Town of Yountville

Pavement Management Program P-TAP 20 Budget Options Report

Submitted to:

Town of Yountville 6550 Yount Street Yountville, CA 94599



Submitted by:

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Quality Engineering Solutions

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SECTION 8 Quality Monitoring Report

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EXECUTIVE SUMMARY

Quality Engineering Solutions, Inc. (QES) completed an update of the existing StreetSaver® database for 8.28 centerline miles of town streets (representing 100% of the street network) and developed a current Budget Options Report. Pavement inspections were completed in August 2019. Maintenance and rehabilitation (M&R) history data, provided by the Town, was updated. In addition, the maintenance decision tree costs were updated to more closely match current unit cost data in the region. A budgetary needs analysis was performed based on the updated inspections and treatment costs, and three budget scenarios were evaluated to compare the effects of various funding levels.

The Town of Yountville is responsible for the repair and maintenance of approximately 8.28 centerline miles of streets, which are defined in 72 pavement sections. The Town's street network replacement value is estimated at \$23.9 million. This represents a significant asset for Town officials to manage. This asset valuation is assessed assuming the entire street network is replaced at today's dollar. The average overall Pavement Condition Index (PCI) of the Town's street network increased to 74 after the completion of the surveys and then subsequently increased to 75 following the M&R update in October 2019, which indicates that the street network is classified in the 'Very Good' condition category. The pavement condition of the Town's street network could deteriorate to the 'Good' condition category without adequate budget to complete the recommended maintenance treatments. The Executive Performance Summary, printed from StreetSaver® is provided as Figure 1 and illustrates the historical trend of the Town's pavement performance.

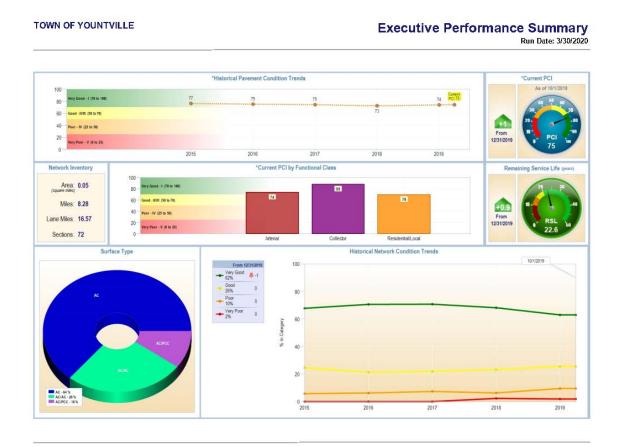


Figure 1. Executive Performance Summary

Contained within the report are three different budget scenarios, each run for a five-year period. The following reports were developed:

- 1. Current Investment Level An annual budget of \$550 thousand was analyzed to evaluate the effect of the current investment level on the pavement condition. Under this budget scenario, the deferred maintenance backlog will slightly decrease to \$1.6 million and the network PCI will increase to and maintain at 79 within five years.
- 2. *Maintain PCI* To maintain the PCI level at 75, a Target-Driven Scenario model was used to determine the required budget. The results indicate that a five-year total of \$2 million for rehabilitation and \$0.4 million for preventive maintenance (PM) is needed. The deferred maintenance will slightly decrease from \$1.8 million in 2020 to \$1.7 million in 2024.
- 3. *Increase PCI to 80* To increase the overall PCI to 80 by the end of the fifth year, a Target-Driven Scenario model was used to determine the required budget. The results indicate that a five-year total of \$3.7 million is needed, with \$3.3 million for rehabilitation and \$0.4 million for PM.

Under Scenario 1, the network PCI will increase to and maintain at 79 over the next five years and the maintenance backlog will decrease from \$1.7 million to \$1.6 million. The percentage of the street network falling in the 'Poor' and 'Very Poor' category will only slightly increase from 11.4% in 2020 to 12.2% in 2024. Thus, the Town's anticipated funding level appears to be sufficient to prevent the deterioration of the pavement network over the next five years, however additional funding would keep the percent of 'Poor' and 'Very Poor' from increasing.

The *ideal* strategy for the Town of Yountville is to eliminate the entire deferred maintenance backlog in the first year. However, the amount of funds required, approximately \$2.1 million, likely makes this strategy unrealistic for the Town.

Additional funding should be sought so that the Town can enhance the Pavement Management Program (PMP) and reduce the number of sections falling in the 'Poor' and 'Very Poor' condition categories. With additional funding, the backlog would be further reduced and additional PM treatments could be applied.

BACKGROUND

QES was selected as part of the Metropolitan Transportation Commission (MTC) Pavement Management Technical Assistance Program (P-TAP) Round 20 to perform an inspection of all 8.28 centerline miles of town streets (representing 100% of the street network) and to update the Budget Options Report. All inspections were completed in accordance with MTC standards, and the StreetSaver® Online 9.0 database was updated with the inspection data. Pavement inspections typically occur on three year cycles and inspections for the previous cycle were completed in June 2017. MTC provided QES access to the Town of Yountville StreetSaver® database in May 2019. M&R history data is typically updated on a continual basis to keep the network PCI up-to-date. QES updated missing M&R history with data provided by the Town. In addition, the maintenance decision tree costs were reviewed, confirmed, and/or updated to reflect current pavement maintenance treatment prices. A budgetary needs analysis was performed

based on the updated inspections and treatment costs, and three budget scenarios were evaluated to compare the effects of various funding levels.

PURPOSE

This report is intended to assist the Town with identifying street maintenance priorities specific to its current conditions and budget levels. The report evaluates the overall condition of the street network and highlights the impacts of various funding levels on the network pavement condition and deferred maintenance funding shortfalls. The MTC StreetSaver® PMP was used for this evaluation. The intent of this program is to develop a maintenance strategy that will improve the overall condition of the street network to an optimal PCI and also to maintain it at that level.

A typical pavement performance curve, as illustrated in Figure 2, shows how streets which are in 'Good' condition will more quickly drop to 'Poor' or 'Very Poor' condition. The farther down the curve a pavement's condition falls, the more rapid the deterioration will be and the costlier the M&R. Thus, the goal is to spend fewer dollars by funding preservation treatments on more roadways and keeping pavements in the 'Very Good' condition range.

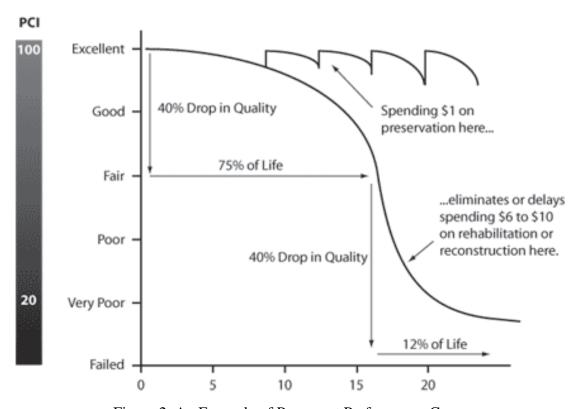


Figure 2. An Example of Pavement Performance Curve

The MTC StreetSaver® program maximizes the return from expenditures by recommending a multi-year street M&R plan based on the most cost-effective repairs available. A comprehensive PM program is a critical component of this plan, as these PM treatments extend the life of good pavements at a much lower cost than rehabilitation, overlay, or reconstruction treatments. To this end, various "what-if" scenarios under different funding levels were conducted to determine the most cost-effective plan for maintaining the Town's street network over the next five years.

NETWORK DESCRIPTION AND EXISTING PAVEMENT CONDITION

The Town of Yountville is responsible for the repair and maintenance of approximately 8.28 centerline miles of streets, identified by 72 pavement sections. The Town's street network replacement value is estimated at \$23.9 million. This represents a significant asset for Town officials to manage. Determination of the asset valuation is assessed by assuming the entire street network is replaced at today's dollar.

Based upon the field condition surveys completed and following the M&R update, the average overall network PCI of the Town's street network is **75**, which indicates that the street network falls into the 'Very Good' condition category. The typical MTC definition of pavement condition categories are based upon the PCI value and are defined as identified in Figure 3. The PCI is a measurement of pavement condition that ranges from 0 to 100. A newly constructed or overlaid street would have a PCI of 100, while a failed road (requiring complete reconstruction) would have a PCI under 25. Table 1 summarizes the number of sections, length, and average PCI of the network by functional class. Figures 4 through 7 provide an example of a pavement in the 'Very Good,' 'Good,' 'Poor,' and 'Very Poor' categories, respectively. Figure 8 presents the pavement condition categories of the network. As shown, 88% of the network falls into the 'Very Good' or 'Good' condition category, while 12% of the network falls into the 'Poor' or 'Very Poor' condition category. Illustrated in Figure 9 is a GIS-based map of the current network PCI conditions. A section-by-section listing of the current condition is provided in Section 2 (sorted alphabetically and also by descending PCI value), while the detailed network statistic summary and replacement costs are provided in Section 3.

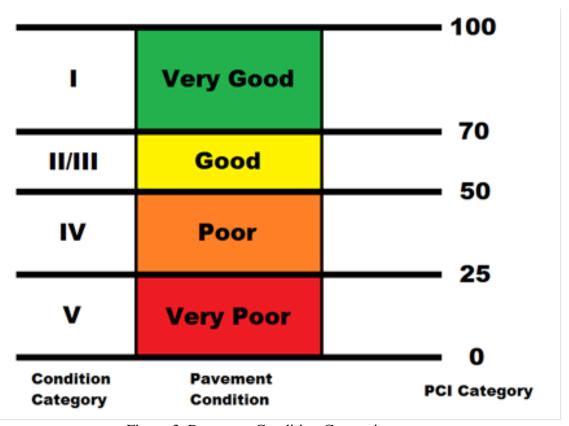


Figure 3. Pavement Condition Categories

Table 1. Street Network Statistics and Average PCI by Functional Class

Functional Class	Total Sections	Total Centerline Miles	Total Lane Miles	PCI
Arterial	12	1.68	3.36	74
Collector	10	1.36	2.71	89
Residential/Local	50	5.25	10.50	70
Total	72	8.29	16.57	
	Overall Netwo	rk PCI as of 10/1/2019:		75



Figure 4. 'Very Good' Condition Category – Adams Street



Figure 5. 'Good' Condition Category – Oak Circle





Figure 7. 'Very Poor' Condition Category - Yount Mill Road

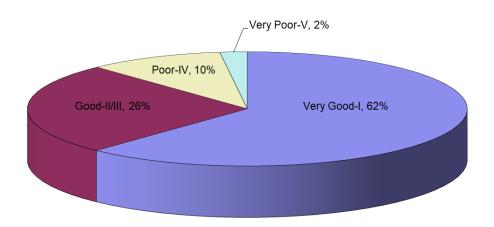


Figure 8. Pavement Condition Summary by Condition Categories

Maintenance and Rehabilitation Treatments and Unit Costs

Based upon the current pavement condition, M&R options are selected using a series of decision trees. A decision tree utilizes the known information, such as roadway type, surface type, and current conditions and then determines a representative maintenance or rehabilitation treatment for that section. Typical M&R treatments are described below in Table 2.

Table 2. Maintenance and Rehabilitation Treatments

Treatment Type

Treatment Description



Crack & Joint Seal

Open joints and cracks in the pavement surface should be periodically sealed to prevent the intrusion of water and other non-compressible materials. As one of the lowest cost pavement preservation treatments around, crack sealing should be carried out every three to four years to prevent serious pavement deterioration such as potholes.



Patching

Asphalt patching can be used to fill cracks and repair potholes to prevent the further deterioration of the pavement. Damaged asphalt is often removed and patched prior to receiving further M&R treatments in order to repair subbase failure and/or eliminate crack propagation into a newly treated surface.



Microsurfacing

Microsurfacing consists of an asphalt emulsion being applied to an asphalt pavement surface. Chemical additives are mixed into the emulsion that causes it to harden faster than a slurry seal and without heat for evaporation. This makes microsurfacing a preferred course of treatment for streets with heavy traffic conditions or on sections that are heavily shaded from direct sunlight.



Mill and Overlay

For more heavily distressed pavements, the top 2 to 3 inches of pavement can be removed and a new layer of asphalt can be overlaid. A thin layer may also be milled and overlaid to resurface and restore an oxidized pavement section that is in relatively good condition with minimal cracking.



Reconstruction

Albeit the most expensive option, reconstruction may be necessary for pavement sections that are beyond repair due to excessive pavement deterioration. Existing pavement material is either removed or recycled and a brand new pavement section is built. Asphalt pavements typically last 25 years before requiring reconstruction and their lifespan can be significantly extended by applying regular PM.

It is important to remember that the decision trees are utilized on a network level basis primarily for determining budgetary needs and may not entirely represent the actual project level work that would be most appropriate. At the request of the Town, the decision trees were updated to account for current costs. The decision trees utilized for the Budget Options are provided in Section 4.

For arterial, collector, and residential/local routes the following M&R treatments were included:

- Microsurfacing at \$14.25 per square yard
- Microsurfacing with 20% digouts at \$28.49 per square yard
- Mill and thin overlay at \$45.54 per square yard
- Mill and thick overlay at \$68.31 per square yard

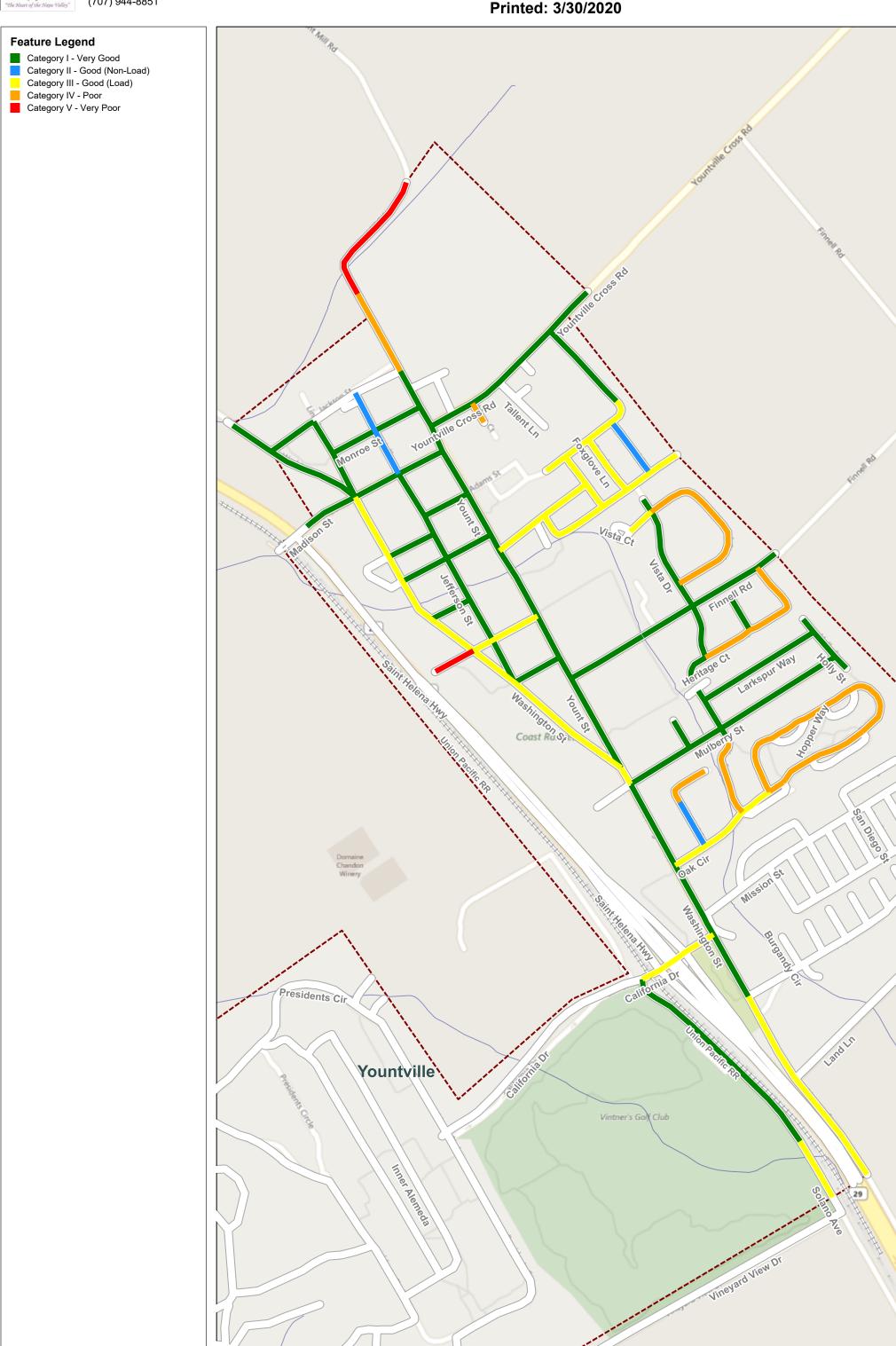
For arterial, collector, and residential/local routes the following cost changes were made:

