	$132,704
	2020		5,523.56	sq.yd.	$102,407
		Total	12,896	sq.yd.	$235,111
2" MILL & HMA OVERLAY	2019		61,478.44	sq.yd.	$2,002,489
		Total	61,478.44	sq.yd.	$2,002,489
CIR w/ 2" HMA OVERLAY	2019		27,408.89	sq.yd.	$1,110,060
		Total	27,408.89	sq.yd.	$1,110,060
CRACK SEAL & SLURRY SEAL	2019		46,769.11	sq.yd.	$255,438
	2020		10,781.44	sq.yd.	$88,603
	2021		10,349	sq.yd.	$101,560
	2022		3,963.67	sq.yd.	$40,064
	2023		5,384.22	sq.yd.	$56,056
	2025		3,425	sq.yd.	$37,830
	2026		38,578.89	sq.yd.	$220,979
	2027		2,492.44	sq.yd.	$11,841
		Total	121,743.78	sq.yd.	$812,371
FDR w/ 3" HMA OVERLAY	2019		170,420.78	sq.yd.	$7,418,739
		Total	170,420.78	sq.yd.	$7,418,739

Total Cost $11,578,770

Appendix E

Scenario Summary Reports

I. Cost Summary
II. Network Condition Summary

City of Firebaugh
133 P Street
Firebaugh, CA 93622

Scenarios - Cost Summary

Interest: 3.00% **Inflation: 3.00%** Printed: 04/18/2019

Scenario: S1: City's Existing Funding

Year	PM	Budget	Rehabilitation		Preventative Maintenance	Surplus PM	Deferred		Stop Gap
2019	14%	$162,500	**II** $121,814	**Non-Project**	$22,392	$358	$11,027,140	**Funded**	$0
			III $16,280					**Unmet**	$154,517
			IV $0	**Project**	$0				
			V $0						
			Total **$138,094**						
			Project $0						
2020	15%	$162,500	**II** $112,035	**Non-Project**	$24,036	$339	$11,648,539	**Funded**	$0
			III $25,916					**Unmet**	$0
			IV $0	**Project**	$0				
			V $0						
			Total **$137,951**						
			Project $0						
2021	15%	$162,500	**II** $0	**Non-Project**	$25,813	$0	$12,446,882	**Funded**	$0
			III $0					**Unmet**	$878
			IV $136,538	**Project**	$0				
			V $0						
			Total **$136,538**						
			Project $0						
2022	15%	$162,500	**II** $0	**Non-Project**	$29,672	$0	$12,855,922	**Funded**	$0
			III $13,345					**Unmet**	$563
			IV $0	**Project**	$0				
			V $116,197						
			Total **$129,542**						
			Project $0						
2023	15%	$162,500	**II** $0	**Non-Project**	$25,113	$0	$13,498,473	**Funded**	$0
			III $9,995					**Unmet**	$0
			IV $0	**Project**	$0				
			V $124,842						
			Total **$134,837**						
			Project $0						
2024	15%	$162,500	**II** $0	**Non-Project**	$34,723	$0	$13,942,962	**Funded**	$0
			III $0					**Unmet**	$206,458
			IV $0	**Project**	$0				
			V $124,477						
			Total **$124,477**						
			Project $0						

Year	PM	Budget	Rehabilitation		Preventative Maintenance	Surplus PM	Deferred		Stop Gap
2025	15%	$162,500	**II** $0	**Non-Project**	$28,718	$0	$14,337,774	**Funded**	$0
			III $0					**Unmet**	$0
			IV $35,699	**Project**	$0				
			V $95,206						
			Total **$130,905**						
			Project $0						
2026	15%	$162,500	**II** $55,165	**Non-Project**	$38,941	$0	$14,904,714	**Funded**	$0
			III $0					**Unmet**	$2,152
			IV $35,662	**Project**	$0				
			V $32,718						
			Total **$123,545**						
			Project $0						
2027	10%	$162,500	**II** $11,841	**Non-Project**	$33,314	$0	$15,403,110	**Funded**	$0
			III $15,470					**Unmet**	$653
			IV $0	**Project**	$0				
			V $100,712						
			Total **$128,023**						
			Project $0						
2028	10%	$162,500	**II** $9,082	**Non-Project**	$36,438	$0	$15,830,370	**Funded**	$0
			III $0					**Unmet**	$0
			IV $0	**Project**	$0				
			V $116,699						
			Total **$125,781**						
			Project $0						

Summary

Functional Class	Rehabilitation	Prev. Maint.	Funded Stop Gap	Unmet Stop Gap
Arterial	$571,996	$111,587	$0	$53,012
Collector	$429,496	$76,286	$0	$94,005
Residential/Local	$308,201	$111,287	$0	$218,203
Grand Total:	$1,309,693	$299,160	$0	$365,220

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Scenarios - Network Condition Summary

Interest: 3% **Inflation: 3%** Printed: 04/18/2019

Scenario: S1: City's Existing Funding

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2019	$162,500	14%	**2023**	$162,500	15%	**2027**	$162,500	10%
2020	$162,500	15%	**2024**	$162,500	15%	**2028**	$162,500	10%
2021	$162,500	15%	**2025**	$162,500	15%			
2022	$162,500	15%	**2026**	$162,500	15%			

Projected Network Average PCI by year

Year	Never Treated	With Selected Treatment	Treated Centerline Miles	Treated Lane Miles
2019	46	47	0.95	2.05
2020	44	45	0.65	1.29
2021	42	43	0.34	0.80
2022	40	42	0.39	0.78
2023	38	41	0.49	0.98
2024	36	40	0.38	0.90
2025	35	39	0.38	0.76
2026	33	38	1.14	2.33
2027	32	37	0.55	1.10
2028	30	37	0.46	0.91

Percent Network Area by Functional Class and Condition Category

Condition in base year 2019, prior to applying treatments.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	1.9%	2.7%	29.2%	0.0%	33.8%
II / III	1.2%	3.0%	10.6%	0.0%	14.8%
IV	1.7%	4.0%	10.2%	0.0%	15.9%
V	6.3%	8.7%	20.5%	0.0%	35.5%
Total	**11.1%**	**18.5%**	**70.5%**	**0.0%**	**100.0%**

Condition in year 2019 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	1.9%	3.6%	32.0%	0.0%	37.6%
II / III	1.2%	2.1%	7.7%	0.0%	11.0%
IV	1.7%	4.0%	10.2%	0.0%	15.9%
V	6.3%	8.7%	20.5%	0.0%	35.5%
Total	**11.1%**	**18.5%**	**70.5%**	**0.0%**	**100.0%**

Condition in year 2028 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	4.3%	4.6%	28.4%	0.0%	37.3%
II / III	0.0%	0.0%	5.4%	0.0%	5.4%
IV	1.2%	0.0%	7.0%	0.0%	8.1%
V	5.6%	13.9%	29.7%	0.0%	49.2%
Total	**11.1%**	**18.5%**	**70.5%**	**0.0%**	**100.0%**

City of Firebaugh
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Scenarios - Cost Summary

Interest: 3.00% **Inflation: 3.00%** Printed: 04/18/2019

Scenario: S2: Maintain PCI at 48

Year	PM	Budget		Rehabilitation		Preventative Maintenance	Surplus PM	Deferred		Stop Gap
2019	10%	$400,000	**II**	$121,814	**Non-Project**	$43,054	$0	$10,787,723	**Funded**	$0
			III	$0					**Unmet**	$152,307
			IV	$128,700	**Project**	$0				
			V	$106,337						
			Total	**$356,851**						
			Project	$0						
2020	10%	$700,000	**II**	$112,035	**Non-Project**	$69,753	$247	$10,849,676	**Funded**	$0
			III	$0					**Unmet**	$0
			IV	$0	**Project**	$0				
			V	$515,697						
			Total	**$627,732**						
			Project	$0						
2021	10%	$525,000	**II**	$0	**Non-Project**	$53,320	$0	$11,261,600	**Funded**	$0
			III	$12,956					**Unmet**	$878
			IV	$248,187	**Project**	$0				
			V	$210,345						
			Total	**$471,488**						
			Project	$0						
2022	10%	$865,000	**II**	$0	**Non-Project**	$88,362	$0	$10,930,435	**Funded**	$0
			III	$9,704					**Unmet**	$563
			IV	$434,716	**Project**	$0				
			V	$331,082						
			Total	**$775,502**						
			Project	$0						
2023	5%	$300,000	**II**	$0	**Non-Project**	$15,235	$0	$11,375,827	**Funded**	$0
			III	$9,995					**Unmet**	$0
			IV	$222,005	**Project**	$0				
			V	$52,108						
			Total	**$284,108**						
			Project	$0						
2024	10%	$675,000	**II**	$0	**Non-Project**	$71,590	$0	$11,276,134	**Funded**	$0
			III	$14,158					**Unmet**	$174,876
			IV	$0	**Project**	$0				
			V	$587,115						
			Total	**$601,273**						
			Project	$0						

Year	PM	Budget		Rehabilitation		Preventative Maintenance	Surplus PM	Deferred		Stop Gap
2025	5%	$400,000	**II**	$0	**Non-Project**	$26,458	$0	$11,436,666	**Funded**	$0
			III	$0					**Unmet**	$0
			IV	$359,723	**Project**	$0				
			V	$12,323						
			Total	**$372,046**						
			Project	$0						
2026	5%	$375,000	**II**	$55,165	**Non-Project**	$16,866	$1,884	$11,704,179	**Funded**	$0
			III	$0					**Unmet**	$1,017
			IV	$249,289	**Project**	$0				
			V	$51,005						
			Total	**$355,459**						
			Project	$0						
2027	5%	$450,000	**II**	$11,841	**Non-Project**	$25,060	$0	$11,872,647	**Funded**	$0
			III	$0					**Unmet**	$653
			IV	$169,111	**Project**	$0				
			V	$243,136						
			Total	**$424,088**						
			Project	$0						
2028	5%	$425,000	**II**	$0	**Non-Project**	$30,527	$0	$11,950,259	**Funded**	$0
			III	$0					**Unmet**	$0
			IV	$0	**Project**	$0				
			V	$392,176						
			Total	**$392,176**						
			Project	$0						

Summary

Functional Class	Rehabilitation	Prev. Maint.	Funded Stop Gap	Unmet Stop Gap
Arterial	$2,127,992	$177,248	$0	$23,469
Collector	$943,539	$32,264	$0	$92,460
Residential/Local	$1,589,192	$230,713	$0	$214,365
Grand Total:	$4,660,723	$440,225	$0	$330,294

