



Pavement Management Program Update

Final Report

NCE Project No. 967.01.55
January 2019



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



City of Carmel-By-The-Sea

Public Works Department
PO Box SS
Carmel, CA 93921

967.01.55

City of Carmel-By-The-Sea

Pavement Management Program Update

Final Report

Submitted to:

**City of Carmel-By-The-Sea
Public Works Department
PO Box SS
Carmel, CA 93921**

January 2019



Table of Contents

Background 1

Purpose 2

Project Approach 2

Street Network Description 3

Pavement Current Condition 4

Maintenance and Rehabilitation Strategies 8

Budget Needs..... 9

Budget Scenarios..... 11

 Scenario 1: City’s Existing Funding (\$3.45 million/10 Years) 12

 Scenario 2: Maintain PCI at 78 (\$4.9 million/10 Years) 13

 Scenario 3: Funding required to reach BMP (\$5.9 million/10 Years) 14

 Scenario Comparisons..... 15

Discussion..... 18

Conclusions 19

 A. Pavement Budget 19

 B. Pavement Maintenance Strategies..... 19

 C. Re-inspection Strategies 19

 D. Maintenance and Rehabilitation Decision Tree 19

 E. Next Steps 19

Appendix A:

- Section Description Inventory Report – Sorted by Street Name
- Section Description Inventory Report – Sorted by Descending PCI

Appendix B:

- Maintenance and Rehabilitation Decision Tree

Appendix C:

- Budget Needs – Projected PCI/Cost Summary Report
- Budget Needs – Preventive Maintenance Treatment/Cost Summary Report
- Budget Needs – Rehabilitation Treatment/Cost Summary Report



Scenarios 1 – 3:

Cost Summary Report

Network Condition Summary Report

Appendix D:

Scenario 1: Sections Selected for Treatment



List of Tables

Table 1: Network Summary Statistics for City Streets	3
Table 2: 2018 Pavement Condition Breakdowns by Area (Entire Network).....	6
Table 3: Summary Results from Needs Analysis	9
Table 4: Summary Results for Scenario 1.....	12
Table 5: Summary Results for Scenario 2.....	13
Table 6: Summary Results for Scenario 3.....	14

List of Figures

Figure 1: Pavement Condition Categories	4
Figure 2: Examples of Streets with Different PCIs	5
Figure 3: Pavement Condition Summary by Condition Categories (Entire Network by Area, 2018).....	6
Figure 4: Pavement Condition Summary by Functional Classification (Entire Network by Area, 2018)	7
Figure 5: 2018 Pavement Condition Index Compared to Neighboring Agencies.....	7
Figure 6: Costs of Maintaining Pavements over Time	8
Figure 7: PCI vs Deferred Maintenance for Scenario 1	12
Figure 8: PCI vs Deferred Maintenance for Scenario 2	13
Figure 9: PCI vs Deferred Maintenance for Scenario 3	14
Figure 10: Annual Pavement Condition Index by Scenarios 1 to 3	15
Figure 11: Annual Deferred Maintenance by Scenarios 1 to 3	16
Figure 12: Pavement Condition Changes under Each Scenario	17
Figure 13: Paving Capabilities by Lane Miles	18



Background

There is a renewed focus on roads and transportation in Monterey and California as a whole, and the demand for more accurate data is expected to grow. Remarkable changes in the funding picture have been observed with the recent passage of Measure X and the Road Maintenance and Rehabilitation Act (RMRA). Combined, these two funding sources will inject more than \$12 million a year to the entire county.

However, new revenues come with new accountability measures; Measure X requires each jurisdiction to develop a pavement management program (PMP) and submit reports on street conditions to ensure timely repairs, and to keep the public informed. Roads that will be maintained with RMRA funds will require submittal to the California Transportation Commission (CTC) for approval. A robust pavement management program (PMP) will provide the accountability that Monterey County residents demand by assisting in developing cost-effective, multi-year maintenance work plans.

To accomplish these purposes, the Transportation Agency for Monterey County (TAMC) selected Nichols Consulting Engineers, Chtd. (NCE) to update the City of Carmel-by-the-Sea's StreetSaver Pavement Management Program (PMP) in 2018. Broadly, a "... pavement management [program] system 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."¹ In other words, a PMP is designed to assist cities with answering questions such as:

- What does the City's pavement network consist of?
- What is the existing condition of the pavement network? Is this an acceptable level for the City? If not, what is an acceptable level? How much will it cost to bring it up to an acceptable level?
- How will the condition of the pavement network respond over time under existing funding levels?
- What maintenance and rehabilitation (M&R) strategies exist to improve current pavement conditions?
- What maintenance activities or treatments have occurred in the past on any given street?
- What is the backlog of needed M&R? What are the future M&R needs? Are there different needs for different classes of streets (i.e., arterials vs. residential)?
- What are the maintenance priorities under different budget constraints?

In order to answer the questions above, NCE updated the City's StreetSaver[®] pavement management program. StreetSaver[®] is a program developed by the Metropolitan Transportation Commission (MTC) and is the most widely used PMP in California. StreetSaver[®] also utilizes the pavement condition index (PCI) which was developed by the U.S. Army Corps of Engineers and is now a widely used standard in the United States and internationally.

¹AASHTO "Guidelines for Pavement Management Systems". American Association of State Highway and Transportation Officials, Washington DC, July 1990.



Purpose

The purpose of this report is to assist decision makers at the City of Carmel-by-the-Sea in utilizing the results of the StreetSaver PMP. Specifically, this report assesses the adequacy of projected revenues to meet the following

- 1) Implementing a multi-year street rehabilitation and maintenance program,
- 2) Developing a preventive maintenance program, and
- 3) Selecting streets with the most cost-effective repairs.

This report examines the overall condition of the street network and highlights options for improving the network's pavement condition by conducting "what if" analyses. Varying the budget amounts available for pavement maintenance and repair shows how different funding strategies would affect the City's streets over the next 10 years.

Project Approach

As part of the scope, condition surveys were performed on the City's entire pavement network, which consists of 26.97 centerline miles (233 sections) to identify pavement distress in accordance with the latest MTC Pavement Distress Identification Manuals (AC 4th Edition, PCC 3rd Edition, March 2016)². The inspections were completed in June 2018 and all distress data were entered into the database. Note that the condition inspections did not address non-pavement issues such as traffic, safety and road hazards, geometric issues, street shoulders, sidewalks, curb and gutters, drainage issues, or immediate maintenance needs.

Upon completion of the data collection activities, NCE reviewed M&R strategies with City staff. This included the selection of appropriate treatments such as surface seals or overlays, and the determination of unit costs. The unit costs are based on recent bid tabs from the City as well as surrounding agencies and include all related construction costs and engineering and design costs. Once appropriate M&R treatments were defined, the decision tree was updated.

NCE next performed a budget needs analysis using an analysis period of 10 years with an annual inflation rate of three percent. This identified M&R requirements for each street section and determined the total M&R requirements. Finally, three budgetary scenarios were analyzed for the pavement network.

² PCI Distress Identification Manuals (AC 4th Edition, PCC 3rd Edition), Metropolitan Transportation Commission, San Francisco, CA, March 2016.



Street Network Description

As noted previously, the City is responsible for the repair and maintenance of approximately 26.97 centerline miles of paved streets, or 233 pavement sections. Table 1 below summarizes the entire paved network by functional class.

Table 1: Network Summary Statistics for City Streets

Functional Class	Sections	Centerline Miles	Lane Miles	Percent Paved of the Entire Network (by Pavement Area)
Arterials	31	4.45	9.72	23.5
Collectors	30	3.68	7.23	14.0
Residentials/Locals	152	16.84	33.69	54.0
Others	20	2	4	8.5
	233	26.97	54.64	100

The network replacement cost of the maintained sections is approximately \$21.6 million which is almost half of what was reported in the 2017 PMP report. This is due to the updated strategies that the City currently employs which have resulted in lower construction costs. For example, in the 2017 PMP report, reconstruction of arterial streets was estimated to be \$130.50 per square yard (SY). However, updated construction costs indicate that new strategy will only cost \$62.50/SY.

This replacement cost can be viewed as the value of the City's pavement network, and is the amount needed to fund the full reconstruction of the network. It does not include related infrastructure assets, such as sidewalks, signals, markings, signs, etc.

All network sections, their corresponding 2018 PCI, and other attribute data are provided in Appendix A. For convenience, there are two listings – one sorted by street name and the other sorted by descending PCI.



Pavement Current Condition

Pavement condition is primarily affected by the climate, traffic loads and volumes, construction materials and age. The symptoms manifested by the pavement as it ages or fails are:

Asphalt concrete:

- Alligator (Fatigue) Cracking
- Block Cracking
- Distortions
- Longitudinal/Transverse Cracking
- Patching and Utility Cut
- Rutting and Depressions
- Raveling
- Weathering

Portland cement concrete :

- Corner Break
- Divided Slab
- Faulting
- Linear Cracking
- Patching or Utility Cut
- Scaling, Map Cracking and Cracking
- Spalling

Figure 1 illustrates the definitions of the five pavement condition categories.

I	Good/Very Good		90
II/III	Fair (non-load)	Fair (load-related)	70
IV	Poor		40
V	Very Poor/Failed		20
			0
Condition Category	Pavement Condition		PCI

Figure 1: Pavement Condition Categories



Streets in “Good” condition include streets with both non-load-related (weathering or raveling) and load-related (e.g., alligator cracking) distresses. Since 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® will assign the appropriate treatments and costs to streets identified within each category. Note that the “Maintenance and Rehabilitation Decision Tree” in Appendix B assigns different condition category labels than those in Figure 1 but the PCI ranges are equivalent. The photos in Figure 2 illustrate streets with a range of PCIs.



Figure 2: Examples of Streets with Different PCIs



The average 2018 PCI of the City’s street network is 78. This reflects the increased focus on paving in the last three years, where approximately 14-lane miles were either overlaid or reconstructed. This is more than twenty-five percent of the street-network! Note that these values are projected and area-weighted calculations from StreetSaver. The average remaining service life (RSL) is estimated to be approximately 22 years for the streets (this is the time required for pavement to reach a “Very Poor/Failed” condition if no maintenance occurs).

Table 2 and Figure 4 and 4 detail the network by PCI ranges or condition category. As can be seen, approximately two-thirds of the City’s streets are in the “Good/Very Good” condition with only 3.5 percent in the “Poor” or “Very Poor/Failed” categories. Therefore, only a small percentage of the network will require significant funding for repair. Overall, arterials are in better condition than collectors and residential.

Table 2: 2018 Pavement Condition Breakdowns by Area (Entire Network)

Condition Category	PCI Range	Arterials (%)	Collectors (%)	Residential (%)	Others (%)	Entire Network (%)
Good/Very Good (I)	70-90	18.1	6.5	36.3	5.3	66.2
Fair (II/III)	40-69	5.0	6.8	15.3	3.2	30.3
Poor (IV)	20-39	0.0	0.7	2.3	0.0	3.0
Very Poor/Failed (V)	<20	0.4	0.0	0.1	0.0	0.5
Total		23.5	14.0	54.0	8.5	100.0

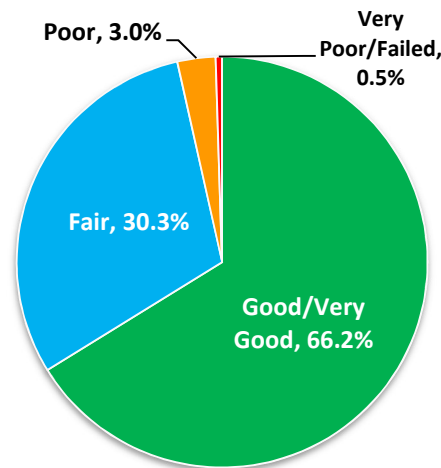


Figure 3: Pavement Condition Summary by Condition Categories (Entire Network by Area, 2018)

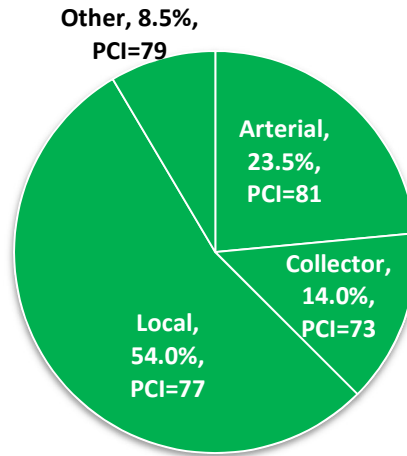


Figure 4: Pavement Condition Summary by Functional Classification (Entire Network by Area, 2018)

Figure 5 shows the City’s network PCI compared to the network PCIs of neighboring agencies. The presented data was also collected and analyzed by NCE in partnership with TAMC on behalf of the listed agencies. Additionally, the statewide average PCI from the 2018 California Statewide Local Streets and Roads Needs Assessment³ is also included for comparison. As can be seen, the City’s PCI is the highest among the agencies below and is also above the statewide average.

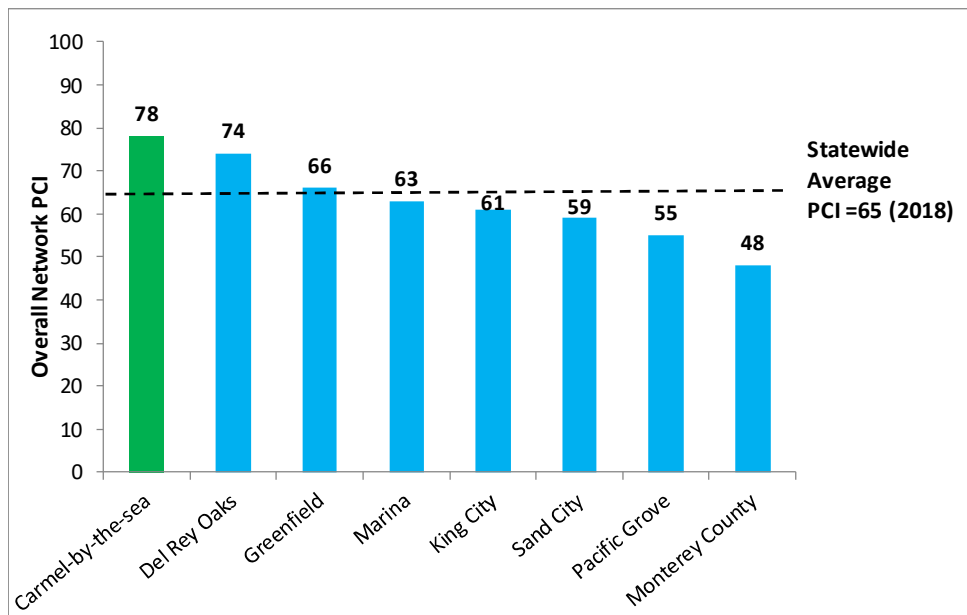


Figure 5: 2018 Pavement Condition Index Compared to Neighboring Agencies

³ “California Statewide Local Streets and Roads Needs Assessment 2018 Update”. Nichols Consulting Engineers Chtd, CA, October 2018.



Maintenance and Rehabilitation Strategies

Historically, the City has utilized slurry seals and Hot Mix Asphalt (HMA) overlays as M&R strategies. Seals are usually utilized as a preventive maintenance technique when the pavements are in “Good/Very Good” condition or above. As the pavement condition deteriorates, slurry seals and HMA overlays are applied. Digouts are typically used as preparation prior to overlays and surface seals as necessary. These pavement treatments are formalized in the M&R decision tree shown in Appendix B.

Figure 6 below demonstrates that pavement maintenance follows the old colloquial saying of “pay me now, or pay me more later”. History has shown that it costs much less to maintain streets in “Good/Very Good” condition than to repair streets that have failed. For example, applying slurry seal to an arterial street may cost \$2.75 per square yard (SY); if allowed to deteriorate, costs may rise to \$32.00/SY for a 2-inch overlay and \$62.50/SY for Surface Reconstruct with a 4-inch overlay. In other words, delays in repairs can result in construction costs increasing as much as 23 times. Appendix B shows the detailed decision tree and the unit costs associated with each type of treatment.

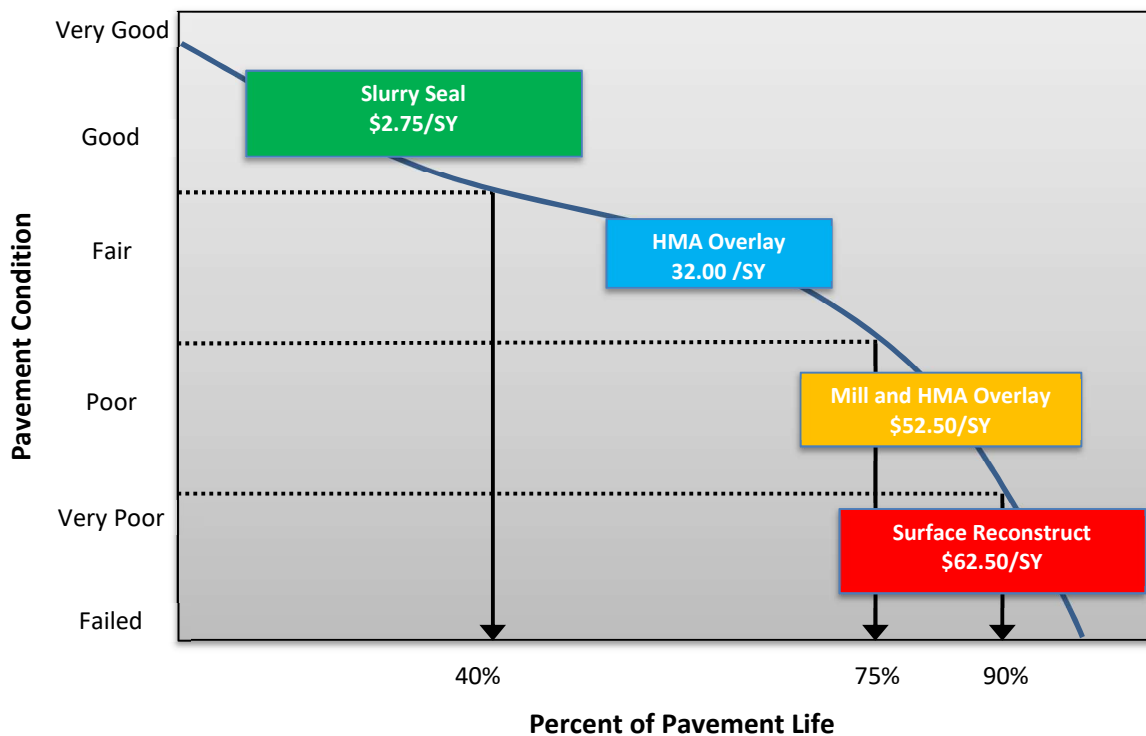


Figure 6: Costs of Maintaining Pavements over Time



Budget Needs

Once the pavement condition has been determined, and the appropriate maintenance treatments determined, then it is possible to determine the funding needs for 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 the pavement condition to a state of good repair?

Based on the principle that it costs less to maintain streets in good condition than those in bad condition, the PMP strives to develop a maintenance strategy that will improve the overall condition of the network to an optimal PCI and then sustain it at that level. By not addressing the maintenance needs, the quality of the street network will inevitably decline. In order to correct these deficiencies, a cost-effective funding and maintenance strategy must be implemented.

The first step in developing a cost-effective M&R strategy is to determine the maintenance "needs" of the pavement network. Using the StreetSaver budget needs module with an inflation rate of 3 percent, the maintenance needs over the next 10 years were estimated at approximately \$6.0 million for the entire network. This reflects the high average PCI and lower construction costs when compared with the 2017 report. Of the \$6.0 million in maintenance needs shown, approximately \$1.2 million (20 percent) is earmarked for preventive maintenance, while the majority, \$4.8 million (80 percent), is allocated for more costly rehabilitation and reconstruction treatments.

If the City follows this ideal strategy, the average network PCI would immediately increase as a large amount of deferred maintenance is addressed in the first year, and then stabilize at a level between the high 70s and low 80s. This type of budget, that addresses all the deferred maintenance (unfunded backlog) in the first year, is known as front-loaded. If no maintenance is performed in the next ten years, the network PCI will drop to 55 by 2028. The results of the budget needs analysis are summarized in Table 3 below.

Table 3: Summary Results from Needs Analysis

Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
PCI Treated	90	84	82	83	80	79	79	77	84	81	---
PCI Untreated	76	73	71	69	66	64	62	59	57	55	---
Needs (\$Millions)	2.16	0.37	0.22	0.54	0.28	0.20	0.27	0.09	1.43	0.48	6.04

It should be noted that the prediction models in StreetSaver may result in a more conservative performance because the impacts of newer and more cost-effective technologies may not be included. For example, if improved materials are utilized (e.g., asphalt-binders with rubber or polymers), the actual performance of these treatments may be under-stated by the models. This results in a higher expected



funding requirement. However, if the City continues to assess the pavement conditions regularly, the prediction accuracy of future conditions will continue to improve.



Budget Scenarios

Having determined the maintenance needs of the pavement network, the next step in developing a cost-effective maintenance and rehabilitation strategy is to conduct several “what-if” analyses using StreetSaver’s budget scenario module. 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 projects the effects of the different scenarios on PCI, deferred maintenance (unfunded backlog), and average RSL of the network. By examining the effects on these indicators, the advantages and disadvantages of different funding levels and maintenance strategies become clear.

Scenario 1: City’s Existing Funding (\$3.45 million/10 Years)– Based on the City’s existing funding level of \$345,000 per year for the next 10 years, this scenario predicts the consequences on the network. The deferred maintenance will slightly increase from \$2.1 million to \$2.3 million and the overall PCI will decrease to 72 by 2028.

Scenario 2: Maintain PCI at 78 (\$4.9 million/10 Years)– This scenario aims to maintain the overall pavement network PCI at 78 over the next ten years. To maintain the current PCI at 78, the City would need an average budget of \$490,000 per year. The deferred maintenance will decrease to \$300,000 by 2028.

Scenario 3: Funding required to reach Best Management Practice (\$5.9 million/10 Years) – The optimal scenario is to bring all pavements into a state of good repair so that best management practices (BMP) can prevail. This scenario would improve the network PCI to 80 and eliminate the deferred maintenance by 2028. This requires an average of \$588,000 per year over the next 10 years.

Note: The term “deferred maintenance” consists of pavement maintenance that is needed but cannot be performed due to lack of funding. Shrinking budgets have forced many cities and counties to defer much needed pavement maintenance. By deferring maintenance, not only does the frequency of citizens’ complaints about the condition of the network increase, but the cost to repair these streets rises as well. More detailed results of the budget needs and scenarios are included in Appendix C.



Scenario 1: City’s Existing Funding (\$3.45 million/10 Years)

This scenario determines the impacts of the City’s existing funding of \$345,000 per year for the next 10 years. The results indicate that the network PCI will decrease to 72 by 2028 and approximately two-thirds of the network will be in “Good/Very Good” condition. The deferred maintenance will fluctuate between \$1.8 million to \$2.3 million and the projected remaining service life (RSL) is 19 years (see Table 4 and Figure 7). Appendix D provides a list of candidate sections selected for treatment in Scenario 1.