- Seal cracks was increased from \$1.32 to \$2 per lineal foot
- Reconstruct structure (AC) was decreased from \$163.94 to \$154.30 per square yard



Figure 9. Current PCI Condition

Printed: 3/30/2020



BUDGET NEEDS

Based on the principle that it costs less to maintain streets in good condition than those in poor, the MTC PMP strives to develop a maintenance strategy that will first improve the overall condition of the network to an optimal PCI somewhere in the 80s, and then sustain it at that level. The overall PCI for the Town street network is 75 which is in the 'Very Good' condition category. However, current funding strategies demonstrate there is a \$1.7 million deferred maintenance backlog in the first year of the scenario. Deferred maintenance refers to postponed PM and/or pavement rehabilitation due to funding deficiencies. If these maintenance issues are not addressed, the quality of the street network will inevitably decline. To correct these deficiencies, a cost-effective funding and M&R strategy must be implemented.

The first step in developing a cost-effective M&R strategy is to determine, assuming unlimited revenues, the maintenance "needs" of the Town's street network.

In determining relative budget scenarios over a five-year period, representative interest and inflation rates must be chosen to be used in the analysis. The interest rate is used to describe an annual percentage increase in invested funds that would be realized if it were not instead spent on rehabilitation and maintenance activities. The inflation rate describes the rate of change of prices especially in relation to the construction cost index where a positive inflation rate indicates a loss in purchasing power over time and a negative inflation rate indicates an increase in purchasing power. Purchasing power simply describes the number of goods or services that can be purchased with a unit of currency.

QES has determined that an interest rate of 2% would best represent the annual increase that would be realized for any funds that were invested over time. QES has also reviewed the current construction cost index as well as the national inflation rate and determined that an inflation rate of 3% would best represent the annual decrease in purchasing power over the next five years.

Using the PMP Budget Needs module, street maintenance needs are estimated at \$4.6 million over the next five years. If the Town follows the strategy recommended by the program, the average network PCI will increase to 84. If, however, current pavement maintenance funding is exhausted and little or no maintenance is applied over the next five years, already distressed streets will continue to deteriorate, and the network PCI will drop to 66. The results of the Budget Needs analysis are summarized in Table 3 below.

Table 3. Summary of Results from Needs Analysis

Year	PCI Treated	PCI Untreated	PM Cost	Rehab Cost	Total Cost
2020	84	75	\$154,166	\$1,896,407	\$2,050,573
2021	87	72	\$10,592	\$1,460,262	\$1,470,854
2022	85	70	\$25,323	\$295,400	\$320,723
2023	85	68	\$86,484	\$417,641	\$504,125
2024	84	66	\$121,907	\$180,613	\$302,520
		%PM	PM Total Cost	Rehab Total Cost	Total Cost
		8.57%	\$398,472	\$4,250,323	\$4,648,795

Table 3 shows the level of expenditure required to raise the Town's pavement condition to an optimal network PCI of 84 and eliminate the current M&R backlog. The results of the Budget

Needs analysis represent the ideal funding strategy recommended by the MTC PMP. Of the \$4.6 million in M&R needs shown, approximately \$398 thousand or 8.57% is earmarked for PM or life-extending treatments, while the remaining \$4.3 million or 91.43% is allocated for more costly rehabilitation and reconstruction treatments.

Figure 10 illustrates funding distribution by street functional classification and is based on the Budget Needs Predictive Module. The PMP is recommending a funding level of \$4.6 million over a five-year period. Details of the Budget Needs analysis are provided in Section 5.

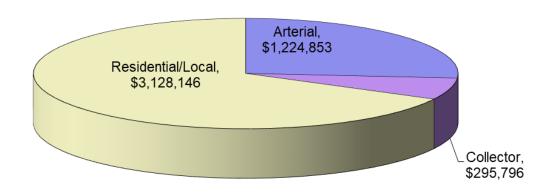


Figure 10. Budget Distribution by Functional Classification

BUDGET SCENARIOS

Having determined the M&R needs of the Town's street network, the next step in developing a cost-effective M&R strategy is to conduct "what-if" analyses. Using the PMP Budget Scenarios module, the impact of various budget scenarios was evaluated. The program projects the effects of the different scenarios on PCI and deferred maintenance (backlog). By examining the effects on these indicators, the advantages and disadvantages of different funding levels and maintenance strategies become clear. For this report, the following three scenarios were run for a five-year analysis period.

- 1. Current Investment Level An annual budget of \$550 thousand was analyzed to evaluate the effect of the current investment level on the pavement condition. A total of 15.1% of the budget was set aside for PM needs (also known as a 15.1% PM split).
- 2. *Maintain PCI* To maintain the PCI level at 75, a Target-Driven Scenario model was used to determine the required budget. The result indicated that a five-year total of \$2.4 million is needed, with \$2 million for rehabilitation and \$0.4 million for PM.

3. *Increase PCI to 80* — In order to increase the PCI to 80, a Target-Driven Scenario model was used to determine the required budget. The result indicated that a five-year total of \$3.7 million is needed, with \$3.3 million for rehabilitation and \$0.4 million for PM.

Scenario 1 - Current Investment Level

An annual budget of \$550 thousand was analyzed to evaluate the effect of the current investment level on the pavement condition. Under this budget scenario, the deferred maintenance backlog will decrease from \$1.7 million in 2020 to \$1.6 million in 2024, while the network PCI will increase and maintain at 79 within five years. This indicates that the Town's current budget level should effectively prevent the deterioration of the pavement condition. Table 4 and Figure 11 summarize the results from Scenario 1. Detailed budget scenario results are provided in Section 6.1.

Table 4. Summary of Results from Scenario 1

		_	Budget Year			
Item	2020	2021	2022	2023	2024	Total
Total Budget	\$550,000	\$550,000	\$550,000	\$550,000	\$550,000	\$2,750,000
Rehabilitation	\$544,534	\$375,710	\$519,424	\$451,218	\$401,344	\$2,292,230
Preventive Maintenance	\$0	\$169,393	\$25,323	\$86,219	\$121,976	\$402,911
Stop Gap (Funded)	\$5,466	\$3,874	\$1,014	\$1,401	\$0	\$11,755
Deferred Maintenance	\$1,668,144	\$2,416,685	\$2,007,594	\$1,934,854	\$1,591,556	-
Overall Network PCI	79	79	79	79	79	-

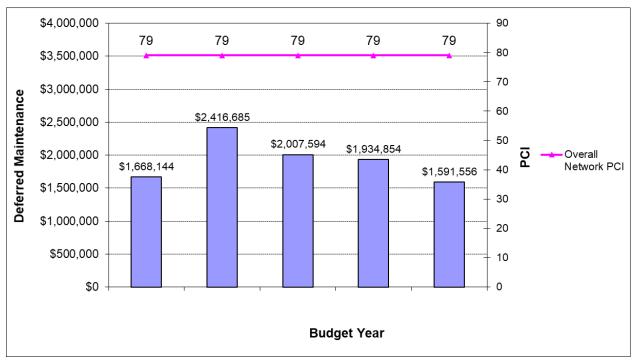


Figure 11. Deferred Maintenance & PCI after Treatment – Scenario 1

Scenario 2 - Maintain PCI

This scenario shows what the budget level must be in order to maintain the street network PCI at the level of 75 by the end of the five-year period. Under this scenario, a total of \$2.4 million is needed, with \$2 million for rehabilitation and \$0.4 million for PM. The annual budget will vary between \$210 thousand and \$633 thousand, while the deferred annual maintenance backlog will slightly decrease from \$1.8 million in 2020 to \$1.7 million in 2024. By the year 2024, 87.8% of the network will fall into the 'Very Good' or 'Good' condition category, while 12.2% of the network will fall into the 'Poor' or 'Very Poor' condition category. Table 5 and Figure 12 summarize the results from Scenario 2. Detailed budget scenario results are provided in Section 6.2.

	Tat	ne 5. Sullilliai	y of Results II	oni Scenario 2		
Item			Budge	et Year		
пеш	2020	2021	2022	2023	2024	Total
Total Budget	\$209,876	\$471,329	\$547,352	\$633,464	\$552,610	\$2,414,631
Rehabilitation	\$176,088	\$471,253	\$484,241	\$477,263	\$410,559	\$2,019,404
Preventive Maintenance	\$33,788	\$76	\$63,111	\$156,201	\$142,051	\$395,227
Deferred Maintenance	\$1,840,690	\$2,530,046	\$1,957,100	\$1,888,448	\$1,694,781	-
Overall Network PCI	75	75	75	75	75	-

Table 5. Summary of Results from Scenario 2

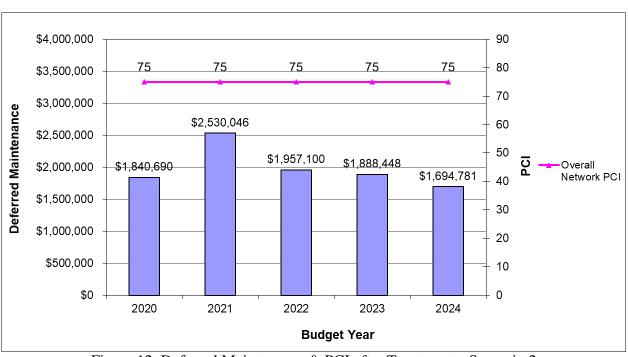


Figure 12. Deferred Maintenance & PCI after Treatment – Scenario 2

Scenario 3 – Increase PCI to 80

This scenario shows what the budget level must be in order to increase the street network PCI from the level of 75 to 80 by year 2024. Under this scenario, a total of \$3.7 million is needed, with \$3.3 million for rehabilitation and \$0.4 million for PM. The annual budget will vary between \$345 thousand and \$874 thousand. The deferred annual maintenance backlog will

decline from \$1.7 million to \$386 thousand by the end of the five-year period. By the year 2024, 91.1% of the network will fall into the 'Very Good' or 'Good' condition category, while 8.9% of the network will fall into the 'Poor' or 'Very Poor' condition category. Table 6 and Figure 13 summarize the results from Scenario 3. Detailed budget scenario results are provided in Section 6.3.

Table 6. Summary of Results from Scenario 3

Item			Budge	et Year		
item	2020	2021	2022	2023	2024	Total
Total Budget	\$345,484	\$874,270	\$867,946	\$847,193	\$791,375	\$3,726,268
Rehabilitation	\$311,696	\$813,220	\$766,883	\$760,974	\$669,468	\$3,322,241
Preventive Maintenance	\$33,788	\$61,050	\$101,063	\$86,219	\$121,907	\$404,027
Deferred Maintenance	\$1,705,082	\$1,987,430	\$1,185,966	\$849,674	\$386,310	-
Overall Network PCI	76	77	78	79	80	-

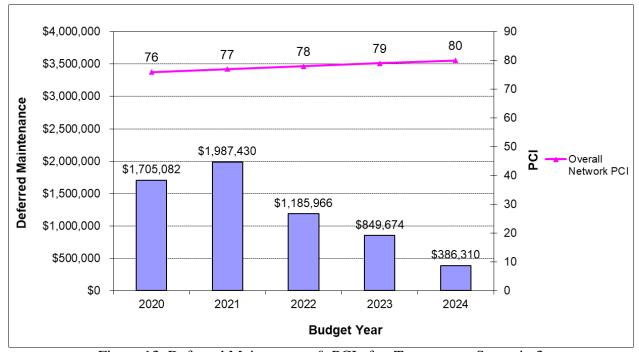


Figure 13. Deferred Maintenance & PCI after Treatment – Scenario 3

Scenario Comparison

Figures 14 and 15 graphically illustrate the comparison of the five-year scenarios in terms of PCI and deferred maintenance. Figure 14 shows the comparison of the change of PCI over time using different five-year budget scenarios and Figure 15 illustrates the change in deferred maintenance over time for each five-year scenario.

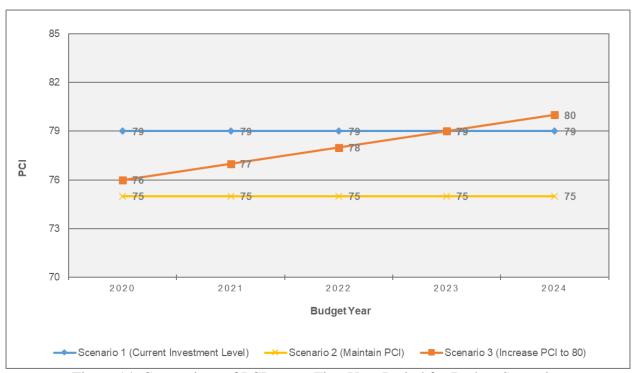


Figure 14. Comparison of PCI over a Five-Year Period for Budget Scenarios

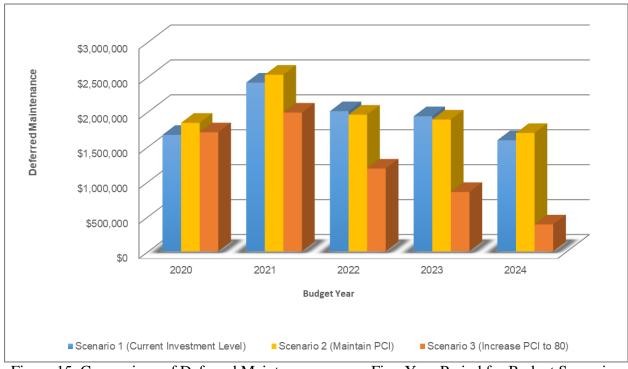


Figure 15. Comparison of Deferred Maintenance over a Five-Year Period for Budget Scenarios

DISCUSSION AND RECOMMENDATIONS

Pavement Budget

Of the various maintenance and funding options considered, the *ideal* strategy for the Town of Yountville is presented in the Budget Needs analysis, with a five-year expenditure total of \$4.6 million. Not only does this budget plan improve the network PCI to an optimal level of 84, but it also eliminates the entire deferred maintenance backlog in the first year. However, the amount of funds required in the first year, approximately \$2.1 million, likely makes this strategy unrealistic for the Town.