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Scenarios - Network Condition Summary

Interest: 3% **Inflation: 3%** Printed: 04/18/2019

Scenario: S2: Maintain PCI at 48

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2019	$400,000	10%	**2023**	$300,000	5%	**2027**	$450,000	5%
2020	$700,000	10%	**2024**	$675,000	10%	**2028**	$425,000	5%
2021	$525,000	10%	**2025**	$400,000	5%			
2022	$865,000	10%	**2026**	$375,000	5%			

Projected Network Average PCI by year

Year	Never Treated	With Selected Treatment	Treated Centerline Miles	Treated Lane Miles
2019	46	48	1.29	2.85
2020	44	48	1.58	3.17
2021	42	48	1.26	2.67
2022	40	48	1.52	3.19
2023	38	48	0.54	1.09
2024	36	48	1.13	3.61
2025	35	48	0.59	1.17
2026	33	48	1.11	2.14
2027	32	48	0.63	1.26
2028	30	48	0.41	0.99

Percent Network Area by Functional Class and Condition Category

Condition in base year 2019, prior to applying treatments.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	1.9%	2.7%	29.2%	0.0%	33.8%
II / III	1.2%	3.0%	10.6%	0.0%	14.8%
IV	1.7%	4.0%	10.2%	0.0%	15.9%
V	6.3%	8.7%	20.5%	0.0%	35.5%
Total	**11.1%**	**18.5%**	**70.5%**	**0.0%**	**100.0%**

Condition in year 2019 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	3.1%	3.6%	31.7%	0.0%	38.4%
II / III	1.2%	2.1%	8.1%	0.0%	11.4%
IV	1.0%	4.0%	10.2%	0.0%	15.2%
V	5.8%	8.7%	20.5%	0.0%	35.0%
Total	**11.1%**	**18.5%**	**70.5%**	**0.0%**	**100.0%**

Condition in year 2028 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	11.1%	6.6%	36.5%	0.0%	54.2%
II / III	0.0%	0.0%	3.9%	0.0%	3.9%
IV	0.0%	0.0%	1.6%	0.0%	1.6%
V	0.0%	11.8%	28.5%	0.0%	40.3%
Total	**11.1%**	**18.5%**	**70.5%**	**0.0%**	**100.0%**

Scenarios Criteria:

City of Firebaugh
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Scenarios - Cost Summary

Interest: 3.00% **Inflation: 3.00%** Printed: 04/23/2019

Scenario: S3: Improve PCI to 65

Year	PM	Budget	Rehabilitation		Preventative Maintenance	Surplus PM	Deferred	Stop Gap
2019	15%	$1,000,000	**II** $121,814	**Non-Project**	$148,568	$1,432	$10,189,868	**Funded** $0
			III $0					**Unmet** $144,162
			IV $147,192	**Project**	$0			
			V $580,191					
			Total **$849,197**					
			Project $0					
2020	15%	$1,000,000	**II** $112,035	**Non-Project**	$136,863	$13,137	$9,949,386	**Funded** $0
			III $0					**Unmet** $0
			IV $189,165	**Project**	$0			
			V $543,924					
			Total **$845,124**					
			Project $0					
2021	15%	$1,100,000	**II** $0	**Non-Project**	$156,416	$8,584	$9,773,099	**Funded** $0
			III $22,377					**Unmet** $878
			IV $369,929	**Project**	$0			
			V $537,293					
			Total **$929,599**					
			Project $0					
2022	5%	$1,000,000	**II** $0	**Non-Project**	$43,285	$6,715	$9,273,925	**Funded** $0
			III $0					**Unmet** $563
			IV $919,404	**Project**	$0			
			V $24,528					
			Total **$943,932**					
			Project $0					
2023	5%	$1,100,000	**II** $0	**Non-Project**	$0	$55,000	$8,924,198	**Funded** $0
			III $0					**Unmet** $0
			IV $737,802	**Project**	$0			
			V $306,967					
			Total **$1,044,769**					
			Project $0					
2024	15%	$1,000,000	**II** $0	**Non-Project**	$99,883	$50,117	$8,528,143	**Funded** $0
			III $0					**Unmet** $147,386
			IV $68,274	**Project**	$0			
			V $772,304					
			Total **$840,578**					
			Project $0					

Year	PM	Budget		Rehabilitation		Preventative Maintenance	Surplus PM	Deferred		Stop Gap
2025	15%	$1,000,000	**II**	$0	**Non-Project**	$136,425	$13,575	$8,069,992	**Funded**	$0
			III	$25,186					**Unmet**	$0
			IV	$70,402	**Project**	$0				
			V	$736,718						
			Total	**$832,306**						
			Project	$0						
2026	15%	$1,000,000	**II**	$55,165	**Non-Project**	$160,765	$0	$7,703,924	**Funded**	$0
			III	$0					**Unmet**	$1,017
			IV	$164,186	**Project**	$0				
			V	$613,187						
			Total	**$832,538**						
			Project	$0						
2027	15%	$1,000,000	**II**	$11,841	**Non-Project**	$142,316	$7,684	$7,235,449	**Funded**	$0
			III	$0					**Unmet**	$653
			IV	$0	**Project**	$0				
			V	$838,106						
			Total	**$849,947**						
			Project	$0						
2028	15%	$1,000,000	**II**	$0	**Non-Project**	$174,237	$0	$6,676,609	**Funded**	$0
			III	$0					**Unmet**	$0
			IV	$0	**Project**	$0				
			V	$822,850						
			Total	**$822,850**						
			Project	$0						

Summary

Functional Class	Rehabilitation	Prev. Maint.	Funded Stop Gap	Unmet Stop Gap
Arterial	$2,038,824	$273,029	$0	$15,434
Collector	$3,822,001	$110,283	$0	$72,481
Residential/Local	$2,930,015	$815,446	$0	$206,744
Grand Total:	$8,790,840	$1,198,758	$0	$294,660

City of Firebaugh
133 P Street
Firebaugh, CA 93622

Scenarios - Network Condition Summary

Interest: 3% **Inflation: 3%** Printed: 04/23/2019

Scenario: S3: Improve PCI to 65

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2019	$1,000,000	15%	**2023**	$1,100,000	5%	**2027**	$1,000,000	15%
2020	$1,000,000	15%	**2024**	$1,000,000	15%	**2028**	$1,000,000	15%
2021	$1,100,000	15%	**2025**	$1,000,000	15%			
2022	$1,000,000	5%	**2026**	$1,000,000	15%			

Projected Network Average PCI by year

Year	Never Treated	With Selected Treatment	Treated Centerline Miles	Treated Lane Miles
2019	46	50	3.13	6.68
2020	44	51	2.75	6.14
2021	42	53	2.78	5.98
2022	40	53	1.28	2.72
2023	38	55	1.10	2.20
2024	36	57	1.57	3.46
2025	35	59	1.93	3.87
2026	33	61	2.60	5.63
2027	32	63	2.17	4.49
2028	30	65	2.37	5.39

Percent Network Area by Functional Class and Condition Category

Condition in base year 2019, prior to applying treatments.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	1.9%	2.7%	29.2%	0.0%	33.8%
II / III	1.2%	3.0%	10.6%	0.0%	14.8%
IV	1.7%	4.0%	10.2%	0.0%	15.9%
V	6.3%	8.7%	20.5%	0.0%	35.5%
Total	**11.1%**	**18.5%**	**70.5%**	**0.0%**	**100.0%**

Condition in year 2019 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	5.2%	3.6%	31.8%	0.0%	40.6%
II / III	1.2%	2.1%	8.1%	0.0%	11.4%
IV	1.0%	4.0%	10.1%	0.0%	15.1%
V	3.7%	8.7%	20.5%	0.0%	32.9%
Total	**11.1%**	**18.5%**	**70.5%**	**0.0%**	**100.0%**

Condition in year 2028 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	11.1%	18.5%	43.1%	0.0%	72.6%
II / III	0.0%	0.0%	3.9%	0.0%	3.9%
V	0.0%	0.0%	23.4%	0.0%	23.4%
Total	**11.1%**	**18.5%**	**70.5%**	**0.0%**	**100.0%**

City of Firebaugh
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Firebaugh, CA 93622

Scenarios - Cost Summary

Interest: 3.00% **Inflation: 3.00%** Printed: 04/18/2019

Scenario: S4: Improve PCI to 85

Year	PM	Budget	Rehabilitation		Preventative Maintenance	Surplus PM	Deferred		Stop Gap
2019	15%	$1,400,000	**II** $121,814	**Non-Project**	$206,310	$3,690	$9,792,279	**Funded**	$0
			III $36,862					**Unmet**	$138,506
			IV $147,192	**Project**	$0				
			V $883,178						
			Total **$1,189,046**						
			Project $0						
2020	2%	$1,700,000	**II** $112,035	**Non-Project**	$34,437	$0	$8,825,054	**Funded**	$0
			III $0					**Unmet**	$0
			IV $749,153	**Project**	$0				
			V $801,177						
			Total **$1,662,365**						
			Project $0						
2021	8%	$2,100,000	**II** $0	**Non-Project**	$170,953	$0	$7,640,279	**Funded**	$0
			III $48,528					**Unmet**	$878
			IV $933,408	**Project**	$0				
			V $946,996						
			Total **$1,928,932**						
			Project $0						
2022	3%	$1,700,000	**II** $0	**Non-Project**	$47,901	$3,099	$6,369,826	**Funded**	$0
			III $53,409					**Unmet**	$0
			IV $248,716	**Project**	$0				
			V $1,344,488						
			Total **$1,646,613**						
			Project $0						
2023	0%	$1,400,000	**II** $0	**Non-Project**	$0	$0	$5,592,337	**Funded**	$0
			III $76,251					**Unmet**	$0
			IV $416,146	**Project**	$0				
			V $893,013						
			Total **$1,385,410**						
			Project $0						
2024	10%	$1,300,000	**II** $0	**Non-Project**	$128,518	$1,482	$4,769,534	**Funded**	$0
			III $14,158					**Unmet**	$83,672
			IV $68,274	**Project**	$0				
			V $1,084,941						
			Total **$1,167,373**						
			Project $0						