Table 4: Summary Results for Scenario 1

Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
Budget(\$Millions)	0.345	0.345	0.345	0.345	0.345	0.345	0.345	0.345	0.345	0.345	3.45
Deferred Maintenance(\$Millions)	1.8	2.1	2.0	2.3	2.2	2.1	2.2	2.0	2.0	2.3	---
PCI	78	78	77	77	76	75	75	74	73	72	---
RSL (Years)	22	22	22	22	21	21	20	20	20	19	---

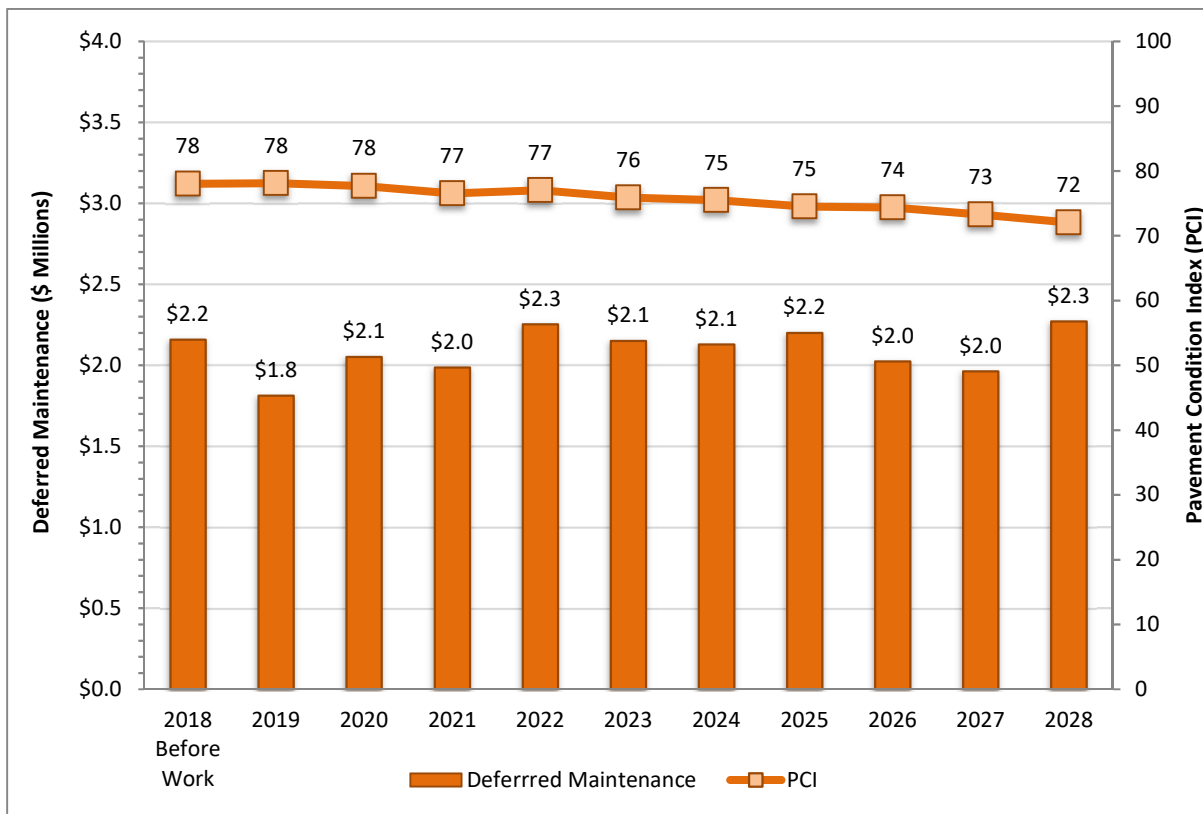


Figure 7: PCI vs Deferred Maintenance for Scenario 1



Scenario 2: Maintain PCI at 78 (\$4.9 million/10 Years)

In order to maintain the pavement condition at existing conditions (i.e., PCI=78), a total of \$4.9 million over the next ten years is required. Approximately 70.8 percent of the network will be in the “Good/Very Good” condition, and there will be no streets in the “Poor” or “Very Poor/Failed” Condition Category. The deferred maintenance will decrease to \$300,000, and the projected remaining service life (RSL) will be 22 years (see Table 4 and Figure 8).

Table 5: Summary Results for Scenario 2

Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
Budget (\$Millions)	0.35	0.70	0.42	0.32	0.50	0.50	0.60	0.55	0.6	0.38	4.9
Deferred Maintenance(\$Millions)	1.8	1.7	1.6	1.8	1.6	1.4	1.1	0.7	0.4	0.3	--
Network PCI	78	78	78	78	78	78	78	78	78	78	--
Life (Years)	22	22	22	22	22	22	22	22	22	22	--

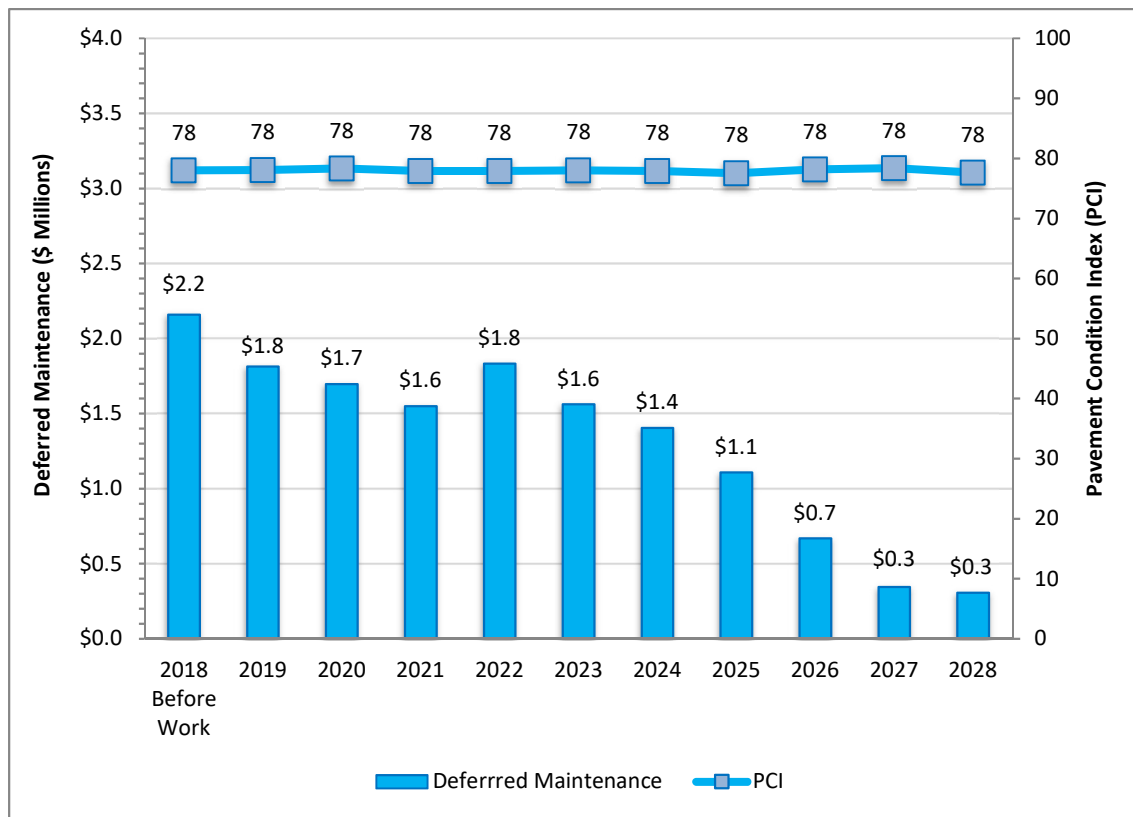


Figure 8: PCI vs Deferred Maintenance for Scenario 2



Scenario 3: Funding required to reach BMP (\$5.9 million/10 Years)

In order to reach a pavement condition where best management practices can be applied, \$5.9 million over the next ten years is required. The PCI will reach 80 and the deferred maintenance will be eliminated by 2028 (Figure 9). Approximately, 80 percent of the network will be in “Good/Very Good” condition with 20 percent in the “Fair” condition category. No streets will be in poor or very poor condition categories. The remaining service life (RSL) will be 23 years. Table 6 and Figure 9 below summarize the results.

Table 6: Summary Results for Scenario 3

Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
Budget (\$Millions)	1.2	0.9	0.3	0.7	0.3	0.5	0.2	0.3	0.8	0.7	5.9
Deferred Maintenance (\$Millions)	1.0	0.6	0.5	0.4	0.4	0.3	0.3	0.1	0.0	0.0	--
Network PCI	82	82	80	82	79	79	78	78	81	81	--
Remaining Service Life (Years)	24	24	23	23	23	23	23	22	23	23	--

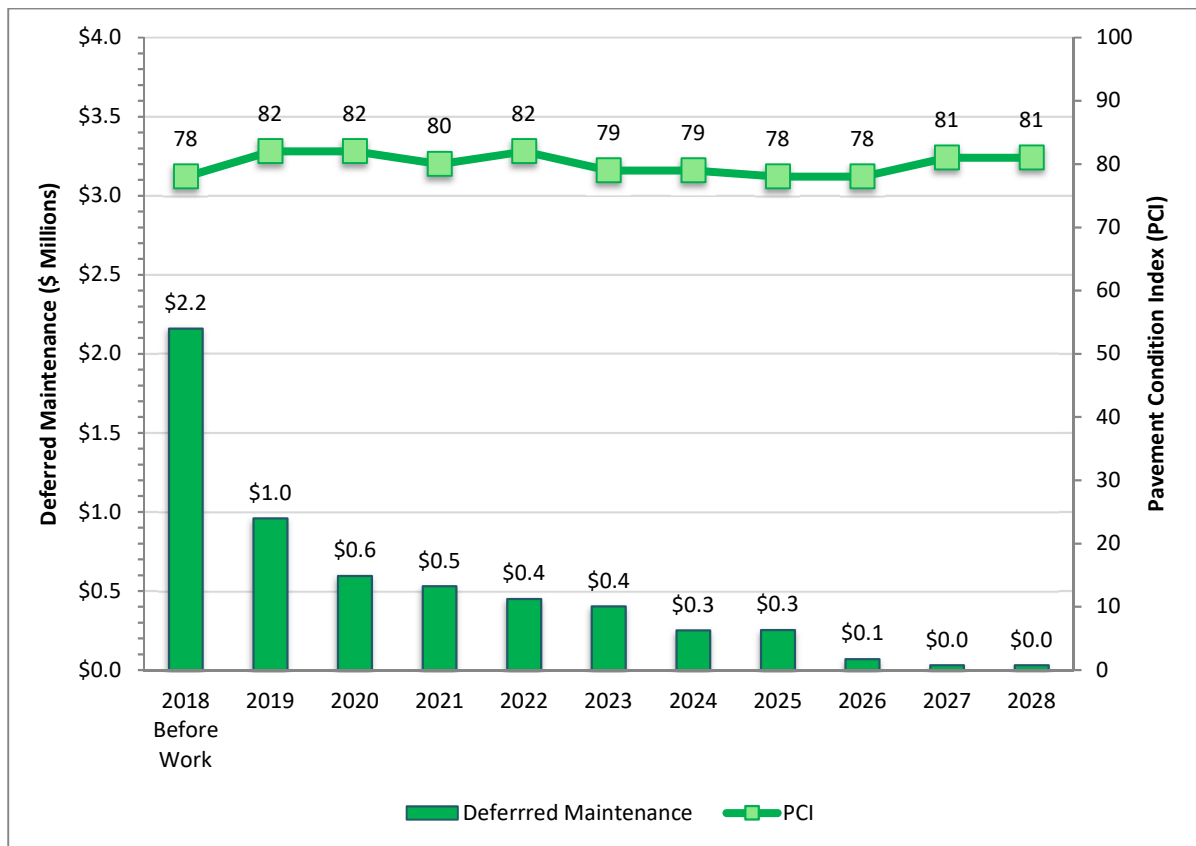


Figure 9: PCI vs Deferred Maintenance for Scenario 3



Scenario Comparisons

The following two figures graphically illustrate the annual changes in PCI and deferred maintenance for each scenario. Figure 10 below illustrates the changes in PCI over time for all three scenarios; clearly, the City's funding is not enough to maintain the current PCI.

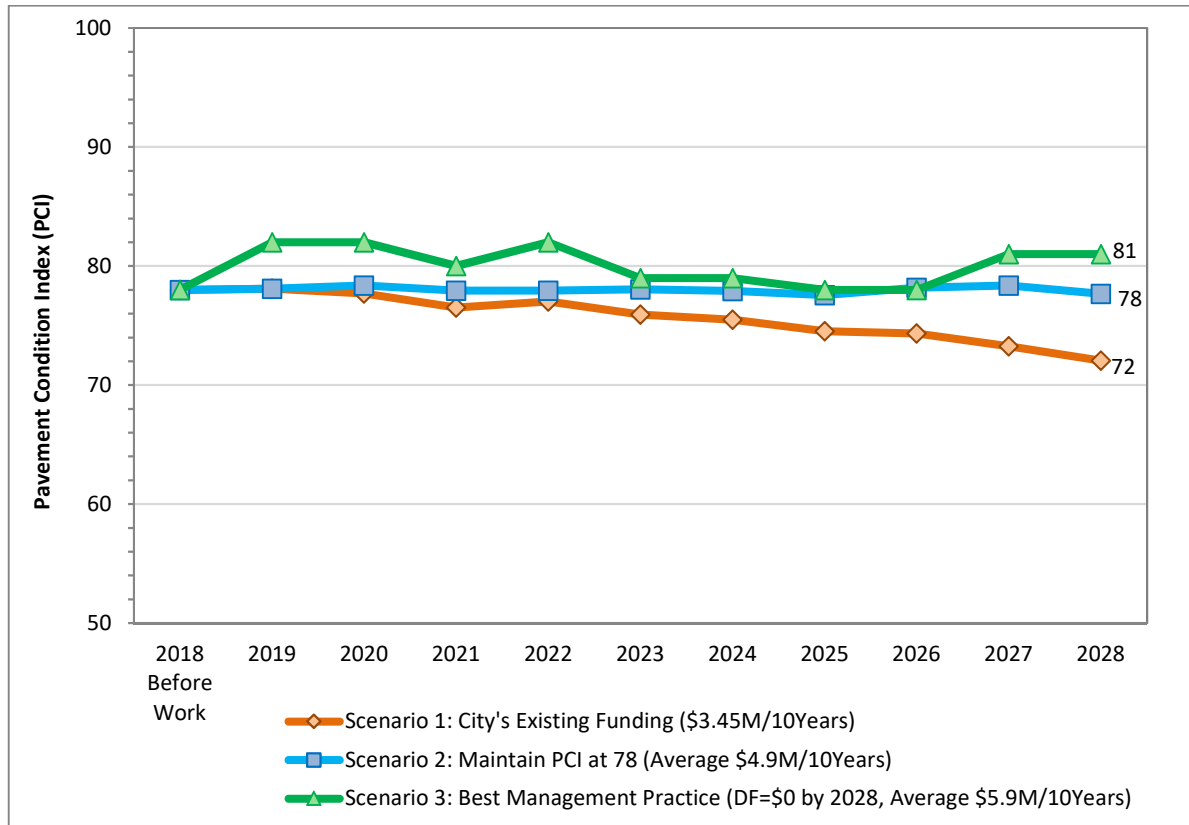


Figure 10: Annual Pavement Condition Index by Scenarios 1 to 3

Figure 11 on the next page illustrates the change in deferred maintenance over time for each budget scenario analysis. As previously noted, Scenario 1 (City's current funding level) will increase the deferred maintenance slightly by 2028. Scenario 2 will reduce the deferred maintenance to approximately \$300,000 and Scenario 3 will eliminate the deferred maintenance by 2028.

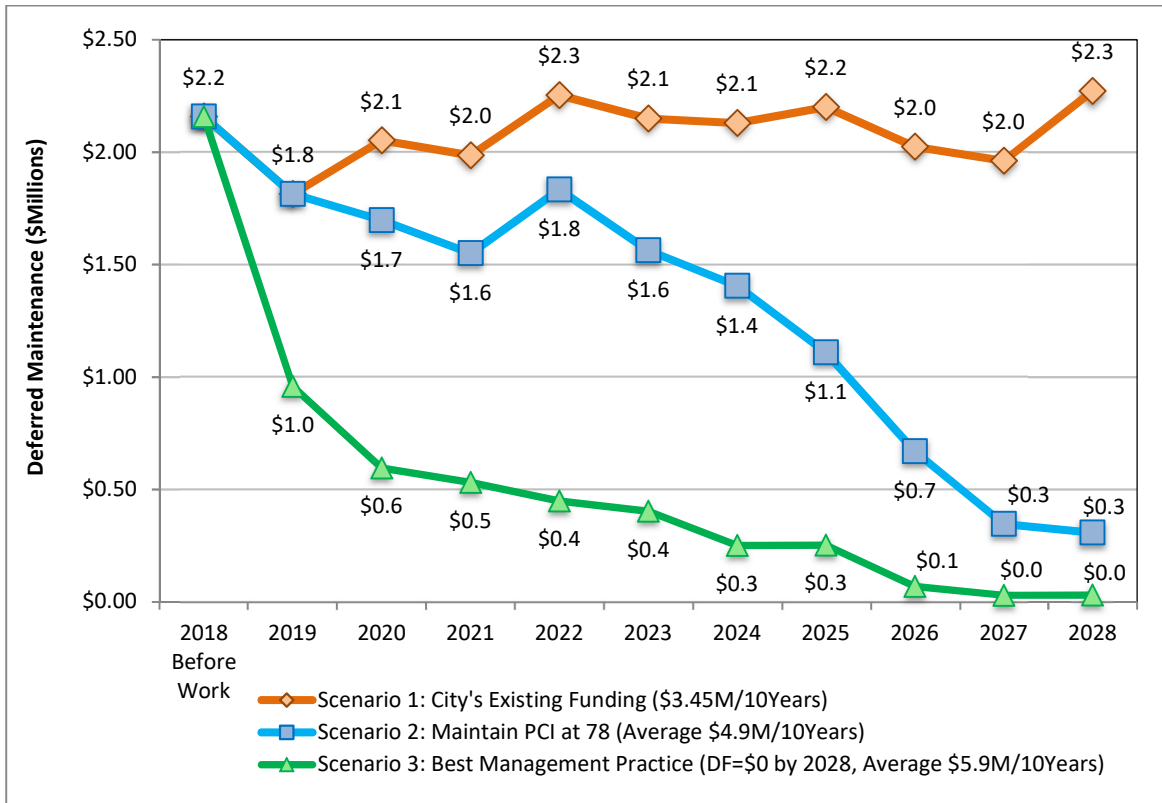


Figure 11: Annual Deferred Maintenance by Scenarios 1 to 3

Figure 12 on the next page illustrates the pavement condition changes under various scenarios. Currently, two thirds of the network are in “Good/Very Good” condition, 30.3 percent in “Fair”, and 3.5 percent in “Poor” or “Very Poor/Failed” condition.

All scenarios will result in more than three quarters of the pavement network in “Fair” or “Good/Very Good” conditions by 2028. Under the City’s existing funding, 2.5 percent of the pavement network will still be in “Very Poor/Failed” condition. All pavements will be in either “Good/Very Good” or “Fair” condition for Scenarios 2 and 3.

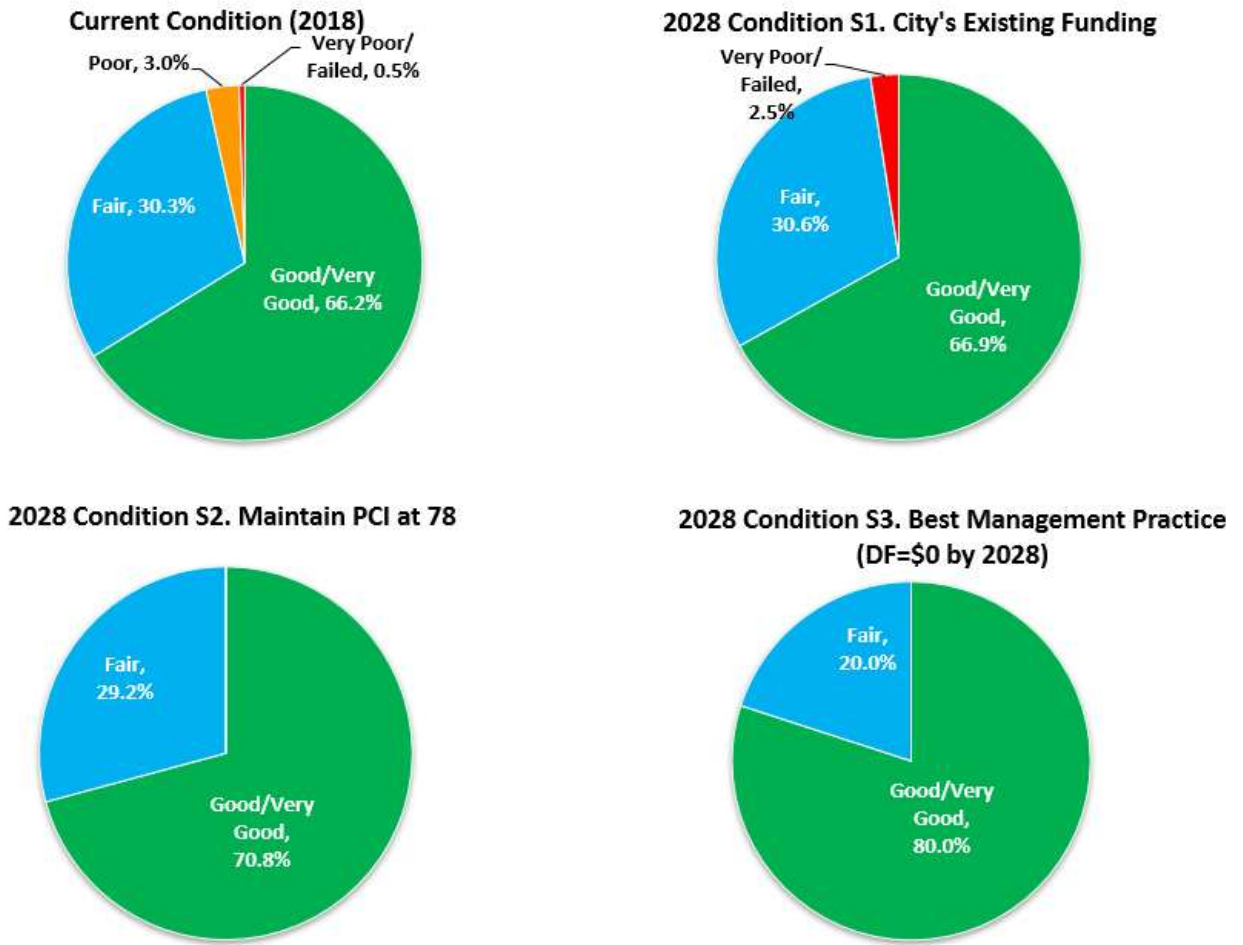


Figure 12: Pavement Condition Changes under Each Scenario



Discussion

To summarize, City of Carmel-by-the-Sea has a substantial investment of \$21.6 million in the pavement network. Overall, the City’s network is in “Good/Very Good” condition with an average PCI of 78. Of the 26.97 centerline miles of paved streets, approximately 66.2 percent are currently in “Good/Very Good” condition with only 3.5 percent in “Poor” or “Very Poor/Failed” conditions.

The analyses indicate that the City needs to spend approximately \$6 million in pavement maintenance over the next 10 years to essentially repair all streets. By doing so, streets then can be maintained in good condition with on-going preventive maintenance.