Under the current annual budget of \$550 thousand, the network PCI is anticipated to increase to and maintain at 79 over the next five years. The maintenance backlog will slightly decrease to \$1.6 million in 2024 and the percentage of the street network falling in the 'Poor' or 'Very Poor' condition category will only slightly increase from 11.4% in 2020 to 12.2% in 2024. This indicates that the current funding level should be sufficient to prevent the deterioration of the network's pavement condition.

Pavement Management Practices

In order to improve the overall condition of the pavement network and eventually bring the Town's network to a level where best management practices can occur, we recommend the inclusion of the following aspects into the Town's pavement management strategies:

- Explore potential alternatives to increase funding for PM and pavement rehabilitation for the Town's network.
- Continue performing cyclic pavement condition inspections with their respective comprehensive data quality management plan.
- Evaluate periodically the cost effectiveness of M&R activities for different conditions such as traffic, existing distresses, and functional classification.
- Annually update M&R work and unit costs in the PMP 'Decision Tree Module.' This will help prevent understating actual funding requirements to adequately maintain the street network.
- Evaluate the use of innovative pavement M&R technologies that could improve efficiency and cost savings. For instance, the use of recycling techniques such as hot-in-place recycling, RAP (reclaimed asphalt pavement), full depth reclamation, and cold-in-place recycling.

The Town has been using the PMP and has maintained the overall condition of the street network. With additional funding, the backlog would be reduced and additional rehabilitation and PM treatments could be applied. The suggested M&R report provided in Section 7 was generated from the StreetSaver® software identifying recommended treatments for the next five years using the current annual budget of \$550 thousand. It is important to understand that this report is generated by the software based upon network level project recommendations. Engineering judgement should be used when programming the M&R options to account for constructability efficiencies.

SECTION 1

Definitions

The pavement condition index, or PCI, is a measurement of the health of the pavement network or condition and ranges from 0 to 100. A newly constructed street would have a PCI of 100, while a failed street would have a PCI of 25 or less. The PCI is calculated based on pavement distresses identified in the field.

Network is defined as a complete inventory of all streets and other pavement facilities in which the Town has jurisdiction and maintenance responsibilities. To facilitate the management of streets, they are subdivided into management sections identified as a segment of street, which has the same characteristics.

Urban Arterial Street carries the major portion of trips entering and leaving the urban area, as well as the majority of through movements desiring to bypass the central Town. In addition, significant intra-area-travel such as between central business districts and outlying residential areas exists in the system.

Urban Collector Street provides land access service and traffic circulation within residential neighborhoods, commercial, and industrial areas. It differs from the arterial system in that facilities on a collector system may penetrate residential neighborhoods.

Urban Local Street comprises all facilities not classified as arterial or collector. It serves primarily to provide direct access to abutting land and access to the higher systems.

Preventive Maintenance refers to repairs applied while the pavement is in "good" condition. Such repairs extend the life of the pavement at relatively low costs, and prevent the pavement from deteriorating into conditions requiring more expensive treatments. Preventive maintenance treatments include slurry seals, crack sealing, and deep patching. Treatments of this sort are applied before pavement deterioration has become severe and usually cost less than \$5.00/sq. yd.

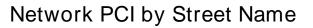
Deferred Maintenance refers to the dollar amount of maintenance and rehabilitation work that should have been completed to maintain the street in "good" condition, but had to be deferred due to funding deficiencies for preventative maintenance and/or pavement rehabilitation programs. The actual repairs that are being deferred are often referred to as a "backlog."

Stop Gap refers to the dollar amount of repairs applied to maintain the pavement in a serviceable condition (e.g., pothole patching). These repairs are a temporary measure to stop resident complaints, and do not extend the pavement life. Stop gap repairs are directly proportional to the amount of deferred maintenance. Money spent on stop gap repairs are often taken from preventive maintenance budgets.

SECTION 2

2.1 PCI Summary: Sorted by Street Name 2.2 PCI Summary: Sorted by Descending PCI

PCI Summary: Sorted by Street Name (Alphabetical)





03/30/2020

Street ID	Section ID	Street Name	Begin Location	End Location	Length	Width	Area	Functional Class	Surface Type	Construction Date	Remaining Life	PCI
ADAMS	10	ADAMS STREET	JEFFERSON ST.	YOUNT ST.	300	33	9900	Residential/Local	AC	01/01/1950	33	93
ADAMS	20	ADAMS STREET	YOUNT ST	LANDE WAY	514	27	13878	Residential/Local	AC	06/01/2006	32	91
CALIF	10	CALIFORNIA DRIVE	SOLANO AVE	WASHINGTON ST.	650	35	22750	Collector	AC	01/01/1965	11	69
CREEK	10	CREEK STREET	WASHINGTON ST.	JEFFERSON ST.	248	26	6448	Residential/Local	AC	01/01/1950	26	81
FINNEL	03	FINNELL ROAD	YOUNT ST	166' WEST OF HOPPER CREEK	425	36	21276	Collector	AC/AC	01/31/2000	24	79
FINNEL	20	FINNELL ROAD	HOPPER CREEK	TOWN LIMIT	1109	36	39924	Collector	AC/AC	01/01/1999	38	92
FINNEL	5-8	FINNELL ROAD	166' WEST OF HOPPER CREEK	HOPPER CREEK	166	43	7138	Collector	AC/AC	01/31/2000	21	77
FORRES	10	FORRESTER LANE	MOUNT AVE.	DEAD END	1306	24	31344	Residential/Local	AC	01/01/1997	10	52
FOXGLO	10	FOXGLOVE LANE	LANDE WAY	FORRESTER LN.	437	24	10488	Residential/Local	AC	01/01/1997	16	63
HARVES	10	HARVEST COURT	HERITAGE WY	DEAD END	288	31	8928	Residential/Local	AC	01/01/1990	25	79
HEATHE	10	HEATHER STREET	END	100' S/O MULBERRY	476	35	16660	Residential/Local	AC/AC	03/11/1968	38	95
HEATHE	20	HEATHER STREET	100' S/O OF MULBERRY ST.	OAK CIRCLE	565	28	15820	Residential/Local	AC	01/01/1985	9	50
HERICT	10	HERITAGE COURT	HERITAGE WAY	DEAD END	213	28	5964	Residential/Local	AC	01/01/1990	24	78
HERIWY	10	HERITAGE WAY	FINNELL RD.	HERITAGE CT.	1103	29	31987	Residential/Local	AC	01/01/1990	6	43
HOLLY	10	HOLLY STREET	100' NORTH OF LARKSPUR ST.	100' SOUTH OF MULBERRY ST.	479	35	16765	Residential/Local	AC/AC	08/16/1974	38	95
HUMBLT	10	HUMBOLDT STREET	WASHINGTON ST.	YOUNT ST.	309	37	11433	Residential/Local	AC	01/01/1950	26	81
IVYCT	10	IVY COURT	MULBERRY ST.	DEAD END	242	32	7744	Residential/Local	AC/AC	07/24/1965	38	95
JACKSO	10	JACKSON STREET	WASHINGTON ST.	LINCOLN AVE.	341	50	17050	Residential/Local	AC	01/01/1999	25	74
JASMIN	10	JASMINE STREET	LANDE WAY	FORRESTER LN.	429	24	10296	Residential/Local	AC	01/01/1997	10	52
JEFFER	10	JEFFERSON STREET	CEMETARY	MADISON ST.	620	35	21700	Residential/Local	AC	01/01/1950	14	60
JEFFER	20	JEFFERSON STREET	MADISON ST.	STARKEY AVE	710	38	26980	Residential/Local	AC	01/01/1950	31	90
JEFFER	30	JEFFERSON STREET	STARKEY AVE	WEBBER ST	680	38	25840	Residential/Local	AC	01/01/1950	29	86
JEFFER	40	JEFFERSON STREET	WEBBER ST.	WASHINGTON ST.	300	27	8100	Residential/Local	AC	01/01/1950	33	95
LANDE	05	LANDE WAY	ADAMS	29 LANDE WAY (PVMNT CHG)	501	27	13527	Residential/Local	AC	06/01/2006	31	88
LANDE	10	LANDE WAY	29 LANDE WAY (PVMNT CHG)	STAGS VIEW LN	754	23	17342	Residential/Local	AC	01/01/1997	10	52
LARKSP	10	LARKSPUR WAY	E/S HEATHER ST.	HOLLY ST.	896	35	31360	Residential/Local	AC/AC	03/02/1975	38	95

Street ID	Section ID	Street Name	Begin Location	End Location	Length	Width	Area	Functional Class	Surface Type	Construction Date	Remaining Life	PCI
LINCOL	10	LINCOLN AVENUE	JACKSON ST.	WASHINGTON ST.	501	40	20040	Residential/Local	AC	01/01/1999	25	79
MADISO	10	MADISON STREET	HWY 29 RIGHT OF WAY	WASHINGTON ST.	440	30	13200	Arterial	AC	01/01/1950	18	79
MADISO	20	MADISON STREET	WASHINGTON ST.	YOUNT ST.	660	35	23100	Arterial	AC	01/01/1950	24	92
MESA	10	MESA COURT	YOUNTVILLE CROSS RD.	DEAD END	280	15	4200	Residential/Local	AC	01/01/1980	6	42
MONROE	10	MONROE STREET	LINCOLN AVE.	JEFFERSON ST.	325	35	11375	Residential/Local	AC	01/01/1950	33	93
MONROE	20	MONROE STREET	JEFFERSON ST.	YOUNT ST.	340	37	12580	Residential/Local	AC	01/01/1950	33	93
MOUNT	25	MOUNT AVENUE	YOUNT ST.	JASMINE ST	749	24	17976	Residential/Local	AC/AC	01/01/1998	19	64
MULBER	05	MULBERRY STREET	WASHINGTON ST.	DEAD END	165	24	3960	Residential/Local	AC	01/01/1990	9	49
MULBER	10	MULBERRY STREET	WASHINGTON ST.	W/S IVY CT.	444	35	15540	Residential/Local	AC/AC	01/01/1990	38	95
MULBER	15	MULBERRY STREET	W/S IVY CT.	W/S HEATHER ST.	290	35	10150	Residential/Local	AC	01/01/1970	33	95
MULBER	20	MULBERRY STREET	HEATHER ST.	HOLLY ST.	1000	35	35000	Residential/Local	AC/AC	04/08/1976	38	95
OAKCIR	10	OAK CIRCLE	WASHINGTON ST.	OAK CIRCLE INTERSECTION	841	24	20184	Residential/Local	AC	01/01/1985	15	62
OAKCIR	20	OAK CIRCLE	OAK CIRCLE INTERSECTION	1410' EAST OF INTERSECTION	1410	25	35250	Residential/Local	AC	01/01/1985	4	38
OAKCIR	30	OAK CIRCLE	1410' EAST OF OAK CIR. INTERSC	OAK CIRCLE INTERSECTION	1196	28	33488	Residential/Local	AC	01/01/1985	6	42
OAKLEA	15	OAK LEAF COURT	375' N OF OAK CIR	END	390	24	9360	Residential/Local	AC	01/01/1982	3	34
OAKLEA	5	OAK LEAF COURT	OAK CIRCLE	375' N OF OAK CIR	375	22	8250	Residential/Local	AC/AC	07/23/1973	18	65
PEDRON	10	PEDRONI STREET	WASHINGTON ST.	JEFFERSON ST.	335	28	9380	Residential/Local	AC	01/01/1950	33	95
REDWOO	10	REDWOOD DRIVE	LANDE WAY	FORRESTER LN.	443	24	10632	Residential/Local	AC	01/01/1997	13	58
SOLANO	05	SOLANO AVENUE	CALIFORNIA DR	1670' SE OF CALIFORNIA DR	1670	32	53440	Collector	AC/AC	01/26/1976	29	92
SOLANO	15	SOLANO AVENUE	1670' SE OF CALIFORNIA DR	TOWN LIMITS	513	32	16416	Collector	AC/AC	01/26/1976	8	52
STAGS	10	STAGS VIEW LANE	YOUNTVILLE CROSS RD.	LANDE WAY	676	36	24336	Residential/Local	AC/AC	01/01/1995	38	95
STARKY	10	STARKEY AVENUE	WASHINGTON ST.	JEFFERSON ST.	350	30	10500	Residential/Local	AC	01/01/1950	24	78
STARKY	20	STARKEY AVENUE	JEFFERSON ST.	YOUNT STREET.	300	27	8100	Residential/Local	AC	01/01/1950	22	74
VINEYA	10	VINEYARD CIRCLE	VISTA DR. AT VISTA CT. (N)	VISTA DRIVE (S)	1260	35	44100	Residential/Local	AC	01/01/1974	9	50
VISTCT	10	VISTA COURT	VISTA DRIVE	DEAD END	255	35	8925	Residential/Local	AC	01/01/1974	10	53
VISTDR	10	VISTA DRIVE	FORRESTER LN.	FINNELL RD.	960	40	38400	Residential/Local	AC/AC	11/30/1963	31	83
VISTDR	20	VISTA DRIVE	FINNELL RD.	HERITAGE WAY	334	31	10354	Residential/Local	AC/AC	03/02/1997	37	93
WASHIN	10	WASHINGTON STREET	TOWN LIMITS	N/S MADISON ST.	1088	25	27200	Arterial	AC/PCC	04/16/1977	17	72
WASHIN	20	WASHINGTON STREET	N/S MADISON ST.	N/S HOPPER CREEK BRIDGE	870	40	34800	Arterial	AC	01/01/1983	13	68
WASHIN	25	WASHINGTON STREET	N/S HOPPER CREEK	N/S WEBBER AVE	475	32	15200	Arterial	AC/PCC	01/01/1997	13	67
WASHIN	30	WASHINGTON STREET	N/S WEBBER AVE	N/S YOUNT ST	1215	28	34020	Arterial	AC/PCC	01/01/1997	14	68