Year	PM	Budget	Rehabilitation		Preventative Maintenance	Surplus PM	Deferred		Stop Gap
2025	8%	$1,500,000	**II** $0	**Non-Project**	$122,677	$0	$3,685,610	**Funded**	$0
			III $0					**Unmet**	$0
			IV $70,402	**Project**	$0				
			V $1,295,560						
			Total **$1,365,962**						
			Project $0						
2026	15%	$1,700,000	**II** $55,165	**Non-Project**	$266,575	$0	$2,474,094	**Funded**	$0
			III $72,399					**Unmet**	$0
			IV $0	**Project**	$0				
			V $1,300,366						
			Total **$1,427,930**						
			Project $0						
2027	20%	$1,600,000	**II** $11,841	**Non-Project**	$316,065	$3,935	$1,330,103	**Funded**	$0
			III $0					**Unmet**	$0
			IV $0	**Project**	$0				
			V $1,267,403						
			Total **$1,279,244**						
			Project $0						
2028	20%	$1,500,000	**II** $0	**Non-Project**	$383,869	$0	$289,357	**Funded**	$0
			III $0					**Unmet**	$0
			IV $0	**Project**	$0				
			V $1,112,010						
			Total **$1,112,010**						
			Project $0						

Summary

Functional Class	Rehabilitation	Prev. Maint.	Funded Stop Gap	Unmet Stop Gap
Arterial	$2,014,085	$270,691	$0	$10,297
Collector	$3,455,854	$403,183	$0	$37,708
Residential/Local	$8,694,946	$1,003,431	$0	$175,052
Grand Total:	$14,164,885	$1,677,305	$0	$223,057

City of Firebaugh
133 P Street
Firebaugh, CA 93622

Scenarios - Network Condition Summary

Interest: 3% **Inflation: 3%** Printed: 04/18/2019

Scenario: S4: Improve PCI to 85

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2019	$1,400,000	15%	**2023**	$1,400,000	0%	**2027**	$1,600,000	20%
2020	$1,700,000	2%	**2024**	$1,300,000	10%	**2028**	$1,500,000	20%
2021	$2,100,000	8%	**2025**	$1,500,000	8%			
2022	$1,700,000	3%	**2026**	$1,700,000	15%			

Projected Network Average PCI by year

Year	Never Treated	With Selected Treatment	Treated Centerline Miles	Treated Lane Miles
2019	46	52	4.30	9.65
2020	44	55	2.38	5.19
2021	42	60	3.98	7.96
2022	40	64	2.02	4.21
2023	38	67	1.55	3.09
2024	36	70	2.29	4.91
2025	35	74	2.21	4.84
2026	33	78	4.37	9.39
2027	32	82	4.14	8.44
2028	30	85	4.38	8.75

Percent Network Area by Functional Class and Condition Category

Condition in base year 2019, prior to applying treatments.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	1.9%	2.7%	29.2%	0.0%	33.8%
II / III	1.2%	3.0%	10.6%	0.0%	14.8%
IV	1.7%	4.0%	10.2%	0.0%	15.9%
V	6.3%	8.7%	20.5%	0.0%	35.5%
Total	**11.1%**	**18.5%**	**70.5%**	**0.0%**	**100.0%**

Condition in year 2019 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	6.6%	3.6%	32.6%	0.0%	42.8%
II / III	1.2%	2.1%	7.3%	0.0%	10.5%
IV	1.0%	4.0%	10.1%	0.0%	15.1%
V	2.3%	8.7%	20.5%	0.0%	31.5%
Total	**11.1%**	**18.5%**	**70.5%**	**0.0%**	**100.0%**

Condition in year 2028 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	11.1%	18.5%	67.3%	0.0%	96.8%
II / III	0.0%	0.0%	2.6%	0.0%	2.6%
V	0.0%	0.0%	0.6%	0.0%	0.6%
Total	**11.1%**	**18.5%**	**70.5%**	**0.0%**	**100.0%**

Appendix F

Sections Selected for Treatment Scenario 3: $1.0 Million per year (Improve Network PCI to 65)

Sections Selected for Treatment

Based on the recommended annual budget of $1.0 million (Scenario 3), the "Sections Selected for Treatment" list provides the City with potential candidates for treatment based on each section's functional classification, PCI, treatment history, and available funding.

This list should not be blindly followed when preparing a street maintenance program. Engineering judgment and project level analysis should be applied to ensure that the treatment is appropriate and cost effective.

City of Firebaugh
133 P Street
Firebaugh, CA 93622

Scenarios - Sections Selected for Treatment

Interest: 3.00% **Inflation: 3.00%** Printed: 04/23/2019

Scenario: S3: Improve PCI to 65

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2019	$1,000,000	15%	**2023**	$1,100,000	5%	**2027**	$1,000,000	15%
2020	$1,000,000	15%	**2024**	$1,000,000	15%	**2028**	$1,000,000	15%
2021	$1,100,000	15%	**2025**	$1,000,000	15%			
2022	$1,000,000	5%	**2026**	$1,000,000	15%			

Year: 2019

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
TWELFTH ST	HYW 33	O ST	12TH ST	0300	365	57	20,805	A	AC		21	20	100	$106,337	14,635	FDR w/ 3" HMA OVERLAY
THIRTEENTH ST	EAST EDGE BRIDGE	EAST CITY LIMIT	13TH ST	0400	577	30	17,310	A	AC		19	18	100	$88,474	14,635	FDR w/ 3" HMA OVERLAY
FOURTEENTH ST	HWY 33	P ST	14TH ST	0100	746	52	38,792	A	AC		0	0	100	$198,271	14,635	FDR w/ 3" HMA OVERLAY
FIFTEENTH ST	Q ST	S ST	15TH ST	0200	404	52	21,008	A	AC		17	16	100	$107,375	14,635	FDR w/ 3" HMA OVERLAY
SEVENTH ST	EIGHTH ST	NORTH EAST END	SEVENTH	0400	650	24	15,600	A	AC		0	0	100	$79,734	14,635	FDR w/ 3" HMA OVERLAY
											Treatment Total			$580,191		
TWELFTH ST	J ST	CANAL EDGE	12TH ST	0100	650	44	28,600	A	AC		49	49	100	$128,700	17,357	CIR w/ 2" HMA OVERLAY
											Treatment Total			$128,700		
LEYVA CT	WEST CDS	LEYVA AVE	LEYVACT	0100	138	36	4,968	R	AC		44	43	100	$18,492	13,456	2" MILL & HMA OVERLAY
											Treatment Total			$18,492		
ELEVENTH ST	HWY 33	P ST	11TH ST	0200	740	52	38,480	C	AC		69	68	100	$76,960	23,312	1.5" MILL & HMA OVERLAY
											Treatment Total			$76,960		
TWELFTH ST	O ST	P ST	12TH ST	0400	370	52	19,240	A	AC		79	78	86	$8,017	40,445	CRACK SEAL & SLURRY SEAL
THIRTEENTH ST	HWY 33	P ST	13TH ST	0200	757	60	45,420	A	AC		75	74	83	$18,925	41,743	CRACK SEAL & SLURRY SEAL
ALDER WY	ELM ST	OAK ST	ALDER	0100	522	32	16,704	R	AC		84	84	90	$6,960	22,353	CRACK SEAL & SLURRY SEAL
ALDER WY	OAK ST	NORTH CDS	ALDER	0200	311	32	9,952	R	AC		78	78	86	$4,147	27,498	CRACK SEAL & SLURRY SEAL
ASH ST	ALDER WY	DOGWOOD WY	ASH	0100	414	32	13,248	R	AC		81	81	88	$5,520	25,632	CRACK SEAL & SLURRY SEAL
CLARK ST	MANES ST	MC CLAIN ST	CALRK	0100	242	36	8,712	R	AC		60	60	70	$3,630	31,695	CRACK SEAL & SLURRY SEAL
CYPRESS WY	HELMS CANAL RD	SPRUCE CT	CYPRESS	0100	158	32	5,056	R	AC		62	62	72	$2,107	33,053	CRACK SEAL & SLURRY SEAL
CYPRESS WY	SPRUCE CT	MAPLE ST	CYPRESS	0200	260	32	8,320	R	AC		75	75	83	$3,467	28,353	CRACK SEAL & SLURRY SEAL

City of Firebaugh
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Scenarios - Sections Selected for Treatment

Interest: 3.00% **Inflation: 3.00%** Printed: 04/23/2019

Scenario: S3: Improve PCI to 65

Year: 2019

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
DOGWOOD WY	ELM ST	NORTH CDS	DOGWOOD	0200	827	32	26,464	R	AC		83	83	90	$11,027	23,623	CRACK SEAL & SLURRY SEAL
ELM ST	DOGWOOD WY	BIRCH DR	ELM	0200	243	32	7,776	R	AC		83	83	90	$3,240	23,623	CRACK SEAL & SLURRY SEAL
HELM CANAL RD	SOUTH CITY LIMIT	BIRCH DR	HELMCAN	0100	1,732	23	39,836	R	AC		83	83	90	$16,599	23,623	CRACK SEAL & SLURRY SEAL
M ST	TWELFTH ST	END OF PAVEMENT	M ST	0400	568	56	31,808	R	AC		61	61	71	$13,254	32,398	CRACK SEAL & SLURRY SEAL
MANES ST	CLYDE FANNON DR	CLARK ST	MANES	0100	440	36	15,840	R	AC		66	65	75	$6,600	27,546	CRACK SEAL & SLURRY SEAL
MAPLE ST	POPLAR WY	DOGWOOD WY	MAPLE	0100	910	32	29,120	R	AC		63	62	73	$12,134	26,930	CRACK SEAL & SLURRY SEAL
MENDOZA DR	CLYDE FANNON DR	EAST CDS	MENDOZA	0100	1,155	32	36,960	R	AC		85	84	91	$15,400	20,902	CRACK SEAL & SLURRY SEAL
P ST	FIFTEENTH ST	THIRTEENTH ST	P ST	0200	960	54	51,840	C	AC		87	86	93	$21,600	29,088	CRACK SEAL & SLURRY SEAL
P ST	BRIDGE	YIP ST	P ST	0700	707	52	36,764	R	AC		76	76	84	$15,319	28,128	CRACK SEAL & SLURRY SEAL
POWERS CT	SABLAN AVE	SOUTH EAST CDS	POWERS	0100	189	36	6,804	R	AC		63	62	73	$2,835	26,930	CRACK SEAL & SLURRY SEAL
SPRUCE CT	CYPRESS WY	EAST CDS	SPRUCECT	0100	322	32	10,304	R	AC		70	69	79	$4,294	28,270	CRACK SEAL & SLURRY SEAL
THOMAS CONBOY AVE	ALLARDT DR	CLINE ST	THOMASCON	0200	580	37	21,460	R	AC		85	84	91	$8,942	20,902	CRACK SEAL & SLURRY SEAL
UN NAMED	WELTY AVE	CORDER AVE	UNAMED	0100	610	37	22,570	R	AC		77	77	85	$9,405	27,884	CRACK SEAL & SLURRY SEAL
												Treatment Total		$193,422		
				Year 2019 Area Total			**649,761**					**Year 2019 Total**		**$997,765**		