The most desirable scenario is to reduce the deferred maintenance to zero (Scenario 3), but this might be unrealistic. However, the goal should be to offer residents a safe and functional pavement network without unduly increasing the maintenance burden in the future. Scenario 2 is a realistic option considering there will be no streets in “Poor” or “Very Poor/Failed” Condition Category. The deferred maintenance will also be reduced from \$2.2 million to \$0.3 million.

To demonstrate the relative costs of different treatment strategies, Figure 13 illustrates the number of lane miles that may be paved in each scenarios. The number of lane miles listed assumes that the entire annual budget is spent on only one treatment. What this illustrates is that a surface seal can be placed on approximately twelve times as many as streets requiring overlays, and one street slated for reconstruction is equivalent to sealing twenty-one streets.

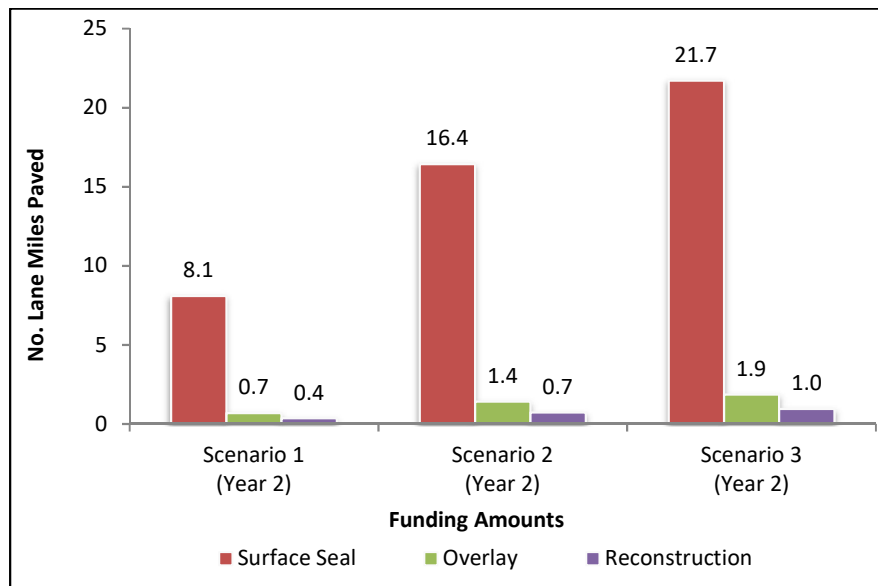


Figure 13: Paving Capabilities by Lane Miles



Conclusions

A. Pavement Budget

The recommended scenario for the City of Carmel-by-the-Sea is Scenario 2 (Maintain PCI at 78), with a budget of \$4.9 million over the next 10 years. This will allow City to increase the percentage of streets in “Good/Very Good” or “Fair” condition. There will be no streets in “Poor” or “Very Poor/Failed” condition under this scenario.

B. Pavement Maintenance Strategies

The City’s pavement maintenance strategies include slurry seals and HMA overlays. Since almost 96 percent of the pavement network are currently in “Good/Very Good” to “Fair” condition, it is important to preserve them. Life-extending surface seals are cost-effective for pavements currently in “Fair” to “Good/Very Good” condition.

NCE recommends that the City continue with the preventive maintenance program as this is necessary to maintain the portion of the street network that is in “Good/ Very Good” condition and avoid increasing the deferred maintenance even more.

C. Re-inspection Strategies

In order to continue monitoring the street network, and make appropriate decisions, it is recommended that arterial and collector streets be inspected every two years and residential streets every four to five years.

D. Maintenance and Rehabilitation Decision Tree

The M&R treatment strategies and associated unit costs should be reviewed and updated annually to reflect new construction techniques/costs so that the budget analysis results can continue to be reliable and accurate.

A significant unknown fact is the future cost of rehabilitation; we recommend that City carefully monitor future construction costs and be ready to adapt to any changes or price increases if necessary.

E. Next Steps

To summarize, we recommend that the City undertake the following steps:

- Maintain a preventive maintenance strategy.
- Pursue additional pavement funding sources to ensure that Scenario 2 is feasible. Examples of some funding sources are listed below:

Federal Funding Sources

- Community Development Block Grants
- Congestion Mitigation & Air Quality Improvement
- Surface Transportation Block Grant Program



- Highway Safety Improvement Program

State Funding Sources

- Active Transportation Program which now includes the Bicycle Transportation Account (BTA) and Safe Routes to Schools
- State Transportation Improvement Program
- AB 2766 (vehicle surcharge)
- Vehicle License Fees
- CalRecycle grants
- State Water Resource Control Board
- Transportation Development Act
- Traffic Safety Fund
- Transportation Uniform Mitigation Fee

Local/Regional Funding Sources

- Development impact fees
- General fund
- Various assessment districts – lighting, maintenance, flood control, special assessments, community facility districts
- Traffic impact fees
- Utilities e.g., stormwater, water, wastewater enterprise funds
- Parcel/property taxes
- Vehicle registration fees
- Vehicle code fines
- Transient Occupancy Taxes

APPENDIX A

Section Description Inventory

Section Description Inventory Report

This report lists a variety of section description information for each of the City's pavement sections. It lists the street and section identifiers, limits, functional class, surface type, number of lanes, lengths, widths, Inspected 2018 PCI, and area identifier.

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

COLUMN	DESCRIPTION
Street ID	Street Identification - A code up to ten characters/digits to identify the street. Generally, the street name is truncated to six characters. The Street ID should be unique for each street.
Section ID	Section Identification - A code up to ten characters/digits to identify the section number. The Section ID must be unique for each section of one street.
Street Name	Street Name - The name of the street as indicated by street signs in the field.
Beg Location	Beginning limit of the section.
End Location	Ending limit of the section.
# of Lanes	Number of travel lanes.
Functional Class (FC)	Functional Classification (A = Arterial, C = Collector, R = Residential, O=Other).
Length (ft)	Length of the section in feet.
Width (ft)	Average width of the section in feet.
Area (ft ²)	Area of section in square feet.
Surface Type (ST)	Surface Type (A = AC, O = AC/AC, P = PCC, G=Gravel).
PCI Date	The last inspection date or rehabilitation date.
PCI	Average PCI for the section. The value is the calculated PCI based on the most recent field inspections or maintenance data (i.e. 2018 inspections).

**Section Description Inventory
Sorted by Street Name**

City of Carmel-by-the-Sea
PCI Listing Report Sorted by Street Name

Street ID	Section ID	Street Name	Begin Location	End Location	Lanes	FC	Length (ft)	Width (ft)	Area (sf)	Surface Type	PCI Date	PCI
10THAV	010	10TH AV	SAN ANTONIO AV	MONTE VERDE ST	2	R	912	30	27360	S	6/12/2018	60
10THAV	020	10TH AV	MONTE VERDE ST	DOLORES ST	2	R	461	26	11986	S	6/15/2018	78
10THAV	030	10TH AV	DOLORES ST	JUNIPERO AV	2	C	729	26	18954	S	6/12/2018	55
10THAV	040	10TH AV	JUNIPERO AV	TORRES ST	2	R	234	16	3744	A	6/12/2018	63
11THAV	010	11TH AV	SAN ANTONIO AV	MONTE VERDE ST	2	R	912	25	22800	S	6/12/2018	60
11THAV	020	11TH AV	MONTE VERDE ST	SAN CARLOS ST	2	R	676	23	15548	A	6/12/2018	98
11THAV	030	11TH AV	SAN CARLOS ST	JUNIPERO AV	2	R	446	23	10258	S	6/12/2018	81
11THAV	040	11TH AV	JUNIPERO AV	EAST END	2	R	658	18	11844	A	6/12/2018	55
12THAV	012	12TH AV	SAN ANTONIO AV	CAMINO REAL	2	R	485	30	14550	S	6/15/2018	72
12THAV	015	12TH AV	CAMINO REAL	MONTE VERDE ST	2	R	480	30	14400	S	6/15/2018	63
12THAV	020	12TH AV	MONTE VERDE ST	SAN CARLOS ST	2	R	683	30	20490	A	6/29/2018	100
12THAV	030	12TH AV	SAN CARLOS ST	JUNIPERO AV	2	R	445	21	9345	O	6/12/2018	97
13THAV	010A	13TH AV	SCENIC RD	CAMINO REAL	2	R	550	26	14300	A	6/12/2018	97
13THAV	010B	13TH AV	CAMINO REAL	MONTE VERDE ST	2	R	332	26	8632	A	6/29/2018	100
13THAV	020	13TH AV	MONTE VERDE ST	48 FT W/O SAN CARLOS ST	2	R	648	23	14904	S	6/12/2018	82
13THAV	030	13TH AV	48 FT W/O SAN CARLOS ST	JUNIPERO AV	2	A	630	22	13860	O	6/12/2018	69
1STAV	010	1ST AV	LINCOLN ST	MISSION ST	2	R	705	20	14100	A	6/29/2018	100
1STAV	020	1ST AV	MISSION ST	JUNIPERO AV	2	R	239	16	3824	S	6/13/2018	81
1STAV	030	1ST AV	JUNIPERO AV (WEST END)	SANTA RITA ST	2	R	633	23	14559	S	6/13/2018	44
1STAV	040A	1ST AV	SANTA RITA ST	CARPENTER ST	2	R	500	23	11500	S	8/22/2018	33
1STAV	040B	1ST AV	CARPENTER ST	LOBOS ST	2	R	233	23	5359	A	6/13/2018	96
1STAV	040C	1ST AV	LOBOS ST	MONTEREY ST	2	R	179	23	4117	S	8/22/2018	14
2NDAV	010	2ND AV	SAN ANTONIO AV	N CAMINO REAL	2	R	484	23	11132	S	6/13/2018	83
2NDAV	020	2ND AV	N CAMINO REAL	N. CASANOVA STREET	2	R	774	23	17802	A	6/14/2018	85
2NDAV	030	2ND AV	N. CASANOVA STREET	MONTE VERDE STREET	2	R	382	18	6876	A	6/14/2018	84
2NDAV	040A	2ND AV	MID BLK W/O LINCOLN ST	LINCOLN ST	2	R	113	20	2260	A	6/14/2018	49
2NDAV	040B	2ND AV	LINCOLN ST	MISSION ST	2	R	749	20	14980	O	6/29/2018	100
2NDAV	050	2ND AV	JUNIPERO AV	SANTA FE ST	2	R	461	23	10603	S	8/22/2018	54
2NDAV	060	2ND AV	SANTA FE ST	CARPENTER ST	2	A	731	32	23392	A	6/14/2018	97
2NDAV	070A	2ND AV	CARPENTER ST	LOBOS ST	2	R	233	23	5359	A	6/14/2018	95
2NDAV	070B	2ND AV	LOBOS ST	MONTEREY ST	2	R	200	23	4600	S	6/14/2018	72
3RDAV	010A	3RD AV	MONTE VERDE ST	LINCOLN ST	2	R	250	23	5750	A	6/13/2018	73
3RDAV	010B	3RD AV	LINCOLN ST	DOLORES ST	2	R	250	23	5750	A	6/13/2018	96
3RDAV	020	3RD AV	MISSION ST	JUNIPERO AV	2	R	224	28	6272	S	6/13/2018	78
3RDAV	030	3RD AV	JUNIPERO AV	TORRES ST	2	A	245	27	6615	O	6/13/2018	97
3RDAV	040	3RD AV	TORRES ST	SANTA FE ST	2	A	269	27	7263	O	6/13/2018	97
3RDAV	050B	3RD AV	GUADALUPE ST	CARPENTER ST	2	R	246	20	4920	S	8/22/2018	65
3RDAV	050C	3RD AV	SANTA FE ST	SANTA RITA ST	2	R	236	20	4720	S	8/22/2018	96
3RDAV	050D	3RD AV	SANTA RITA ST	GUADALUPE ST	2	R	259	20	5180	A	6/13/2018	96
3RDAV	060A	3RD AV	CARPENTER ST	W END	2	R	236	24	5664	S	6/13/2018	54

City of Carmel-by-the-Sea
PCI Listing Report Sorted by Street Name

Street ID	Section ID	Street Name	Begin Location	End Location	Lanes	FC	Length (ft)	Width (ft)	Area (sf)	Surface Type	PCI Date	PCI
3RDAV	060B	3RD AV	LOBOS ST	MONTEREY ST	2	R	202	24	4848	O	6/13/2018	96
4THAV	010	4TH AV	SAN ANTONIO AV	CASANOVA ST	2	R	874	21	18354	S	6/13/2018	55
4THAV	020	4TH AV	CASANOVA ST	MID BLK E/O MONTE VERDE ST	2	R	382	21	8022	S	6/13/2018	57
4THAV	030	4TH AV	LINCOLN ST	DOLORES ST	2	C	251	27	6777	S	6/13/2018	88
4THAV	040	4TH AV	DOLORES ST	JUNIPERO AV	2	C	681	30	20430	S	6/13/2018	56
4THAV	050	4TH AV	JUNIPERO AV	TORRES ST	2	C	214	21	4494	S	6/13/2018	90
4THAV	060A	4TH AV	TORRES ST	SANTA FE ST	2	R	243	21	5103	A	6/13/2018	96
4THAV	060B	4TH AV	SANTA FE ST	SANTA RITA ST	2	R	253	21	5313	A	6/13/2018	91
4THAV	060C	4TH AV	SANTA RITA ST	GUADALUPE ST	2	R	188	21	3948	S	6/13/2018	85
4THAV	070A	4TH AV	GUADALUPE ST	CARPENTER ST	2	R	248	21	5208	A	6/13/2018	42
4THAV	070B	4TH AV	CARPENTER ST	CITY LIMITS	2	R	454	21	9534	A	6/13/2018	96
5THAV	011	5TH AV	MONTE VERDE ST	DOLORES ST	2	C	400	31	12400	A	6/22/2018	100
5THAV	012	5TH AV	DOLORES ST	SAN CARLOS ST	1	C	230	31	7130	A	6/13/2018	95
5THAV	020A	5TH AV	SAN CARLOS ST	MISSION ST	2	C	215	29	6235	S	8/22/2018	51
5THAV	020B	5TH AV	MISSION ST	JUNIPERO AV	2	C	215	22	4730	A	6/13/2018	96
5THAV	025	5TH AV	JUNIPERO AV	TORRES ST	2	C	219	37	8103	A	6/13/2018	73
5THAV	030	5TH AV	TORRES ST	GUADALUPE ST	2	R	685	20	13700	S	6/13/2018	43
5THAV	040A	5TH AV	GUADALUPE ST	CARPENTER ST	2	R	254	23	5842	A	6/18/2018	52
5THAV	040B	5TH AV	CARPENTER ST	CITY LIMITS	2	R	400	23	9200	A	6/18/2018	96
6THAV	010	6TH AV	MONTE VERDE ST	LINCOLN ST	2	O	215	33	7095	A	6/13/2018	77
6THAV	020A	6TH AV	LINCOLN ST	DOLORES ST	2	O	245	33	8085	O	6/29/2018	100
6THAV	020B	6TH AV	DOLORES ST	MISSION ST	2	O	507	33	16731	A	8/22/2018	86
6THAV	025	6TH AV	MISSION ST	JUNIPERO AV	2	O	216	33	7128	A	6/13/2018	70
6THAV	030	6TH AV	JUNIPERO AV	TORRES ST	2	C	218	33	7194	A	6/13/2018	60
6THAV	040	6TH AV	TORRES ST	GUADALUPE ST	2	R	705	20	14100	S	6/13/2018	51
6THAV	050A	6TH AV	GUADALUPE ST	CARPENTER ST	2	R	247	20	4940	A	6/13/2018	64
6THAV	050B	6TH AV	CARPENTER ST	EAST END	2	R	282	20	5640	A	6/13/2018	96
7THAV	010	7TH AV	SAN ANTONIO AV	MONTE VERDE ST	2	R	887	23	20401	S	6/12/2018	82
7THAV	020	7TH AV	MONTE VERDE ST	DOLORES ST	2	O	482	33	15906	S	6/12/2018	67
7THAV	030	7TH AV	DOLORES ST	SAN CARLOS ST	2	O	222	33	7326	P	8/22/2018	69
7THAV	040	7TH AV	SAN CARLOS ST	JUNIPERO AV	2	O	425	33	14025	A	6/12/2018	77
7THAV	050A	7TH AV	GUADALUPE ST	FOREST ST	2	R	259	16	4144	O	6/12/2018	96
7THAV	050B	7TH AV	FOREST ST	CITY LIMITS	2	R	224	16	3584	S	8/22/2018	41
8THAV	010	8TH AV	SCENIC RD	SAN ANTONIO AV	2	C	220	33	7260	A	6/29/2018	100
8THAV	020A	8TH AV	SAN ANTONIO AV	CARMELO ST	2	R	225	33	7425	A	6/29/2018	100
8THAV	020B	8TH AV	CARMELO ST	CASANOVA ST	2	R	425	33	14025	A	6/12/2018	96
8THAV	020C	8TH AV	CASANOVA ST	MONTE VERDE ST	2	R	225	33	7425	S	8/22/2018	63
8THAV	030	8TH AV	MONTE VERDE ST	SAN CARLOS ST	2	O	640	33	21120	S	6/12/2018	70
8THAV	035	8TH AV	SAN CARLOS ST	JUNIPERO AV	2	A	529	33	17457	A	6/12/2018	65
8THAV	040	8TH AV	JUNIPERO AV	MOUNTAIN VIEW AV	2	R	877	23	20171	A	6/12/2018	98

City of Carmel-by-the-Sea
PCI Listing Report Sorted by Street Name

Street ID	Section ID	Street Name	Begin Location	End Location	Lanes	FC	Length (ft)	Width (ft)	Area (sf)	Surface Type	PCI Date	PCI
8THAV	050	8TH AV	FOREST RD	TURN AROUND	2	R	135	16	2160	S	6/12/2018	100
9THAV	010	9TH AV	SAN ANTONIO AV	MONTE VERDE ST	2	R	912	26	23712	S	8/22/2018	73
9THAV	020	9TH AV	MONTE VERDE ST	DOLORES ST	2	R	447	32	14304	S	6/12/2018	58
9THAV	030	9TH AV	DOLORES ST	SAN CARLOS ST	2	C	216	30	6480	S	6/12/2018	70
9THAV	040	9TH AV	MID BLK W\O TORRES ST	EAST END	2	R	279	20	5580	S	6/12/2018	79
ALTA AV	010	ALTA AV	SAN CARLOS ST	JUNIPERO AV	2	R	530	23	12190	S	8/22/2018	67
CMDMNT	010	CAMINO DEL MONTE	CITY LIMIT	120' S/O JUNIPERO AV	2	A	260	23	5980	O	8/22/2018	54
CMDMNT	020	CAMINO DEL MONTE	SAN CARLOS ST	120' S/O JUNIPERO AV	2	A	742	30	22260	A	6/15/2018	94
CMNRL	010	CAMINO REAL	4TH AV	OCEAN AV	2	R	681	23	15663	S	6/14/2018	75
CMNRL	020	CAMINO REAL	OCEAN AV	9TH AV	2	R	905	25	22625	S	6/14/2018	84
CMNRL	030	CAMINO REAL	9TH AV	12TH AV	2	R	1243	25	31075	S	6/14/2018	85
CMNRL	040	CAMINO REAL	12TH AV	SANTA LUCIA AV	2	R	1050	25	26250	S	6/14/2018	75
CMELO	010	CARMELO AV	4TH AV	OCEAN AV	2	R	605	23	13915	S	6/14/2018	75
CMELO	020	CARMELO AV	OCEAN AV	9TH AV	2	R	1365	23	31395	S	6/14/2018	60
CMELO	030	CARMELO AV	9TH AV	12TH AV	2	R	1362	25	34050	S	6/14/2018	50
CMELO	040	CARMELO AV	12TH AV	SANTA LUCIA AV	2	R	825	25	20625	S	8/22/2018	60
CRPNTR	011	CARPENTER ST	CITY LIMITS	2ND AVE	2	A	645	30	19350	C	6/15/2018	97
CRPNTR	012	CARPENTER ST	2ND AVE	3RD AVE	2	C	460	30	13800	C	6/15/2018	97
CRPNTR	020	CARPENTER ST	3RD AV	OCEAN AV	2	A	1528	30	45840	C	6/15/2018	97
CASNVA	010	CASANOVA ST	4TH AV	OCEAN AV	2	R	835	23	19205	S	8/22/2018	89
CASNVA	020	CASANOVA ST	OCEAN AV	9TH AV	2	R	1389	25	34725	S	6/14/2018	72
CASNVA	030	CASANOVA ST	9TH AV	12TH AV	2	R	1243	25	31075	S	6/14/2018	66
CASNVA	040	CASANOVA ST	12TH AV	SANTA LUCIA AV	2	R	1146	23	26358	S	6/14/2018	87
CRESPI	010	CRESPI AV	MOUNTAIN VIEW AV	FLANDERS WAY	2	R	695	18	12510	A	6/16/2018	97
DELMAR	010	DEL MAR AV	OCEAN AV	TURN AROUND	2	A	141	81	11421	A	6/15/2018	96
DLORES	010	DOLORES ST	VISTA AV	2ND AV	2	R	929	30	27870	A	6/15/2018	97
DLORES	020	DOLORES ST	2ND AV	4TH AV	2	R	882	23	20286	A	6/15/2018	95
DLORES	031	DOLORES ST	4TH AV	5TH AV	2	O	474	30	14220	A	6/15/2018	71
DLORES	032	DOLORES ST	5TH AV	OCEAN AV	2	O	536	30	16080	O	6/15/2018	96
DLORES	040A	DOLORES ST	OCEAN AV	7TH AV	2	O	482	30	14460	P	6/15/2018	80
DLORES	040B	DOLORES ST	7TH	8TH AV	2	O	381	30	11430	O	6/15/2018	77
DLORES	050	DOLORES ST	8TH AV	10TH AV	2	C	915	23	21045	S	6/15/2018	76
DLORES	060	DOLORES ST	10TH AV	12TH AV	2	R	789	23	18147	S	6/15/2018	79
DLORES	070	DOLORES ST	12TH AV	SANTA LUCIA AV	2	R	1340	23	30820	S	6/15/2018	60
DLORES	080	DOLORES ST	SANTA LUCIA AV	FRANCISCAN WY	2	R	327	25	8175	A	6/29/2018	100
DLORES	090	DOLORES ST	FRANCISCAN WY	CITY LIMIT	2	R	197	25	4925	A	6/15/2018	94
ESCOLL	010	ESCOLLE WAY	PERRY NEWBERRY WAY	TURN AROUND	2	R	147	15	2205	A	6/15/2018	97
FLANDR	010	FLANDERS WAY	VIZCAINO	CRESPI AV	2	R	216	23	4968	A	6/16/2018	97
FOREST	010	FOREST RD	MOUNTAIN VIEW	7TH AVE	2	R	536	23	12328	A	6/16/2018	82
FOREST	020	FOREST RD	7TH AVE.	OCEAN AVE	2	R	600	23	13800	A	6/16/2018	97