Street ID	Section ID	Street Name	Begin Location	End Location	Length	Width	Area	Functional Class	Surface Type	Construction Date	Remaining Life	PCI
WASHIN	35	WASHINGTON STREET	N/S YOUNT ST (HURLEYS)	N/S MULBERRY ST	290	40	11600	Arterial	AC	01/30/2000	14	68
WASHIN	40	WASHINGTON STREET	N/S MULBERRY ST	N/S OAK CIRCLE	680	40	27200	Arterial	AC/PCC	07/06/1995	16	71
WASHIN	45	WASHINGTON STREET	N/S OAK CIRCLE	N/S CALIFORNIA DR	557	40	22280	Arterial	AC/PCC	07/06/1995	16	71
WASHIN	50	WASHINGTON STREET	N/S CALIFORNIA DR	S/S CHAMPAGNE DR	740	40	29600	Arterial	AC	12/30/1961	15	71
WASHIN	55	WASHINGTON STREET	S/S CHAMPAGNE DR	TOWN LIMITS	565	30	16950	Arterial	AC/PCC	12/13/1983	9	55
WEBBER	10	WEBBER AVENUE	DEAD END AT HWY 29 ROW	WASHINGTON ST.	314	21	6594	Residential/Local	AC	01/01/1983	0	18
WEBBER	20	WEBBER AVENUE	WASHINGTON ST.	YOUNT ST.	413	27	11151	Residential/Local	AC	01/01/1950	18	68
YNTMIL	05	YOUNT MILL ROAD	END OF YOUNT STREET	643' NORTH OF YOUNT STREET.	643	23	14789	Residential/Local	AC	01/01/1950	2	32
YNTMIL	10	YOUNT MILL ROAD	643' NORTH OF YOUNT STREET	TOWN LIMITS	910	22	20020	Residential/Local	AC	01/01/1950	0	21
YNTSTR	10	YOUNT STREET	YOUNT MILL RD.	YOUNTVILLE CROSS RD.	500	37	18500	Residential/Local	AC	01/01/1950	33	93
YNTSTR	15	YOUNT STREET	YOUNTVILLE CROSS RD	ADAMS ST	600	40	24000	Collector	AC	01/01/1950	22	94
YNTSTR	30	YOUNT STREET	S/S ADAMS ST	COP S/O MOUNT AVE	662	40	26480	Collector	AC	01/01/1950	22	94
YNTSTR	33	YOUNT STREET	S/S COP S/O MOUNT AVE	N/S FINNEL ROAD	800	40	32000	Collector	AC	01/01/1965	23	96
YNTSTR	35	YOUNT STREET	FINNEL ROAD	WASHINGTON ST	568	40	22720	Collector	AC	01/01/1965	29	92
YNTVIL	10	YOUNTVILLE CROSS ROAD	YOUNT ST.	TOWN LIMITS	1286	33	42438	Arterial	AC	01/01/1990	18	83

PCI Summary: Sorted by PCI (Descending)



Network PCI by Street Name (Descending PCI)

03/30/2020

											U	13/30/2020
Street ID	Section ID	Street Name	Begin Location	End Location	Length	Width	Area	Functional Class	Surface Type	Construction Date	Remaining Life	PCI
YNTSTR	33	YOUNT STREET	S/S COP S/O MOUNT AVE	N/S FINNEL ROAD	800	40	32000	Collector	AC	01/01/1965	23	96
HEATHE	10	HEATHER STREET	END	100' S/O MULBERRY	476	35	16660	Residential/Local	AC/AC	03/11/1968	38	95
HOLLY	10	HOLLY STREET	100' NORTH OF LARKSPUR ST.	100' SOUTH OF MULBERRY ST.	479	35	16765	Residential/Local	AC/AC	08/16/1974	38	95
IVYCT	10	IVY COURT	MULBERRY ST.	DEAD END	242	32	7744	Residential/Local	AC/AC	07/24/1965	38	95
JEFFER	40	JEFFERSON STREET	WEBBER ST.	WASHINGTON ST.	300	27	8100	Residential/Local	AC	01/01/1950	33	95
LARKSP	10	LARKSPUR WAY	E/S HEATHER ST.	HOLLY ST.	896	35	31360	Residential/Local	AC/AC	03/02/1975	38	95
MULBER	10	MULBERRY STREET	WASHINGTON ST.	W/S IVY CT.	444	35	15540	Residential/Local	AC/AC	01/01/1990	38	95
MULBER	15	MULBERRY STREET	W/S IVY CT.	W/S HEATHER ST.	290	35	10150	Residential/Local	AC	01/01/1970	33	95
MULBER	20	MULBERRY STREET	HEATHER ST.	HOLLY ST.	1000	35	35000	Residential/Local	AC/AC	04/08/1976	38	95
PEDRON	10	PEDRONI STREET	WASHINGTON ST.	JEFFERSON ST.	335	28	9380	Residential/Local	AC	01/01/1950	33	95
STAGS	10	STAGS VIEW LANE	YOUNTVILLE CROSS RD.	LANDE WAY	676	36	24336	Residential/Local	AC/AC	01/01/1995	38	95
YNTSTR	15	YOUNT STREET	YOUNTVILLE CROSS RD	ADAMS ST	600	40	24000	Collector	AC	01/01/1950	22	94
YNTSTR	30	YOUNT STREET	S/S ADAMS ST	COP S/O MOUNT AVE	662	40	26480	Collector	AC	01/01/1950	22	94
ADAMS	10	ADAMS STREET	JEFFERSON ST.	YOUNT ST.	300	33	9900	Residential/Local	AC	01/01/1950	33	93
MONROE	10	MONROE STREET	LINCOLN AVE.	JEFFERSON ST.	325	35	11375	Residential/Local	AC	01/01/1950	33	93
MONROE	20	MONROE STREET	JEFFERSON ST.	YOUNT ST.	340	37	12580	Residential/Local	AC	01/01/1950	33	93
VISTDR	20	VISTA DRIVE	FINNELL RD.	HERITAGE WAY	334	31	10354	Residential/Local	AC/AC	03/02/1997	37	93
YNTSTR	10	YOUNT STREET	YOUNT MILL RD.	YOUNTVILLE CROSS RD.	500	37	18500	Residential/Local	AC	01/01/1950	33	93
FINNEL	20	FINNELL ROAD	HOPPER CREEK	TOWN LIMIT	1109	36	39924	Collector	AC/AC	01/01/1999	38	92
MADISO	20	MADISON STREET	WASHINGTON ST.	YOUNT ST.	660	35	23100	Arterial	AC	01/01/1950	24	92
SOLANO	05	SOLANO AVENUE	CALIFORNIA DR	1670' SE OF CALIFORNIA DR	1670	32	53440	Collector	AC/AC	01/26/1976	29	92
YNTSTR	35	YOUNT STREET	FINNEL ROAD	WASHINGTON ST	568	40	22720	Collector	AC	01/01/1965	29	92
ADAMS	20	ADAMS STREET	YOUNT ST	LANDE WAY	514	27	13878	Residential/Local	AC	06/01/2006	32	91
JEFFER	20	JEFFERSON STREET	MADISON ST.	STARKEY AVE	710	38	26980	Residential/Local	AC	01/01/1950	31	90

Street ID	Section ID	Street Name	Begin Location	End Location	Length	Width	Area	Functional Class	Surface Type	Construction Date	Remaining Life	PCI
LANDE	05	LANDE WAY	ADAMS	29 LANDE WAY (PVMNT CHG)	501	27	13527	Residential/Local	AC	06/01/2006	31	88
JEFFER	30	JEFFERSON STREET	STARKEY AVE	WEBBER ST	680	38	25840	Residential/Local	AC	01/01/1950	29	86
VISTDR	10	VISTA DRIVE	FORRESTER LN.	FINNELL RD.	960	40	38400	Residential/Local	AC/AC	11/30/1963	31	83
YNTVIL	10	YOUNTVILLE CROSS ROAD	YOUNT ST.	TOWN LIMITS	1286	33	42438	Arterial	AC	01/01/1990	18	83
CREEK	10	CREEK STREET	WASHINGTON ST.	JEFFERSON ST.	248	26	6448	Residential/Local	AC	01/01/1950	26	81
HUMBLT	10	HUMBOLDT STREET	WASHINGTON ST.	YOUNT ST.	309	37	11433	Residential/Local	AC	01/01/1950	26	81
FINNEL	03	FINNELL ROAD	YOUNT ST	166' WEST OF HOPPER CREEK	425	36	21276	Collector	AC/AC	01/31/2000	24	79
HARVES	10	HARVEST COURT	HERITAGE WY	DEAD END	288	31	8928	Residential/Local	AC	01/01/1990	25	79
LINCOL	10	LINCOLN AVENUE	JACKSON ST.	WASHINGTON ST.	501	40	20040	Residential/Local	AC	01/01/1999	25	79
MADISO	10	MADISON STREET	HWY 29 RIGHT OF WAY	WASHINGTON ST.	440	30	13200	Arterial	AC	01/01/1950	18	79
HERICT	10	HERITAGE COURT	HERITAGE WAY	DEAD END	213	28	5964	Residential/Local	AC	01/01/1990	24	78
STARKY	10	STARKEY AVENUE	WASHINGTON ST.	JEFFERSON ST.	350	30	10500	Residential/Local	AC	01/01/1950	24	78
FINNEL	5-8	FINNELL ROAD	166' WEST OF HOPPER CREEK	HOPPER CREEK	166	43	7138	Collector	AC/AC	01/31/2000	21	77
JACKSO	10	JACKSON STREET	WASHINGTON ST.	LINCOLN AVE.	341	50	17050	Residential/Local	AC	01/01/1999	25	74
STARKY	20	STARKEY AVENUE	JEFFERSON ST.	YOUNT STREET.	300	27	8100	Residential/Local	AC	01/01/1950	22	74
WASHIN	10	WASHINGTON STREET	TOWN LIMITS	N/S MADISON ST.	1088	25	27200	Arterial	AC/PCC	04/16/1977	17	72
WASHIN	40	WASHINGTON STREET	N/S MULBERRY ST	N/S OAK CIRCLE	680	40	27200	Arterial	AC/PCC	07/06/1995	16	71
WASHIN	45	WASHINGTON STREET	N/S OAK CIRCLE	N/S CALIFORNIA DR	557	40	22280	Arterial	AC/PCC	07/06/1995	16	71
WASHIN	50	WASHINGTON STREET	N/S CALIFORNIA DR	S/S CHAMPAGNE DR	740	40	29600	Arterial	AC	12/30/1961	15	71
CALIF	10	CALIFORNIA DRIVE	SOLANO AVE	WASHINGTON ST.	650	35	22750	Collector	AC	01/01/1965	11	69
WASHIN	20	WASHINGTON STREET	N/S MADISON ST.	N/S HOPPER CREEK BRIDGE	870	40	34800	Arterial	AC	01/01/1983	13	68
WASHIN	30	WASHINGTON STREET	N/S WEBBER AVE	N/S YOUNT ST	1215	28	34020	Arterial	AC/PCC	01/01/1997	14	68
WASHIN	35	WASHINGTON STREET	N/S YOUNT ST (HURLEYS)	N/S MULBERRY ST	290	40	11600	Arterial	AC	01/30/2000	14	68
WEBBER	20	WEBBER AVENUE	WASHINGTON ST.	YOUNT ST.	413	27	11151	Residential/Local	AC	01/01/1950	18	68
WASHIN	25	WASHINGTON STREET	N/S HOPPER CREEK	N/S WEBBER AVE	475	32	15200	Arterial	AC/PCC	01/01/1997	13	67
OAKLEA	5	OAK LEAF COURT	OAK CIRCLE	375' N OF OAK CIR	375	22	8250	Residential/Local	AC/AC	07/23/1973	18	65
MOUNT	25	MOUNT AVENUE	YOUNT ST.	JASMINE ST	749	24	17976	Residential/Local	AC/AC	01/01/1998	19	64
FOXGLO	10	FOXGLOVE LANE	LANDE WAY	FORRESTER LN.	437	24	10488	Residential/Local	AC	01/01/1997	16	63
OAKCIR	10	OAK CIRCLE	WASHINGTON ST.	OAK CIRCLE INTERSECTION	841	24	20184	Residential/Local	AC	01/01/1985	15	62
JEFFER	10	JEFFERSON STREET	CEMETARY	MADISON ST.	620	35	21700	Residential/Local	AC	01/01/1950	14	60
REDWOO	10	REDWOOD DRIVE	LANDE WAY	FORRESTER LN.	443	24	10632	Residential/Local	AC	01/01/1997	13	58

Street ID	Section ID	Street Name	Begin Location	End Location	Length	Width	Area	Functional Class	Surface Type	Construction Date	Remaining Life	PCI
WASHIN	55	WASHINGTON STREET	S/S CHAMPAGNE DR	TOWN LIMITS	565	30	16950	Arterial	AC/PCC	12/13/1983	9	55
VISTCT	10	VISTA COURT	VISTA DRIVE	DEAD END	255	35	8925	Residential/Local	AC	01/01/1974	10	53
FORRES	10	FORRESTER LANE	MOUNT AVE.	DEAD END	1306	24	31344	Residential/Local	AC	01/01/1997	10	52
JASMIN	10	JASMINE STREET	LANDE WAY	FORRESTER LN.	429	24	10296	Residential/Local	AC	01/01/1997	10	52
LANDE	10	LANDE WAY	29 LANDE WAY (PVMNT CHG)	STAGS VIEW LN	754	23	17342	Residential/Local	AC	01/01/1997	10	52
SOLANO	15	SOLANO AVENUE	1670' SE OF CALIFORNIA DR	TOWN LIMITS	513	32	16416	Collector	AC/AC	01/26/1976	8	52
HEATHE	20	HEATHER STREET	100' S/O OF MULBERRY ST.	OAK CIRCLE	565	28	15820	Residential/Local	AC	01/01/1985	9	50
VINEYA	10	VINEYARD CIRCLE	VISTA DR. AT VISTA CT. (N)	VISTA DRIVE (S)	1260	35	44100	Residential/Local	AC	01/01/1974	9	50
MULBER	05	MULBERRY STREET	WASHINGTON ST.	DEAD END	165	24	3960	Residential/Local	AC	01/01/1990	9	49
HERIWY	10	HERITAGE WAY	FINNELL RD.	HERITAGE CT.	1103	29	31987	Residential/Local	AC	01/01/1990	6	43
MESA	10	MESA COURT	YOUNTVILLE CROSS RD.	DEAD END	280	15	4200	Residential/Local	AC	01/01/1980	6	42
OAKCIR	30	OAK CIRCLE	1410' EAST OF OAK CIR. INTERSC	OAK CIRCLE INTERSECTION	1196	28	33488	Residential/Local	AC	01/01/1985	6	42
OAKCIR	20	OAK CIRCLE	OAK CIRCLE INTERSECTION	1410' EAST OF INTERSECTION	1410	25	35250	Residential/Local	AC	01/01/1985	4	38
OAKLEA	15	OAK LEAF COURT	375' N OF OAK CIR	END	390	24	9360	Residential/Local	AC	01/01/1982	3	34
YNTMIL	05	YOUNT MILL ROAD	END OF YOUNT STREET	643' NORTH OF YOUNT STREET.	643	23	14789	Residential/Local	AC	01/01/1950	2	32
YNTMIL	10	YOUNT MILL ROAD	643' NORTH OF YOUNT STREET	TOWN LIMITS	910	22	20020	Residential/Local	AC	01/01/1950	0	21
WEBBER	10	WEBBER AVENUE	DEAD END AT HWY 29 ROW	WASHINGTON ST.	314	21	6594	Residential/Local	AC	01/01/1983	0	18

SECTION 3

- 3.1 Network Summary Statistics 3.2 Network Replacement Cost



Network Summary Statistics

Printed: 3/30/2020

	Total Sections	Total Center Miles	Total Lane Miles	Total Area (sq. ft.)	PCI	
Arterial	12	1.68	3.36	297,588	74	
Collector	10	1.36	2.71	266,144	89	
Residential/Local	50	5.25	10.50	832,688	70	
Total	72	8.29	16.57	1,396,420		
		Overall Network PCI as of 10/1/2019:				

^{**} Combined Sections are excluded from totals. These Sections do not have a PCI Date - they have not been inspected or had a Treatment applied.