Year: 2020

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
THIRTEENTH ST	P ST	WEST SIDE BRIDGE	13TH ST	0300	1,101	40	44,040	A	AC		29	24	100	$231,847	14,209	FDR w/ 3" HMA OVERLAY
FIFTEENTH ST	HWY 33	Q ST	15TH ST	0100	1,140	52	59,280	A	AC		1	0	100	$312,077	14,209	FDR w/ 3" HMA OVERLAY
												Treatment Total		$543,924		
O ST	THIRTEENTH ST	TWELFTH ST	O ST	0300	459	52	23,868	R	AC		43	40	100	$91,508	13,289	2" MILL & HMA OVERLAY
SPRUCE ST	POPLAR WY	CYPRESS WY	SPRUCE	0100	796	32	25,472	R	AC		45	42	100	$97,657	13,153	2" MILL & HMA OVERLAY
												Treatment Total		$189,165		
P ST	ELEVENTH ST	NINTH ST	P ST	0400	956	52	49,712	C	AC		71	67	100	$102,407	22,938	1.5" MILL & HMA OVERLAY

											Treatment Total			$102,407		
ALLARDT DR	CLYDE FAMMON DR	THOMAS CONBOY DR	ALLARDT	0100	1,390	32	44,480	R	AC		87	85	91	$19,090	19,868	CRACK SEAL & SLURRY SEAL
BIRCH DR	HELM CANAL RD	ELM ST	BIRCH	0100	770	30	23,100	R	AC		86	84	91	$9,914	21,279	CRACK SEAL & SLURRY SEAL
BIRCH DR	ELM ST	NORTH CDS	BIRCH	0200	1,138	30	34,140	R	AC		86	84	91	$14,652	21,184	CRACK SEAL & SLURRY SEAL
CLINE ST	T ST	THOMAS CONBOY DR (NORTH EDGE)	CLINE	0200	878	37	32,486	R	AC		87	85	91	$13,942	19,868	CRACK SEAL & SLURRY SEAL
CORDEL AVE	HWY 33	EAST END	CORDEL	0100	972	37	35,964	R	AC		88	86	92	$15,435	18,447	CRACK SEAL & SLURRY SEAL
DIAZ ST	CLYDE FANNON DR	EAST END	DIAZ	0100	429	45	19,305	R	AC		87	85	91	$8,286	19,868	CRACK SEAL & SLURRY SEAL
DOGWOOD WY	MAPLE ST	ELM ST	DOGWOOD	0100	236	32	7,552	R	AC		86	84	91	$3,242	21,279	CRACK SEAL & SLURRY SEAL
ELM ST	WILLOW WY	DOGWOOD WY	ELM	0100	991	32	31,712	R	AC		91	88	94	$13,610	13,737	CRACK SEAL & SLURRY SEAL
OAK ST	WEST END	DOGWOOD WY	OAK	0100	472	32	15,104	R	AC		86	84	91	$6,483	21,279	CRACK SEAL & SLURRY SEAL
Q ST	NINTH ST	EIGHTH ST	QST	0700	457	36	16,452	R	AC		87	85	91	$7,061	19,868	CRACK SEAL & SLURRY SEAL
REV KANTOR ST	CLYDE FANNON DR	ZOZAYA ST	REVKANTOR	0100	900	36	32,400	R	AC		90	87	93	$13,905	15,323	CRACK SEAL & SLURRY SEAL
WELTY AVE	HWY 33	UN NAMED	WELTY	0100	708	37	26,196	R	AC		86	84	91	$11,243	21,279	CRACK SEAL & SLURRY SEAL
WILLOW WY	SPRUCE ST	ELM ST	WILLOW	0100	701	32	22,432	R	AC		71	69	78	$9,628	27,313	CRACK SEAL & SLURRY SEAL
											Treatment Total			$146,491		
					Year 2020 Area Total		**543,695**				**Year 2020 Total**			**$981,987**		

Year: 2021

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
NEES AVE	WEST CITY LIMIT	J ST	NESS	0100	2,252	44	99,088	A	AC		18	7	100	$537,293	13,795	FDR w/ 3" HMA OVERLAY
											Treatment Total			$537,293		
POPLAR WY	HELM CANAL RD	SPRUCE ST	POPLAR	0100	174	32	5,568	C	AC		54	46	100	$26,582	12,141	CIR w/ 2" HMA OVERLAY
											Treatment Total			$26,582		
LEYVA AVE	VALLE DE PAZ AVE	CARDIEL AVE	LEYVA	0100	906	36	32,616	R	AC		47	42	100	$128,798	12,781	2" MILL & HMA OVERLAY
LOWE CT	WEST CDS	ZOZAYA ST	LOWE	0100	281	36	10,116	R	AC		46	41	100	$39,948	12,854	2" MILL & HMA OVERLAY
VASQUEZ DR	SOUTH CDS	NORTH END	VASQUEZ	0100	1,195	37	44,215	R	AC		47	42	100	$174,601	12,781	2" MILL & HMA OVERLAY
											Treatment Total			$343,347		
TENTH ST	P ST	Q ST	10TH ST	0400	304	52	15,808	C	AC		93	88	94	$6,988	24,440	CRACK SEAL & SLURRY SEAL

City of Firebaugh
133 P Street
Firebaugh, CA 93622

Scenarios - Sections Selected for Treatment

Interest: 3.00% **Inflation: 3.00%** Printed: 04/23/2019

Scenario: S3: Improve PCI to 65

Year: 2021

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
FOURTEENTH ST	P ST	Q ST	14TH ST	0200	349	52	18,148	A	AC/AC		92	88	93	$8,023	22,620	CRACK SEAL & SLURRY SEAL
CLINE ST	P ST	T ST	CLINE	0100	1,203	37	44,511	R	AC		94	88	94	$19,676	12,958	CRACK SEAL & SLURRY SEAL
CORREGIDOR AVE	SAIPAN AVE	CARDELLA ST	CORREG	0100	1,135	37	41,995	R	AC		94	88	94	$18,564	13,242	CRACK SEAL & SLURRY SEAL
DEBOER CIR	INDART ST	EAST CDS	DEBOER	0100	182	36	6,552	R	AC		94	88	94	$2,897	12,858	CRACK SEAL & SLURRY SEAL
DEL RIO AVE	HWY 33	NO NAME	DELRIO	0100	746	37	27,602	R	AC		94	88	94	$12,202	13,242	CRACK SEAL & SLURRY SEAL
ENRICO AVE	CARDELLA ST	EAST END	ENRICO	0100	628	37	23,236	R	AC		94	88	94	$10,272	12,858	CRACK SEAL & SLURRY SEAL
GOMES AVE	BORBOA LN	MILLER LN	GOMES	0100	240	36	8,640	R	AC		66	62	72	$9,421	10,237	CRACK SEAL & SLURRY SEAL
GRAYSON CIR	INDART ST	EAST CDS	GRAYSON	0100	262	36	9,432	R	AC		94	88	94	$4,170	12,858	CRACK SEAL & SLURRY SEAL
INDART ST	ENRICO AVE	LANDUCCI DR	INDART	0100	1,542	37	57,054	R	AC		94	88	94	$25,221	12,858	CRACK SEAL & SLURRY SEAL
NO NAME	MENDOZA DR	ALLARDT DR	NOMANE	0100	280	32	8,960	R	AC		94	88	94	$3,961	12,958	CRACK SEAL & SLURRY SEAL
P ST	YIP ST	CLYDE FANNON RD	P ST	0800	859	51	43,809	R	AC		94	88	94	$19,366	13,242	CRACK SEAL & SLURRY SEAL
Q ST	ELEVENTH ST	TENTH ST	QST	0500	457	26	11,882	R	AC		67	63	73	$12,956	10,315	CRACK SEAL & SLURRY SEAL
REBECCHI CIR	INDART ST	EAST CDS	REBECCHIC	0100	274	37	10,138	R	AC		94	88	94	$4,482	12,858	CRACK SEAL & SLURRY SEAL
TRI CIRCLE DR	CORREGIDOR AVE	TRI CIRCLE DR	TRICIRCLE	0100	934	32	29,888	R	AC		94	88	94	$13,212	12,866	CRACK SEAL & SLURRY SEAL
TUCCI ST	CARDELLA ST	INDART ST	TUCCI	0100	247	37	9,139	R	AC		93	88	94	$4,040	13,785	CRACK SEAL & SLURRY SEAL
ZOZAYA ST	HWY 33	EAST END	ZOZAYA	0100	210	36	7,560	R	AC		94	88	94	$3,342	13,242	CRACK SEAL & SLURRY SEAL
													Treatment Total	$178,793		
				Year 2021 Area Total			**565,957**						**Year 2021 Total**	**$1,086,015**		

Year: 2022

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
THIRTEENTH ST	WEST END	HWY 33	13TH ST	0100	90	24	2,160	R	AC		1	0	100	$11,277	9,452	FDR w/ 3" HMA OVERLAY
RAMIREZ CT	RAMIREZ DR	WEST CDS	RAMIREZCT	0100	94	27	2,538	R	AC		29	18	100	$13,251	9,452	FDR w/ 3" HMA OVERLAY
													Treatment Total	$24,528		
TWELFTH ST	CANAL EDGE	HWY 33	12TH ST	0200	843	60	50,580	A	AC		58	48	100	$248,716	15,934	CIR w/ 2" HMA OVERLAY

											Treatment Total			$248,716		
BORBOA LN	CLYDE FANNON DR	GOMES DR	BORBOA	0100	696	36	25,056	R	AC		51	44	100	$101,913	12,252	2" MILL & HMA OVERLAY
O ST	TWELFTH ST	NINTH ST	O ST	0400	1,402	52	72,904	R	AC		54	47	100	$296,528	11,958	2" MILL & HMA OVERLAY
VALLE DE PAZ AVE	LEYVA AVE	SABLAN AVE	VALLEDEP	0100	1,054	37	38,998	R	AC		49	42	100	$158,620	12,414	2" MILL & HMA OVERLAY
YIP ST	HWY 33	P ST	YIP	0100	776	36	27,936	R	AC		51	44	100	$113,627	12,252	2" MILL & HMA OVERLAY
											Treatment Total			$670,688		
O ST	SAIPAN AVE	FIFTEENTH ST	O ST	0100	1,228	52	63,856	R	AC/AC		79	75	83	$29,074	27,354	CRACK SEAL & SLURRY SEAL
Q ST	SIXTEENTH ST	FIFTEENTH ST	QST	0200	578	54	31,212	R	AC/AC		75	71	80	$14,211	27,604	CRACK SEAL & SLURRY SEAL
											Treatment Total			$43,285		
					Year 2022 Area Total		**315,240**				**Year 2022 Total**			**$987,217**		