City of Carmel-by-the-Sea
PCI Listing Report Sorted by Street Name

Street ID	Section ID	Street Name	Begin Location	End Location	Lanes	FC	Length (ft)	Width (ft)	Area (sf)	Surface Type	PCI Date	PCI
FRANCN	010	FRANCISCAN WAY	DOLORES ST	SANTA LUCIA AV	2	R	912	21	19152	S	6/16/2018	68
FRASER	010	FRASER WAY	CAMINO REAL	CASANOVA ST	2	R	240	16	3840	S	6/14/2018	52
GUADLP	010	GUADALUPE ST	CITY LIMITS	2ND AV	2	R	632	27	17064	S	8/22/2018	45
GUADLP	015	GUADALUPE ST	2ND AV	3RD AV	2	R	455	25	11375	A	6/16/2018	96
GUADLP	020A	GUADALUPE ST	3RD AVE	4TH AVE	2	R	436	26	11336	A	6/16/2018	96
GUADLP	020B	GUADALUPE ST	4TH AVE	5TH AVE	2	R	467	26	12142	O	6/16/2018	96
GUADLP	030A	GUADALUPE ST	5TH AV	6TH AV	2	R	440	20	8800	O	6/16/2018	95
GUADLP	030B	GUADALUPE ST	6TH AV	OCEAN AV	2	R	175	16	2800	A	6/16/2018	95
GUADLP	040A	GUADALUPE ST	OCEAN AV	7TH AV	2	R	492	23	11316	A	6/16/2018	97
GUADLP	040B	GUADALUPE ST	7TH AV	MOUNTAIN VIEW AV	2	R	433	23	9959	O	6/16/2018	96
JUNPRO	010	JUNIPERO AV	ALTA ST	CAMINO DEL MONTE	2	R	1115	23	25645	S	6/15/2018	74
JUNPRO	030	JUNIPERO AV	2ND AV	3RD AV	2	C	475	28	13300	A	6/16/2018	89
JUNPRO	040	JUNIPERO AV	3RD AV	4TH AV	4	A	452	58	26216	O	6/16/2018	65
JUNPRO	050	JUNIPERO AV	4TH AV	OCEAN AV	4	A	1075	58	62350	A	6/16/2018	84
JUNPRO	060	JUNIPERO AV	OCEAN AV	8TH AV	2	A	896	58	51968	A	6/16/2018	96
JUNPRO	070	JUNIPERO AV	8TH AV	10TH AV	2	C	930	42	39060	O	6/22/2018	70
JUNPRO	080	JUNIPERO AV	10TH AV	RIO RD	2	C	1665	30	49950	A	6/16/2018	71
JUNPRO	20	JUNIPERO AV	CAMINO DEL MONTE	2ND AVE	2	C	146	37	5402	A	6/16/2018	71
LADERA	010	LADERA DRIVE	RIO RD	TURN AROUND	2	R	1033	23	23759	S	6/12/2018	35
LAUSEN	010	LAUSEN DRIVE	RIO RD	SHARP RD BEND/CITY LIM	2	C	538	30	16140	A	6/12/2018	95
LINCOL	010	LINCOLN ST	1ST AV	2ND AV	2	R	553	23	12719	S	8/22/2018	69
LINCOL	015A	LINCOLN ST	2BD AV	3RD AV	2	R	445	23	10235	S	8/22/2018	73
LINCOL	015B	LINCOLN ST	3RD AV	MID BLK S/O 3RD AV	2	R	152	23	3496	A	6/29/2018	100
LINCOL	021	LINCOLN ST	4TH AVE	5TH AVE	2	O	482	25	12050	O	6/16/2018	96
LINCOL	022	LINCOLN ST	5TH AVE	OCEAN AVE	2	O	611	30	18330	A	6/16/2018	89
LINCOL	030	LINCOLN ST	OCEAN AV	8TH AV	2	O	909	30	27270	A	6/16/2018	97
LINCOL	040	LINCOLN ST	8TH AV	9TH AV	2	R	458	30	13740	S	6/16/2018	77
LINCOL	050	LINCOLN ST	9TH AV	12TH AV	2	C	1245	30	37350	S	6/16/2018	80
LINCOL	060	LINCOLN ST	12TH AV	SANTA LUCIA AV	2	R	1258	25	31450	S	6/16/2018	84
LOBOS	010A	LOBOS ST	CITY LIMITS	1ST AV	2	R	256	23	5888	S	6/13/2018	42
LOBOS	010B	LOBOS ST	1ST AV	2ND AV	2	R	389	23	8947	O	6/13/2018	95
LOBOS	020	LOBOS ST	2ND AV	4TH AV	2	R	897	24	21528	A	6/13/2018	92
LOPEZ	010	LOPEZ AV	NORTH END	4TH AV	2	R	695	23	15985	S	6/14/2018	73
MISION	010	MISSION ST	ALTA AV	2ND AV	2	R	1368	23	31464	S	6/15/2018	73
MISION	020	MISSION ST	3RD AV	4TH AV	2	R	415	32	13280	A	6/16/2018	96
MISION	030A	MISSION ST	4TH AV	6TH AV	2	O	825	32	26400	A	6/16/2018	95
MISION	030B	MISSION ST	6TH AV	OCEAN AV	2	O	143	32	4576	O	6/16/2018	97
MISION	040	MISSION ST	OCEAN AV	8TH AV	2	O	792	32	25344	A	6/16/2018	96
MISION	050	MISSION ST	8TH AV	10TH AV	2	C	854	32	27328	S	8/22/2018	76
MISION	060	MISSION ST	10TH AV	13TH AV	2	R	1338	23	30774	S	6/16/2018	66

City of Carmel-by-the-Sea
PCI Listing Report Sorted by Street Name

Street ID	Section ID	Street Name	Begin Location	End Location	Lanes	FC	Length (ft)	Width (ft)	Area (sf)	Surface Type	PCI Date	PCI
MISION	070	MISSION ST	13TH AV	SANTA LUCIA AV	2	R	587	24	14088	S	6/16/2018	83
MNTVRD	010	MONTE VERDE ST	2ND AV	4TH AV	2	R	915	20	18300	A	6/14/2018	93
MNTVRD	020	MONTE VERDE ST	4TH AV	OCEAN AV	2	O	1060	25	26500	S	8/22/2018	67
MNTVRD	030	MONTE VERDE ST	OCEAN AV	8TH AV	2	O	912	30	27360	S	6/14/2018	44
MNTVRD	040	MONTE VERDE ST	8TH AV	9TH AV	2	R	435	25	10875	S	6/14/2018	78
MNTVRD	050	MONTE VERDE ST	9TH AV	12TH AV	2	R	1253	25	31325	S	6/14/2018	83
MNTVRD	060	MONTE VERDE ST	12TH AV	125 FT S/O SANTA LUCIA AV	2	R	1332	23	30636	S	6/14/2018	73
MONTRY	010	MONTEREY ST	NORTH END	2ND AV	2	R	650	20	13000	A	6/15/2018	86
MONTRY	020	MONTEREY ST	2ND AV	SOUTH END	2	R	681	20	13620	A	6/15/2018	94
MTVIEW	010A	MOUNTAIN VIEW AV	JUNIPERO AV	TORRES ST	2	R	200	23	4600	S	6/16/2018	84
MTVIEW	010B	MOUNTAIN VIEW AV	TORRES ST	100' EAST OF TORRES ST	2	R	100	23	2300	O	6/29/2018	100
MTVIEW	010C	MOUNTAIN VIEW AV	100' EAST OF TORRES ST	SANTA FE STREET	2	R	150	23	3450	A	6/29/2018	100
MTVIEW	020	MOUNTAIN VIEW AV	SANTA FE ST	FOREST RD	2	R	980	23	22540	A	6/29/2018	100
NCMNRL	010	N CAMINO REAL	2ND AV	4TH AV	2	R	855	23	19665	S	6/16/2018	72
NCMELO	010	N CARMELO AV	2ND AV	4TH AV	2	R	745	25	18625	S	6/16/2018	72
NCASNV	010	N CASANOVA ST	2ND AV	SOUTN END	2	R	750	23	17250	S	6/15/2018	91
NSANAN	010	N SAN ANTONIO AV	2ND AV	4TH AV	2	A	726	23	16698	S	6/15/2018	53
OAKNOL	010	OAK KNOLL WAY	FOREST RD	TURN AROUND	2	R	250	16	4000	A	6/29/2018	100
OCEAN	010	OCEAN AV	DEL MAR AV	SAN ANTONIO AV	2	A	495	80	39600	A	8/22/2018	99
OCEAN	020	OCEAN AV	SAN ANTONIO AV	MONTE VERDE ST	2	A	1000	25	25000	P	8/22/2018	64
OCEAN	030	OCEAN AV	MONTE VERDE ST	JUNIPERO AV	4	A	1380	64	88320	A	9/6/2018	100
OCEAN	040	OCEAN AV	JUNIPERO AV	CARPENTER ST	2	A	1262	30	37860	P	6/15/2018	98
OCEAN	050	OCEAN AV	CARPENTER ST	CITY LIMITS	2	A	341	35	11935	A	6/15/2018	74
PALOU	010	PALOU AV	NORTH END	MONTE VERDE ST	2	R	761	18	13698	S	6/15/2018	73
PRYNBY	010	PERRY NEWBERRY WY	4TH AV	6TH AV	2	R	876	23	20148	A	6/15/2018	97
PNRIDG	010	PINE RIDGE WAY	FOREST RD	TURN AROUND	2	R	141	23	3243	A	6/16/2018	71
RDGWOD	010	RIDGEWOOD RD	JUNIPERO AV	RIO RD	2	R	1117	23	25691	S	6/15/2018	71
RIORD	010	RIO RD	JUNIPERO AV	SANTA LUCIA AV	2	A	305	30	9150	O	6/29/2018	100
RIORD	020	RIO RD	SANTA LUCIA AV	SOUTH CITY LIMIT	2	A	1310	52	68120	A	6/12/2018	45
SANAN	010	SAN ANTONIO AV	4TH AV	OCEAN AV	2	A	576	28	16128	S	8/22/2018	20
SANAN	015	SAN ANTONIO AV	OCEAN AV	8TH AV	2	C	908	28	25424	S	6/14/2018	39
SANAN	020	SAN ANTONIO AV	8TH AV	11TH AV	2	C	1358	22	29876	S	6/14/2018	62
SANAN	030	SAN ANTONIO AV	11TH AV	SAN LUCIA AV	2	C	1270	22	27940	A	6/14/2018	97
SANCAR	010	SAN CARLOS ST	ALTA AV	2ND AV	2	R	1362	23	31326	S	6/15/2018	89
SANCAR	020	SAN CARLOS ST	N END	CAMINO DEL MONTE	2	R	447	20	8940	A	6/15/2018	96
SANCAR	030	SAN CARLOS ST	CAMINO DEL MONTE	5TH AV	2	A	770	42	32340	O	6/15/2018	92
SANCAR	041	SAN CARLOS ST	6TH AVE	OCEAN	2	A	152	40	6080	P	6/15/2018	88
SANCAR	042	SAN CARLOS ST	6TH AVE	5TH AVE	2	A	475	36	17100	P	6/15/2018	67
SANCAR	050	SAN CARLOS ST	OCEAN AV	8TH AV	2	A	860	36	30960	P	6/15/2018	77
SANCAR	060	SAN CARLOS ST	8TH AV	11TH AV	2	A	1415	42	59430	A	6/15/2018	83

City of Carmel-by-the-Sea
PCI Listing Report Sorted by Street Name

Street ID	Section ID	Street Name	Begin Location	End Location	Lanes	FC	Length (ft)	Width (ft)	Area (sf)	Surface Type	PCI Date	PCI
SANCAR	070	SAN CARLOS ST	11TH AV	13TH AV	2	A	945	42	39690	A	6/15/2018	92
SANCAR	080	SAN CARLOS ST	13TH AV	SANTA LUCIA AV	2	C	707	23	16261	A	6/29/2018	100
SANTFE	012A	SANTA FE ST	3RD AVE	2ND AVE	2	R	446	23	10258	A	6/15/2018	97
SANTFE	012B	SANTA FE ST	2ND AVE	CITY LIMIT	2	R	715	23	16445	A	6/15/2018	94
SANLUC	010	SANTA LUCIA AV	SCENIC RD	CAMINO REAL	2	C	914	21	19194	A	6/12/2018	65
SANLUC	020	SANTA LUCIA AV	CAMINO REAL	DOLORES ST	2	C	1092	21	22932	A	6/12/2018	66
SANLUC	030	SANTA LUCIA AV	DOLORES ST	RIO RD	2	C	866	25	21650	A	6/12/2018	58
SANRIT	010A	SANTA RITA ST	CITY LIMITS	2ND AV	2	R	590	30	17700	O	6/16/2018	91
SANRIT	010B	SANTA RITA ST	2ND AV	3RD AV	2	R	456	30	13680	A	6/16/2018	94
SANRIT	020	SANTA RITA ST	3RD AV	5TH AV	2	R	922	30	27660	A	6/16/2018	96
SANRIT	030	SANTA RITA ST	5TH AV	OCEAN AV	2	R	620	25	15500	A	6/16/2018	94
SANRIT	040	SANTA RITA ST	OCEAN AV	MOUNTAIN VIEW AV	2	R	650	20	13000	A	6/16/2018	93
SANTFE	030A	SANTE FE ST	3RD AV	4TH AV	2	R	450	23	10350	A	6/16/2018	94
SANTFE	030B	SANTE FE ST	4TH AV	5TH AV	2	R	456	23	10488	S	6/16/2018	60
SANTFE	040	SANTE FE ST	5TH AV	6TH AV	2	R	449	23	10327	S	6/16/2018	42
SANTFE	050	SANTE FE ST	OCEAN AV	8TH AV	2	R	906	22	19932	O	6/16/2018	90
SANTFE	060	SANTE FE ST	8TH AV	SOUTH END	2	R	408	18	7344	A	6/16/2018	97
SCENIC	010	SCENIC ROAD	OCEAN AV	8TH AV	2	A	865	25	21625	A	6/16/2018	90
SCENIC	020	SCENIC ROAD	8TH AV	BLK A3 S/END	1	A	1420	23	32660	O	6/29/2018	100
SCENIC	030	SCENIC ROAD	BLK A3 S/END	SANTA LUCIA AV	2	A	1035	30	31050	A	6/15/2018	84
SCENIC	040	SCENIC ROAD	SANTA LUCIA AV	CITY LIMIT	2	C	832	30	24960	A	6/15/2018	85
STRLNG	010	STERLING WAY	PERRY NEWBERRY WAY	TURN AROUND	2	R	145	25	3625	A	6/15/2018	97
TORRES	010A	TORRES ST	CITY LIMITS	2ND AVE	2	R	703	18	12654	A	6/15/2018	88
TORRES	010B	TORRES ST	2ND AVE	3RD AVE	2	R	387	18	6966	S	6/15/2018	71
TORRES	020	TORRES ST	3RD AV	4TH AV	1	C	428	30	12840	S	6/15/2018	72
TORRES	030A	TORRES ST	4TH AV	5TH AV	2	R	449	20	8980	A	6/15/2018	95
TORRES	030B	TORRES ST	5TH AV	OCEAN AV	2	R	620	20	12400	S	6/15/2018	70
TORRES	040	TORRES ST	OCEAN AV	8TH AV	2	R	875	23	20125	O	6/15/2018	97
TORRES	050	TORRES ST	8TH AV	285 FT N/O 11TH AV	2	R	1270	20	25400	A	6/15/2018	98
TORRES	060	TORRES ST	285 FT N/O 11TH AV	11TH AV	2	R	285	16	4560	O	6/15/2018	98
VALLEY	010	VALLEY WAY	N CITY LIMITS	E CITY LIMITS	2	R	365	24	8760	A	6/15/2018	74
VISTA	010	VISTA AV	DOLORES ST	JUNIPERO AV	2	R	708	20	14160	S	8/22/2018	53
VIZCAN	010	VIZCAINO	MOUNTAIN VIEW AV	FLANDERS WAY	2	R	762	18	13716	A	6/16/2018	95

**Section Description Inventory
Sorted by Descending PCI**

City of Carmel-by-the-Sea
PCI Listing Report Sorted by Descending PCI

Street ID	Section ID	Street Name	Begin Location	End Location	Lanes	FC	Length (ft)	Width (ft)	Area (sf)	Surface Type	PCI Date	PCI
12THAV	020	12TH AV	MONTE VERDE ST	SAN CARLOS ST	2	R	683	30	20490	A	6/29/2018	100
13THAV	010B	13TH AV	CAMINO REAL	MONTE VERDE ST	2	R	332	26	8632	A	6/29/2018	100
1STAV	010	1ST AV	LINCOLN ST	MISSION ST	2	R	705	20	14100	A	6/29/2018	100
2NDAV	040B	2ND AV	LINCOLN ST	MISSION ST	2	R	749	20	14980	O	6/29/2018	100
5THAV	011	5TH AV	MONTE VERDE ST	DOLORES ST	2	C	400	31	12400	A	6/22/2018	100
6THAV	020A	6TH AV	LINCOLN ST	DOLORES ST	2	O	245	33	8085	O	6/29/2018	100
8THAV	010	8TH AV	SCENIC RD	SAN ANTONIO AV	2	C	220	33	7260	A	6/29/2018	100
8THAV	020A	8TH AV	SAN ANTONIO AV	CARMELO ST	2	R	225	33	7425	A	6/29/2018	100
8THAV	050	8TH AV	FOREST RD	TURN AROUND	2	R	135	16	2160	S	6/12/2018	100
DLORES	080	DOLORES ST	SANTA LUCIA AV	FRANCISCAN WY	2	R	327	25	8175	A	6/29/2018	100
LINCOL	015B	LINCOLN ST	3RD AV	MID BLK S/O 3RD AV	2	R	152	23	3496	A	6/29/2018	100
MTVIEW	010B	MOUNTAIN VIEW AV	TORRES ST	100' EAST OF TORRES ST	2	R	100	23	2300	O	6/29/2018	100
MTVIEW	010C	MOUNTAIN VIEW AV	100' EAST OF TORRES ST	SANTA FE STREET	2	R	150	23	3450	A	6/29/2018	100
MTVIEW	020	MOUNTAIN VIEW AV	SANTA FE ST	FOREST RD	2	R	980	23	22540	A	6/29/2018	100
OAKNOL	010	OAK KNOLL WAY	FOREST RD	TURN AROUND	2	R	250	16	4000	A	6/29/2018	100
OCEAN	030	OCEAN AV	MONTE VERDE ST	JUNIPERO AV	4	A	1380	64	88320	A	9/6/2018	100
RIORD	010	RIO RD	JUNIPERO AV	SANTA LUCIA AV	2	A	305	30	9150	O	6/29/2018	100
SANCAR	080	SAN CARLOS ST	13TH AV	SANTA LUCIA AV	2	C	707	23	16261	A	6/29/2018	100
SCENIC	020	SCENIC ROAD	8TH AV	BLK A3 S/END	1	A	1420	23	32660	O	6/29/2018	100
OCEAN	010	OCEAN AV	DEL MAR AV	SAN ANTONIO AV	2	A	495	80	39600	A	8/22/2018	99
11THAV	020	11TH AV	MONTE VERDE ST	SAN CARLOS ST	2	R	676	23	15548	A	6/12/2018	98
8THAV	040	8TH AV	JUNIPERO AV	MOUNTAIN VIEW AV	2	R	877	23	20171	A	6/12/2018	98
OCEAN	040	OCEAN AV	JUNIPERO AV	CARPENTER ST	2	A	1262	30	37860	P	6/15/2018	98
TORRES	050	TORRES ST	8TH AV	285 FT N/O 11TH AV	2	R	1270	20	25400	A	6/15/2018	98
TORRES	060	TORRES ST	285 FT N/O 11TH AV	11TH AV	2	R	285	16	4560	O	6/15/2018	98
12THAV	030	12TH AV	SAN CARLOS ST	JUNIPERO AV	2	R	445	21	9345	O	6/12/2018	97
13THAV	010A	13TH AV	SCENIC RD	CAMINO REAL	2	R	550	26	14300	A	6/12/2018	97
2NDAV	060	2ND AV	SANTA FE ST	CARPENTER ST	2	A	731	32	23392	A	6/14/2018	97
3RDAV	030	3RD AV	JUNIPERO AV	TORRES ST	2	A	245	27	6615	O	6/13/2018	97
3RDAV	040	3RD AV	TORRES ST	SANTA FE ST	2	A	269	27	7263	O	6/13/2018	97
CRPNTR	011	CARPENTER ST	CITY LIMITS	2ND AVE	2	A	645	30	19350	C	6/15/2018	97
CRPNTR	020	CARPENTER ST	3RD AV	OCEAN AV	2	A	1528	30	45840	C	6/15/2018	97
CRPNTR	012	CARPENTER ST	2ND AVE	3RD AVE	2	C	460	30	13800	C	6/15/2018	97
CRESPI	010	CRESPI AV	MOUNTAIN VIEW AV	FLANDERS WAY	2	R	695	18	12510	A	6/16/2018	97
DLORES	010	DOLORES ST	VISTA AV	2ND AV	2	R	929	30	27870	A	6/15/2018	97
ESCOLL	010	ESCOLLE WAY	PERRY NEWBERRY WAY	TURN AROUND	2	R	147	15	2205	A	6/15/2018	97
FLANDR	010	FLANDERS WAY	VIZCAINO	CRESPI AV	2	R	216	23	4968	A	6/16/2018	97
FOREST	020	FOREST RD	7TH AVE.	OCEAN AVE	2	R	600	23	13800	A	6/16/2018	97
GUADLP	040A	GUADALUPE ST	OCEAN AV	7TH AV	2	R	492	23	11316	A	6/16/2018	97
LINCOL	030	LINCOLN ST	OCEAN AV	8TH AV	2	O	909	30	27270	A	6/16/2018	97

