FREESE AND NICHOLS

Innovative approaches
Practical results
Outstanding service

STEPHENVILLE PAVEMENT MANAGEMENT REPORT

City of Stephenville, Texas

April 2016

Prepared by:

CITY OF STEPHENVILLE
PUBLIC WORKS DEPARTMENT
298 West Washington Street
Stephenville, Texas 76401

FREESE AND NICHOLS, INC.
4055 International Plaza, Suite 200
Fort Worth, Texas 76109

TRANSMAP CORPORATION
3366 Riverside Drive, Suite 103
Upper Arlington, Ohio 43221

Innovative approaches
Practical results
Outstanding service

STEPHENVILLE PAVEMENT MANAGEMENT REPORT

APRIL 2016

City of Stephenville, Texas

FREESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

04/21/2016

Prepared by:

CITY OF STEPHENVILLE
PUBLIC WORKS DEPARTMENT
298 West Washington Street
Stephenville, Texas 76401

FREESE AND NICHOLS, INC.
4055 International Plaza, Suite 200
Fort Worth, Texas 76109

TRANSMAP CORPORATION
3366 Riverside Drive, Suite 103
Upper Arlington, Ohio 43221

STE15434

TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

The City of Stephenville, Texas selected Freese and Nichols, Inc. (FNI) to develop a Pavement Management System for all city-maintained roadways. The system included an inventory and inspection of all streets in the City's network, assessment of existing pavement conditions, and an analysis of various budget scenarios for street maintenance.

FNI partnered with Transmap Corporation to collect and analyze the existing pavement data. Using automated data collection technology, each street was photographed, analyzed to determine the extent and severity of multiple types of distresses, and assigned a score. The data was then loaded into MicroPAVER, a software package developed by the US Army Corps of Engineers for pavement analysis.

Stephenville's asphalt and concrete street network currently has an overall "fair" Pavement Condition Index (PCI) score of 58 on a scale of 0 to 100. Concrete streets, which make up less than 5% of the network, have a "good" average PCI score of 89. Asphalt streets, which compose about 92% of the system, have a "fair" average PCI score of 56. Because asphalt streets make up a vast majority of the city's network, the analysis focused primarily on those streets. The value of the current street maintenance backlog, or unfunded work needed to bring the city streets to a "satisfactory" condition, was calculated at $27.3 million in 2016 dollars.

The project team developed four budget plan scenarios:

1. Maintain the current $250,000 annual capital street maintenance budget.
2. Increase the capital street maintenance budget to $1,000,000 per year.
3. Identify the capital street maintenance budget required to maintain the existing asphalt PCI score of 56.
4. Identify the capital street maintenance budget required to attain an asphalt street rating of "satisfactory" by raising the average PCI to 71 or higher within ten years. The objective is to reach a PCI score which will allow pavements to be perpetually maintained in lieu of total reconstruction, thereby minimizing the annual cost of maintenance.

If current funding levels are maintained, the model predicts a reduction in the asphalt PCI score from 56 to 30 over the next ten years. Unfortunately, even a budget increase to $1,000,000 per year is not adequate to maintain the current PCI score, and the model predicts that it will drop from 56 to 41 in ten

years. The analysis showed that annual funding of $2,100,000 is required to maintain the asphalt PCI score of 56, and $3,200,000 per year is required to achieve a "satisfactory" score over a ten year period.

Brick streets were analyzed separately from asphalt streets. Approximately 45% of brick streets, which make up about 3% of the street network, were rated a "good" condition. An estimated $1,070,000 in repair costs is needed to improve all brick streets from "poor" or "fair" condition to "good" condition. We recognize the historic significance of Stephenville's brick streets, but suggest that the City determine if some heavily-traveled brick streets may be good candidates for being reconstructed with asphalt.

We recommend that the City update the MicroPAVER database yearly as streets are maintained to ensure that the model contains the most accurate data possible. The recommended pavement repair plans generated by MicroPAVER are intended to be used by City staff as a planning tool. Engineering judgement and field verification is necessary prior to preparing final pavement repair plans for each year.

PAVEMENT MANAGEMENT SYSTEM REPORT GOALS

The objectives of the Pavement Management System include the creation of an initial inventory and condition assessment of city streets, set-up of a network database in a pavement management software package, and analyses of various funding scenarios to obtain target condition ratings. Upon completion of the system, City staff will have the tools to optimize the expenditure of annual street maintenance funds.