Network Replacement Cost

Printed: 03/30/2020

Functional Class	Surface Type	Lane Miles	Unit Cost/ Square Foot	Pavement Area/ Square Feet	Cost To Replace (in thousands)
Arterial	AC	1.6	\$17.14	154,738	\$2,653
	AC/PCC	1.7	\$17.14	142,850	\$2,449
Collector	AC	1.2	\$17.14	127,950	\$2,194
	AC/AC	1.5	\$17.14	138,194	\$2,369
Residential/Local	AC	8.0	\$17.14	610,303	\$10,463
	AC/AC	2.5	\$17.14	222,385	\$3,813
	Grand Total:	16.6		1,396,420	\$23,941

SECTION 4

Current Decision Tree for Maintenance and Rehabilitation



Decision Tree

Printed: 03/05/2020

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:		Yrs Between Surface Seals	# of Surface Seals before Overlay
Arterial	AC	I - Very Good	Crack Treatment	SEAL CRACKS	\$2.00	3		
			Surface Treatment	MICROSURFACING	\$14.25		7	
			Restoration Treatment	MILL AND THIN OVERLAY	\$45.54			3
		II - Good, Non-Load Related		MICROSURFACING WITH 20% DIGOUTS	\$28.49		7	
		III - Good, Load Related		MILL AND THIN OVERLAY	\$45.54			
		IV - Poor		MILL AND THICK OVERLAY	\$68.31			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	\$154.30			
	AC/AC	I - Very Good II - Good, Non-Load Related	Crack Treatment	SEAL CRACKS	\$2.00	3		
			Surface Treatment	MICROSURFACING	\$14.25		7	
			Restoration Treatment	MILL AND OVERLAY	\$45.54			3
				MICROSURFACING WITH 20% DIGOUTS	\$28.49		7	
		III - Good, Load Related		MILL AND OVERLAY	\$45.54			
		IV - Poor		MILL AND OVERLAY	\$68.31			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	\$154.30			
	AC/PCC	I - Very Good	Crack Treatment	SEAL CRACKS	\$2.00	3		
			Surface Treatment	MICROSURFACING	\$14.25		7	
			Restoration Treatment	MILL AND THIN OVERLAY	\$45.54			3
		II - Good, Non-Load Related		MICROSURFACING WITH 20% DIGOUTS	\$28.49		7	
		III - Good, Load Related		MILL AND THIN OVERLAY	\$45.54			
		IV - Poor		MILL AND THICK OVERLAY	\$68.31			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	\$154.30			

1

Functional Class and Surface combination not used

Selected Treatment is not a Surface Seal



Decision Tree

Printed: 03/05/2020

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:		Yrs Between Surface Seals	# of Surface Seals before Overlay
Collector	AC	I - Very Good	Crack Treatment	SEAL CRACKS	\$2.00	3		
			Surface Treatment	MICROSURFACING	\$14.25		7	
			Restoration Treatment	MILL AND THIN OVERLAY	\$45.54			3
		II - Good, Non-Load Related		MICROSURFACING WITH 20% DIGOUTS	\$28.49		7	
		III - Good, Load Related		MILL AND THIN OVERLAY	\$45.54			
		IV - Poor		MILL AND THICK OVERLAY	\$68.31			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	\$154.30			
	AC/AC	I - Very Good	Crack Treatment	SEAL CRACKS	\$2.00	3		
			Surface Treatment	MICROSURFACING	\$14.25		7	
			Restoration Treatment	MILL AND THIN OVERLAY	\$45.54			3
		II - Good, Non-Load Related		MICROSURFACING WITH 20% DIGOUTS	\$28.49			
		III - Good, Load Related		MILL AND THIN OVERLAY	\$45.54			
		IV - Poor		MILL AND THICK OVERLAY	\$68.31			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	\$154.30			
	AC/PCC	I - Very Good	Crack Treatment	SEAL CRACKS	\$1.32	3		
			Surface Treatment	LIGHT MAINTENANCE	\$6.15		7	
			Restoration Treatment	LIGHT REHABILITATION	\$47.82			3
		II - Good, Non-Load Related		HEAVY MAINTENANCE	\$17.08		7	
		III - Good, Load Related		LIGHT REHABILITATION	\$47.82			
		IV - Poor		HEAVY REHABILITATION	\$85.39			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	\$163.94			

Functional Class and Surface combination not used

Selected Treatment is not a Surface Seal



Decision Tree

Printed: 03/05/2020

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	\$2.00	3		
			Surface Treatment	MICROSURFACING	\$14.25		7	
			Restoration Treatment	MILL AND THIN OVERLAY	\$45.54			3
		II - Good, Non-Load Related		MICROSURFACING WITH 20% DIGOUTS	\$28.49		7	
		III - Good, Load Related		MILL AND THIN OVERLAY	\$45.54			
		IV - Poor		MILL AND THICK OVERLAY	\$68.31			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	\$154.30			
	AC/AC	I - Very Good	Crack Treatment	SEAL CRACKS	\$2.00	3		
			Surface Treatment	MICROSURFACING	\$14.25		7	
			Restoration Treatment	MILL AND THIN OVERLAY	\$45.54			3
		II - Good, Non-Load Related		MICROSURFACING WITH 20% DIGOUTS	\$28.49		7	
		III - Good, Load Related		MILL AND THIN OVERLAY	\$45.54			
		IV - Poor		MILL AND THICK OVERLAY	\$68.31			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	\$154.30			
	AC/PCC	I - Very Good	Crack Treatment	SEAL CRACKS	\$1.32	3		
			Surface Treatment	LIGHT MAINTENANCE	\$6.15		7	
			Restoration Treatment	LIGHT REHABILITATION	\$47.82			3
		II - Good, Non-Load Related		HEAVY MAINTENANCE	\$17.08		7	
		III - Good, Load Related		LIGHT REHABILITATION	\$47.82			
		IV - Poor		HEAVY REHABILITATION	\$85.39			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	\$163.94			

Functional Class and Surface combination not used

Selected Treatment is not a Surface Seal

SECTION 5

Needs Analysis



Needs - Projected PCI/Cost Summary

Inflation Rate = 3.00 % Printed: 3/30/2020

Year	PCI Treated	PCI Untreated	PM Cost	Rehab Cost	Cost
2020	84	75	\$154,166	\$1,896,407	\$2,050,573
2021	87	72	\$10,592	\$1,460,262	\$1,470,854
2022	85	70	\$25,323	\$295,400	\$320,723
2023	85	68	\$86,484	\$417,641	\$504,125
2024	84	66	\$121,907	\$180,613	\$302,520
		% PM	PM Total Cost	Rehab Total Cost	Total Cost
		8.57%	\$398,472	\$4,250,323	\$4,648,795



Needs - Rehabilitation Treatment/Cost Summary

Printed: 3/30/2020

\$4,250,323

Inflation Rate = 3.00 %

Total Cost

Treatment	Year	Area Treated	Cost
MICROSURFACING WITH 20% DIGOUTS	2020	3,327.78 sq.yd.	\$94,809
	2022	3,022.22 sq.yd.	\$91,347
	Total	6,350 sq.yd.	\$186,156
RECONSTRUCT STRUCTURE (AC)	2020	2,957.11 sq.yd.	\$456,283
	2023	1,643.22 sq.yd.	\$277,061
	2024	1,040 sq.yd.	\$180,613
	Total	5,640.33 sq.yd.	\$913,957
MILL AND THIN OVERLAY	2020	17,268.78 sq.yd.	\$786,424
	2021	11,314.44 sq.yd.	\$530,719
	Total	28,583.22 sq.yd.	\$1,317,143
MILL AND THICK OVERLAY	2020	8,181.67 sq.yd.	\$558,891
	2021	13,211.33 sq.yd.	\$929,543
	2022	2,815.67 sq.yd.	\$204,053
	2023	1,883.33 sq.yd.	\$140,580
	Total	26,092 sq.yd.	\$1,833,067

Criteria: 1 MTC StreetSaver



Needs - Preventive Maintenance Treatment/Cost Summary

Inflation Rate = 3.00 % Printed: 3/30/2020

Treatment	Year	Area Treated	Cost	
MICROSURFACING	2020	10,811.56	sq. yd. \$154,065	
	2021	716.44	sq. yd. \$10,516	
	2022	1,654.67	sq. yd. \$25,016	
	2023	5,537	sq. yd. \$86,219	
	2024	7,586.44	sq. yd. \$121,676	
	Total	26,306.11	\$397,492	
SEAL CRACKS	2020	49.85	lineal ft. \$101	
	2021	36.48	lineal ft. \$76	
	2022	144.25	lineal ft. \$307	
	2023	120.05	lineal ft. \$265	
	2024	101.82	lineal ft. \$231	
	Total	452.45	\$980	
	Total Quantity	26,758.56	\$398,472	

SECTION 6

Budget Options Report

- **6.1 Current Investment Level**
- 6.2 Maintain PCI
- 6.3 Increase PCI to 80

6.1 Current Investment Level

- Cost Summary Report
 Network Condition Summary Report



Scenarios - Cost Summary

Interest: 2.00% Inflation: 3.00% Printed: 3/30/2020

Year	PM	Budget	Rehabilitation		Preventative Maintenance	Surplus PM	Deferred		Stop Gap
2020	0%	 	II \$0 II \$0 V \$0 V \$0	Non- Project Project	\$0 \$0	\$0	\$1,668,144	Funded Unmet	\$5,466 \$0
		Tota Projec	•						
2021	31%	 	+ / -	Non- Project Project	\$169,393 \$0	\$0	\$2,416,685	Funded Unmet	\$3,874 \$0
2022	4%		\$0 al \$519,424	Non- Project Project	\$25,323 \$0	\$0	\$2,007,594	Funded Unmet	\$1,014 \$0
2023	15%		* - / -	Non- Project Project	\$86,219 \$0	\$0	\$1,934,854	Funded Unmet	\$1,401 \$0
2024	22%		\$0 al \$401,344	Non- Project Project	\$121,976 \$0	\$0	\$1,591,556	Funded Unmet	\$0 \$0

Summary				
Functional Class	Rehabilitation	Prev. Maint.	Funded Stop Gap	Unmet Stop Gap
Arterial	\$1,169,266	\$97,562	\$2,975	\$0
Collector	\$266,026	\$46,339	\$725	\$0
Residential/Local	\$856,938	\$259,010	\$8,055	\$0
Grand Total:	\$2,292,230	\$402,911	\$11,755	\$0



Scenarios - Network Condition Summary

Interest: 2%

Inflation: 3%

Printed: 3/30/2020

Scenario: Current Investment Level

Year	Budget	PM
2020	\$550,000	0%
2021	\$550,000	31%

Year	Budget	PM
2022	\$550,000	4%
2023	\$550,000	15%

Year	Budget	PM
2024	\$550,000	22%

Projected N	letwork Average F	CI by year		
Year	Never Treated	With Selected Treatment	Treated Centerline Miles	Treated Lane Miles
2020	75	79	0.90	1.81
2021	72	79	1.07	2.14
2022	70	79	0.87	1.74
2023	68	79	0.65	1.31
2024	66	79	1.01	2.02

Percent Network Area by Functional Class and Condition Category

Condition in base year 2020, prior to applying treatments.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	13.2%	17.9%	31.9%	0.0%	63.0%
II / III	8.1%	1.2%	16.3%	0.0%	25.6%
IV	0.0%	0.0%	9.5%	0.0%	9.5%
V	0.0%	0.0%	1.9%	0.0%	1.9%
Total	21.3%	19.1%	59.6%	0.0%	100.0%

Condition in year 2020 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	13.2%	17.9%	40.6%	0.0%	71.7%
II / III	8.1%	1.2%	13.2%	0.0%	22.4%
IV	0.0%	0.0%	3.9%	0.0%	3.9%
V	0.0%	0.0%	1.9%	0.0%	1.9%
Total	21.3%	19.1%	59.6%	0.0%	100.0%

Condition in year 2024 after schedulable treatments applied.

•					
Condition	Arterial	Collector	Res/Loc	Other	Total
I	21.3%	19.1%	43.8%	0.0%	84.2%
II / III	0.0%	0.0%	3.6%	0.0%	3.6%
IV	0.0%	0.0%	9.2%	0.0%	9.2%
V	0.0%	0.0%	3.0%	0.0%	3.0%
Total	21.3%	19.1%	59.6%	0.0%	100.0%

6.2 Maintain PCI

- Cost Summary Report
 Network Condition Summary Report



Target-Driven Scenarios - Cost Summary

Interest: 2% Inflation: 3% Printed: 3/30/2020

Scenario: Maintain PCI
Objective: Minimum Network Average PCI
Target: Overall 75

Year	Re	habilitation	Preventive M	1aintenance	Total Cost	Deferred
2020		\$0	Non- Project	\$33,788	\$209,876	\$1,840,690
		\$176,088	Project	\$0		
	IV	\$0	110,000			
	V Total	\$0				
		\$176,088 \$0				
	Project					
2021		\$0	Non- Project	\$76	\$471,329	\$2,530,046
		\$471,253	Project	\$0		
	IV	\$0	110,600	Ψ0		
		\$0				
	Total	\$471,253				
	Project	\$0				
2022	II	\$0	Non-	\$63,111	\$547,352	\$1,957,100
	III	\$484,241	Project Project	\$0		
	IV	\$0	Project	<u>Ф0</u>		
	V	\$0				
	Total	\$484,241				
	Project	\$0				
2023	II	\$94,088	Non-	\$156,201	\$633,464	\$1,888,448
	III	\$106,444	Project			
	IV	\$276,731	Project	\$0		
	V	\$0				
	Total	\$477,263				
	Project	\$0				
2024	II	\$0	Non-	\$142,051	\$552,610	\$1,694,781
	III	\$0	Project			
	IV	\$410,559	Project	\$0		
	V	\$0				
	Total	\$410,559				
	Project	\$0				

Functional Class		Rehabilitation	Prev. Maint.	Summai
Arterial		\$1,147,626	\$98,107	
Collector		\$258,277	\$45,678	
Residential/Local		\$613,501	\$251,442	
	Total:	\$2,019,404	\$395,227	Grand Total: \$2,414,631



Target-Driven Scenarios Network Condition Summary

Interest: 2.00% Inflation: 3.00%

Printed: 3/30/2020

Scenario: Maintain PCI	
Objective: Minimum Network Average PCI	Target: Overall 75

Projected Network Average PCI by year									
Year	Never Treated	With Selected Treatment	Without Selected Treatment						
2020	74	75	74						
2021	72	75	72						
2022	70	75	70						
2023	68	75	68						
2024	66	75	66						

Percent Network Area by Functional Classification and Condition Class

Condition in base year 2020, prior to applying treatments.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
	13.2%	17.9%	31.9%	0.0%	63.0%
II / III	8.1%	1.2%	16.3%	0.0%	25.6%
IV	0.0%	0.0%	9.5%	0.0%	9.5%
V	0.0%	0.0%	1.9%	0.0%	1.9%
Total	21.3%	19.1%	59.6%	0.0%	100.0%

Condition in year 2020 after schedulable treatments applied.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
I	15.7%	17.9%	31.9%	0.0%	65.5%
11 / 111	5.6%	1.2%	16.3%	0.0%	23.1%
IV	0.0%	0.0%	9.5%	0.0%	9.5%
V	0.0%	0.0%	1.9%	0.0%	1.9%
Total	21.3%	19.1%	59.6%	0.0%	100.0%