Year: 2023

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
TENTH ST	O ST	P ST	10TH ST	0300	360	52	18,720	C	AC		9	0	100	$100,666	10,905	FDR w/ 3" HMA OVERLAY
ELEVENTH ST	P ST	Q ST	11TH ST	0300	317	52	16,484	C	AC		27	0	100	$88,642	10,905	FDR w/ 3" HMA OVERLAY
EIGHTH ST	Q ST	SEVENTH ST	8TH	0200	530	23	12,190	C	AC		2	0	100	$65,551	10,905	FDR w/ 3" HMA OVERLAY
CLYDE FANNON RD	RABE ST	DODDERER ST	CLYDE	0400	285	34	9,690	C	AC		5	0	100	$52,108	10,905	FDR w/ 3" HMA OVERLAY
											Treatment Total			$306,967		
CLYDE FANNON RD	DODDERER ST	NORTH CITY LIMIT	CLYDE	0500	1,002	34	34,068	C	AC		57	41	100	$172,548	11,661	CIR w/ 2" HMA OVERLAY
SAIPAN AVE	Q ST	EAST END	SAIPAN	0300	736	40	29,440	C	AC		57	41	100	$149,108	11,661	CIR w/ 2" HMA OVERLAY
											Treatment Total			$321,656		
HELM CANAL RD	POPLAR WY	MORRIS KYLE DR	HELMCAN	0300	1,903	36	68,508	R	AC		56	48	100	$287,007	11,586	2" MILL & HMA OVERLAY
ZOZAYA ST	RABE ST	NORTH END	ZOZAYA	0700	685	45	30,825	R	AC		56	48	100	$129,139	11,586	2" MILL & HMA OVERLAY
											Treatment Total			$416,146		
					Year 2023 Area Total		**219,925**				**Year 2023 Total**			**$1,044,769**		

Year: 2024

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
EIGHTH ST	HWY 33	Q ST	8TH	0100	1,165	54	62,910	C	AC		6	0	100	$348,444	10,587	FDR w/ 3" HMA OVERLAY
CARDELLA ST	MORRIS KYLE DR	TUCCI ST	CARDELLA	0100	1,130	37	41,810	C	AC		0	0	100	$231,576	10,587	FDR w/ 3" HMA OVERLAY

City of Firebaugh
133 P Street
Firebaugh, CA 93622

Scenarios - Sections Selected for Treatment

Interest: 3.00% **Inflation: 3.00%** Printed: 04/23/2019

Scenario: S3: Improve PCI to 65

Year: 2024

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
CLYDE FANNON RD	HWY 33	MENDOZA DR	CLYDE	0100	789	44	34,716	C	AC		2	0	100	$192,284	10,587	FDR w/ 3" HMA OVERLAY
													Treatment Total	$772,304		
HELM CANAL RD	MORRIS KYLE DR	HWY 33	HELMCAN	0400	410	19	7,790	R	AC		58	48	100	$33,615	11,179	2" MILL & HMA OVERLAY
SPRUCE ST	WILLOW WY	POPLAR WY	SPRUCE	0200	251	32	8,032	R	AC		58	48	100	$34,659	11,214	2" MILL & HMA OVERLAY
													Treatment Total	$68,274		
TWELFTH ST	J ST	CANAL EDGE	12TH ST	0100	650	44	28,600	A	AC		49	83	90	$13,815	36,003	CRACK SEAL & SLURRY SEAL
TWELFTH ST	HYW 33	O ST	12TH ST	0300	365	57	20,805	A	AC		21	82	89	$10,050	31,758	CRACK SEAL & SLURRY SEAL
TWELFTH ST	O ST	P ST	12TH ST	0400	370	52	19,240	A	AC		79	75	84	$9,294	35,856	CRACK SEAL & SLURRY SEAL
THIRTEENTH ST	HWY 33	P ST	13TH ST	0200	757	60	45,420	A	AC		75	72	81	$21,940	35,899	CRACK SEAL & SLURRY SEAL
THIRTEENTH ST	EAST EDGE BRIDGE	EAST CITY LIMIT	13TH ST	0400	577	30	17,310	A	AC		19	82	89	$8,362	31,758	CRACK SEAL & SLURRY SEAL
FOURTEENTH ST	HWY 33	P ST	14TH ST	0100	746	52	38,792	A	AC		0	82	89	$18,738	31,758	CRACK SEAL & SLURRY SEAL
FIFTEENTH ST	Q ST	S ST	15TH ST	0200	404	52	21,008	A	AC		17	82	89	$10,148	31,758	CRACK SEAL & SLURRY SEAL
SEVENTH ST	EIGHTH ST	NORTH EAST END	SEVENTH	0400	650	24	15,600	A	AC		0	82	89	$7,536	31,758	CRACK SEAL & SLURRY SEAL
													Treatment Total	$99,883		
					Year 2024 Area Total		**362,033**						**Year 2024 Total**	**$940,461**		

Year: 2025

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
TENTH ST	HWY 33	O ST	10TH ST	0200	320	52	16,640	C	AC		49	19	100	$94,930	10,279	FDR w/ 3" HMA OVERLAY
CARDELLA ST	TUCCI ST	LANDUCCI DR	CARDELLA	0200	1,078	37	39,886	C	AC		0	0	100	$227,547	10,279	FDR w/ 3" HMA OVERLAY
CLYDE FANNON RD	MENDOZA DR	END SB	CLYDE	0200	1,589	37	58,793	C	AC		4	0	100	$335,410	10,279	FDR w/ 3" HMA OVERLAY
LANDUCCI DR	INDART ST	CARDELLA ST	LANDUCCI	0200	294	47	13,818	C	AC		0	0	100	$78,831	10,279	FDR w/ 3" HMA OVERLAY
													Treatment Total	$736,718		
MC CLAIN ST	CLYDE FANNON DR	CLARK ST	MCCLAIN	0100	440	36	15,840	R	AC		60	48	100	$70,402	10,843	2" MILL & HMA OVERLAY
													Treatment Total	$70,402		
THIRTEENTH ST	P ST	WEST SIDE BRIDGE	13TH ST	0300	1,101	40	44,040	A	AC		29	82	89	$21,911	30,833	CRACK SEAL & SLURRY SEAL

** - Treatment from Project Selection

Scenarios Criteria:

City of Firebaugh
133 P Street
Firebaugh, CA 93622

Scenarios - Sections Selected for Treatment

Interest: 3.00% **Inflation: 3.00%** Printed: 04/23/2019

Scenario: S3: Improve PCI to 65

Year: 2025

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
FIFTEENTH ST	HWY 33	Q ST	15TH ST	0100	1,140	52	59,280	A	AC		1	82	89	$29,494	30,833	CRACK SEAL & SLURRY SEAL
CARDELLA ST	LANDUCCI DR	RIVER LN	CARDELLA	0300	677	37	25,049	R	AC/AC		94	83	90	$12,463	20,371	CRACK SEAL & SLURRY SEAL
GOMES AVE	BORBOA LN	MILLER LN	GOMES	0100	240	36	8,640	R	AC		66	65	75	$10,604	9,336	CRACK SEAL & SLURRY SEAL
P ST	FIFTEENTH ST	THIRTEENTH ST	P ST	0200	960	54	51,840	C	AC		87	81	88	$25,792	26,622	CRACK SEAL & SLURRY SEAL
Q ST	FIFTEENTH ST	Q ST	QST	0300	785	54	42,390	R	AC/AC		94	82	89	$21,090	21,097	CRACK SEAL & SLURRY SEAL
Q ST	Q ST	P ST	QST	0400	386	34	13,124	R	AC/AC		94	82	89	$6,530	21,097	CRACK SEAL & SLURRY SEAL
Q ST	ELEVENTH ST	TENTH ST	QST	0500	457	26	11,882	R	AC		67	66	76	$14,582	9,414	CRACK SEAL & SLURRY SEAL
												Treatment Total		$142,466		
ELEVENTH ST	HWY 33	P ST	11TH ST	0200	740	52	38,480	C	AC		69	81	88	$19,145	26,799	CHIP SEAL AND SLURRY SEAL
												Treatment Total		$19,145		
				Year 2025 Area Total			**439,702**					**Year 2025 Total**		**$968,731**		

Year: 2026

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
BORBON ST	FATHER CRAIG ST	GUERRA ST	BORBON	0100	259	36	9,324	R	AC		19	0	100	$54,789	8,398	FDR w/ 3" HMA OVERLAY
CLYDE FANNON RD	SOUTH END	RABE ST	CLYDE	0300	850	34	28,900	C	AC		38	0	100	$169,819	9,980	FDR w/ 3" HMA OVERLAY
LANDUCCI DR	MORRIS KYLE DR	INDART ST	LANDUCCI	0100	1,407	47	66,129	C	AC		0	0	100	$388,579	9,980	FDR w/ 3" HMA OVERLAY
												Treatment Total		$613,187		
ZOZAYA ST	FATHER CRAIG ST	MILLER LN	ZOZAYA	0500	797	45	35,865	R	AC		62	49	100	$164,186	10,473	2" MILL & HMA OVERLAY
												Treatment Total		$164,186		
FOURTEENTH ST	P ST	Q ST	14TH ST	0200	349	52	18,148	A	AC/AC		92	82	90	$9,300	34,683	CRACK SEAL & SLURRY SEAL
ALDER WY	ELM ST	OAK ST	ALDER	0100	522	32	16,704	R	AC		84	79	86	$8,560	21,941	CRACK SEAL & SLURRY SEAL
ALDER WY	OAK ST	NORTH CDS	ALDER	0200	311	32	9,952	R	AC		78	74	83	$5,100	23,055	CRACK SEAL & SLURRY SEAL
ASH ST	ALDER WY	DOGWOOD WY	ASH	0100	414	32	13,248	R	AC		81	77	85	$6,789	22,621	CRACK SEAL & SLURRY SEAL
CLARK ST	MANES ST	MC CLAIN ST	CALRK	0100	242	36	8,712	R	AC		60	60	71	$4,465	26,080	CRACK SEAL & SLURRY SEAL