The specific goals of this report are to:

- Identify and assess Stephenville's existing pavement network conditions.
- Communicate the anticipated needs to Stephenville's pavement system.
- Recommend maintenance and funding strategies to address immediate and backlog funding needs in order to successfully maintain the street system.

1.0 PROJECT INTRODUCTION

1.1 BACKGROUND

The City of Stephenville, Texas is a growing city with a population of about 20,000 residents located in Erath County, seventy miles southwest of Fort Worth, Texas. The City is responsible for a pavement network of approximately 87 centerline miles of roadway consisting primarily of asphalt-surface roadways, as well as some concrete and brick streets.

The quality of this roadway network is of utmost importance to the City of Stephenville. High quality, however, cannot be maintained without appropriate funding levels for pavement maintenance activities and optimized spending of those funds. The City of Stephenville is implementing a pavement management system to determine the funding levels and optimized budget execution required to maintain a high quality network for years to come.

The City of Stephenville selected Freese and Nichols, Inc. (FNI) to establish this pavement management system. Project objectives included an initial inventory and condition assessment of city streets, set-up of a network database in a pavement management software package, and analyses of various funding scenarios to obtain target condition ratings. Upon completion of this project, City staff will have the tools to optimize the expenditure of annual street maintenance funds.

In order to obtain the most consistent data possible, FNI partnered with Transmap Corporation to perform automated data collection by photographing all roadways within the City, assigning a condition score to each street, and running various budget scenarios in MicroPAVER software. MicroPAVER was originally developed by the U.S. Army Corps of Engineers to help manage the inventory of pavements maintained by the Department of Defense. The software is used to predict future pavement maintenance and repair needs. The program performs multiple levels of analysis to help show where and when to optimize available street maintenance and repair funds. The automated data collection method is not useful for analysis of brick streets, so those streets were studied visually by FNI staff and were analyzed separately from the remainder of the street network. This report was prepared jointly by City of Stephenville, FNI, and Transmap staff.

The recommended pavement repair plans generated in conjunction with this report are intended to be used by City staff as a planning tool. Engineering judgement and field verification is necessary prior to preparing final pavement repair plans for each year.

1.2 PRINCIPLES OF PAVEMENT MANAGEMENT

Given the persistent shortage of funds for maintaining street systems, the preservation and stewardship of existing roads have become major activities for all levels of government. An excellent way of maximizing the return on investment for the money that exists for road maintenance is to implement a Pavement Management System.

Pavement management is a systematic approach to extending the life of a pavement network. More specifically, it is the process of planning, budgeting, funding, designing, constructing, monitoring, evaluating, maintaining, and rehabilitating the pavement network to provide maximum benefits with available funds.

A Pavement Management System provides tools and methods for finding and implementing the best Maintenance & Repair (M&R) strategies. Maintaining streets when they are still in good condition ultimately costs less over their lifetime than waiting to fix roads that have fallen into poor condition. In other words, the proactive approach of routine pavement management means less money wasted on frequent roadway reconstruction, and a potential savings of millions of dollars.

This process is illustrated in Figure 1-1. It details how timely intervention can delay the inevitable total reconstruction for as long as practical. If repairs are delayed until a road is rated in “Poor” condition or worse, the cost of rehabilitation becomes many times more expensive than for those roads in “Good” condition due to more intensive repair methods. This means without preventive pavement maintenance, the cost of rehabilitation will be prohibitively expensive.

Figure 1-2 compares three 30-year maintenance strategies for a typical 1-mile section of Stephenville pavement. For Strategy “A,” the pavement receives preventive maintenance early and often during its lifespan, which allows major maintenance to be deferred for many years. The total cost of this approach for a 1-mile section of pavement is approximately $600,000. In Strategy “B,” preventive maintenance is deferred until later in the pavement’s life. The result is the need for heavier maintenance over the pavement’s lifespan, and the total costs are estimated at $1,100,000. Strategy “C” defers all preventive maintenance until the pavement must be reconstructed, with estimated costs of $1,900,000.

A secondary benefit of regular maintenance is the significantly reduced time required to perform the maintenance work compared with the time a street would be closed for major repair or reconstruction. Citizens then benefit from better pavement conditions and experience less inconvenience from road closures.