Condition in year 2024 after schedulable treatments applied.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
	21.3%	19.1%	37.4%	0.0%	77.8%
II / III	0.0%	0.0%	5.1%	0.0%	5.1%
IV	0.0%	0.0%	13.5%	0.0%	13.5%
V	0.0%	0.0%	3.6%	0.0%	3.6%
Total	21.3%	19.1%	59.6%	0.0%	100.0%

6.3 Increase PCI to 80

- Cost Summary Report
 Network Condition Summary Report



Target-Driven Scenarios - Cost Summary

Interest: 2% Inflation: 3% Printed: 3/30/2020

Scenario: Inci	rease PCI to 80						
Objective: Min	nimum Networl	k Average P	CI				Target: By Year
Year	Value	Year	Value	Year	Value	Year	Value
Year 1	76	Year 2	77	Year 3	78	Year 4	79
Year 5	80						

Year	Po	habilitation	Preventive M	Maintenance	Total Cost	Deferred
2020	II III IV V Total Project	\$0 \$311,696 \$0 \$0 \$311,696 \$0	Non- Project Project	\$33,788 \$0	\$345,484	\$1,705,082
2021	II III IV V Total Project	\$0 \$813,220 \$0 \$0 \$813,220	Non- Project Project	\$61,050 - \$0	\$874,270	\$1,987,430
2022	II III IV V Total Project	\$91,347 \$156,359 \$519,177 \$0 \$766,883	Non- Project Project	\$101,063 _ \$0	\$867,946	\$1,185,966
2023	II III IV V Total Project	\$0 \$0 \$760,974 \$0 \$760,974	Non- Project Project	\$86,219 _	\$847,193	\$849,674
2024	II III IV V Total Project	\$0 \$76,243 \$593,225 \$669,468	Non- Project Project	\$121,907 	\$791,375	\$386,310

Functional Class	Rehabilitation	Prev. Maint.
Arterial	\$1,133,079	\$97,562
Collector	\$250,755	\$45,328
Residential/Local	\$1,938,407	\$261,137
Total	\$3,322,241	\$404,027



Target-Driven Scenarios Network Condition Summary

Interest: 2.00% Inflation: 3.00%

Printed: 3/30/2020

Scenario: Increase PCI to 80								
Objective: Minimum Network Average PCI						Target: By Year		
Year	Value	Year	Value	Year	Value	Year	Value	
Year 1	76	Year 2	77	Year 3	78	Year 4	79	
Year 5	80							

Projected Netw	ork Average PCI b	y year	
Year	Never Treated	With Selected Treatment	Without Selected Treatment
2020	74	76	74
2021	72	77	72
2022	70	78	70
2023	68	79	68
2024	66	80	66

Percent Network Area by Functional Classification and Condition Class

Condition in base year 2020, prior to applying treatments.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
	13.2%	17.9%	31.9%	0.0%	63.0%
/	8.1%	1.2%	16.3%	0.0%	25.6%
IV	0.0%	0.0%	9.5%	0.0%	9.5%
V	0.0%	0.0%	1.9%	0.0%	1.9%
Total	21.3%	19.1%	59.6%	0.0%	100.0%

Condition in year 2020 after schedulable treatments applied.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
	17.7%	17.9%	31.9%	0.0%	67.4%
II / III	3.7%	1.2%	16.3%	0.0%	21.2%
IV	0.0%	0.0%	9.5%	0.0%	9.5%
V	0.0%	0.0%	1.9%	0.0%	1.9%
Total	21.3%	19.1%	59.6%	0.0%	100.0%

Condition in year 2024 after schedulable treatments applied.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
	21.3%	19.1%	47.0%	0.0%	87.4%
II / III	0.0%	0.0%	3.7%	0.0%	3.7%
IV	0.0%	0.0%	7.5%	0.0%	7.5%
V	0.0%	0.0%	1.4%	0.0%	1.4%
Total	21.3%	19.1%	59.6%	0.0%	100.0%

SECTION 7

- 7.1 Sections Selected for Treatments under Scenario 1
- 7.2 Scenario Treatment Map for 2020 Project Period
- 7.3 Scenario Treatment Map for 2021 Project Period
- 7.4 Scenario Treatment Map for 2022 Project Period
- 7.5 Scenario Treatment Map for 2023 Project Period
- 7.6 Scenario Treatment Map for 2024 Project Period



Scenarios - Sections Selected for Treatment

Interest: 2.00%

Inflation: 3.00%

Printed: 3/30/2020

Scenario: Current Investment Level

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2020	\$550,000	0%	2022	\$550,000	4%	2024	\$550,000	22%
2021	\$550,000	31%	2023	\$550,000	15%			

Year: 2020															
Street Name	Pogin Logotion	End Logotion	Stroot ID	Section ID	Longth	Width	Aroo	EC.	Surface	Aron ID	Current	Treatm PCI	PCI	Coot	Poting Treetment
Street Name	Begin Location			Section in	Length	vviatri	Area	ГС	туре	Area ID	PCI	Before	Arter	Cost	Rating Treatment
**OAK CIRCLE	WASHINGTON ST.	OAK CIRCLE INTERSECTION	OAKCIR	10	841	24	20,184	R	AC	S1 - 2010 CIP SLURRY SEAL PLANNED	61	62	100	\$34,874	28,071 MILL AND THIN OVERLAY
**OAK LEAF COURT	OAK CIRCLE	375' N OF OAK CIR	OAKLEA	5	375	22	8,250	R	AC/AC		64	65	100	\$13,980	26,491 MILL AND THIN OVERLAY
											Treatme	nt Total		\$48,854	
**HEATHER STREET	100' S/O OF MULBERRY ST.	OAK CIRCLE	HEATHE	20	565	28	15,820	R	AC		49	50	100	\$83,495	10,627 MILL AND THICK OVERLAY
**OAK CIRCLE	OAK CIRCLE INTERSECTION	1410' EAST OF INTERSECTION	OAKCIR	20	1,410	25	35,250	R	AC		38	39	100	\$186,042	11,421 MILL AND THICK OVERLAY
**OAK CIRCLE	1410' EAST OF OAK CIR. INTERSC	OAK CIRCLE INTERSECTION	OAKCIR	30	1,196	28	33,488	R	AC		41	42	100	\$176,743	11,261 MILL AND THICK OVERLAY
**OAK LEAF COURT	375' N OF OAK CIR	END	OAKLEA	15	390	24	9,360	R	AC		34	35	100	\$49,400	11,571 MILL AND THICK OVERLAY
											Treatme	nt Total		\$495,680	

Year 2020 Total

Year 2020 Area Total 122,352 \$544,534 Year: 2021

												Treatm	ent		
									Surface		Current	PCI	PCI		
Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Type	Area ID	PCI	Before	After	Cost	Rating Treatment
CREEK STREET	WASHINGTON ST.	JEFFERSON ST.	CREEK	10	248	26	6,448	R	AC		81	79	87	\$10,516	7,767 MICROSURFACING
FINNELL ROAD	YOUNT ST	166' WEST OF HOPPER CREEK	FINNEL	03	425	36	21,276	С	AC/AC		79	78	86	\$34,698	16,577 MICROSURFACING
FINNELL ROAD	166' WEST OF HOPPER CREEK	HOPPER CREEK	FINNEL	5-8	166	43	7,138	С	AC/AC		76	75	84	\$11,641	11,754 MICROSURFACING
JACKSON STREET	WASHINGTON ST.	LINCOLN AVE.	JACKSO	10	341	50	17,050	R	AC		74	73	81	\$27,806	11,182 MICROSURFACING
LINCOLN AVENUE	JACKSON ST.	WASHINGTON ST.	LINCOL	10	501	40	20,040	R	AC		79	77	85	\$32,682	8,044 MICROSURFACING
MADISON STREET	HWY 29 RIGHT OF WAY	WASHINGTON ST.	MADISO	10	440	30	13,200	Α	AC		78	77	85	\$21,527	11,678 MICROSURFACING
STARKEY AVENUE	WASHINGTON ST.	JEFFERSON ST.	STARKY	10	350	30	10,500	R	AC		78	76	84	\$17,124	8,137 MICROSURFACING
STARKEY AVENUE	JEFFERSON ST.	YOUNT STREET.	STARKY	20	300	27	8,100	R	AC		74	72	81	\$13,210	8,209 MICROSURFACING



Scenarios - Sections Selected for Treatment

Interest: 2.00%

Inflation: 3.00%

Printed: 3/30/2020

											Treatmen	t Total		\$169,204	
IADVECT COURT	LIEDITA OF MAY	DEAD END	LIADVEO	40	000	04	0.000	_	10		70	77	70	COO	400 700 OFAL ODAOKO
IARVEST COURT	HERITAGE WY	DEAD END	HARVES	10	288	31	8,928	R			79	77	79	\$66	439,766 SEAL CRACKS
IERITAGE COURT	HERITAGE WAY	DEAD END	HERICT	10	213	28	5,964	R			78	76	78	\$47	435,299 SEAL CRACKS
IUMBOLDT STREET	WASHINGTON ST.	YOUNT ST.	HUMBLT	10	309	37	11,433	R	AC		81	79	81	\$76	453,048 SEAL CRACKS
											Treatmen	t Total		\$189	
OXGLOVE LANE	LANDE WAY	FORRESTER LN.	FOXGLO	10	437	24	10,488	R	AC		62	61	100	\$54,662	9,251 MILL AND THIN OVERLAY
VASHINGTON STREET	N/S MADISON ST.	N/S HOPPER CREEK BRIDGE	WASHIN	20	870	40	34,800	Α	AC		67	65	100	\$181,371	13,875 MILL AND THIN OVERLAY
VASHINGTON STREET	N/S HOPPER CREEK	N/S WEBBER AVE	WASHIN	25	475	32	15,200	Α	AC/PCC		66	65	100	\$79,220	13,539 MILL AND THIN OVERLAY
VASHINGTON STREET	N/S YOUNT ST (HURLEYS)	N/S MULBERRY ST	WASHIN	35	290	40	11,600	Α	AC		67	66	100	\$60,457	13,545 MILL AND THIN OVERLAY
											Treatmen	nt Total		\$375,710	
				Ye	ar 2021 A	rea To	tal	20	02,165		Year 2021	Total		\$545,103	
Year: 2022															
												Tuestas			
									Surface		Current	Treatm	PCI		
Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC		Area ID		Before		Cost	Rating Treatment
ARVEST COURT	HERITAGE WY	DEAD END	HARVES	10	288	31	8.928	R	AC				86	\$14,997	
IERITAGE COURT							0,320	1.	AC		79	78	00	φ14,997	7,765 MICROSURFACING
	HERITAGE WAY	DEAD END	HERICT	10	213	28	5,964	R			79 78	78 77	85	\$10,019	7,765 MICROSURFACING 7,856 MICROSURFACING
	HERITAGE WAY	DEAD END	HERICT	10			-,				78	77		\$10,019	,
					213	28	5,964	R	AC		78 Treatmen	77 nt Total	85	\$10,019 \$25,016	7,856 MICROSURFACING
OUNTVILLE CROSS	YOUNT ST.	DEAD END TOWN LIMITS	HERICT	10			5,964		AC		78	77		\$10,019	,
OUNTVILLE CROSS					213	28	5,964	R	AC		78 Treatmen	77 nt Total 78	85	\$10,019 \$25,016	7,856 MICROSURFACING
OUNTVILLE CROSS	YOUNT ST.	TOWN LIMITS	YNTVIL		213	28	5,964	R A	AC		78 Treatmen	77 nt Total 78	85	\$10,019 \$25,016 \$307	7,856 MICROSURFACING 519,338 SEAL CRACKS 13,435 MILL AND THIN
OUNTVILLE CROSS OAD VASHINGTON STREET	YOUNT ST. N/S WEBBER AVE	TOWN LIMITS N/S YOUNT ST	YNTVIL	10	213 1,286	28	5,964 42,438	A A	AC AC		Treatmen 83 Treatmen	77 nt Total 78 nt Total	85	\$10,019 \$25,016 \$307 \$307	7,856 MICROSURFACING 519,338 SEAL CRACKS
OUNTVILLE CROSS ROAD	YOUNT ST. N/S WEBBER AVE N/S MULBERRY ST	TOWN LIMITS N/S YOUNT ST T N/S OAK CIRCLE	YNTVIL WASHIN WASHIN WASHIN	10	1,286 1,215	33	5,964 42,438 34,020	A A	AC AC/PCC AC/PCC		78 Treatmen 83 Treatmen 67	77 at Total 78 at Total 64	85	\$10,019 \$25,016 \$307 \$307 \$182,625	7,856 MICROSURFACING 519,338 SEAL CRACKS 13,435 MILL AND THIN OVERLAY 12,097 MILL AND THIN
OUNTVILLE CROSS COAD VASHINGTON STREET VASHINGTON STREET	YOUNT ST. N/S WEBBER AVE N/S MULBERRY ST	TOWN LIMITS N/S YOUNT ST T N/S OAK CIRCLE S/S	YNTVIL WASHIN WASHIN WASHIN	10 30 40	1,286 1,215 680	28 33 28 40	5,964 42,438 34,020 27,200	A A A	AC AC/PCC AC/PCC		78 Treatmen 83 Treatmen 67	77 at Total 78 at Total 64 68 66	85 80 100 100	\$10,019 \$25,016 \$307 \$307 \$182,625 \$146,014	7,856 MICROSURFACING 519,338 SEAL CRACKS 13,435 MILL AND THIN OVERLAY 12,097 MILL AND THIN OVERLAY 13,268 MILL AND THIN
OUNTVILLE CROSS OAD /ASHINGTON STREET /ASHINGTON STREET	YOUNT ST. N/S WEBBER AVE N/S MULBERRY ST	TOWN LIMITS N/S YOUNT ST T N/S OAK CIRCLE S/S CHAMPAGNE DE	YNTVIL WASHIN WASHIN WASHIN	10 30 40	1,286 1,215 680	28 33 28 40	5,964 42,438 34,020 27,200 29,600	A A A	AC AC/PCC AC/PCC AC		78 Treatmen 83 Treatmen 67 71 70	77 at Total 78 at Total 64 68 66	85 80 100 100	\$10,019 \$25,016 \$307 \$307 \$182,625 \$146,014 \$158,898	7,856 MICROSURFACING 519,338 SEAL CRACKS 13,435 MILL AND THIN OVERLAY 12,097 MILL AND THIN OVERLAY 13,268 MILL AND THIN
YOUNTVILLE CROSS ROAD VASHINGTON STREET VASHINGTON STREET	YOUNT ST. N/S WEBBER AVE N/S MULBERRY ST N/S CALIFORNIA DR	TOWN LIMITS N/S YOUNT ST T N/S OAK CIRCLE S/S CHAMPAGNE DE	YNTVIL WASHIN WASHIN WASHIN	10 30 40 50	1,286 1,215 680 740	28 33 28 40 40	5,964 42,438 34,020 27,200 29,600	A A A	AC AC/PCC AC/PCC AC		78 Treatmen 83 Treatmen 67 71 70 Treatmen	77 at Total 78 at Total 64 68 66 at Total 44	85 80 100 100	\$10,019 \$25,016 \$307 \$307 \$182,625 \$146,014 \$158,898	7,856 MICROSURFACING 519,338 SEAL CRACKS 13,435 MILL AND THIN OVERLAY 12,097 MILL AND THIN OVERLAY 13,268 MILL AND THIN OVERLAY 7,272 MILL AND THICK