City of Carmel-by-the-Sea
PCI Listing Report Sorted by Descending PCI

Street ID	Section ID	Street Name	Begin Location	End Location	Lanes	FC	Length (ft)	Width (ft)	Area (sf)	Surface Type	PCI Date	PCI
MISION	030B	MISSION ST	6TH AV	OCEAN AV	2	O	143	32	4576	O	6/16/2018	97
PRYNBY	010	PERRY NEWBERRY WY	4TH AV	6TH AV	2	R	876	23	20148	A	6/15/2018	97
SANAN	030	SAN ANTONIO AV	11TH AV	SAN LUCIA AV	2	C	1270	22	27940	A	6/14/2018	97
SANTFE	012A	SANTA FE ST	3RD AVE	2ND AVE	2	R	446	23	10258	A	6/15/2018	97
SANTFE	060	SANTE FE ST	8TH AV	SOUTH END	2	R	408	18	7344	A	6/16/2018	97
STRLNG	010	STERLING WAY	PERRY NEWBERRY WAY	TURN AROUND	2	R	145	25	3625	A	6/15/2018	97
TORRES	040	TORRES ST	OCEAN AV	8TH AV	2	R	875	23	20125	O	6/15/2018	97
1STAV	040B	1ST AV	CARPENTER ST	LOBOS ST	2	R	233	23	5359	A	6/13/2018	96
3RDAV	010B	3RD AV	LINCOLN ST	DOLORES ST	2	R	250	23	5750	A	6/13/2018	96
3RDAV	050C	3RD AV	SANTA FE ST	SANTA RITA ST	2	R	236	20	4720	S	8/22/2018	96
3RDAV	050D	3RD AV	SANTA RITA ST	GUADALUPE ST	2	R	259	20	5180	A	6/13/2018	96
3RDAV	060B	3RD AV	LOBOS ST	MONTEREY ST	2	R	202	24	4848	O	6/13/2018	96
4THAV	060A	4TH AV	TORRES ST	SANTA FE ST	2	R	243	21	5103	A	6/13/2018	96
4THAV	070B	4TH AV	CARPENTER ST	CITY LIMITS	2	R	454	21	9534	A	6/13/2018	96
5THAV	020B	5TH AV	MISSION ST	JUNIPERO AV	2	C	215	22	4730	A	6/13/2018	96
5THAV	040B	5TH AV	CARPENTER ST	CITY LIMITS	2	R	400	23	9200	A	6/18/2018	96
6THAV	050B	6TH AV	CARPENTER ST	EAST END	2	R	282	20	5640	A	6/13/2018	96
7THAV	050A	7TH AV	GUADALUPE ST	FOREST ST	2	R	259	16	4144	O	6/12/2018	96
8THAV	020B	8TH AV	CARMELO ST	CASANOVA ST	2	R	425	33	14025	A	6/12/2018	96
DELMAR	010	DEL MAR AV	OCEAN AV	TURN AROUND	2	A	141	81	11421	A	6/15/2018	96
DLORES	032	DOLORES ST	5TH AV	OCEAN AV	2	O	536	30	16080	O	6/15/2018	96
GUADLP	015	GUADALUPE ST	2ND AV	3RD AV	2	R	455	25	11375	A	6/16/2018	96
GUADLP	020A	GUADALUPE ST	3RD AVE	4TH AVE	2	R	436	26	11336	A	6/16/2018	96
GUADLP	020B	GUADALUPE ST	4TH AVE	5TH AVE	2	R	467	26	12142	O	6/16/2018	96
GUADLP	040B	GUADALUPE ST	7TH AV	MOUNTAIN VIEW AV	2	R	433	23	9959	O	6/16/2018	96
JUNPRO	060	JUNIPERO AV	OCEAN AV	8TH AV	2	A	896	58	51968	A	6/16/2018	96
LINCOL	021	LINCOLN ST	4TH AVE	5TH AVE	2	O	482	25	12050	O	6/16/2018	96
MISION	040	MISSION ST	OCEAN AV	8TH AV	2	O	792	32	25344	A	6/16/2018	96
MISION	020	MISSION ST	3RD AV	4TH AV	2	R	415	32	13280	A	6/16/2018	96
SANCAR	020	SAN CARLOS ST	N END	CAMINO DEL MONTE	2	R	447	20	8940	A	6/15/2018	96
SANRIT	020	SANTA RITA ST	3RD AV	5TH AV	2	R	922	30	27660	A	6/16/2018	96
2NDAV	070A	2ND AV	CARPENTER ST	LOBOS ST	2	R	233	23	5359	A	6/14/2018	95
5THAV	012	5TH AV	DOLORES ST	SAN CARLOS ST	1	C	230	31	7130	A	6/13/2018	95
DLORES	020	DOLORES ST	2ND AV	4TH AV	2	R	882	23	20286	A	6/15/2018	95
GUADLP	030A	GUADALUPE ST	5TH AV	6TH AV	2	R	440	20	8800	O	6/16/2018	95
GUADLP	030B	GUADALUPE ST	6TH AV	OCEAN AV	2	R	175	16	2800	A	6/16/2018	95
LAUSEN	010	LAUSEN DRIVE	RIO RD	SHARP RD BEND/CITY LIM	2	C	538	30	16140	A	6/12/2018	95
LOBOS	010B	LOBOS ST	1ST AV	2ND AV	2	R	389	23	8947	O	6/13/2018	95
MISION	030A	MISSION ST	4TH AV	6TH AV	2	O	825	32	26400	A	6/16/2018	95
TORRES	030A	TORRES ST	4TH AV	5TH AV	2	R	449	20	8980	A	6/15/2018	95

City of Carmel-by-the-Sea
PCI Listing Report Sorted by Descending PCI

Street ID	Section ID	Street Name	Begin Location	End Location	Lanes	FC	Length (ft)	Width (ft)	Area (sf)	Surface Type	PCI Date	PCI
VIZCAN	010	VIZCAINO	MOUNTAIN VIEW AV	FLANDERS WAY	2	R	762	18	13716	A	6/16/2018	95
CMDMNT	020	CAMINO DEL MONTE	SAN CARLOS ST	120' S/O JUNIPERO AV	2	A	742	30	22260	A	6/15/2018	94
DLORES	090	DOLORES ST	FRANCISCAN WY	CITY LIMIT	2	R	197	25	4925	A	6/15/2018	94
MONTRY	020	MONTEREY ST	2ND AV	SOUTH END	2	R	681	20	13620	A	6/15/2018	94
SANTFE	012B	SANTA FE ST	2ND AVE	CITY LIMIT	2	R	715	23	16445	A	6/15/2018	94
SANRIT	010B	SANTA RITA ST	2ND AV	3RD AV	2	R	456	30	13680	A	6/16/2018	94
SANRIT	030	SANTA RITA ST	5TH AV	OCEAN AV	2	R	620	25	15500	A	6/16/2018	94
SANTFE	030A	SANTE FE ST	3RD AV	4TH AV	2	R	450	23	10350	A	6/16/2018	94
MNTVRD	010	MONTE VERDE ST	2ND AV	4TH AV	2	R	915	20	18300	A	6/14/2018	93
SANRIT	040	SANTA RITA ST	OCEAN AV	MOUNTAIN VIEW AV	2	R	650	20	13000	A	6/16/2018	93
LOBOS	020	LOBOS ST	2ND AV	4TH AV	2	R	897	24	21528	A	6/13/2018	92
SANCAR	030	SAN CARLOS ST	CAMINO DEL MONTE	5TH AV	2	A	770	42	32340	O	6/15/2018	92
SANCAR	070	SAN CARLOS ST	11TH AV	13TH AV	2	A	945	42	39690	A	6/15/2018	92
4THAV	060B	4TH AV	SANTA FE ST	SANTA RITA ST	2	R	253	21	5313	A	6/13/2018	91
NCASNV	010	N CASANOVA ST	2ND AV	SOUTN END	2	R	750	23	17250	S	6/15/2018	91
SANRIT	010A	SANTA RITA ST	CITY LIMITS	2ND AV	2	R	590	30	17700	O	6/16/2018	91
4THAV	050	4TH AV	JUNIPERO AV	TORRES ST	2	C	214	21	4494	S	6/13/2018	90
SANTFE	050	SANTE FE ST	OCEAN AV	8TH AV	2	R	906	22	19932	O	6/16/2018	90
SCENIC	010	SCENIC ROAD	OCEAN AV	8TH AV	2	A	865	25	21625	A	6/16/2018	90
CASNVA	010	CASANOVA ST	4TH AV	OCEAN AV	2	R	835	23	19205	S	8/22/2018	89
JUNPRO	030	JUNIPERO AV	2ND AV	3RD AV	2	C	475	28	13300	A	6/16/2018	89
LINCOL	022	LINCOLN ST	5TH AVE	OCEAN AVE	2	O	611	30	18330	A	6/16/2018	89
SANCAR	010	SAN CARLOS ST	ALTA AV	2ND AV	2	R	1362	23	31326	S	6/15/2018	89
4THAV	030	4TH AV	LINCOLN ST	DOLORES ST	2	C	251	27	6777	S	6/13/2018	88
SANCAR	041	SAN CARLOS ST	6TH AVE	OCEAN	2	A	152	40	6080	P	6/15/2018	88
TORRES	010A	TORRES ST	CITY LIMITS	2ND AVE	2	R	703	18	12654	A	6/15/2018	88
CASNVA	040	CASANOVA ST	12TH AV	SANTA LUCIA AV	2	R	1146	23	26358	S	6/14/2018	87
6THAV	020B	6TH AV	DOLORES ST	MISSION ST	2	O	507	33	16731	A	8/22/2018	86
MONTRY	010	MONTEREY ST	NORTH END	2ND AV	2	R	650	20	13000	A	6/15/2018	86
2NDAV	020	2ND AV	N CAMINO REAL	N. CASANOVA STREET	2	R	774	23	17802	A	6/14/2018	85
4THAV	060C	4TH AV	SANTA RITA ST	GUADALUPE ST	2	R	188	21	3948	S	6/13/2018	85
CMNRL	030	CAMINO REAL	9TH AV	12TH AV	2	R	1243	25	31075	S	6/14/2018	85
SCENIC	040	SCENIC ROAD	SANTA LUCIA AV	CITY LIMIT	2	C	832	30	24960	A	6/15/2018	85
2NDAV	030	2ND AV	N. CASANOVA STREET	MONTE VERDE STREET	2	R	382	18	6876	A	6/14/2018	84
CMNRL	020	CAMINO REAL	OCEAN AV	9TH AV	2	R	905	25	22625	S	6/14/2018	84
JUNPRO	050	JUNIPERO AV	4TH AV	OCEAN AV	4	A	1075	58	62350	A	6/16/2018	84
LINCOL	060	LINCOLN ST	12TH AV	SANTA LUCIA AV	2	R	1258	25	31450	S	6/16/2018	84
MTVIEW	010A	MOUNTAIN VIEW AV	JUNIPERO AV	TORRES ST	2	R	200	23	4600	S	6/16/2018	84
SCENIC	030	SCENIC ROAD	BLK A3 S/END	SANTA LUCIA AV	2	A	1035	30	31050	A	6/15/2018	84
2NDAV	010	2ND AV	SAN ANTONIO AV	N CAMINO REAL	2	R	484	23	11132	S	6/13/2018	83

City of Carmel-by-the-Sea
PCI Listing Report Sorted by Descending PCI

Street ID	Section ID	Street Name	Begin Location	End Location	Lanes	FC	Length (ft)	Width (ft)	Area (sf)	Surface Type	PCI Date	PCI
MISION	070	MISSION ST	13TH AV	SANTA LUCIA AV	2	R	587	24	14088	S	6/16/2018	83
MNTVRD	050	MONTE VERDE ST	9TH AV	12TH AV	2	R	1253	25	31325	S	6/14/2018	83
SANCAR	060	SAN CARLOS ST	8TH AV	11TH AV	2	A	1415	42	59430	A	6/15/2018	83
13THAV	020	13TH AV	MONTE VERDE ST	48 FT W/O SAN CARLOS ST	2	R	648	23	14904	S	6/12/2018	82
7THAV	010	7TH AV	SAN ANTONIO AV	MONTE VERDE ST	2	R	887	23	20401	S	6/12/2018	82
FOREST	010	FOREST RD	MOUNTAIN VIEW	7TH AVE	2	R	536	23	12328	A	6/16/2018	82
11THAV	030	11TH AV	SAN CARLOS ST	JUNIPERO AV	2	R	446	23	10258	S	6/12/2018	81
1STAV	020	1ST AV	MISSION ST	JUNIPERO AV	2	R	239	16	3824	S	6/13/2018	81
DLORES	040A	DOLORES ST	OCEAN AV	7TH AV	2	O	482	30	14460	P	6/15/2018	80
LINCOL	050	LINCOLN ST	9TH AV	12TH AV	2	C	1245	30	37350	S	6/16/2018	80
9THAV	040	9TH AV	MID BLK W\O TORRES ST	EAST END	2	R	279	20	5580	S	6/12/2018	79
DLORES	060	DOLORES ST	10TH AV	12TH AV	2	R	789	23	18147	S	6/15/2018	79
10THAV	020	10TH AV	MONTE VERDE ST	DOLORES ST	2	R	461	26	11986	S	6/15/2018	78
3RDAV	020	3RD AV	MISSION ST	JUNIPERO AV	2	R	224	28	6272	S	6/13/2018	78
MNTVRD	040	MONTE VERDE ST	8TH AV	9TH AV	2	R	435	25	10875	S	6/14/2018	78
6THAV	010	6TH AV	MONTE VERDE ST	LINCOLN ST	2	O	215	33	7095	A	6/13/2018	77
7THAV	040	7TH AV	SAN CARLOS ST	JUNIPERO AV	2	O	425	33	14025	A	6/12/2018	77
DLORES	040B	DOLORES ST	7TH	8TH AV	2	O	381	30	11430	P	6/15/2018	77
LINCOL	040	LINCOLN ST	8TH AV	9TH AV	2	R	458	30	13740	S	6/16/2018	77
SANCAR	050	SAN CARLOS ST	OCEAN AV	8TH AV	2	A	860	36	30960	P	6/15/2018	77
DLORES	050	DOLORES ST	8TH AV	10TH AV	2	C	915	23	21045	S	6/15/2018	76
MISION	050	MISSION ST	8TH AV	10TH AV	2	C	854	32	27328	S	8/22/2018	76
CMNRL	010	CAMINO REAL	4TH AV	OCEAN AV	2	R	681	23	15663	S	6/14/2018	75
CMNRL	040	CAMINO REAL	12TH AV	SANTA LUCIA AV	2	R	1050	25	26250	S	6/14/2018	75
CMELO	010	CARMELO AV	4TH AV	OCEAN AV	2	R	605	23	13915	S	6/14/2018	75
JUNPRO	010	JUNIPERO AV	ALTA ST	CAMINO DEL MONTE	2	R	1115	23	25645	S	6/15/2018	74
OCEAN	050	OCEAN AV	CARPENTER ST	CITY LIMITS	2	A	341	35	11935	A	6/15/2018	74
VALLEY	010	VALLEY WAY	N CITY LIMITS	E CITY LIMITS	2	R	365	24	8760	A	6/15/2018	74
3RDAV	010A	3RD AV	MONTE VERDE ST	LINCOLN ST	2	R	250	23	5750	A	6/13/2018	73
5THAV	025	5TH AV	JUNIPERO AV	TORRES ST	2	C	219	37	8103	A	6/13/2018	73
9THAV	010	9TH AV	SAN ANTONIO AV	MONTE VERDE ST	2	R	912	26	23712	S	8/22/2018	73
LINCOL	015A	LINCOLN ST	2BD AV	3RD AV	2	R	445	23	10235	S	8/22/2018	73
LOPEZ	010	LOPEZ AV	NORTH END	4TH AV	2	R	695	23	15985	S	6/14/2018	73
MISION	010	MISSION ST	ALTA AV	2ND AV	2	R	1368	23	31464	S	6/15/2018	73
MNTVRD	060	MONTE VERDE ST	12TH AV	125 FT S/O SANTA LUCIA AV	2	R	1332	23	30636	S	6/14/2018	73
PALOU	010	PALOU AV	NORTH END	MONTE VERDE ST	2	R	761	18	13698	S	6/15/2018	73
12THAV	012	12TH AV	SAN ANTONIO AV	CAMINO REAL	2	R	485	30	14550	S	6/15/2018	72
2NDAV	070B	2ND AV	LOBOS ST	MONTEREY ST	2	R	200	23	4600	S	6/14/2018	72
CASNVA	020	CASANOVA ST	OCEAN AV	9TH AV	2	R	1389	25	34725	S	6/14/2018	72
NCMNRL	010	N CAMINO REAL	2ND AV	4TH AV	2	R	855	23	19665	S	6/16/2018	72

City of Carmel-by-the-Sea
PCI Listing Report Sorted by Descending PCI

Street ID	Section ID	Street Name	Begin Location	End Location	Lanes	FC	Length (ft)	Width (ft)	Area (sf)	Surface Type	PCI Date	PCI
NCMELO	010	N CARMELO AV	2ND AV	4TH AV	2	R	745	25	18625	S	6/16/2018	72
TORRES	020	TORRES ST	3RD AV	4TH AV	1	C	428	30	12840	S	6/15/2018	72
DLORES	031	DOLORES ST	4TH AV	5TH AV	2	O	474	30	14220	A	6/15/2018	71
JUNPRO	080	JUNIPERO AV	10TH AV	RIO RD	2	C	1665	30	49950	A	6/16/2018	71
JUNPRO	20	JUNIPERO AV	CAMINO DEL MONTE	2ND AVE	2	C	146	37	5402	A	6/16/2018	71
PNRIDG	010	PINE RIDGE WAY	FOREST RD	TURN AROUND	2	R	141	23	3243	A	6/16/2018	71
RDGWOD	010	RIDGEWOOD RD	JUNIPERO AV	RIO RD	2	R	1117	23	25691	S	6/15/2018	71
TORRES	010B	TORRES ST	2ND AVE	3RD AVE	2	R	387	18	6966	S	6/15/2018	71
6THAV	025	6TH AV	MISSION ST	JUNIPERO AV	2	O	216	33	7128	A	6/13/2018	70
8THAV	030	8TH AV	MONTE VERDE ST	SAN CARLOS ST	2	O	640	33	21120	S	6/12/2018	70
9THAV	030	9TH AV	DOLORES ST	SAN CARLOS ST	2	C	216	30	6480	S	6/12/2018	70
JUNPRO	070	JUNIPERO AV	8TH AV	10TH AV	2	C	930	42	39060	O	6/22/2018	70
TORRES	030B	TORRES ST	5TH AV	OCEAN AV	2	R	620	20	12400	S	6/15/2018	70
13THAV	030	13TH AV	48 FT W/O SAN CARLOS ST	JUNIPERO AV	2	A	630	22	13860	O	6/12/2018	69
7THAV	030	7TH AV	DOLORES ST	SAN CARLOS ST	2	O	222	33	7326	P	8/22/2018	69
LINCOL	010	LINCOLN ST	1ST AV	2ND AV	2	R	553	23	12719	S	8/22/2018	69
FRANCN	010	FRANCISCAN WAY	DOLORES ST	SANTA LUCIA AV	2	R	912	21	19152	S	6/16/2018	68
7THAV	020	7TH AV	MONTE VERDE ST	DOLORES ST	2	O	482	33	15906	S	6/12/2018	67
ALTA AV	010	ALTA AV	SAN CARLOS ST	JUNIPERO AV	2	R	530	23	12190	S	8/22/2018	67
MNTVRD	020	MONTE VERDE ST	4TH AV	OCEAN AV	2	O	1060	25	26500	S	8/22/2018	67
SANCAR	042	SAN CARLOS ST	6TH AVE	5TH AVE	2	A	475	36	17100	P	6/15/2018	67
CASNVA	030	CASANOVA ST	9TH AV	12TH AV	2	R	1243	25	31075	S	6/14/2018	66
MISION	060	MISSION ST	10TH AV	13TH AV	2	R	1338	23	30774	S	6/16/2018	66
SANLUC	020	SANTA LUCIA AV	CAMINO REAL	DOLORES ST	2	C	1092	21	22932	A	6/12/2018	66
3RDAV	050B	3RD AV	GUADALUPE ST	CARPENTER ST	2	R	246	20	4920	S	8/22/2018	65
8THAV	035	8TH AV	SAN CARLOS ST	JUNIPERO AV	2	A	529	33	17457	A	6/12/2018	65
JUNPRO	040	JUNIPERO AV	3RD AV	4TH AV	4	A	452	58	26216	O	6/16/2018	65
SANLUC	010	SANTA LUCIA AV	SCENIC RD	CAMINO REAL	2	C	914	21	19194	A	6/12/2018	65
6THAV	050A	6TH AV	GUADALUPE ST	CARPENTER ST	2	R	247	20	4940	A	6/13/2018	64
OCEAN	020	OCEAN AV	SAN ANTONIO AV	MONTE VERDE ST	2	A	1000	25	25000	P	8/22/2018	64
10THAV	040	10TH AV	JUNIPERO AV	TORRES ST	2	R	234	16	3744	A	6/12/2018	63
12THAV	015	12TH AV	CAMINO REAL	MONTE VERDE ST	2	R	480	30	14400	S	6/15/2018	63
8THAV	020C	8TH AV	CASANOVA ST	MONTE VERDE ST	2	R	225	33	7425	S	8/22/2018	63
SANAN	020	SAN ANTONIO AV	8TH AV	11TH AV	2	C	1358	22	29876	S	6/14/2018	62
10THAV	010	10TH AV	SAN ANTONIO AV	MONTE VERDE ST	2	R	912	30	27360	S	6/12/2018	60
11THAV	010	11TH AV	SAN ANTONIO AV	MONTE VERDE ST	2	R	912	25	22800	S	6/12/2018	60
6THAV	030	6TH AV	JUNIPERO AV	TORRES ST	2	C	218	33	7194	A	6/13/2018	60
CMELO	020	CARMELO AV	OCEAN AV	9TH AV	2	R	1365	23	31395	S	6/14/2018	60
CMELO	040	CARMELO AV	12TH AV	SANTA LUCIA AV	2	R	825	25	20625	S	8/22/2018	60
DLORES	070	DOLORES ST	12TH AV	SANTA LUCIA AV	2	R	1340	23	30820	S	6/15/2018	60

City of Carmel-by-the-Sea
PCI Listing Report Sorted by Descending PCI

Street ID	Section ID	Street Name	Begin Location	End Location	Lanes	FC	Length (ft)	Width (ft)	Area (sf)	Surface Type	PCI Date	PCI
SANTFE	030B	SANTE FE ST	4TH AV	5TH AV	2	R	456	23	10488	S	6/16/2018	60
9THAV	020	9TH AV	MONTE VERDE ST	DOLORES ST	2	R	447	32	14304	S	6/12/2018	58
SANLUC	030	SANTA LUCIA AV	DOLORES ST	RIO RD	2	C	866	25	21650	A	6/12/2018	58
4THAV	020	4TH AV	CASANOVA ST	MID BLK E/O MONTE VERDE ST	2	R	382	21	8022	S	6/13/2018	57
4THAV	040	4TH AV	DOLORES ST	JUNIPERO AV	2	C	681	30	20430	S	6/13/2018	56
10THAV	030	10TH AV	DOLORES ST	JUNIPERO AV	2	C	729	26	18954	S	6/12/2018	55
11THAV	040	11TH AV	JUNIPERO AV	EAST END	2	R	658	18	11844	A	6/12/2018	55
4THAV	010	4TH AV	SAN ANTONIO AV	CASANOVA ST	2	R	874	21	18354	S	6/13/2018	55
2NDAV	050	2ND AV	JUNIPERO AV	SANTA FE ST	2	R	461	23	10603	S	8/22/2018	54
3RDAV	060A	3RD AV	CARPENTER ST	W END	2	R	236	24	5664	S	6/13/2018	54
CMDMNT	010	CAMINO DEL MONTE	CITY LIMIT	120' S/O JUNIPERO AV	2	A	260	23	5980	O	8/22/2018	54
NSANAN	010	N SAN ANTONIO AV	2ND AV	4TH AV	2	A	726	23	16698	S	6/15/2018	53
VISTA	010	VISTA AV	DOLORES ST	JUNIPERO AV	2	R	708	20	14160	S	8/22/2018	53
5THAV	040A	5TH AV	GUADALUPE ST	CARPENTER ST	2	R	254	23	5842	A	6/18/2018	52
FRASER	010	FRASER WAY	CAMINO REAL	CASANOVA ST	2	R	240	16	3840	S	6/14/2018	52
5THAV	020A	5TH AV	SAN CARLOS ST	MISSION ST	2	C	215	29	6235	S	8/22/2018	51
6THAV	040	6TH AV	TORRES ST	GUADALUPE ST	2	R	705	20	14100	S	6/13/2018	51
CMELO	030	CARMELO AV	9TH AV	12TH AV	2	R	1362	25	34050	S	6/14/2018	50
2NDAV	040A	2ND AV	MID BLK W/O LINCOLN ST	LINCOLN ST	2	R	113	20	2260	A	6/14/2018	49
GUADLP	010	GUADALUPE ST	CITY LIMITS	2ND AV	2	R	632	27	17064	S	8/22/2018	45
RIORD	020	RIO RD	SANTA LUCIA AV	SOUTH CITY LIMIT	2	A	1310	52	68120	A	6/12/2018	45
1STAV	030	1ST AV	JUNIPERO AV (WEST END)	SANTA RITA ST	2	R	633	23	14559	S	6/13/2018	44
MNTVRD	030	MONTE VERDE ST	OCEAN AV	8TH AV	2	O	912	30	27360	S	6/14/2018	44
5THAV	030	5TH AV	TORRES ST	GUADALUPE ST	2	R	685	20	13700	S	6/13/2018	43
4THAV	070A	4TH AV	GUADALUPE ST	CARPENTER ST	2	R	248	21	5208	A	6/13/2018	42
LOBOS	010A	LOBOS ST	CITY LIMITS	1ST AV	2	R	256	23	5888	S	6/13/2018	42
SANTFE	040	SANTE FE ST	5TH AV	6TH AV	2	R	449	23	10327	S	6/16/2018	42
7THAV	050B	7TH AV	FOREST ST	CITY LIMITS	2	R	224	16	3584	S	8/22/2018	41
SANAN	015	SAN ANTONIO AV	OCEAN AV	8TH AV	2	C	908	28	25424	S	6/14/2018	39
LADERA	010	LADERA DRIVE	RIO RD	TURN AROUND	2	R	1033	23	23759	S	6/12/2018	35
1STAV	040A	1ST AV	SANTA RITA ST	CARPENTER ST	2	R	500	23	11500	S	8/22/2018	33
SANAN	010	SAN ANTONIO AV	4TH AV	OCEAN AV	2	A	576	28	16128	S	8/22/2018	20
1STAV	040C	1ST AV	LOBOS ST	MONTEREY ST	2	R	179	23	4117	S	8/22/2018	14

APPENDIX B

Maintenance and Rehabilitation Decision Tree

Maintenance and Rehabilitation (M&R) Decision Tree

This report presents the current maintenance and rehabilitation decision tree that exists in the database. The decision tree forms the basis for all of the budgetary computations 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 – Very Good. All preventive maintenance treatment listings are assigned only to sections in Condition Category I where the $PCI \geq 70$. Sections with PCI values less than 70 are assigned to treatments listed in Categories II through V.