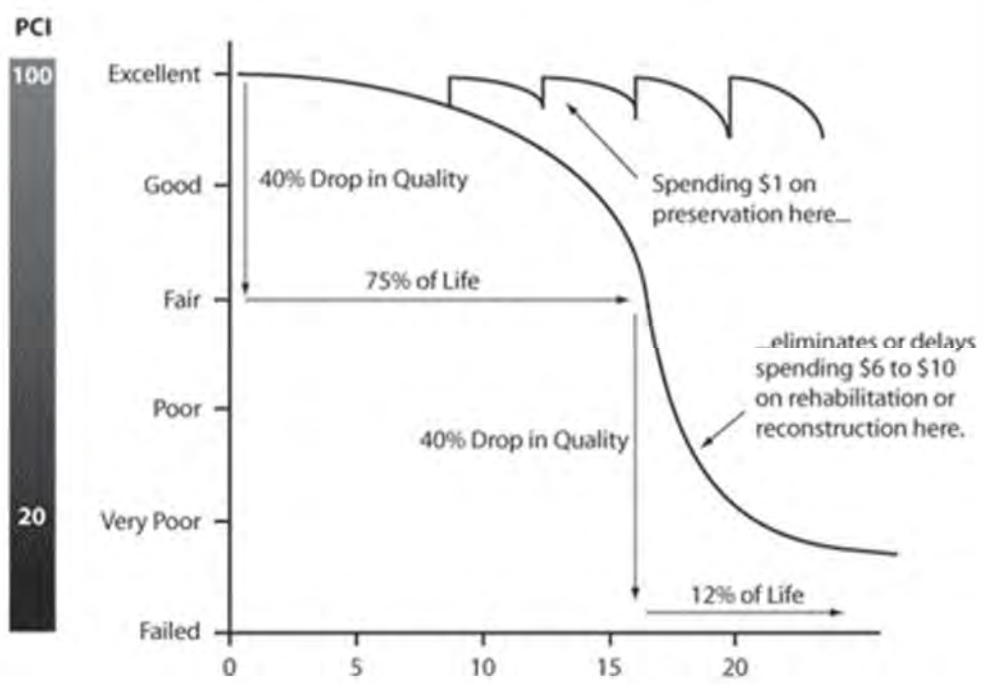


Figure 1-1 – Typical Pavement Deterioration Curve

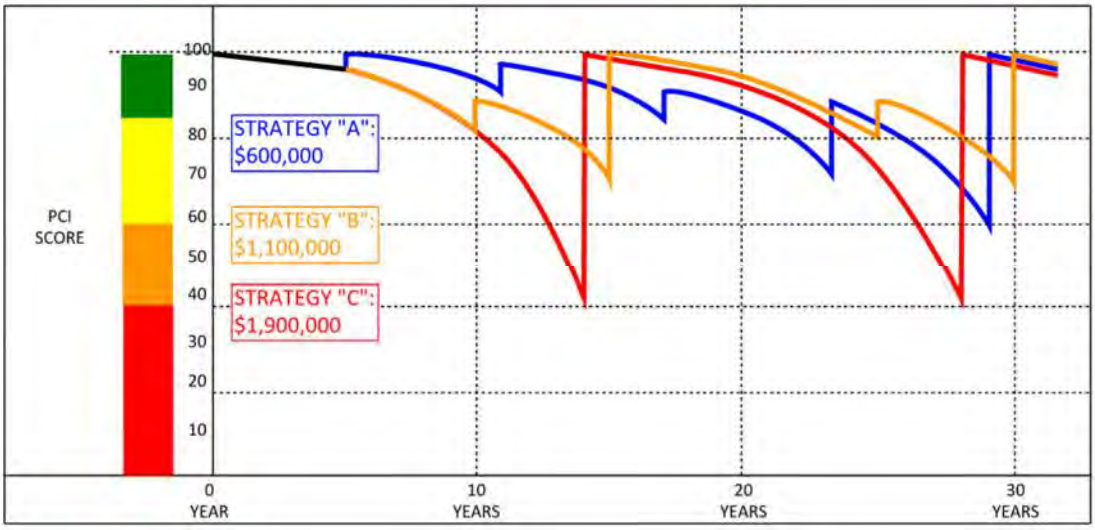


Figure 1-2 – Comparison of Three Pavement Maintenance Strategies

Pavement Management System software provides a way to store an accurate inventory of all roadways, enriched with links to easements, as-built records, and historical documentation. The breadth and depth of information they hold, including digital images of roadways, baseline pavement condition data, and reviews of deterioration over time, are invaluable resources for measuring and tracking the effectiveness of M&R strategies.