Scenarios - Sections Selected for Treatment

Interest: 2.00%

Inflation: 3.00%

Printed: 3/30/2020

and Stone of the Student	CHINESE CO.														
Year: 2023															
												Treatm	ent		
									Surface		Current		PCI		
Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Туре	Area ID	PCI	Before	After	Cost	Rating Treatment
HUMBOLDT STREET	WASHINGTON ST.	YOUNT ST.	HUMBLT	10	309	37	11,433	R	AC		81	78	86	\$19,781	7,512 MICROSURFACING
VISTA DRIVE	FORRESTER LN.	FINNELL RD.	VISTDR	10	960	40	38,400	R	AC/AC	_	83	79	87	\$66,438	8,592 MICROSURFACING
											Treatme	nt Total		\$86,219	
CALIFORNIA DRIVE	SOLANO AVE	WASHINGTON ST.	CALIF	10	650	35	22,750	С	AC		69	61	100	\$125,790	10,676 MILL AND THIN OVERLAY
WASHINGTON STREET	N/S OAK CIRCLE	N/S CALIFORNIA DR	WASHIN	45	557	40	22,280	Α	AC/PCC		71	66	100	\$123,191	12,381 MILL AND THIN OVERLAY
WEBBER AVENUE	WASHINGTON ST.	YOUNT ST.	WEBBER	20	413	27	11,151	R	AC	S1 - 2010 CIF SLURRY SEA PLANNED		63	100	\$61,657	8,667 MILL AND THIN OVERLAY
											Treatme	nt Total		\$310,638	
WASHINGTON STREET	S/S CHAMPAGNE DR	TOWN LIMITS	WASHIN	55	565	30	16,950	Α	AC/PCC		55	47	100	\$140,580	10,802 MILL AND THICK OVERLAY
											Treatme	nt Total		\$140,580	
				Yea	ar 2023 A	rea To	tal	12	22,964		Year 2023	3 Total		\$537,437	
Year: 2024															
												Treatm	ent		
									Surface		Current	PCI	PCI		
Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Туре	Area ID	PCI	Before	After	Cost	Rating Treatment
JEFFERSON STREET	STARKEY AVE	WEBBER ST	JEFFER	30	680	38	25,840	R	AC		85	79	87	\$46,049	7,081 MICROSURFACING
YOUNTVILLE CROSS ROAD	YOUNT ST.	TOWN LIMITS	YNTVIL	10	1,286	33	42,438	Α	AC		83	75	83	\$75,627	9,042 MICROSURFACING
											Treatme	nt Total		\$121,676	
WASHINGTON STREET	TOWN LIMITS	N/S MADISON ST.	WASHIN	10	1,088	25	27,200	Α	AC/PCC		72	65	75	\$96,910	7,432 MICROSURFACING WITH 20% DIGOUTS
											Treatme	nt Total		\$96,910	
JACKSON STREET	WASHINGTON ST.	LINCOLN AVE.	JACKSO	10	341	50	17,050	R	AC		74	78	80	\$130	576,445 SEAL CRACKS
MADISON STREET	HWY 29 RIGHT OF WAY	WASHINGTON ST.	MADISO	10	440	30	13,200	Α	AC		78	78	80	\$101	583,434 SEAL CRACKS
STARKEY AVENUE	JEFFERSON ST.	YOUNT STREET.	. STARKY	20	300	27	8,100	R	AC		74	76	78	\$69	398,132 SEAL CRACKS
											Treatme	nt Total		\$300	



Scenarios - Sections Selected for Treatment

Interest: 2.00%

Inflation: 3.00%

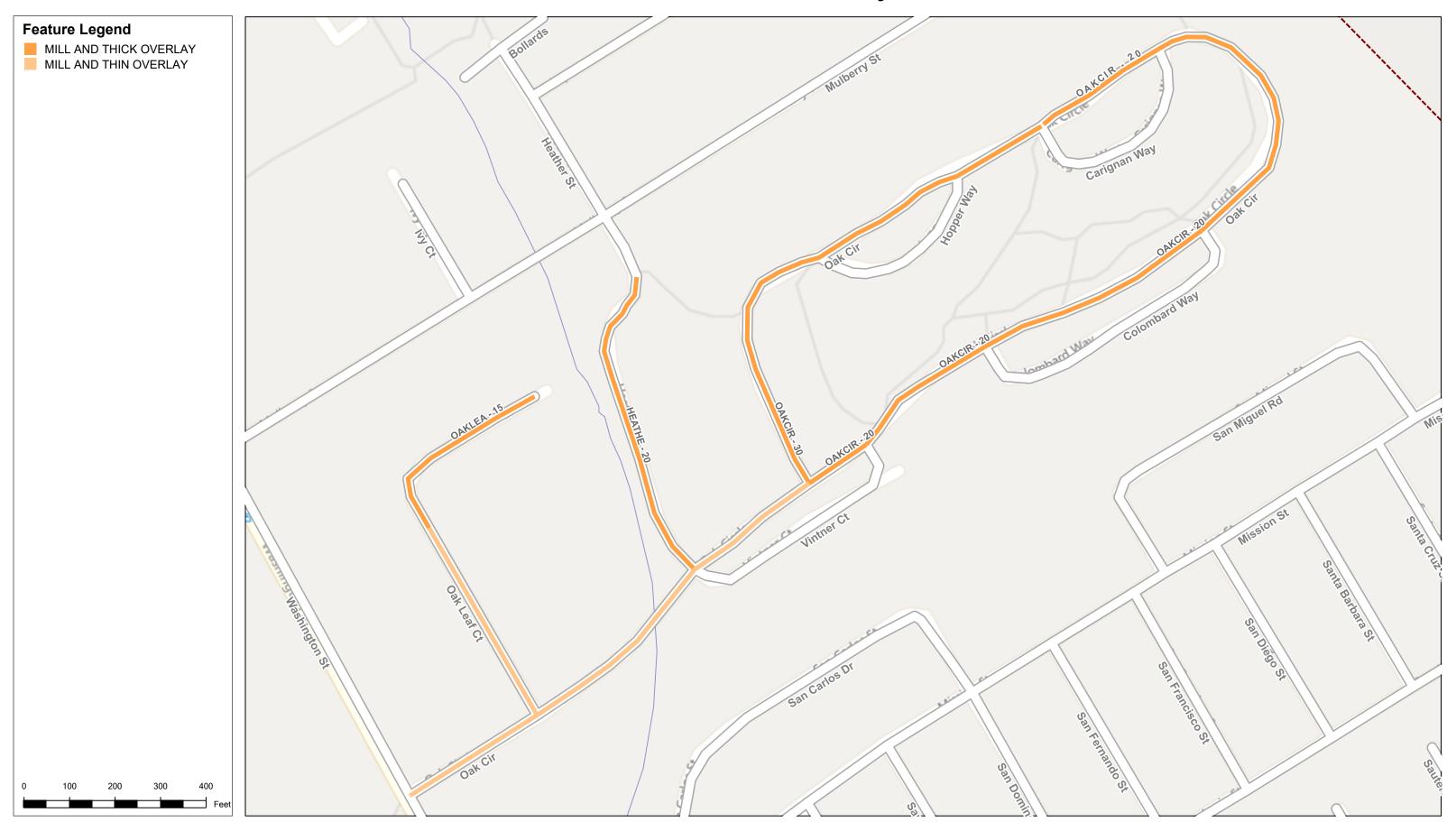
Printed: 3/30/2020

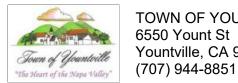
Year: 2024															
												Treatn			
Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surface Type	Area ID	Current PCI	PCI Before	PCI After	Cost	Rating Treatment
SOLANO AVENUE	1670' SE OF CALIFORNIA DR	TOWN LIMITS	SOLANO	15	513	32	16,416	С	AC/AC		52	42	100	\$140,236	7,784 MILL AND THICK OVERLAY
VISTA COURT	VISTA DRIVE	DEAD END	VISTCT	10	255	35	8,925	R	AC		52	44	100	\$76,243	6,893 MILL AND THICK OVERLAY
											Treatme	ent Tota	I	\$304,434	
				Yea	ar 2024 <i>A</i>	Area To	tal	10	69,465		Year 202	4 Total		\$523,320	
				Grand To	otal Sec	tion Are	a:	70	69,056		Grand	d Total	\$	2,695,141	



Scenario Treatments

Current Investment Level - 2020 Project Period - Printed: 3/30/2020

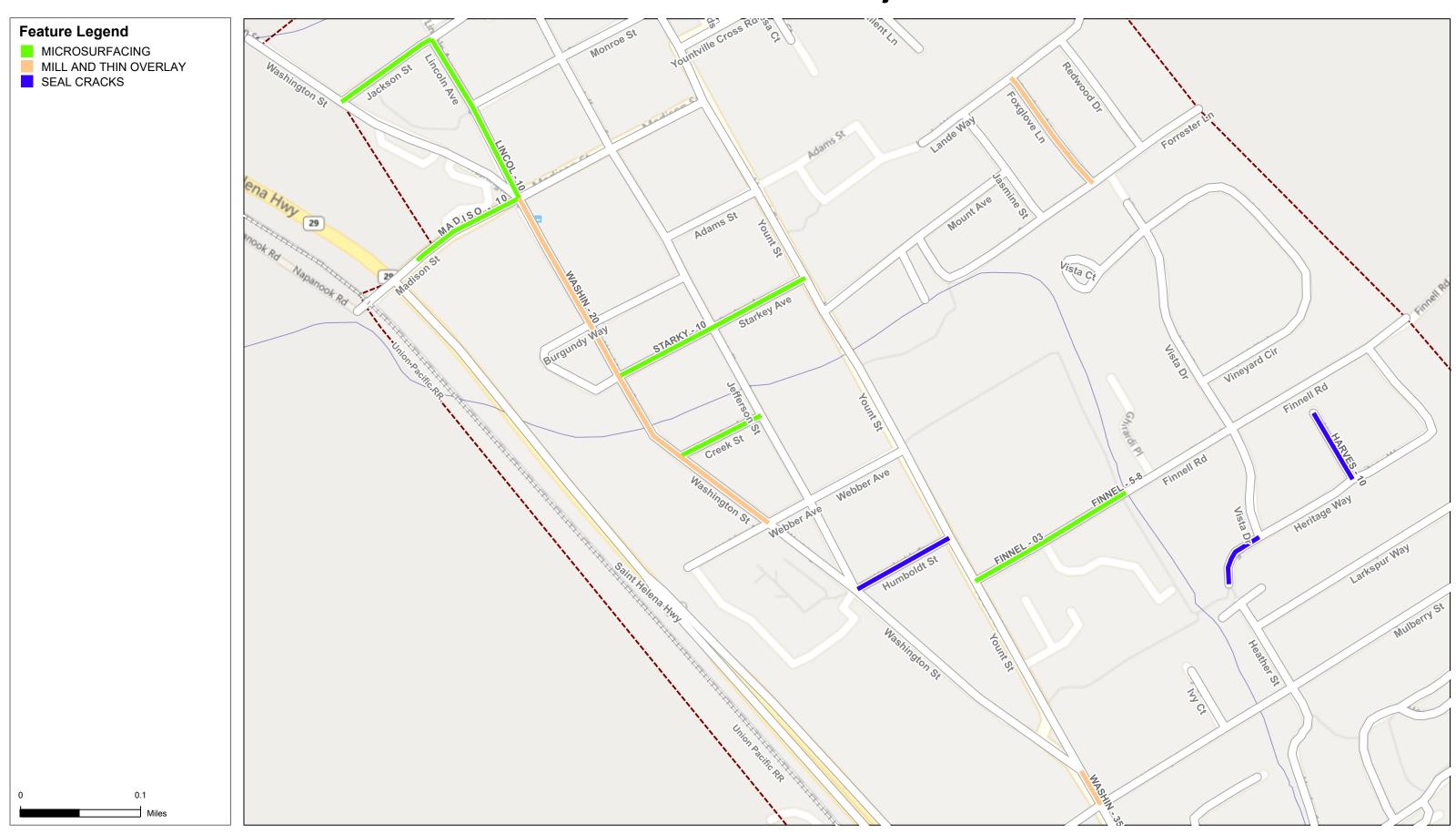




TOWN OF YOUNTVILLE 6550 Yount St Yountville, CA 94599

Scenario Treatments

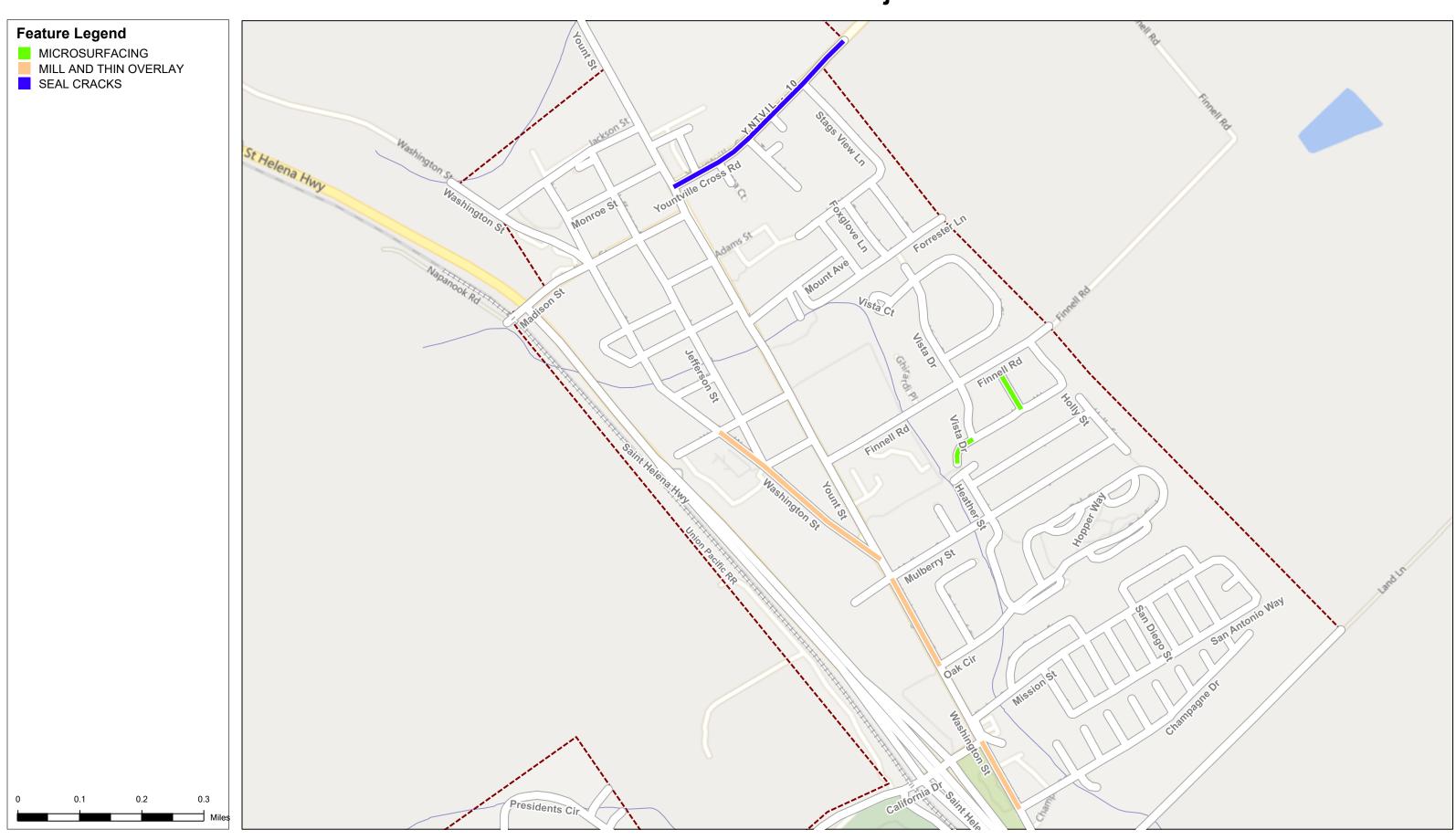
Current Investment Level - 2021 Project Period - Printed: 3/30/2020