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

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

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

COLUMN	DESCRIPTION
Functional Class	Functional Classification identifying the branch number.
Surface	Surface Type identifying the branch number.
Condition Category	Condition Category (I through V).
Treatment Type	First Row (Crack Treatment) indicates localized treatment (e.g. crack sealing). Second Row (Surface Treatment) indicates surface treatment (e.g. slurry sealing). Third Row (Restoration Treatment) indicates surface restoration (e.g. overlay).
Treatment	Name of treatments from the "Treatment Descriptions" report.


COLUMN	DESCRIPTION
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).
Number of Sequential Seals	Number of times that the treatment application in the second row (i.e. SURFACE treatment) will be performed prior to performing the treatment application in the third row.

Note that the treatments assigned to each section should not be blindly followed in preparing a 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.

Decision Tree

Printed: 12/07/2018


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	SEAL CRACKS	\$1.00	4				
			Surface Treatment	SLURRY SEAL	\$2.75		4			
			Restoration Treatment	DO NOTHING	\$0.00			99		
				II - Good, Non-Load Related		SLURRY SEAL	\$3.50		4	
				III - Good, Load Related		2" AC OVERLAY	\$32.00			
				IV - Poor		MILL & 3" AC OVERLAY	\$52.50			
				V - Very Poor		SURFACE RECONSTRUCT w/ 4" OVERLAY	\$62.50			
	AC/AC	I - Very Good	Crack Treatment	SEAL CRACKS	\$1.00	4				
			Surface Treatment	SLURRY SEAL	\$2.75		4			
			Restoration Treatment	DO NOTHING	\$0.00			99		
				II - Good, Non-Load Related		SLURRY SEAL	\$3.50		4	
				III - Good, Load Related		2" AC OVERLAY	\$32.00			
				IV - Poor		MILL & 3" AC OVERLAY	\$52.50			
				V - Very Poor		SURFACE RECONSTRUCT w/ 4" OVERLAY	\$62.50			
	AC/PCC	I - Very Good	Crack Treatment	SEAL CRACKS	\$1.00	4				
			Surface Treatment	SLURRY SEAL	\$2.75		4			
			Restoration Treatment	DO NOTHING	\$0.00			99		
				II - Good, Non-Load Related		SLURRY SEAL	\$2.75		4	
				III - Good, Load Related		2" AC OVERLAY	\$25.50			
				IV - Poor		MILL & 2" AC OVERLAY	\$31.00			
				V - Very Poor		2" OVERLAY w/15% SLAB REPAIRS	\$77.00			
	PCC	I - Very Good	Crack Treatment	DO NOTHING	\$0.00	99				
			Surface Treatment	DO NOTHING	\$0.00		99			
			Restoration Treatment	DO NOTHING	\$0.00			99		
				II - Good, Non-Load Related		DO NOTHING	\$0.00		9	
				III - Good, Load Related		DO NOTHING	\$0.00			
				IV - Poor		15%SLAB REPAIRS w/ DIAMOND GRIND	\$49.00			
				V - Very Poor		30%SLAB REPAIRS w/ DIAMOND GRIND	\$97.50			

 Functional Class and Surface combination not used

Decision Tree

Printed: 12/07/2018


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	99			
			Surface Treatment	DO NOTHING	\$0.00				
			Restoration Treatment	DO NOTHING	\$0.00			99	
			II - Good, Non-Load Related		CAPE SEAL	\$11.50			4
			III - Good, Load Related		CAPE SEAL	\$11.50			4
			IV - Poor		CAPE SEAL	\$11.50			4
			V - Very Poor		2" AC OVERLAY	\$46.50			

 Functional Class and Surface combination not used

Decision Tree

Printed: 12/07/2018


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	SEAL CRACKS	\$1.00	6				
			Surface Treatment	SLURRY SEAL	\$2.75		6			
			Restoration Treatment	DO NOTHING	\$0.00			99		
				II - Good, Non-Load Related		SLURRY SEAL	\$3.50		6	
				III - Good, Load Related		2" AC OVERLAY	\$32.00			
				IV - Poor		MILL & 3" AC OVERLAY	\$52.50			
				V - Very Poor		SURFACE RECONSTRUCT w/ 4" OVERLAY	\$62.50			
	AC/AC	I - Very Good	Crack Treatment	SEAL CRACKS	\$1.00	6				
			Surface Treatment	SLURRY SEAL	\$2.75		6			
			Restoration Treatment	DO NOTHING	\$0.00			99		
				II - Good, Non-Load Related		SLURRY SEAL	\$3.50		6	
				III - Good, Load Related		2" AC OVERLAY	\$32.00			
				IV - Poor		MILL & 3" AC OVERLAY	\$52.50			
				V - Very Poor		SURFACE RECONSTRUCT w/ 4" OVERLAY	\$62.50			
	AC/PCC	I - Very Good	Crack Treatment	SEAL CRACKS	\$1.00	6				
			Surface Treatment	SLURRY SEAL	\$2.50		6			
			Restoration Treatment	DO NOTHING	\$0.00			99		
				II - Good, Non-Load Related		SLURRY SEAL	\$2.50		6	
				III - Good, Load Related		2" AC OVERLAY	\$25.50			
				IV - Poor		MILL & 2" AC OVERLAY	\$31.00			
				V - Very Poor		2" OVERLAY w/15% SLAB REPAIRS	\$77.00			
	PCC	I - Very Good	Crack Treatment	RUBBERIZED CRACK SEAL	\$1.00	5				
			Surface Treatment	DO NOTHING	\$0.00		99			
			Restoration Treatment	RECONSTRUCT PCC	\$80.00			3		
				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		RECONSTRUCT PCC	\$80.00			

 Functional Class and Surface combination not used

Decision Tree

Printed: 12/07/2018


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	99			
			Surface Treatment	DO NOTHING	\$0.00		9		
			Restoration Treatment	DO NOTHING	\$0.00			99	
			II - Good, Non-Load Related		CAPE SEAL	\$11.50		6	
			III - Good, Load Related		CAPE SEAL	\$11.50		6	
			IV - Poor		CAPE SEAL	\$11.50		6	
			V - Very Poor		2" AC OVERLAY	\$39.00			

 Functional Class and Surface combination not used

Decision Tree

Printed: 12/07/2018

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	SEAL CRACKS	\$1.00	8				
			Surface Treatment	SLURRY SEAL	\$2.75		8			
			Restoration Treatment	DO NOTHING	\$0.00			99		
				II - Good, Non-Load Related		SLURRY SEAL	\$3.50		8	
				III - Good, Load Related		2" AC OVERLAY	\$32.00			
				IV - Poor		MILL & 2" AC OVERLAY	\$35.50			
				V - Very Poor		SURFACE RECONSTRUCTION w/ 3" OVERLAY	\$47.00			
	AC/AC	I - Very Good	Crack Treatment	SEAL CRACKS	\$1.00	8				
			Surface Treatment	SLURRY SEAL	\$2.75		8			
			Restoration Treatment	DO NOTHING	\$0.00			99		
				II - Good, Non-Load Related		SLURRY SEAL	\$3.50		8	
				III - Good, Load Related		2" AC OVERLAY	\$32.00			
				IV - Poor		MILL & 2" AC OVERLAY	\$35.50			
				V - Very Poor		SURFACE RECONSTRUCTION w/ 3" OVERLAY	\$47.00			
	AC/PCC	I - Very Good	Crack Treatment	DO NOTHING	\$0.00					
			Surface Treatment	SLURRY SEAL	\$0.75		4			
			Restoration Treatment	MILL AND THIN OVERLAY	\$5.04			3		
				II - Good, Non-Load Related		CHIP SEAL WITH CRO	\$1.50			
				III - Good, Load Related		CHIP SEAL WITH CRO	\$1.50			
				IV - Poor		MILL AND THIN OVERLAY	\$5.04			
				V - Very Poor		RECONSTRUCT SURFACE (AC)	\$27.00			
	PCC	I - Very Good	Crack Treatment	RUBBERIZED CRACK SEAL	\$1.00	5				
			Surface Treatment	DO NOTHING	\$0.00		99			
			Restoration Treatment	RECONSTRUCT PCC	\$80.00			3		
				II - Good, Non-Load Related		RECONSTRUCT STRUCTURE (AC)	\$40.00			
				III - Good, Load Related		DO NOTHING	\$0.00			
				IV - Poor		DO NOTHING	\$0.00			
				V - Very Poor		RECONSTRUCT PCC	\$80.00			

 Functional Class and Surface combination not used

Decision Tree

Printed: 12/07/2018


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	99			
			Surface Treatment	DO NOTHING	\$0.00		9		
			Restoration Treatment	DO NOTHING	\$0.00			99	
			II - Good, Non-Load Related		CAPE SEAL	\$10.50		8	
			III - Good, Load Related		CAPE SEAL	\$10.50		8	
			IV - Poor		CAPE SEAL	\$10.50		8	
			V - Very Poor		CAPE SEAL	\$10.50		8	

 Functional Class and Surface combination not used

Decision Tree

Printed: 12/07/2018

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay	
Other	AC	I - Very Good	Crack Treatment	SEAL CRACKS	\$1.00	8			
			Surface Treatment	SLURRY SEAL	\$2.75		8		
			Restoration Treatment	DO NOTHING	\$0.00			99	
			II - Good, Non-Load Related		SLURRY SEAL	\$3.50		8	
			III - Good, Load Related		2" AC OVERLAY	\$32.00			
			IV - Poor		MILL & 2" AC OVERLAY	\$35.50			
			V - Very Poor		SURFACE RECONSTRUCTION w/ 3" OVERLAY	\$47.00			
AC/AC	AC/AC	I - Very Good	Crack Treatment	SEAL CRACKS	\$1.00	8			
			Surface Treatment	SLURRY SEAL	\$2.75		8		
			Restoration Treatment	DO NOTHING	\$0.00			99	
			II - Good, Non-Load Related		SLURRY SEAL	\$3.50		8	
			III - Good, Load Related		2" AC OVERLAY	\$32.00			
			IV - Poor		MILL & 2" AC OVERLAY	\$35.50			
			V - Very Poor		SURFACE RECONSTRUCTION w/ 3" OVERLAY	\$47.00			
AC/PCC	AC/PCC	I - Very Good	Crack Treatment	DO NOTHING	\$0.00				
			Surface Treatment	SLURRY SEAL	\$0.75		4		
			Restoration Treatment	MILL AND THICK OVERLAY	\$5.85			3	
			II - Good, Non-Load Related		SLURRY SEAL	\$0.75			
			III - Good, Load Related		MILL AND THICK OVERLAY	\$5.85			
			IV - Poor		MILL AND THICK OVERLAY	\$5.85			
			V - Very Poor		RECONSTRUCT SURFACE (AC)	\$27.00			
PCC	PCC	I - Very Good	Crack Treatment	DO NOTHING	\$0.00	99			
			Surface Treatment	DO NOTHING	\$0.00		99		
			Restoration Treatment	DO NOTHING	\$0.00			99	
			II - Good, Non-Load Related		DO NOTHING	\$0.00			
			III - Good, Load Related		DO NOTHING	\$0.00			
			IV - Poor		15%SLAB REPAIRS w/ DIAMOND GRIND	\$49.00			
			V - Very Poor		30%SLAB REPAIRS w/ DIAMOND GRIND	\$97.50			

 Functional Class and Surface combination not used

Decision Tree

Printed: 12/07/2018

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	99		
			Surface Treatment	DO NOTHING	\$0.00		9	
			Restoration Treatment	DO NOTHING	\$0.00			100
		II - Good, Non-Load Related		CAPE SEAL	\$10.50		8	
		III - Good, Load Related		CAPE SEAL	\$10.50		8	
		IV - Poor		CAPE SEAL	\$10.50		8	
		V - Very Poor		CAPE SEAL	\$10.50		8	

APPENDIX C

Budget Needs

Projected PCI / Cost Summary

Preventative Treatment / Cost Summary

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 \$6 million dollars over the next ten years the PCI of the street network will improve from the current level of 77 to 81 by 2028. If no treatments are programmed, the weighted average PCI is projected to deteriorate to 55 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 - Projected PCI/Cost Summary

Inflation Rate = 3.00 % Printed: 11/21/2018

Year	PCI Treated	PCI Untreated	PM Cost	Rehab Cost	Cost	
2019	90	76	\$131,796	\$2,026,747	\$2,158,543	
2020	84	73	\$93,081	\$276,063	\$369,144	
2021	82	71	\$44,376	\$172,805	\$217,181	
2022	83	69	\$56,969	\$486,215	\$543,184	
2023	80	66	\$206,165	\$75,066	\$281,231	
2024	79	64	\$204,692	\$0	\$204,692	
2025	79	62	\$58,691	\$208,867	\$267,558	
2026	77	59	\$93,132	\$3,876	\$97,008	
2027	84	57	\$225,037	\$1,202,498	\$1,427,535	
2028	81	55	\$139,839	\$340,549	\$480,388	
			% PM	PM Total Cost	Rehab Total Cost	Total Cost
			20.74%	\$1,253,778	\$4,792,686	\$6,046,464

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.
Area Treated	Quantities in linear feet (Seal Cracks) or square yard (Microsurfacing).
Cost	Maintenance treatment cost.

Needs - Preventive Maintenance Treatment/Cost Summary

Inflation Rate = 3.00 % Printed: 11/21/2018

Treatment	Year	Area Treated	Cost
SLURRY SEAL	2019	47,922.78 sq.yd.	\$131,796
	2020	32,859.56 sq.yd.	\$93,081
	2021	15,207.89 sq.yd.	\$44,376
	2022	19,096.67 sq.yd.	\$56,969
	2023	66,605.22 sq.yd.	\$206,165
	2024	64,202.33 sq.yd.	\$204,692
	2025	17,872.78 sq.yd.	\$58,691
	2026	27,533.67 sq.yd.	\$93,132
	2027	64,594.67 sq.yd.	\$225,037
	2028	39,109.56 sq.yd.	\$139,839
	Total	395,005.11	\$1,253,778
	Total Quantity	395,005.11	\$1,253,778

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.
Area Treated	Quantities in square yard.
Cost	Rehabilitation treatment cost.

Needs - Rehabilitation Treatment/Cost Summary

Inflation Rate = 3.00 % Printed: 11/21/2018

Treatment	Year	Area Treated	Cost
2" AC OVERLAY	2019	28,514.33 sq.yd.	\$938,446
	2020	1,612.22 sq.yd.	\$53,140
	2021	1,326.11 sq.yd.	\$45,020
	Total	31,452.67 sq.yd.	\$1,036,606
CAPE SEAL	2019	96,531.44 sq.yd.	\$1,028,809
	2020	20,173.11 sq.yd.	\$218,177
	2021	10,959.22 sq.yd.	\$127,785
	2022	41,980.44 sq.yd.	\$486,215
	2023	3,347.67 sq.yd.	\$43,063
	2025	13,359.89 sq.yd.	\$183,455
	2027	88,546.33 sq.yd.	\$1,186,945
	2028	24,323.11 sq.yd.	\$338,649
Total	299,221.22 sq.yd.	\$3,613,098	
MILL & 2" AC OVERLAY	2019	578.67 sq.yd.	\$20,543
	2023	649.11 sq.yd.	\$25,936
	Total	1,227.78 sq.yd.	\$46,479
SLURRY SEAL	2019	11,127.67 sq.yd.	\$38,949
	2020	1,316.33 sq.yd.	\$4,746
	2023	1,540 sq.yd.	\$6,067
	2025	6,080.22 sq.yd.	\$25,412
	2026	900.33 sq.yd.	\$3,876
	2027	3,507.44 sq.yd.	\$15,553
	2028	416 sq.yd.	\$1,900
	Total	24,888 sq.yd.	\$96,503
Total Cost			\$4,792,686

Scenarios 1 - 3

Scenario 1: City's Existing Funding
(\$3.45 M/10 Years)
Cost Summary Report
Network Condition Summary Report

Scenarios - Cost Summary

Interest: 3.00%

Inflation: 3.00%

Printed: 11/21/2018

Scenario 1: City's Existing Funding \$345,000 per year

Year	PM	Budget	Rehabilitation		Preventative Maintenance	Surplus PM	Deferred	Stop Gap		
2019	5%	\$345,000	II	\$61,869	Non-Project	\$20,261	\$0	\$1,813,528	Funded	\$0
			III	\$169,505					Unmet	\$15,617
			IV	\$88,558	Project	\$0				
			V	\$4,804						
			Total	\$324,736						
Project	\$0									
2020	5%	\$345,000	II	\$66,016	Non-Project	\$21,856	\$0	\$2,052,333	Funded	\$0
			III	\$96,311					Unmet	\$2,961
			IV	\$74,543	Project	\$0				
			V	\$85,828						
			Total	\$322,698						
Project	\$0									
2021	5%	\$345,000	II	\$5,694	Non-Project	\$21,894	\$0	\$1,986,249	Funded	\$0
			III	\$233,436					Unmet	\$1,600
			IV	\$40,163	Project	\$0				
			V	\$43,641						
			Total	\$322,934						
Project	\$0									
2022	5%	\$345,000	II	\$123,221	Non-Project	\$19,962	\$0	\$2,252,895	Funded	\$0
			III	\$83,365					Unmet	\$5,964
			IV	\$118,355	Project	\$0				
			V	\$0						
			Total	\$324,941						
Project	\$0									
2023	5%	\$345,000	II	\$141,259	Non-Project	\$17,392	\$0	\$2,149,879	Funded	\$0
			III	\$99,115					Unmet	\$183
			IV	\$86,559	Project	\$0				
			V	\$0						
			Total	\$326,933						
Project	\$0									
2024	5%	\$345,000	II	\$100,853	Non-Project	\$18,857	\$0	\$2,129,387	Funded	\$0
			III	\$152,066					Unmet	\$6,437
			IV	\$72,525	Project	\$0				
			V	\$0						
			Total	\$325,444						
Project	\$0									

Year	PM	Budget	Rehabilitation		Preventative Maintenance	Surplus PM	Deferred	Stop Gap		
2025	5%	\$345,000	II	\$197,157	Non-Project	\$16,957	\$293	\$2,200,113	Funded	\$0
			III	\$110,467					Unmet	\$1,458
			IV	\$19,927	Project	\$0				
			V	\$0						
			Total	\$327,551						
Project	\$0									
2026	5%	\$345,000	II	\$67,711	Non-Project	\$20,520	\$0	\$2,023,567	Funded	\$0
			III	\$65,155					Unmet	\$445
			IV	\$190,838	Project	\$0				
			V	\$0						
			Total	\$323,704						
Project	\$0									
2027	5%	\$345,000	II	\$8,151	Non-Project	\$63,054	\$0	\$1,962,160	Funded	\$0
			III	\$165,929					Unmet	\$1,764
			IV	\$107,540	Project	\$0				
			V	\$0						
			Total	\$281,620						
Project	\$0									
2028	5%	\$345,000	II	\$59,329	Non-Project	\$25,541	\$0	\$2,272,103	Funded	\$0
			III	\$260,134					Unmet	\$2,836
			IV	\$0	Project	\$0				
			V	\$0						
			Total	\$319,463						
Project	\$0									

Summary				
Functional Class	Rehabilitation	Prev. Maint.	Funded Stop Gap	Unmet Stop Gap
Arterial	\$435,259	\$233,498	\$0	\$5,639
Collector	\$722,973	\$1,627	\$0	\$8,498
Other	\$146,644	\$2,233	\$0	\$2,810
Residential/Local	\$1,895,148	\$8,936	\$0	\$22,316
Grand Total:	\$3,200,024	\$246,294	\$0	\$39,264

Scenarios - Network Condition Summary

Interest: 3%

Inflation: 3%

Printed: 11/21/2018

Scenario 1: City's Existing Funding \$345,000 per year

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2019	\$345,000	5%	2023	\$345,000	5%	2027	\$345,000	5%
2020	\$345,000	5%	2024	\$345,000	5%	2028	\$345,000	5%
2021	\$345,000	5%	2025	\$345,000	5%			
2022	\$345,000	5%	2026	\$345,000	5%			

Projected Network Average PCI by year

Year	Never Treated	With Selected Treatment	Treated Centerline Miles	Treated Lane Miles
2019	76	78	2.08	4.33
2020	73	78	1.71	3.75
2021	71	77	1.37	2.74
2022	69	77	2.46	4.91
2023	66	76	2.08	4.16
2024	64	75	2.06	3.85
2025	62	75	2.01	4.19
2026	59	74	2.24	4.47
2027	57	73	2.28	4.47
2028	55	72	1.89	3.51

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	18.1%	6.5%	36.3%	5.3%	66.2%
II / III	5.0%	6.8%	15.3%	3.1%	30.3%
IV	0.0%	0.7%	2.3%	0.0%	3.0%
V	0.4%	0.0%	0.1%	0.0%	0.5%
Total	23.5%	14.0%	54.1%	8.4%	100.0%

Condition in year 2019 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	19.6%	8.4%	38.8%	5.7%	72.5%
II / III	3.5%	5.6%	14.2%	2.8%	26.0%
IV	0.0%	0.0%	1.1%	0.0%	1.1%
V	0.4%	0.0%	0.0%	0.0%	0.4%
Total	23.5%	14.0%	54.1%	8.4%	100.0%

Condition in year 2028 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	18.2%	7.0%	36.6%	5.0%	66.9%
II / III	3.5%	6.2%	17.5%	3.4%	30.6%
V	1.8%	0.8%	0.0%	0.0%	2.5%
Total	23.5%	14.0%	54.1%	8.4%	100.0%