City of Firebaugh
133 P Street
Firebaugh, CA 93622

Scenarios - Sections Selected for Treatment

Interest: 3.00% **Inflation: 3.00%** Printed: 04/23/2019

Scenario: S3: Improve PCI to 65

Year: 2026

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
CYPRESS WY	HELMS CANAL RD	SPRUCE CT	CYPRESS	0100	158	32	5,056	R	AC		62	62	73	$2,591	27,263	CRACK SEAL & SLURRY SEAL
CYPRESS WY	SPRUCE CT	MAPLE ST	CYPRESS	0200	260	32	8,320	R	AC		75	72	81	$4,264	23,118	CRACK SEAL & SLURRY SEAL
DOGWOOD WY	ELM ST	NORTH CDS	DOGWOOD	0200	827	32	26,464	R	AC		83	78	86	$13,562	22,182	CRACK SEAL & SLURRY SEAL
ELM ST	DOGWOOD WY	BIRCH DR	ELM	0200	243	32	7,776	R	AC		83	78	86	$3,985	22,182	CRACK SEAL & SLURRY SEAL
LEYVA CT	WEST CDS	LEYVA AVE	LEYVACT	0100	138	36	4,968	R	AC		44	82	89	$2,546	20,483	CRACK SEAL & SLURRY SEAL
M ST	TWELFTH ST	END OF PAVEMENT	M ST	0400	568	56	31,808	R	AC		61	61	72	$16,300	26,616	CRACK SEAL & SLURRY SEAL
MANES ST	CLYDE FANNON DR	CLARK ST	MANES	0100	440	36	15,840	R	AC		66	63	73	$8,118	22,010	CRACK SEAL & SLURRY SEAL
MAPLE ST	POPLAR WY	DOGWOOD WY	MAPLE	0100	910	32	29,120	R	AC		63	60	71	$14,923	21,524	CRACK SEAL & SLURRY SEAL
NEES AVE	WEST CITY LIMIT	J ST	NESS	0100	2,252	44	99,088	A	AC		18	82	89	$50,778	29,935	CRACK SEAL & SLURRY SEAL
P ST	BRIDGE	YIP ST	P ST	0700	707	52	36,764	R	AC		76	73	81	$18,840	23,147	CRACK SEAL & SLURRY SEAL
POWERS CT	SABLAN AVE	SOUTH EAST CDS	POWERS	0100	189	36	6,804	R	AC		63	60	71	$3,487	21,524	CRACK SEAL & SLURRY SEAL
SPRUCE CT	CYPRESS WY	EAST CDS	SPRUCECT	0100	322	32	10,304	R	AC		70	67	77	$5,281	22,653	CRACK SEAL & SLURRY SEAL
UN NAMED	WELTY AVE	CORDER AVE	UNAMED	0100	610	37	22,570	R	AC		77	74	82	$11,566	23,098	CRACK SEAL & SLURRY SEAL
												Treatment Total		$190,455		
P ST	ELEVENTH ST	NINTH ST	P ST	0400	956	52	49,712	C	AC		71	81	88	$25,475	26,019	CHIP SEAL AND SLURRY SEAL
												Treatment Total		$25,475		
					Year 2026 Area Total		**561,576**					**Year 2026 Total**		**$993,303**		

Year: 2027

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
TENTH ST	WEST END	J ST	10TH ST	0100	685	36	24,660	R	AC		15	0	100	$149,251	8,153	FDR w/ 3" HMA OVERLAY
LANDUCCI DR	CARDELLA AVE	SAIPAN AVE	LANDUCCI	0300	448	37	16,576	C	AC		6	0	100	$100,324	9,689	FDR w/ 3" HMA OVERLAY
P ST	THIRTEENTH ST	ELEVENTH ST	P ST	0300	958	52	49,816	C	AC		36	0	100	$301,504	9,689	FDR w/ 3" HMA OVERLAY
POPLAR WY	SPRUCE ST	ELM ST	POPLAR	0200	697	32	22,304	C	AC		52	12	100	$134,992	9,689	FDR w/ 3" HMA OVERLAY

City of Firebaugh
133 P Street
Firebaugh, CA 93622

Scenarios - Sections Selected for Treatment

Interest: 3.00% **Inflation: 3.00%** Printed: 04/23/2019

Scenario: S3: Improve PCI to 65

Year: 2027

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
SAIPAN AVE	HWY 33	O ST	SAIPAN	0100	628	40	25,120	C	AC		36	0	100	$152,035	9,689	FDR w/ 3" HMA OVERLAY
													Treatment Total	$838,106		
TENTH ST	P ST	Q ST	10TH ST	0400	304	52	15,808	C	AC		93	82	89	$8,344	25,081	CRACK SEAL & SLURRY SEAL
TWELFTH ST	CANAL EDGE	HWY 33	12TH ST	0200	843	60	50,580	A	AC		58	83	90	$26,698	32,948	CRACK SEAL & SLURRY SEAL
DOGWOOD WY	MAPLE ST	ELM ST	DOGWOOD	0100	236	32	7,552	R	AC		86	79	87	$3,987	21,227	CRACK SEAL & SLURRY SEAL
HELM CANAL RD	SOUTH CITY LIMIT	BIRCH DR	HELMCAN	0100	1,732	23	39,836	R	AC		83	76	85	$21,027	22,037	CRACK SEAL & SLURRY SEAL
MENDOZA DR	CLYDE FANNON DR	EAST CDS	MENDOZA	0100	1,155	32	36,960	R	AC		85	78	86	$19,509	21,710	CRACK SEAL & SLURRY SEAL
MUNICHA ST	YIP ST	NW CDS	MUNUCHA	0100	456	36	16,416	R	AC/AC		96	89	95	$8,665	25,711	CRACK SEAL & SLURRY SEAL
RIVER LN	VAZQUEZ DR	CARDELLA ST	RIVER	0100	1,840	41	75,440	R	AC/AC		96	89	94	$39,819	25,654	CRACK SEAL & SLURRY SEAL
THOMAS CONBOY AVE	ALLARDT DR	CLINE ST	THOMASCON	0200	580	37	21,460	R	AC		85	78	86	$11,328	21,710	CRACK SEAL & SLURRY SEAL
WILLOW WY	SPRUCE ST	ELM ST	WILLOW	0100	701	32	22,432	R	AC		71	66	76	$11,841	21,905	CRACK SEAL & SLURRY SEAL
													Treatment Total	$151,218		
POPLAR WY	HELM CANAL RD	SPRUCE ST	POPLAR	0100	174	32	5,568	C	AC		54	81	88	$2,939	25,261	CHIP SEAL AND SLURRY SEAL
													Treatment Total	$2,939		
					Year 2027 Area Total		**430,528**				**Year 2027 Total**			**$992,263**		

Year: 2028

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
NINTH ST	HWY 33	O ST	9TH	0100	340	54	18,360	R	AC		2	0	100	$114,455	7,916	FDR w/ 3" HMA OVERLAY
NINTH ST	WEST END	Q ST	9TH	0200	528	46	24,288	R	AC		9	0	100	$151,410	7,916	FDR w/ 3" HMA OVERLAY
ALLARDT DR	ZOZOYA ST	CLINE ST	ALLARDT	0200	442	36	15,912	R	AC		9	0	100	$99,195	7,916	FDR w/ 3" HMA OVERLAY
CARDELLA CT NORTH	CARDELLA ST	EAST CDS	CARDELCTN	0100	166	37	6,142	R	AC		3	0	100	$38,289	7,916	FDR w/ 3" HMA OVERLAY
CARDELLA CT SOUTH	WEST CDS	CARDELLA ST	CARDELCTS	0100	260	37	9,620	R	AC		7	0	100	$59,971	7,916	FDR w/ 3" HMA OVERLAY
CARDELLA ST	REBECCHI ST	SOUTH CDS	CARDELLA	0500	124	50	6,200	R	AC		14	0	100	$38,651	7,916	FDR w/ 3" HMA OVERLAY
CLINE ST	THOMAS CONBOY DR (NORTH EDGE)	ZOZAYA ST	CLINE	0300	389	37	14,393	R	AC		11	0	100	$89,725	7,916	FDR w/ 3" HMA OVERLAY

** - Treatment from Project Selection

Scenarios Criteria:

City of Firebaugh
133 P Street
Firebaugh, CA 93622

Scenarios - Sections Selected for Treatment

Interest: 3.00% **Inflation: 3.00%** Printed: 04/23/2019

Scenario: S3: Improve PCI to 65

Year: 2028

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
SAIPAN AVE	O ST	Q ST	SAIPAN	0200	927	40	37,080	C	AC		34	0	100	$231,154	9,407	FDR w/ 3" HMA OVERLAY
													Treatment Total	$822,850		
ALLARDT DR	CLYDE FAMMON DR	THOMAS CONBOY DR	ALLARDT	0100	1,390	32	44,480	R	AC		87	78	86	$24,182	21,035	CRACK SEAL & SLURRY SEAL
BIRCH DR	HELM CANAL RD	ELM ST	BIRCH	0100	770	30	23,100	R	AC		86	77	85	$12,559	21,183	CRACK SEAL & SLURRY SEAL
BIRCH DR	ELM ST	NORTH CDS	BIRCH	0200	1,138	30	34,140	R	AC		86	77	85	$18,561	21,172	CRACK SEAL & SLURRY SEAL
CLINE ST	T ST	THOMAS CONBOY DR (NORTH EDGE)	CLINE	0200	878	37	32,486	R	AC		87	78	86	$17,662	21,035	CRACK SEAL & SLURRY SEAL
CORDEL AVE	HWY 33	EAST END	CORDEL	0100	972	37	35,964	R	AC		88	78	86	$19,553	20,890	CRACK SEAL & SLURRY SEAL
DIAZ ST	CLYDE FANNON DR	EAST END	DIAZ	0100	429	45	19,305	R	AC		87	78	86	$10,496	21,035	CRACK SEAL & SLURRY SEAL
ELM ST	WILLOW WY	DOGWOOD WY	ELM	0100	991	32	31,712	R	AC		91	79	87	$17,241	20,554	CRACK SEAL & SLURRY SEAL
OAK ST	WEST END	DOGWOOD WY	OAK	0100	472	32	15,104	R	AC		86	77	85	$8,212	21,183	CRACK SEAL & SLURRY SEAL
Q ST	NINTH ST	EIGHTH ST	QST	0700	457	36	16,452	R	AC		87	78	86	$8,945	21,035	CRACK SEAL & SLURRY SEAL
REV KANTOR ST	CLYDE FANNON DR	ZOZAYA ST	REVKANTOR	0100	900	36	32,400	R	AC		90	79	86	$17,615	20,645	CRACK SEAL & SLURRY SEAL
TUCCI ST	CARDELLA ST	INDART ST	TUCCI	0100	247	37	9,139	R	AC		93	80	88	$4,969	19,730	CRACK SEAL & SLURRY SEAL
WELTY AVE	HWY 33	UN NAMED	WELTY	0100	708	37	26,196	R	AC		86	77	85	$14,242	21,183	CRACK SEAL & SLURRY SEAL
													Treatment Total	$174,237		
							Year 2028 Area Total			**452,473**			**Year 2028 Total**	**$997,087**		
							Total Section Area:			**4,540,890**			**Grand Total**	**$9,989,598**		