Scenario Treatments

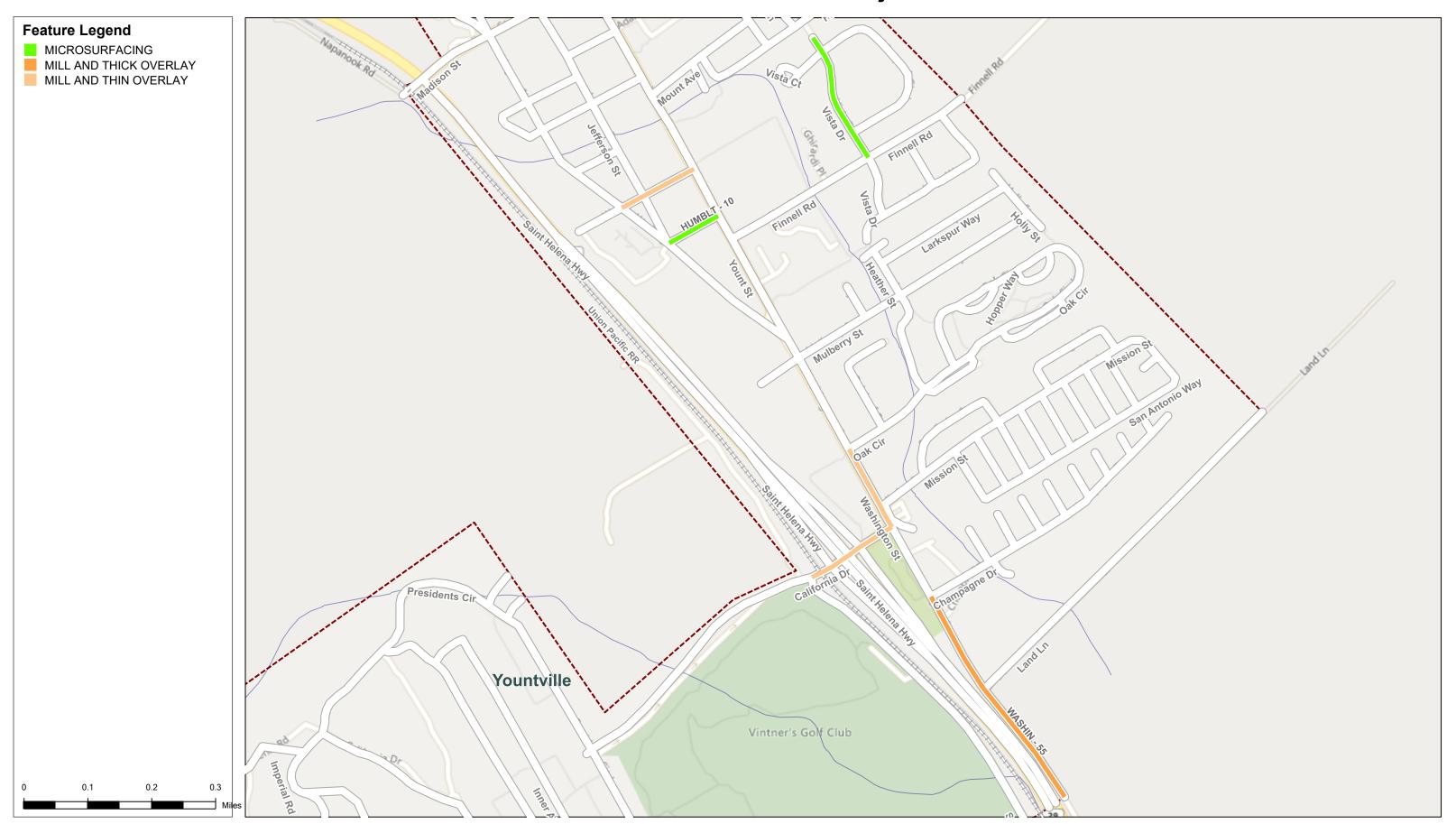
Current Investment Level - 2022 Project Period - Printed: 3/30/2020





Scenario Treatments

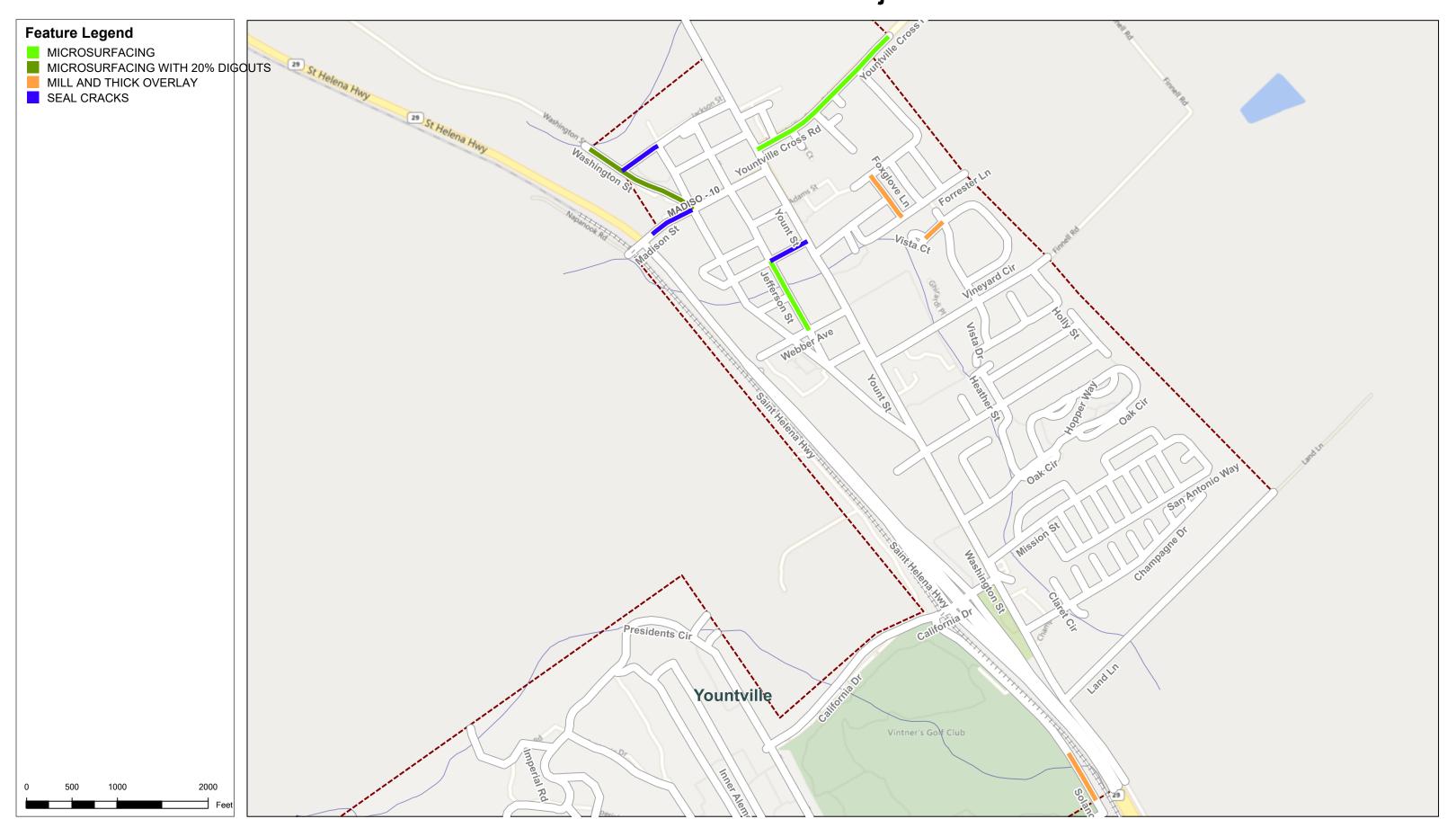
Current Investment Level - 2023 Project Period - Printed: 3/30/2020





Scenario Treatments

Current Investment Level - 2024 Project Period - Printed: 3/30/2020



SECTION 8

Quality Monitoring Report



QUALITY MONITORING REPORT Yountville, CA October 2019

Quality Engineering Solutions, Inc. (QES) successfully completed the pavement distress data collection on 100% of the street network in the Town of Yountville between August 20, 2019 and August 21, 2019. All production level surveys were completed by Jason Clinton, the distress rating lead. Documented in this letter report are the results of the quality monitoring process completed by QES in preparation for, and during the field data collection effort.

Rater Training and Control Site Rater Calibration

Rater training began in April 2019 with a review of the MTC StreetSaver manuals:

- Pavement Condition Index Distress Identification Manual for Flexible Pavements, March 2016 Fourth Edition
- Pavement Condition Index Distress Identification Manual for Rigid Pavements, March 2016 Third Edition

This training was completed by Ryan Finley and Mr. Clinton. The training was followed by independent rating of 10 asphalt control sites located around Reno, Nevada. Mr. Finley's ratings were used as the "ground truth" for this comparison. Mr. Clinton met the requirements on the first round of ratings. These results are documented in Form 1.

Office Checks

The rating database was checked for completeness and reasonableness. The data was loaded into the StreetSaver database and the report "PCI Difference Between Inspections" was executed by Mr. Finley. Mr. Finley reviewed the past and present data for all sections with differences between inspections of more than 15 PCI points, looking for maintenance or rehabilitation as well as consistency of the reported data. The results of the office check are summarized in Form 2. There were a total of 4 sections where the difference in PCI was greater than 15 points and the data for each of these sections was reviewed. For 3 sections with large decreases in PCI, an increase in quantities of medium and/or high severity alligator cracking was the primary driving force for the decline in PCI. A total of 1 section experienced a significant increase in PCI which was due to M&R work. As for the updated network PCI, the PCI was a 73 pre-survey and remained a 73 post-survey.

On-Site Consistency Check

In an effort to determine the on-site consistency, Jason Clinton re-surveyed total of 4 randomly selected sections over the data collection period. All of Mr. Clinton's 4 sections were within 5 PCI points of the original sample thus passing the minimum threshold of 90%. These surveys were not necessarily conducted on the exact piece of pavement as the original sample, since the



inspection units were not routinely marked during surveys. The results of these surveys were within our allowable range and are documented in the attached Form 3.

Independent Quality Assurance Check

Finally, an independent quality assurance check was completed, as documented in Form 4 and the attached table of sections. Prior to beginning any surveys, a 5% random sample of all management sections was selected by Mr. Finley, the Staff Engineer. An independent rating team led by Mr. Finley and supported by Douglas Frith recorded detailed description locations of inspections units and conducted a "ground truth" distress rating. During the survey, Mr. Clinton surveyed the inspection units identified for these select management sections. These results were compared daily, as sections were surveyed. The results of this independent quality assurance rating are provided on Form 4, and all ratings fell within the allowable range.

Summary

The quality monitoring was completed per the submitted Quality Monitoring Plan. We believe this will ensure high quality pavement distress data is used in StreetSaver and will result in valid PCI numbers as well as reasonable pavement management recommendations.

Engineering • Inspection

FORMS

Control Site Rater Certification

Rater:	Jason Clinton	Date:	4/1/2019

Survey Method: StreetSaver

		Results		
		Ground Truth	Rater	Difference
Site #	Location	PCI	PCI	∆ PCI
1	Jones Street	79	77	2
2	6th Street, East	7	18	-11
3	6th Street, West	62	67	-5
4	White Fir Street	74	66	8
5	Damselfly Drive	27	32	-5
6	River Park Court	75	75	0
7	Riverberry Drive	39	32	7
8	Idlewild Drive	39	44	-5
9	Riviera Street	74	75	-1
10	11th Street	12	23	-11

Resi	ıltı
1162	ait.

PASS

FAIL

Certified by:

Date:

4/1/19

Office Check and PCI Comparison

Data Set:	Yountville	Date Imported:	10-Oct-19
Number of	Mangement Sections Loaded:		72
Number of	Management Sections with \triangle PCI > 15:		4
(Percent of S	_	5.6%	
Number of	differences explained by M&R		1
(Percent of S	ections)		1.4%
for the modera a PCI in	tions that declined by more than 15 PCI placed decline appears to be due to the inclusion at early and/or high severity alligator cracking crease of more than 15 PCI points, the precent M&R work.	on and/or increase og. For the one section	of on with
Certified by	1: KuBA	Date: /	0/10/19

Quality Engineering Solutions

ON-SITE REPEATABILITY CHECKS

City:	Yountville	Week Ending:	24-Aug-19	
Survey Team:	Jason Clinton			
Number of Sec	ctions with Duplicate Surveys:		4	
Percent of Sec (5% Minimum)	tions with Duplicate Surveys:		5.6%	
Number of Sec (+/- 5 PCI Points)	ctions Passing Comparison:		4	
Percent of Sec (90% Minimum)	tions Passing Comparison:		100.0%	
Comments:	All 4 repeatability sections fell w	rithin 5 PCI points.		
QC Result:		PASS	FAIL	
Certified by:	fyb 45	Date:	8/23/19	

Quality Engineering Solutions

Form 3

Engineering • Inspection

ON-SITE SUPERVISORY QUALITY CHECKS

Survey Team: Jason Clinton			(City: Yountville				
Supervisor Tea	m:	Ryan Finley						
Number of Sec	tions with	Duplicate Survey	ys:			4		
Percent of Sect (5% Minimum)	ions with	Duplicate Survey	rs:			5.6%		
Percent of Sect (+/- 5 PCI Points, !		ng Comparison: um)				75%		
Percent of Sect (+/- 15 PCI Points,					-	100%		
		ion, the differenc						
alligator crackir	ng than the	e Supervisor Tear	m.					
QA Result:					PASS	FAIL		
Certified by:	fyld	/ V			Date:	8/23/19		

QA INSPECTION UNITS

Street ID	Section ID	Street Name	Begin Location	End Location		Surface Type	Units	Samp. Width	Insp Len	PCI	From Description	To Description
LANDE	05	LANDE WAY	ADAMS	29 LANDE WAY (PVMNT CHG)	501	A - AC	1	27	100	89	Start at light pole at house #33	End 100' towards Yount Street
MESA	10	MESA COURT	YOUNTVILLE CROSS RD.	DEAD END	280	A - AC	1	15	100	43	Start at pavement transition	End 100' south
MOUNT	25	MOUNT AVENUE	YOUNT ST.	JASMINE ST	749	O - AC/AC	1	24	100	65	Start at mailbox	End 100' towards Yount Street
YNTMIL	105		END OF YOUNT STREET	643' NORTH OF YOUNT STREET.	643	A - AC	1	23	100	34	Start at pavement transition	End 100' towards city limits