Scenario 2: Maintain PCI at 78
(\$4.9 M/10 Years)

Cost Summary Report

Network Condition Summary Report

Interest: 3.00%

Inflation: 3.00%

Printed: 11/25/2018

Scenario 2: Maintain PCI at 78

Year	PM	Budget	Rehabilitation		Preventative Maintenance	Surplus PM	Deferred	Stop Gap		
2019	5%	\$345,000	II	\$61,869	Non-Project	\$20,261	\$0	\$1,813,528	Funded	\$0
			III	\$169,505					Unmet	\$15,617
			IV	\$88,558	Project	\$0				
			V	\$4,804						
			Total	\$324,736						
Project	\$0									
2020	5%	\$700,000	II	\$49,117	Non-Project	\$35,612	\$0	\$1,697,147	Funded	\$0
			III	\$45,352					Unmet	\$2,961
			IV	\$483,831	Project	\$0				
			V	\$85,828						
			Total	\$664,128						
Project	\$0									
2021	5%	\$415,000	II	\$23,100	Non-Project	\$21,995	\$0	\$1,550,416	Funded	\$0
			III	\$285,924					Unmet	\$1,600
			IV	\$40,163	Project	\$0				
			V	\$43,641						
			Total	\$392,828						
Project	\$0									
2022	5%	\$315,000	II	\$87,208	Non-Project	\$17,772	\$0	\$1,834,191	Funded	\$0
			III	\$91,361					Unmet	\$5,865
			IV	\$118,355	Project	\$0				
			V	\$0						
			Total	\$296,924						
Project	\$0									
2023	5%	\$500,000	II	\$247,502	Non-Project	\$25,048	\$0	\$1,563,120	Funded	\$0
			III	\$140,711					Unmet	\$218
			IV	\$86,559	Project	\$0				
			V	\$0						
			Total	\$474,772						
Project	\$0									
2024	15%	\$500,000	II	\$177,370	Non-Project	\$74,882	\$118	\$1,404,710	Funded	\$0
			III	\$174,972					Unmet	\$4,562
			IV	\$72,525	Project	\$0				
			V	\$0						
			Total	\$424,867						
Project	\$0									

Year	PM	Budget	Rehabilitation		Preventative Maintenance	Surplus PM	Deferred	Stop Gap		
2025	15%	\$600,000	II	\$194,182	Non-Project	\$96,553	\$0	\$1,109,513	Funded	\$0
			III	\$233,496					Unmet	\$1,027
			IV	\$75,711	Project	\$0				
			V	\$0						
			Total	\$503,389						
Project	\$0									
2026	15%	\$550,000	II	\$15,991	Non-Project	\$316,966	\$0	\$668,756	Funded	\$0
			III	\$26,157					Unmet	\$102
			IV	\$190,838	Project	\$0				
			V	\$0						
			Total	\$232,986						
Project	\$0									
2027	10%	\$600,000	II	\$1,598	Non-Project	\$197,242	\$0	\$346,296	Funded	\$0
			III	\$155,440					Unmet	\$260
			IV	\$48,359	Project	\$0				
			V	\$190,456						
			Total	\$395,853						
Project	\$0									
2028	10%	\$375,000	II	\$0	Non-Project	\$89,228	\$0	\$307,232	Funded	\$0
			III	\$217,862					Unmet	\$0
			IV	\$0	Project	\$0				
			V	\$65,185						
			Total	\$283,047						
Project	\$0									

Summary				
Functional Class	Rehabilitation	Prev. Maint.	Funded Stop Gap	Unmet Stop Gap
Arterial	\$794,251	\$466,567	\$0	\$2,709
Collector	\$1,006,308	\$62,593	\$0	\$7,210
Other	\$194,990	\$64,246	\$0	\$1,676
Residential/Local	\$1,997,981	\$302,153	\$0	\$20,617
Grand Total:	\$3,993,530	\$895,559	\$0	\$32,212

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2019	\$345,000	5%	2023	\$500,000	5%	2027	\$600,000	10%
2020	\$700,000	5%	2024	\$500,000	15%	2028	\$375,000	10%
2021	\$415,000	5%	2025	\$600,000	15%			
2022	\$315,000	5%	2026	\$550,000	15%			

Projected Network Average PCI by year

Year	Never Treated	With Selected Treatment	Treated Centerline Miles	Treated Lane Miles
2019	76	78	2.08	4.33
2020	73	78	1.91	4.24
2021	71	78	1.76	3.44
2022	69	78	2.14	4.28
2023	66	78	3.02	6.05
2024	64	78	3.37	6.64
2025	62	78	3.20	6.80
2026	59	78	7.49	15.46
2027	57	78	4.91	9.74
2028	55	78	2.37	4.64

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	18.1%	6.5%	36.3%	5.3%	66.2%
II / III	5.0%	6.8%	15.3%	3.1%	30.3%
IV	0.0%	0.7%	2.3%	0.0%	3.0%
V	0.4%	0.0%	0.1%	0.0%	0.5%
Total	23.5%	14.0%	54.1%	8.4%	100.0%

Condition in year 2019 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	19.6%	8.4%	38.8%	5.7%	72.5%
II / III	3.5%	5.6%	14.2%	2.8%	26.0%
IV	0.0%	0.0%	1.1%	0.0%	1.1%
V	0.4%	0.0%	0.0%	0.0%	0.4%
Total	23.5%	14.0%	54.1%	8.4%	100.0%

Condition in year 2028 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	21.6%	8.5%	35.2%	5.5%	70.8%
II / III	1.9%	5.5%	18.9%	2.9%	29.2%
Total	23.5%	14.0%	54.1%	8.4%	100.0%

Scenario 3: Best Management Practice (DF=0 by 2028)

(\$5.9 M/10 Years)

Cost Summary Report

Network Condition Summary Report

Interest: 3.00%

Inflation: 3.00%

Printed: 12/12/2018

Scenario: S3:Best Management Practice (DF=0 by 2028)

Year	PM	Budget	Rehabilitation		Preventative Maintenance	Surplus PM	Deferred	Stop Gap		
2019	10%	\$1,200,000	II	\$181,094	Non-Project	\$122,998	\$0	\$958,522	Funded	\$0
			III	\$698,688					Unmet	\$9,279
			IV	\$109,101	Project	\$0				
			V	\$88,132						
			Total	\$1,077,015						
Project	\$0									
2020	10%	\$925,000	II	\$133,452	Non-Project	\$102,143	\$0	\$595,270	Funded	\$0
			III	\$222,706					Unmet	\$56
			IV	\$462,672	Project	\$0				
			V	\$0						
			Total	\$818,830						
Project	\$0									
2021	5%	\$300,000	II	\$79,036	Non-Project	\$42,721	\$0	\$530,980	Funded	\$0
			III	\$93,769					Unmet	\$0
			IV	\$40,163	Project	\$0				
			V	\$43,641						
			Total	\$256,609						
Project	\$0									
2022	5%	\$650,000	II	\$371,855	Non-Project	\$45,155	\$0	\$449,152	Funded	\$0
			III	\$114,360					Unmet	\$0
			IV	\$118,355	Project	\$0				
			V	\$0						
			Total	\$604,570						
Project	\$0									
2023	20%	\$305,000	II	\$15,368	Non-Project	\$192,107	\$0	\$403,413	Funded	\$0
			III	\$9,747					Unmet	\$0
			IV	\$86,559	Project	\$0				
			V	\$0						
			Total	\$111,674						
Project	\$0									
2024	10%	\$500,000	II	\$0	Non-Project	\$231,395	\$0	\$250,509	Funded	\$0
			III	\$0					Unmet	\$3,165
			IV	\$267,581	Project	\$0				
			V	\$0						
			Total	\$267,581						
Project	\$0									

Year	PM	Budget	Rehabilitation		Preventative Maintenance	Surplus PM	Deferred	Stop Gap		
2025	5%	\$225,000	II	\$2,509	Non-Project	\$50,792	\$0	\$252,160	Funded	\$0
			III	\$93,746					Unmet	\$791
			IV	\$75,711	Project	\$0				
			V	\$0						
			Total	\$171,966						
Project	\$0									
2026	5%	\$300,000	II	\$3,876	Non-Project	\$93,132	\$0	\$68,889	Funded	\$0
			III	\$0					Unmet	\$0
			IV	\$190,838	Project	\$0				
			V	\$0						
			Total	\$194,714						
Project	\$0									
2027	10%	\$790,000	II	\$1,598	Non-Project	\$187,524	\$0	\$29,602	Funded	\$0
			III	\$547,806					Unmet	\$260
			IV	\$48,359	Project	\$0				
			V	\$0						
			Total	\$597,763						
Project	\$0									
2028	0%	\$685,000	II	\$0	Non-Project	\$162,335	\$0	\$30,490	Funded	\$0
			III	\$520,031					Unmet	\$0
			IV	\$0	Project	\$0				
			V	\$0						
			Total	\$520,031						
Project	\$0									

Summary				
Functional Class	Rehabilitation	Prev. Maint.	Funded Stop Gap	Unmet Stop Gap
Arterial	\$791,751	\$697,804	\$0	\$1,312
Collector	\$1,065,403	\$102,958	\$0	\$2,734
Other	\$273,402	\$83,446	\$0	\$655
Residential/Local	\$2,490,197	\$346,094	\$0	\$8,850
Grand Total:	\$4,620,753	\$1,230,302	\$0	\$13,551

Scenarios - Network Condition Summary

Interest: 3%

Inflation: 3%

Printed: 12/12/2018

Scenario: S3:Best Management Practice (DF=0 by 2028)

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2019	\$1,200,000	10%	2023	\$305,000	20%	2027	\$790,000	10%
2020	\$925,000	10%	2024	\$500,000	10%	2028	\$685,000	0%
2021	\$300,000	5%	2025	\$225,000	5%			
2022	\$650,000	5%	2026	\$300,000	5%			

Projected Network Average PCI by year

Year	Never Treated	With Selected Treatment	Treated Centerline Miles	Treated Lane Miles
2019	76	82	6.66	13.83
2020	73	82	4.48	8.97
2021	71	80	2.34	4.64
2022	69	82	4.34	8.93
2023	66	79	4.02	8.62
2024	64	79	4.65	9.29
2025	62	78	1.47	2.86
2026	59	78	2.57	5.40
2027	57	81	5.92	12.38
2028	55	81	4.72	9.44

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	18.1%	6.5%	36.3%	5.3%	66.2%
II / III	5.0%	6.8%	15.3%	3.1%	30.3%
IV	0.0%	0.7%	2.3%	0.0%	3.0%
V	0.4%	0.0%	0.1%	0.0%	0.5%
Total	23.5%	14.0%	54.1%	8.4%	100.0%

Condition in year 2019 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	20.0%	11.3%	43.3%	7.5%	82.1%
II / III	3.5%	2.7%	9.8%	0.9%	16.9%
IV	0.0%	0.0%	0.9%	0.0%	0.9%
Total	23.5%	14.0%	54.1%	8.4%	100.0%

Condition in year 2028 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	21.6%	11.2%	39.6%	7.6%	80.0%
II / III	1.9%	2.8%	14.4%	0.9%	20.0%
Total	23.5%	14.0%	54.1%	8.4%	100.0%

APPENDIX D

**Scenario 1: City's Existing Funding
(\$3.45 M/10 Years)**

Sections Selected for Treatment

Scenarios - Sections Selected for Treatment

Interest: 3.00%

Inflation: 3.00%

Printed: 12/07/2018

Scenario 1: City's Existing Funding \$345,000 per year

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2019	\$345,000	5%	2023	\$345,000	5%	2027	\$345,000	5%
2020	\$345,000	5%	2024	\$345,000	5%	2028	\$345,000	5%
2021	\$345,000	5%	2025	\$345,000	5%			
2022	\$345,000	5%	2026	\$345,000	5%			

Year: 2019

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment
											PCI Before	PCI After			
8TH AV	SAN CARLOS ST	JUNIPERO AV	8THAV	035	529	33	17,457	A	AC	64	62	100	\$62,070	18,051	2" AC OVERLAY
JUNIPERO AV	3RD AV	4TH AV	JUNPRO	040	452	58	26,216	A	AC/AC	64	62	100	\$93,213	18,214	2" AC OVERLAY
												Treatment Total	\$155,283		
12TH AV	CAMINO REAL	MONTE VERDE ST	12THAV	015	480	30	14,400	R	ST	62	60	100	\$16,800	14,595	CAPE SEAL
1ST AV	JUNIPERO AV (WEST END)	SANTA RITA ST	1STAV	030	633	23	14,559	R	ST	42	39	100	\$16,986	22,908	CAPE SEAL
1ST AV	LOBOS ST	MONTEREY ST	1STAV	040C	179	23	4,117	R	ST	12	8	100	\$4,804	23,862	CAPE SEAL
3RD AV	GUADALUPE ST	CARPENTER ST	3RDAV	050B	246	20	4,920	R	ST	64	62	100	\$5,740	17,216	CAPE SEAL
5TH AV	TORRES ST	GUADALUPE ST	5THAV	030	685	20	13,700	R	ST	41	38	100	\$15,984	23,067	CAPE SEAL
7TH AV	FOREST ST	CITY LIMITS	7THAV	050B	224	16	3,584	R	ST	39	39	100	\$4,182	22,872	CAPE SEAL
8TH AV	CASANOVA ST	MONTE VERDE ST	8THAV	020C	225	33	7,425	R	ST	62	62	100	\$8,663	13,609	CAPE SEAL
ALTA AV	SAN CARLOS ST	JUNIPERO AV	ALTA AV	010	530	23	12,190	R	ST	66	65	100	\$14,222	11,423	CAPE SEAL
LOBOS ST	CITY LIMITS	1ST AV	LOBOS	010A	256	23	5,888	R	ST	40	37	100	\$6,870	23,203	CAPE SEAL
SAN ANTONIO AV	OCEAN AV	8TH AV	SANAN	015	908	28	25,424	C	ST	37	33	100	\$32,487	28,142	CAPE SEAL
SANTE FE ST	5TH AV	6TH AV	SANTFE	040	449	23	10,327	R	ST	40	37	100	\$12,049	23,151	CAPE SEAL
												Treatment Total	\$138,787		
13TH AV	48 FT W/O SAN CARLOS ST	JUNIPERO AV	13THAV	030	630	22	13,860	A	AC/AC	68	66	76	\$5,390	53,124	SLURRY SEAL

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: 3.00%

Inflation: 3.00%

Printed: 12/07/2018

Scenario 1: City's Existing Funding \$345,000 per year

Year: 2019

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment		
											PCI Before	PCI After					
2ND AV	N. CASANOVA STREET	MONTE VERDE STREET	2NDAV	030	382	18	6,876	R	AC	83	82	89	\$2,101	33,407	SLURRY SEAL		
DOLORES ST	4TH AV	5TH AV	DLORES	031	474	30	14,220	O	AC	69	68	77	\$5,530	22,431	SLURRY SEAL		
JUNIPERO AV	CAMINO DEL MONTE	2ND AVE	JUNPRO	20	146	37	5,402	C	AC	69	68	77	\$2,101	32,904	SLURRY SEAL		
PINE RIDGE WAY	FOREST RD	TURN AROUND	PNRIDG	010	141	23	3,243	R	AC	70	69	78	\$1,262	34,211	SLURRY SEAL		
SAN CARLOS ST	8TH AV	11TH AV	SANCAR	060	1,415	42	59,430	A	AC	81	80	88	\$18,160	52,691	SLURRY SEAL		
SANTA LUCIA AV	SCENIC RD	CAMINO REAL	SANLUC	010	914	21	19,194	C	AC	63	61	72	\$7,465	26,006	SLURRY SEAL		
SANTA LUCIA AV	CAMINO REAL	DOLORES ST	SANLUC	020	1,092	21	22,932	C	AC	64	62	73	\$8,918	26,430	SLURRY SEAL		
												Treatment Total		\$50,927			
							Year 2019 Area Total		305,364		Year 2019 Total			\$344,997			

Year: 2020

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment		
											PCI Before	PCI After					
4TH AV	GUADALUPE ST	CARPENTER ST	4THAV	070A	248	21	5,208	R	AC	40	35	100	\$21,159	12,747	MILL & 2" AC OVERLAY		
												Treatment Total		\$21,159			
SAN ANTONIO AV	4TH AV	OCEAN AV	SANAN	010	576	28	16,128	A	ST	17	4	100	\$85,828	14,056	2" AC OVERLAY		
												Treatment Total		\$85,828			
7TH AV	MONTE VERDE ST	DOLORES ST	7THAV	020	482	33	15,906	O	ST	66	63	100	\$19,114	12,014	CAPE SEAL		
9TH AV	DOLORES ST	SAN CARLOS ST	9THAV	030	216	30	6,480	C	ST	68	66	100	\$8,529	11,676	CAPE SEAL		
CASANOVA ST	9TH AV	12TH AV	CASNVA	030	1,243	25	31,075	R	ST	65	61	100	\$37,342	13,453	CAPE SEAL		
GUADALUPE ST	CITY LIMITS	2ND AV	GUADLP	010	632	27	17,064	R	ST	44	37	100	\$20,506	22,480	CAPE SEAL		
MISSION ST	10TH AV	13TH AV	MISION	060	1,338	23	30,774	R	ST	65	61	100	\$36,981	14,063	CAPE SEAL		
MONTE VERDE ST	4TH AV	OCEAN AV	MNTVRD	020	1,060	25	26,500	O	ST	66	63	100	\$31,845	12,459	CAPE SEAL		

** - Treatment from Project Selection

Scenarios - Sections Selected for Treatment

Interest: 3.00%

Inflation: 3.00%

Printed: 12/07/2018

Scenario 1: City's Existing Funding \$345,000 per year

Year: 2020

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment
											PCI Before	PCI After			
MONTE VERDE ST	OCEAN AV	8TH AV	MNTVRD	030	912	30	27,360	O	ST	42	36	100	\$32,878	22,596	CAPE SEAL
TORRES ST	2ND AVE	3RD AVE	TORRES	010B	387	18	6,966	R	ST	69	66	100	\$8,371	10,205	CAPE SEAL
TORRES ST	3RD AV	4TH AV	TORRES	020	428	30	12,840	C	ST	70	67	100	\$16,899	11,344	CAPE SEAL
												Treatment Total	\$212,465		
5TH AV	JUNIPERO AV	TORRES ST	5THAV	025	219	37	8,103	C	AC	71	67	76	\$3,246	27,788	SLURRY SEAL
6TH AV	MONTE VERDE ST	LINCOLN ST	6THAV	010	215	33	7,095	O	AC	76	74	82	\$2,233	47,172	SLURRY SEAL
JUNIPERO AV	4TH AV	OCEAN AV	JUNPRO	050	1,075	58	62,350	A	AC	82	79	87	\$19,623	52,644	SLURRY SEAL
												Treatment Total	\$25,102		
							Year 2020 Area Total	273,849			Year 2020 Total	\$344,554			

Year: 2021

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment
											PCI Before	PCI After			
JUNIPERO AV	10TH AV	RIO RD	JUNPRO	080	1,665	30	49,950	C	AC	69	62	100	\$188,416	13,533	2" AC OVERLAY
OCEAN AV	CARPENTER ST	CITY LIMITS	OCEAN	050	341	35	11,935	A	AC	72	68	100	\$45,020	15,980	2" AC OVERLAY
												Treatment Total	\$233,436		
1ST AV	SANTA RITA ST	CARPENTER ST	1STAV	040A	500	23	11,500	R	ST	31	18	100	\$14,234	22,493	CAPE SEAL
2ND AV	LOBOS ST	MONTEREY ST	2NDAV	070B	200	23	4,600	R	ST	70	65	100	\$5,694	10,746	CAPE SEAL
LADERA DRIVE	RIO RD	TURN AROUND	LADERA	010	1,033	23	23,759	R	ST	32	17	100	\$29,407	22,493	CAPE SEAL
N SAN ANTONIO AV	2ND AV	4TH AV	NSANAN	010	726	23	16,698	A	ST	51	37	100	\$22,636	36,710	CAPE SEAL
VISTA AV	DOLORES ST	JUNIPERO AV	VISTA	010	708	20	14,160	R	ST	51	38	100	\$17,527	22,060	CAPE SEAL
												Treatment Total	\$89,498		
7TH AV	GUADALUPE ST	FOREST ST	7THAV	050A	259	16	4,144	R	AC/AC	93	87	93	\$1,344	21,947	SLURRY SEAL

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: 3.00%

Inflation: 3.00%

Printed: 12/07/2018

Scenario 1: City's Existing Funding \$345,000 per year

Year: 2021

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment		
											PCI Before	PCI After					
SAN CARLOS ST	CAMINO DEL MONTE	5TH AV	SANCAR	030	770	42	32,340	A	AC/AC	90	85	91	\$10,484	44,838	SLURRY SEAL		
SCENIC ROAD	BLK A3 S/END	SANTA LUCIA AV	SCENIC	030	1,035	30	31,050	A	AC	82	78	86	\$10,066	52,068	SLURRY SEAL		
												Treatment Total		\$21,894			
							Year 2021 Area Total		200,136		Year 2021 Total			\$344,828			

Year: 2022

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment		
											PCI Before	PCI After					
2ND AV	MID BLK W/O LINCOLN ST	LINCOLN ST	2NDAV	040A	113	20	2,260	R	AC	47	37	100	\$9,742	11,976	MILL & 2" AC OVERLAY		
												Treatment Total		\$9,742			
12TH AV	SAN ANTONIO AV	CAMINO REAL	12THAV	012	485	30	14,550	R	ST	70	63	100	\$18,550	11,490	CAPE SEAL		
4TH AV	SAN ANTONIO AV	CASANOVA ST	4THAV	010	874	21	18,354	R	ST	53	32	100	\$23,399	21,585	CAPE SEAL		
4TH AV	CASANOVA ST	MID BLK E/O MONTE VERDE ST	4THAV	020	382	21	8,022	R	ST	55	35	100	\$10,227	21,476	CAPE SEAL		
5TH AV	SAN CARLOS ST	MISSION ST	5THAV	020A	215	29	6,235	C	ST	50	38	100	\$8,706	25,149	CAPE SEAL		
6TH AV	TORRES ST	GUADALUPE ST	6THAV	040	705	20	14,100	R	ST	49	37	100	\$17,976	21,227	CAPE SEAL		
8TH AV	MONTE VERDE ST	SAN CARLOS ST	8THAV	030	640	33	21,120	O	ST	68	62	100	\$26,925	12,077	CAPE SEAL		
CARMELO AV	9TH AV	12TH AV	CMELO	030	1,362	25	34,050	R	ST	48	36	100	\$43,409	21,281	CAPE SEAL		
DOLORES ST	8TH AV	10TH AV	DLORES	050	915	23	21,045	C	ST	74	66	100	\$29,385	11,618	CAPE SEAL		
FRANCISCAN WAY	DOLORES ST	SANTA LUCIA AV	FRANCN	010	912	21	19,152	R	ST	67	60	100	\$24,416	13,343	CAPE SEAL		
FRASER WAY	CAMINO REAL	CASANOVA ST	FRASER	010	240	16	3,840	R	ST	50	35	100	\$4,896	21,483	CAPE SEAL		
LINCOLN ST	1ST AV	2ND AV	LINCOL	010	553	23	12,719	R	ST	68	61	100	\$16,215	13,218	CAPE SEAL		