** - Treatment from Project Selection

Scenarios Criteria:

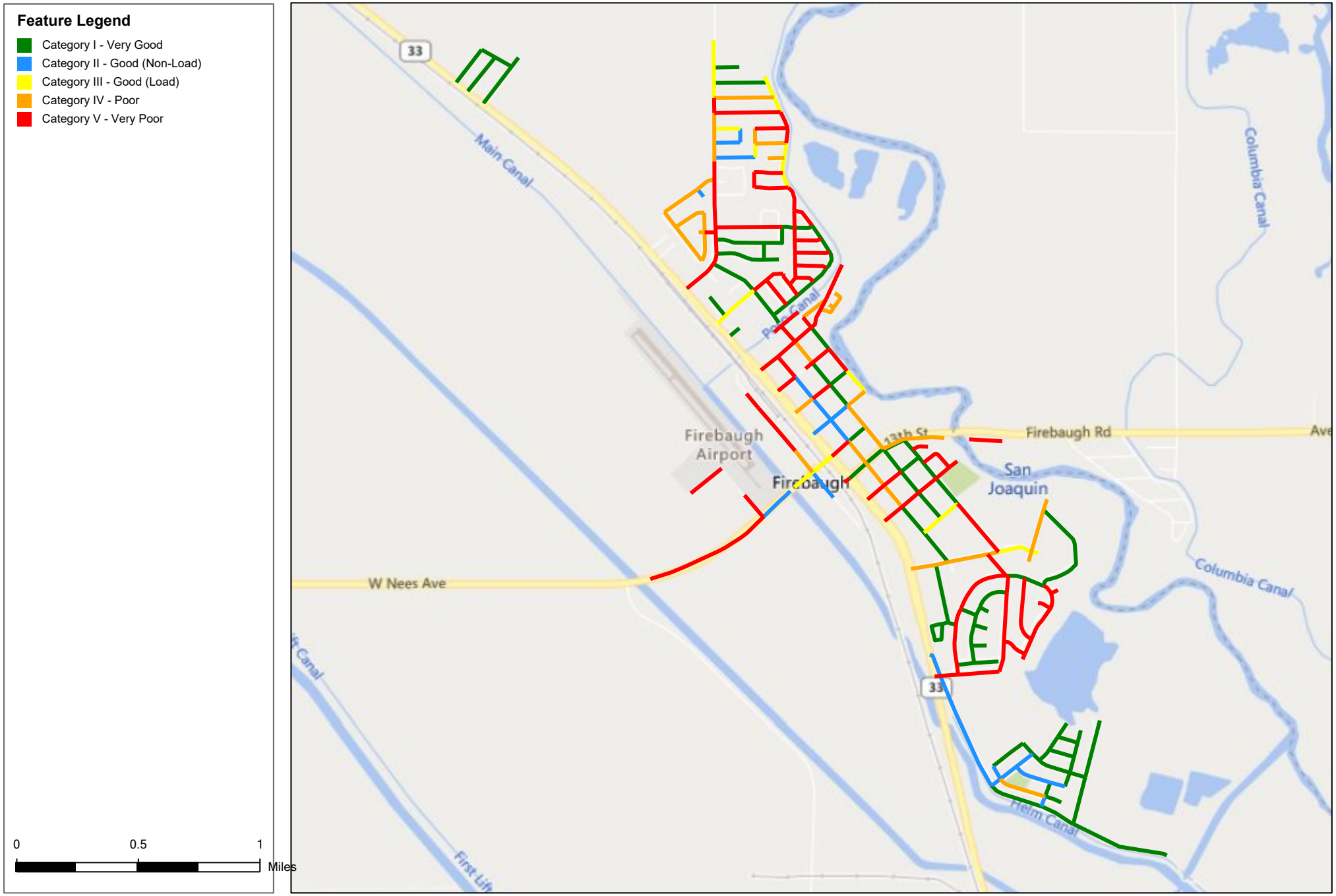
Appendix G

GIS Maps

City of Firebaugh
133 P Street
Firebaugh, CA 93622

Current PCI Condition

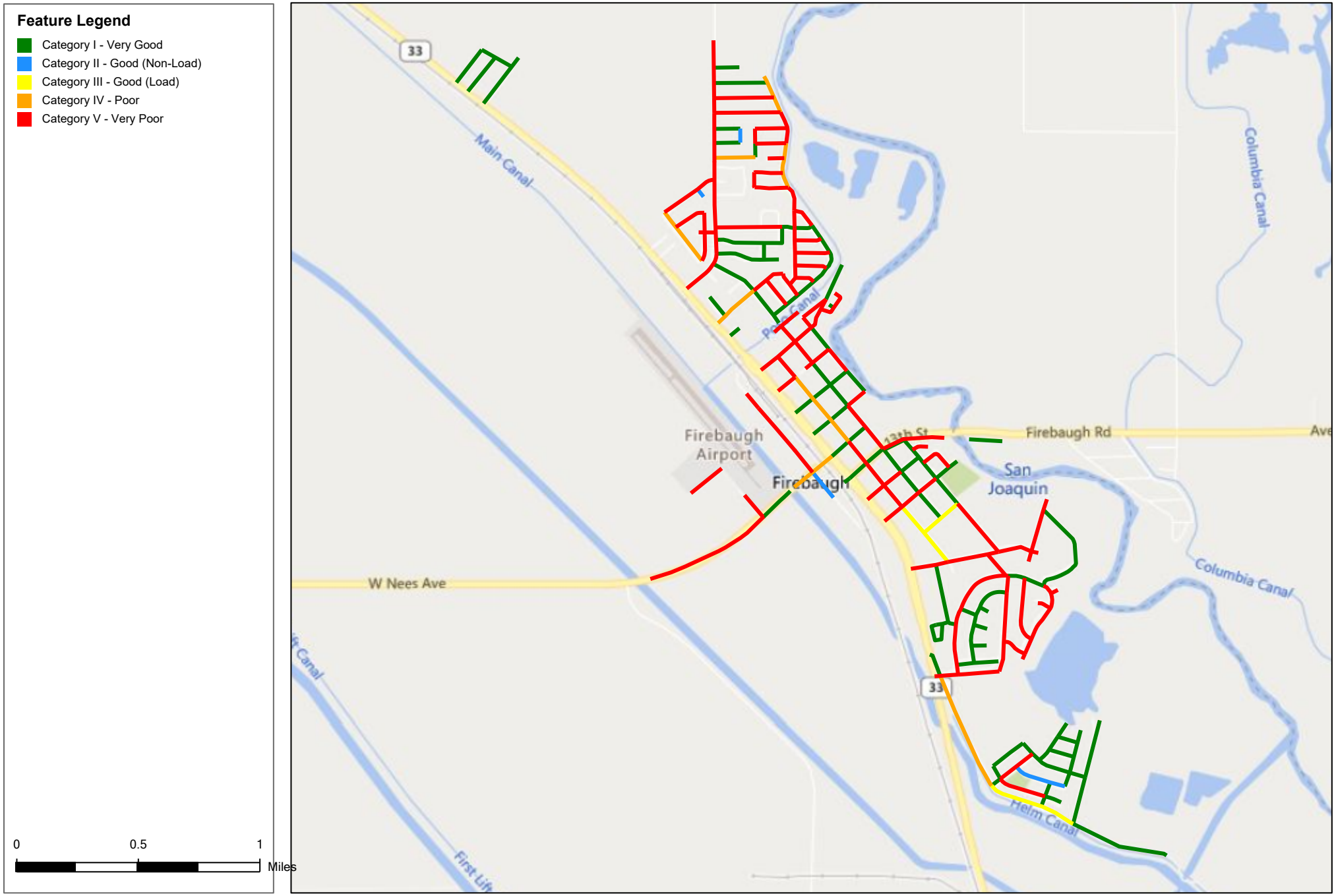
Printed: 4/18/2019



City of Firebaugh
133 P Street
Firebaugh, CA 93622

Scenario PCI Condition

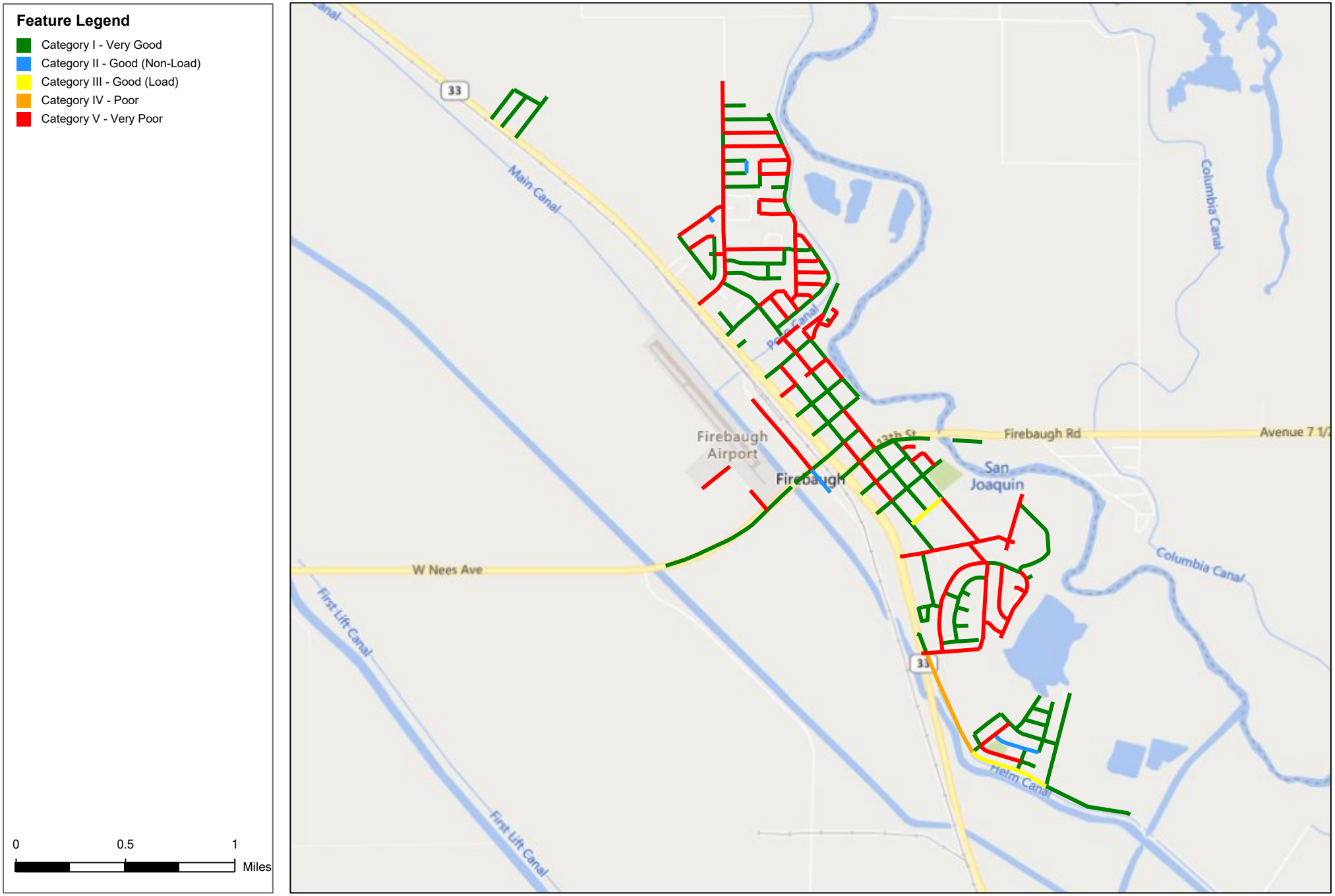
S1: City's Existing Funding - 2028 Project Period - Total Rehab: $125,781 - Printed: 4/18/2019



City of Firebaugh
133 P Street
Firebaugh, CA 93622

Scenario PCI Condition

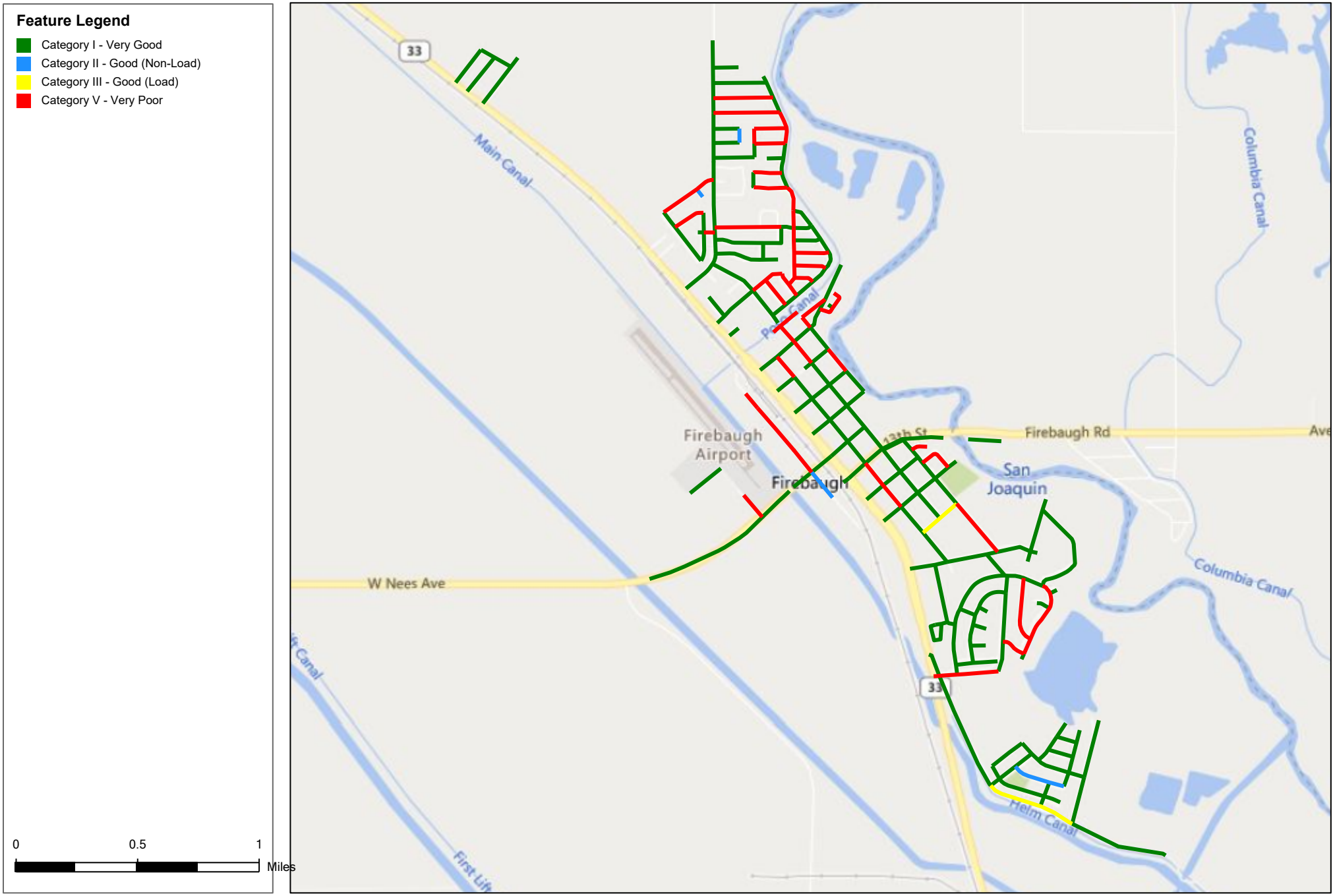