Successful Pavement Management System programs let agency decision makers develop reliable performance models for the roadway, which can be used to generate sound policies and long-term repair strategies, budgets, and timetables.

Another compelling reason for implementing a Pavement Management System is to maintain compliance with the Governmental Accounting Standards Board (GASB) Statement 34. This document recommends agencies that collect taxes for the purpose of managing a long-term, fixed infrastructure asset to either:

Option #1 - Implement financial accounting controls to effectively depreciate and plan for the replacement of fixed assets; or

Option #2 - Implement an asset management system that provides a mechanism to gauge and budget for the long-term repair and/or maintenance of assets.

This analysis of the city's roadway network can be used as the basis for achieving GASB 34 compliance, either as the foundation for the inventory and valuation of the network (Option #1), or as the foundation of an asset management system (Option #2).

1.3 THE PAVEMENT MANAGEMENT PROCESS

Figure 1-3 depicts the three unique, but equally important, steps that comprise the Pavement Management Process: 1. System Configuration, 2. Field Data Collection, and 3. Analysis and Reporting.

1. System Configuration

System configuration involves identifying all roadway sections in the project network and assigning them a unique identifier. Roadway sections were typically delineated by block, from intersection to intersection. The city's street network includes 924 sections. Each section has attributes such as physical characteristics (length, width, etc.), pavement type, and road classification. As part of system configuration, the network was linked to a GIS map. The City is not responsible for maintaining the pavement of every street in the city limits; State and privately-owned streets were identified and removed from the survey. In addition,

roadways within parks and brick streets were not included in the data collection process. Analysis of brick streets is discussed in Section 5 of this report.

Figure 1-3 – The Pavement Management Process

2. Field Data Collection

After the system configuration was completed, Transmap technicians drove every roadway in the system and photographed each section of pavement. The condition of each section was assessed by determining the surface distresses present in each section and the severity of each distress. Other data collected during field surveys include the pavement width, the pavement type, GPS coordinates, and digital images. FNI staff performed field verification at multiple locations in the City as a quality control check of the data.

Surface Distress

Using high definition digital images, technicians evaluate the distress of each street. They record surface distresses such as cracking, potholes, and raveling. Pavement distresses recorded during this survey are itemized in Table 1-1, with respect to the pavement type (AC=Asphalt Pavement and PCC=Portland Cement Concrete).

Photographs of example pavement distresses are included as Appendix G in this report.

Table 1-1 – Description of Observed Distresses

Surface Distress (SD) Descriptions
Asphalt (AC)
Fatigue cracking that consists of a series of interconnecting cracks formed by repeated traffic loading
An assessment of the number and quality of roadway patches
An assessment of number of potholes and severity
Measurement of longitudinal cracks quantified by 3 severities and lengths
Measurement of transverse cracks quantified by 3 severities and crack count
Measurement of extent and severity of alligator cracking
Measurement of the extent of weathered and raveled pavement
Measurement of extent and severity of block cracking
Concrete (PCC)
Divided Slabs - number of pieces in cracked slab
Linear Cracking - divides the slab into two or three pieces
Corner Breaks - intersects at the joints by number and severity
Durability (“D”) Cracking - low if less than 15% coverage
Faulting - difference in elevation across the joint
Joint Seal Damage - condition of the seal such as good, fair, or poor
Popouts - greater than three popouts per square yard
Pumping - ejection of slab foundation material through joints or cracks
Scaling or Map Cracking - extent of slab that has hairline cracks
Shrinkage Cracking - surface hairline cracks less than 6.5 feet
Spalling, Corner - deterioration of slab within 1.5 foot of the corner. Measured by depth and dimensions of the sides of the spall.
Spalling, Joint - deterioration of the slab within 1.5 foot of the joint. Measured by width and length of spall.
Patching present in concrete - a small patching area is defined as less than 5.5 square feet in area

Distress Severity

Once a distress was identified, its severity (Low, Moderate, High) was attached to the appropriate record and its count (e.g. number of potholes), square footage (area covered by cracking), or linear feet (length of a specific crack) was added, as well.

In a Network Level Pavement Management System such as this, a condition survey of a limited number of sample units per section is sufficient. A sample area is defined as an area of 2,500 square feet plus or minus 1,000. A section is viewed as the smallest measuring unit when considering the application and selection of Maintenance and Repair (M&R) treatments. All field survey data was collected in samples and summarized on a section-by-section basis. Each section constitutes a unit of data to populate the Pavement Management System.