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: 3.00%

Inflation: 3.00%

Printed: 12/07/2018

Scenario 1: City's Existing Funding \$345,000 per year

Year: 2022

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment
											PCI Before	PCI After			
N CAMINO REAL	2ND AV	4TH AV	NCMNRL	010	855	23	19,665	R	ST	70	63	100	\$25,070	11,601	CAPE SEAL
PALOU AV	NORTH END	MONTE VERDE ST	PALOU	010	761	18	13,698	R	ST	71	64	100	\$17,463	11,032	CAPE SEAL
RIDGEWOOD RD	JUNIPERO AV	RIO RD	RDGWOD	010	1,117	23	25,691	R	ST	69	62	100	\$32,753	12,115	CAPE SEAL
TORRES ST	5TH AV	OCEAN AV	TORRES	030B	620	20	12,400	R	ST	68	61	100	\$15,809	13,051	CAPE SEAL
												Treatment Total	\$315,199		
3RD AV	JUNIPERO AV	TORRES ST	3RDAV	030	245	27	6,615	A	AC/AC	92	84	91	\$2,209	48,673	SLURRY SEAL
3RD AV	TORRES ST	SANTA FE ST	3RDAV	040	269	27	7,263	A	AC/AC	92	84	91	\$2,426	48,673	SLURRY SEAL
CARPENTER ST	CITY LIMITS	2ND AVE	CRPNTR	011	645	30	19,350	A	AC/PC C	92	84	91	\$6,461	46,584	SLURRY SEAL
DOLORES ST	FRANCISCAN WY	CITY LIMIT	DLORES	090	197	25	4,925	R	AC	92	84	91	\$1,645	26,612	SLURRY SEAL
SCENIC ROAD	OCEAN AV	8TH AV	SCENIC	010	865	25	21,625	A	AC	88	81	89	\$7,221	46,576	SLURRY SEAL
												Treatment Total	\$19,962		
							Year 2022 Area Total	306,679			Year 2022 Total	\$344,903			

Year: 2023

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment
											PCI Before	PCI After			
5TH AV	GUADALUPE ST	CARPENTER ST	5THAV	040A	254	23	5,842	R	AC	50	39	100	\$25,936	11,533	MILL & 2" AC OVERLAY
												Treatment Total	\$25,936		
CAMINO DEL MONTE	CITY LIMIT	120' S/O JUNIPERO AV	CMDMNT	010	260	23	5,980	A	AC/AC	53	39	100	\$39,262	12,532	MILL & 3" AC OVERLAY
												Treatment Total	\$39,262		
2ND AV	JUNIPERO AV	SANTA FE ST	2NDAV	050	461	23	10,603	R	ST	53	38	100	\$13,923	20,448	CAPE SEAL
3RD AV	CARPENTER ST	W END	3RDAV	060A	236	24	5,664	R	ST	52	38	100	\$7,438	20,525	CAPE SEAL
8TH AV	FOREST RD	TURN AROUND	8THAV	050	135	16	2,160	R	ST	78	68	100	\$2,837	8,054	CAPE SEAL

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: 3.00%

Inflation: 3.00%

Printed: 12/07/2018

Scenario 1: City's Existing Funding \$345,000
per year

Year: 2023

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment
											PCI Before	PCI After			
CASANOVA ST	OCEAN AV	9TH AV	CASNVA	020	1,389	25	34,725	R	ST	70	61	100	\$45,598	12,473	CAPE SEAL
LINCOLN ST	2BD AV	3RD AV	LINCOL	015A	445	23	10,235	R	ST	72	63	100	\$13,440	11,016	CAPE SEAL
LOPEZ AV	NORTH END	4TH AV	LOPEZ	010	695	23	15,985	R	ST	71	62	100	\$20,990	12,054	CAPE SEAL
MISSION ST	ALTA AV	2ND AV	MISION	010	1,368	23	31,464	R	ST	71	62	100	\$41,316	12,051	CAPE SEAL
MISSION ST	8TH AV	10TH AV	MISION	050	854	32	27,328	C	ST	75	65	100	\$39,302	11,938	CAPE SEAL
MONTE VERDE ST	12TH AV	125 FT S/O SANTA LUCIA AV	MNTVRD	060	1,332	23	30,636	R	ST	71	62	100	\$40,228	11,951	CAPE SEAL
N CARMELO AV	2ND AV	4TH AV	NCMELO	010	745	25	18,625	R	ST	70	61	100	\$24,457	12,466	CAPE SEAL
												Treatment Total	\$249,529		
13TH AV	48 FT W/O SAN CARLOS ST	JUNIPERO AV	13THAV	030	630	22	13,860	A	AC/AC	68	69	78	\$6,067	48,780	SLURRY SEAL
5TH AV	MISSION ST	JUNIPERO AV	5THAV	020B	215	22	4,730	C	AC	95	88	94	\$1,627	45,544	SLURRY SEAL
7TH AV	SAN CARLOS ST	JUNIPERO AV	7THAV	040	425	33	14,025	O	AC	76	68	77	\$6,139	26,715	SLURRY SEAL
CARPENTER ST	3RD AV	OCEAN AV	CRPNTR	020	1,528	30	45,840	A	AC/PC C	92	83	90	\$15,765	51,362	SLURRY SEAL
												Treatment Total	\$29,598		
Year 2023 Area Total							277,702	Year 2023 Total					\$344,325		

Year: 2024

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment
											PCI Before	PCI After			
10TH AV	DOLORES ST	JUNIPERO AV	10THAV	030	729	26	18,954	C	ST	53	38	100	\$28,077	23,739	CAPE SEAL
4TH AV	LINCOLN ST	DOLORES ST	4THAV	030	251	27	6,777	C	ST	78	66	100	\$10,039	11,047	CAPE SEAL
4TH AV	DOLORES ST	JUNIPERO AV	4THAV	040	681	30	20,430	C	ST	54	38	100	\$30,263	23,767	CAPE SEAL
4TH AV	JUNIPERO AV	TORRES ST	4THAV	050	214	21	4,494	C	ST	78	66	100	\$6,657	11,046	CAPE SEAL
4TH AV	SANTA RITA ST	GUADALUPE ST	4THAV	060C	188	21	3,948	R	ST	78	64	100	\$5,340	10,065	CAPE SEAL
9TH AV	SAN ANTONIO AV	MONTE VERDE ST	9THAV	010	912	26	23,712	R	ST	72	61	100	\$32,071	11,981	CAPE SEAL

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: 3.00%

Inflation: 3.00%

Printed: 12/07/2018

Scenario 1: City's Existing Funding \$345,000 per year

Year: 2024

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment			
											PCI Before	PCI After						
CARMELO AV	4TH AV	OCEAN AV	CMELO	010	605	23	13,915	R	ST	73	61	100	\$18,820	12,007	CAPE SEAL			
CAMINO REAL	4TH AV	OCEAN AV	CMNRL	010	681	23	15,663	R	ST	73	61	100	\$21,184	12,007	CAPE SEAL			
CAMINO REAL	12TH AV	SANTA LUCIA AV	CMNRL	040	1,050	25	26,250	R	ST	73	61	100	\$35,503	12,008	CAPE SEAL			
JUNIPERO AV	ALTA ST	CAMINO DEL MONTE	JUNPRO	010	1,115	23	25,645	R	ST	72	62	100	\$34,685	11,734	CAPE SEAL			
LINCOLN ST	8TH AV	9TH AV	LINCOL	040	458	30	13,740	R	ST	75	63	100	\$18,584	11,125	CAPE SEAL			
LINCOLN ST	9TH AV	12TH AV	LINCOL	050	1,245	30	37,350	C	ST	77	64	100	\$55,327	12,373	CAPE SEAL			
MONTE VERDE ST	8TH AV	9TH AV	MNTVRD	040	435	25	10,875	R	ST	76	63	100	\$14,709	10,814	CAPE SEAL			
SANTE FE ST	4TH AV	5TH AV	SANTFE	030B	456	23	10,488	R	ST	58	34	100	\$14,185	20,381	CAPE SEAL			
												Treatment Total		\$325,444				
DEL MAR AV	OCEAN AV	TURN AROUND	DELMAR	010	141	81	11,421	A	AC	93	78	86	\$4,046	47,429	SLURRY SEAL			
RIO RD	JUNIPERO AV	SANTA LUCIA AV	RIORD	010	305	30	9,150	A	AC/AC	92	81	89	\$3,242	53,925	SLURRY SEAL			
SCENIC ROAD	8TH AV	BLK A3 S/END	SCENIC	020	1,420	23	32,660	A	AC/AC	92	81	89	\$11,569	53,925	SLURRY SEAL			
												Treatment Total		\$18,857				
							Year 2024 Area Total		285,472		Year 2024 Total		\$344,301					

Year: 2025

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment
											PCI Before	PCI After			
10TH AV	MONTE VERDE ST	DOLORES ST	10THAV	020	461	26	11,986	R	ST	76	62	100	\$16,698	11,149	CAPE SEAL
13TH AV	MONTE VERDE ST	48 FT W/O SAN CARLOS ST	13THAV	020	648	23	14,904	R	ST	78	62	100	\$20,763	11,083	CAPE SEAL
3RD AV	MISSION ST	JUNIPERO AV	3RDAV	020	224	28	6,272	R	ST	76	62	100	\$8,738	11,157	CAPE SEAL
9TH AV	MONTE VERDE ST	DOLORES ST	9THAV	020	447	32	14,304	R	ST	56	39	100	\$19,927	19,117	CAPE SEAL
9TH AV	MID BLK W/O TORRES ST	EAST END	9THAV	040	279	20	5,580	R	ST	76	63	100	\$7,774	10,898	CAPE SEAL

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: 3.00%

Inflation: 3.00%

Printed: 12/07/2018

Scenario 1: City's Existing Funding \$345,000
per year

Year: 2025

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment		
											PCI Before	PCI After					
CASANOVA ST	12TH AV	SANTA LUCIA AV	CASNVA	040	1,146	23	26,358	R	ST	78	62	100	\$36,719	11,035	CAPE SEAL		
CAMINO REAL	OCEAN AV	9TH AV	CMNRL	020	905	25	22,625	R	ST	78	62	100	\$31,519	11,071	CAPE SEAL		
CAMINO REAL	9TH AV	12TH AV	CMNRL	030	1,243	25	31,075	R	ST	78	62	100	\$43,290	11,050	CAPE SEAL		
DOLORES ST	10TH AV	12TH AV	DLORES	060	789	23	18,147	R	ST	76	63	100	\$25,280	10,910	CAPE SEAL		
MISSION ST	13TH AV	SANTA LUCIA AV	MISION	070	587	24	14,088	R	ST	78	62	100	\$19,626	11,331	CAPE SEAL		
MOUNTAIN VIEW AV	JUNIPERO AV	TORRES ST	MTVIEW	010A	200	23	4,600	R	ST	78	62	100	\$6,409	10,952	CAPE SEAL		
N CASANOVA ST	2ND AV	SOUTN END	NCASNV	010	750	23	17,250	R	ST	78	62	100	\$24,031	11,030	CAPE SEAL		
N SAN ANTONIO AV	2ND AV	4TH AV	NSANAN	010	726	23	16,698	A	ST	51	69	100	\$25,477	11,282	CAPE SEAL		
SAN ANTONIO AV	OCEAN AV	8TH AV	SANAN	015	908	28	25,424	C	ST	37	65	100	\$38,791	11,441	CAPE SEAL		
												Treatment Total			\$325,042		
8TH AV	SAN CARLOS ST	JUNIPERO AV	8THAV	035	529	33	17,457	A	AC	64	81	89	\$6,370	52,354	SLURRY SEAL		
GUADALUPE ST	6TH AV	OCEAN AV	GUADLP	030B	175	16	2,800	R	AC	93	80	88	\$1,022	29,705	SLURRY SEAL		
JUNIPERO AV	3RD AV	4TH AV	JUNPRO	040	452	58	26,216	A	AC/AC	64	81	89	\$9,565	52,354	SLURRY SEAL		
JUNIPERO AV	CAMINO DEL MONTE	2ND AVE	JUNPRO	20	146	37	5,402	C	AC	69	63	73	\$2,509	25,000	SLURRY SEAL		
												Treatment Total			\$19,466		
Year 2025 Area Total								281,186					Year 2025 Total			\$344,508	

Year: 2026

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment
											PCI Before	PCI After			
10TH AV	SAN ANTONIO AV	MONTE VERDE ST	10THAV	010	912	30	27,360	R	ST	58	39	100	\$39,258	18,592	CAPE SEAL
11TH AV	SAN ANTONIO AV	MONTE VERDE ST	11THAV	010	912	25	22,800	R	ST	58	37	100	\$32,715	18,803	CAPE SEAL
11TH AV	SAN CARLOS ST	JUNIPERO AV	11THAV	030	446	23	10,258	R	ST	77	61	100	\$14,719	11,441	CAPE SEAL
1ST AV	MISSION ST	JUNIPERO AV	1STAV	020	239	16	3,824	R	ST	77	61	100	\$5,487	11,437	CAPE SEAL

** - Treatment from Project Selection

Scenarios - Sections Selected for Treatment

Interest: 3.00%

Inflation: 3.00%

Printed: 12/07/2018

Scenario 1: City's Existing Funding \$345,000
per year

Year: 2026

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment
											PCI Before	PCI After			
3RD AV	SANTA FE ST	SANTA RITA ST	3RDAV	050C	236	20	4,720	R	ST	80	61	100	\$6,773	11,665	CAPE SEAL
CARMELO AV	OCEAN AV	9TH AV	CMELO	020	1,365	23	31,395	R	ST	58	37	100	\$45,048	18,801	CAPE SEAL
CARMELO AV	12TH AV	SANTA LUCIA AV	CMELO	040	825	25	20,625	R	ST	59	38	100	\$29,594	18,731	CAPE SEAL
DOLORES ST	12TH AV	SANTA LUCIA AV	DLORES	070	1,340	23	30,820	R	ST	58	37	100	\$44,223	18,819	CAPE SEAL
MONTE VERDE ST	9TH AV	12TH AV	MNTVRD	050	1,253	25	31,325	R	ST	78	60	100	\$44,947	11,862	CAPE SEAL
SAN CARLOS ST	ALTA AV	2ND AV	SANCAR	010	1,362	23	31,326	R	ST	78	60	100	\$44,949	11,888	CAPE SEAL
Treatment Total												\$307,713			
5TH AV	JUNIPERO AV	TORRES ST	5THAV	025	219	37	8,103	C	AC	71	60	71	\$3,876	20,588	SLURRY SEAL
CAMINO DEL MONTE	SAN CARLOS ST	120' S/O JUNIPERO AV	CMDMNT	020	742	30	22,260	A	AC	92	74	83	\$8,366	46,281	SLURRY SEAL
FOREST RD	MOUNTAIN VIEW	7TH AVE	FOREST	010	536	23	12,328	R	AC	81	68	78	\$5,897	24,455	SLURRY SEAL
MONTEREY ST	NORTH END	2ND AV	MONTRY	010	650	20	13,000	R	AC	84	68	78	\$6,218	20,773	SLURRY SEAL
SAN CARLOS ST	CAMINO DEL MONTE	5TH AV	SANCAR	030	770	42	32,340	A	AC/AC	90	82	89	\$12,154	49,306	SLURRY SEAL
Treatment Total												\$36,511			
Year 2026 Area Total							302,484	Year 2026 Total				\$344,224			

Year: 2027

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment
											PCI Before	PCI After			
11TH AV	JUNIPERO AV	EAST END	11THAV	040	658	18	11,844	R	AC	54	34	100	\$59,181	10,399	MILL & 2" AC OVERLAY
Treatment Total												\$59,181			
12TH AV	CAMINO REAL	MONTE VERDE ST	12THAV	015	480	30	14,400	R	ST	62	61	100	\$21,282	11,391	CAPE SEAL
1ST AV	JUNIPERO AV (WEST END)	SANTA RITA ST	1STAV	030	633	23	14,559	R	ST	42	61	100	\$21,517	11,391	CAPE SEAL

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: 3.00%

Inflation: 3.00%

Printed: 12/07/2018

Scenario 1: City's Existing Funding \$345,000 per year

Year: 2027

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment		
											PCI Before	PCI After					
1ST AV	LOBOS ST	MONTEREY ST	1STAV	040C	179	23	4,117	R	ST	12	61	100	\$6,085	11,391	CAPE SEAL		
3RD AV	GUADALUPE ST	CARPENTER ST	3RDAV	050B	246	20	4,920	R	ST	64	61	100	\$7,272	11,391	CAPE SEAL		
5TH AV	TORRES ST	GUADALUPE ST	5THAV	030	685	20	13,700	R	ST	41	61	100	\$20,248	11,391	CAPE SEAL		
7TH AV	FOREST ST	CITY LIMITS	7THAV	050B	224	16	3,584	R	ST	39	61	100	\$5,297	11,391	CAPE SEAL		
8TH AV	CASANOVA ST	MONTE VERDE ST	8THAV	020C	225	33	7,425	R	ST	62	61	100	\$10,974	11,391	CAPE SEAL		
9TH AV	DOLORES ST	SAN CARLOS ST	9THAV	030	216	30	6,480	C	ST	68	63	100	\$10,489	12,237	CAPE SEAL		
ALTA AV	SAN CARLOS ST	JUNIPERO AV	ALTA AV	010	530	23	12,190	R	ST	66	61	100	\$18,016	11,391	CAPE SEAL		
LOBOS ST	CITY LIMITS	1ST AV	LOBOS	010A	256	23	5,888	R	ST	40	61	100	\$8,702	11,391	CAPE SEAL		
SAN ANTONIO AV	8TH AV	11TH AV	SANAN	020	1,358	22	29,876	C	ST	61	37	100	\$48,359	21,802	CAPE SEAL		
SANTE FE ST	5TH AV	6TH AV	SANTFE	040	449	23	10,327	R	ST	40	61	100	\$15,263	11,391	CAPE SEAL		
TORRES ST	3RD AV	4TH AV	TORRES	020	428	30	12,840	C	ST	70	63	100	\$20,784	12,237	CAPE SEAL		
												Treatment Total		\$214,288			
13TH AV	48 FT W/O SAN CARLOS ST	JUNIPERO AV	13THAV	030	630	22	13,860	A	AC/AC	68	71	80	\$5,365	56,381	SLURRY SEAL		
3RD AV	JUNIPERO AV	TORRES ST	3RDAV	030	245	27	6,615	A	AC/AC	92	81	89	\$2,561	49,043	SLURRY SEAL		
3RD AV	TORRES ST	SANTA FE ST	3RDAV	040	269	27	7,263	A	AC/AC	92	81	89	\$2,812	49,043	SLURRY SEAL		
CARPENTER ST	CITY LIMITS	2ND AVE	CRPNTR	011	645	30	19,350	A	AC/PC C	92	82	89	\$7,490	48,527	SLURRY SEAL		
CARPENTER ST	3RD AV	OCEAN AV	CRPNTR	020	1,528	30	45,840	A	AC/PC C	92	82	89	\$17,744	46,259	SLURRY SEAL		
JUNIPERO AV	2ND AV	3RD AV	JUNPRO	030	475	28	13,300	C	AC	88	68	77	\$6,553	23,077	SLURRY SEAL		
MOUNTAIN VIEW AV	TORRES ST	100' EAST OF TORRES ST	MTVIEW	010B	100	23	2,300	R	AC/AC	94	79	87	\$891	30,015	SLURRY SEAL		
OCEAN AV	DEL MAR AV	SAN ANTONIO AV	OCEAN	010	495	80	39,600	A	AC	94	74	82	\$15,328	44,942	SLURRY SEAL		
OCEAN AV	CARPENTER ST	CITY LIMITS	OCEAN	050	341	35	11,935	A	AC	72	81	89	\$4,620	49,349	SLURRY SEAL		

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: 3.00%

Inflation: 3.00%

Printed: 12/07/2018

Scenario 1: City's Existing Funding \$345,000 per year

Year: 2027

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment		
											PCI Before	PCI After					
PINE RIDGE WAY	FOREST RD	TURN AROUND	PNRIDG	010	141	23	3,243	R	AC	70	67	76	\$1,598	26,357	SLURRY SEAL		
SAN ANTONIO AV	4TH AV	OCEAN AV	SANAN	010	576	28	16,128	A	ST	17	78	85	\$6,243	43,880	SLURRY SEAL		
												Treatment Total		\$71,205			
							Year 2027 Area Total		331,584		Year 2027 Total			\$344,674			

Year: 2028

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Current PCI	Treatment		Cost	Rating	Treatment		
											PCI Before	PCI After					
SCENIC ROAD	SANTA LUCIA AV	CITY LIMIT	SCENIC	040	832	30	24,960	C	AC	84	61	100	\$115,795	11,151	2" AC OVERLAY		
												Treatment Total		\$115,795			
7TH AV	MONTE VERDE ST	DOLORES ST	7THAV	020	482	33	15,906	O	ST	66	61	100	\$24,213	11,060	CAPE SEAL		
CASANOVA ST	9TH AV	12TH AV	CASNVA	030	1,243	25	31,075	R	ST	65	61	100	\$47,304	11,060	CAPE SEAL		
GUADALUPE ST	CITY LIMITS	2ND AV	GUADLP	010	632	27	17,064	R	ST	44	61	100	\$25,976	11,060	CAPE SEAL		
MISSION ST	10TH AV	13TH AV	MISION	060	1,338	23	30,774	R	ST	65	61	100	\$46,846	11,060	CAPE SEAL		
												Treatment Total		\$144,339			
2ND AV	N CAMINO REAL	N. CASANOVA STREET	2NDAV	020	774	23	17,802	R	AC	84	68	78	\$9,033	23,049	SLURRY SEAL		
3RD AV	LOBOS ST	MONTEREY ST	3RDAV	060B	202	24	4,848	R	AC/AC	93	77	85	\$1,933	30,562	SLURRY SEAL		
CAMINO DEL MONTE	CITY LIMIT	120' S/O JUNIPERO AV	CMDMNT	010	260	23	5,980	A	AC/AC	53	83	90	\$2,385	43,621	SLURRY SEAL		
DEL MAR AV	OCEAN AV	TURN AROUND	DELMAR	010	141	81	11,421	A	AC	93	78	86	\$4,554	42,550	SLURRY SEAL		
RIO RD	JUNIPERO AV	SANTA LUCIA AV	RIORD	010	305	30	9,150	A	AC/AC	92	82	89	\$3,648	46,984	SLURRY SEAL		
SAN CARLOS ST	8TH AV	11TH AV	SANCAR	060	1,415	42	59,430	A	AC	81	68	77	\$30,156	33,477	SLURRY SEAL		
SAN CARLOS ST	11TH AV	13TH AV	SANCAR	070	945	42	39,690	A	AC	90	69	78	\$20,140	33,622	SLURRY SEAL		
SCENIC ROAD	8TH AV	BLK A3 S\END	SCENIC	020	1,420	23	32,660	A	AC/AC	92	82	89	\$13,021	46,984	SLURRY SEAL		

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: 3.00%

Inflation: 3.00%

Printed: 12/07/2018

Scenario 1: City's Existing Funding \$345,000
per year

		Treatment Total	\$84,870
<u>Year 2028 Area Total</u>	<u>300,760</u>	<u>Year 2028 Total</u>	<u>\$345,004</u>
<u>Total Section Area:</u>	<u>2,865,216</u>	<u>Grand Total</u>	<u>\$3,446,318</u>



Collaboration. Commitment. Confidence.

www.ncenef.com