S2: Maintain PCI at 48 - 2028 Project Period - Total Rehab: $392,176 - Printed: 4/23/2019



City of Firebaugh
133 P Street
Firebaugh, CA 93622

Scenario PCI Condition

S3: Improve PCI to 65 - 2028 Project Period - Total Rehab: $822,850 - Printed: 4/23/2019



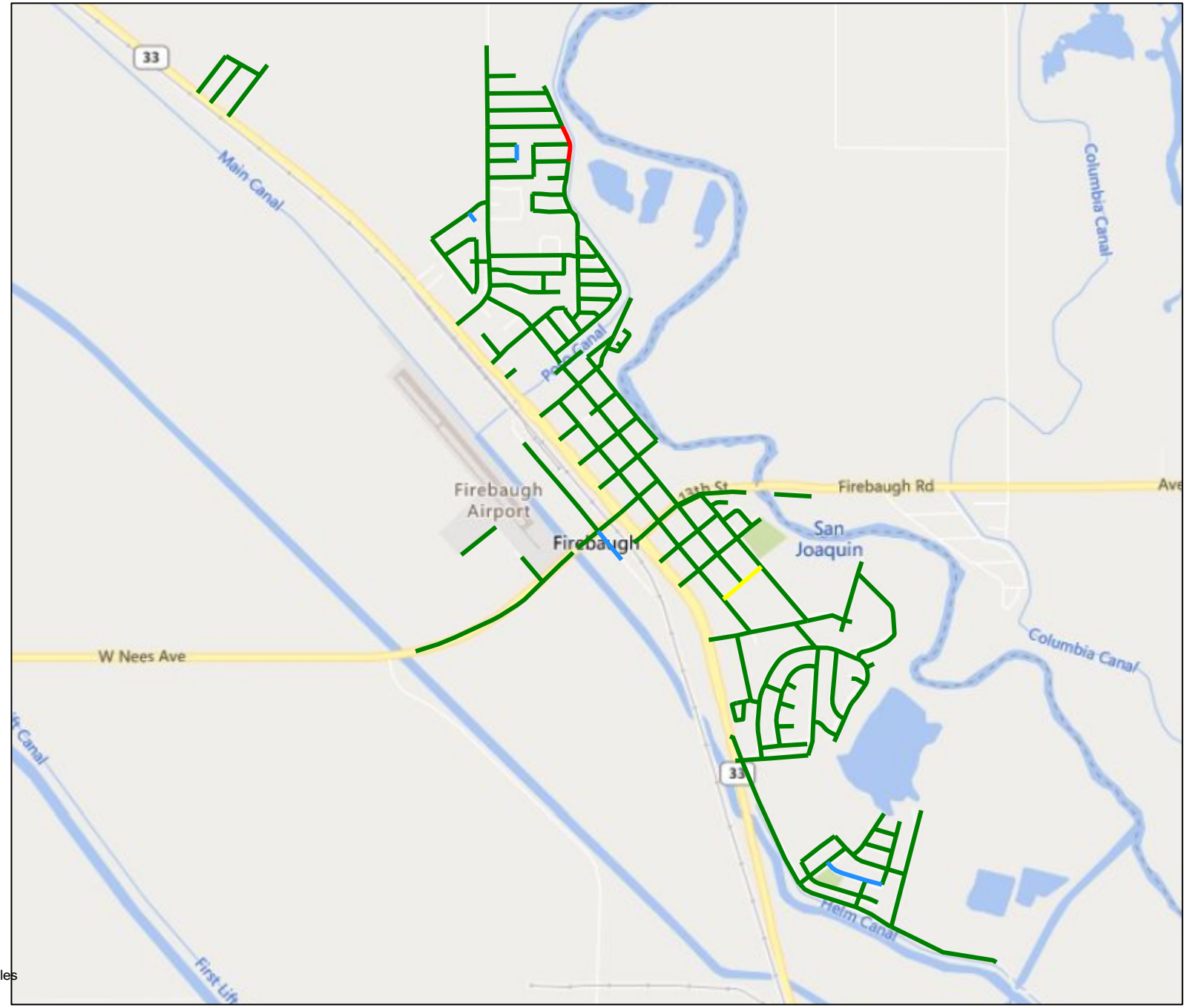
City of Firebaugh
133 P Street
Firebaugh, CA 93622

Scenario PCI Condition

S4: Improve PCI to 85 - 2028 Project Period - Total Rehab: $1,112,010 - Printed: 4/23/2019

Feature Legend

- Category I - Very Good
- Category II - Good (Non-Load)
- Category III - Good (Load)
- Category V - Very Poor



0 0.5 1 Miles