3. Analysis and Reporting

The results of a Pavement Management System analysis provide a quantitative performance score called the Pavement Condition Index (PCI). The PCI scoring system was developed by the United States Army Corps of Engineers and has become widely accepted and implemented as standard procedure worldwide as ASTM Standard D6433. The PCI is a distress-based condition index, i.e., specific distresses in the pavement are identified and tallied, and the type, severity, and extent of each distress is used to calculate a single number representing the pavement condition.

PCI scores represent the surface condition of the pavement on a scale of 0 to 100. For example:

- A PCI score of 100 represents a pavement in perfect condition.
- A PCI score of 0 represents a pavement that is in a failed condition.

All condition ratings of the field surveys are captured at sample areas and combined to calculate one value, which represents the PCI of a pavement section using the area weighted average.

Figure 1-4 shows how the PCI scores typically deteriorate over time for 3 different types of roadways. It also compares the PCI's to commonly used descriptive terms (Good, Satisfactory, Fair, Poor, Very Poor, Serious, Failed). The divisions between the descriptive terms are not fixed, but are meant to indicate common perceptions of roadway condition. In general, arterials deteriorate faster than collectors and local streets due to higher traffic volumes and larger truck percentages.

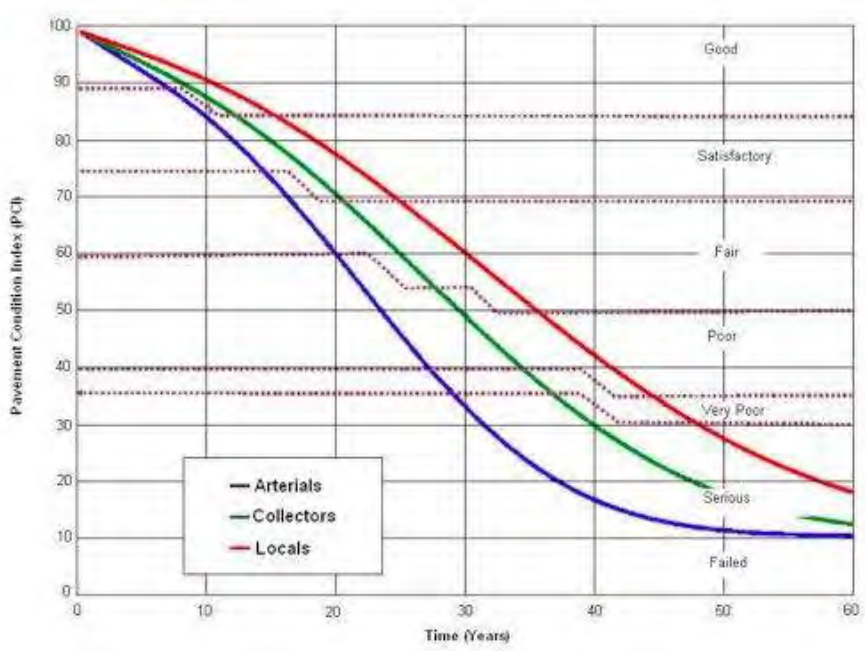


Figure 1-4 – Typical PCI Deterioration Curves

Table 1-2 defines the PCI condition levels with respect to the remaining life of a pavement and typical rehabilitation options recommended. For simplicity, this table reduces the total number of PCI categories from seven to five.

Table 1-2 – PCI Condition Levels and M&R Options

PCI	Work Type	PCI Rating	Remaining Life	Typical Rehabilitation Options
86-100	Rejuvenation	Good	15-25 Years	Little or no maintenance required (fog seal rejuvenation)
71-85	Global Preventative Maintenance	Satisfactory	12-20 Years	Routine maintenance - micro surfacing, slurry seal, crack sealing
56-70	Critical Condition	Fair	10-15 Years	Chip seals, cape seals, microsurfacing, thin overlays
26-55	Conventional Approach	Very Poor/Poor	7-12 Years	Resurface, mill and resurface
0-25	Reconstruction	Failed/Serious	5-10 Years	Reconstruction, rebuild, full depth reclamation

2.0 MAINTENANCE AND REPAIR PLANNING

2.1 KEY ANALYSIS INPUTS

All Pavement Management Systems require user inputs in order to establish budget estimates and pavement M&R plans. During the data review session with city staff, decisions were made that affected the pavement rehabilitation program in a variety of ways. The key inputs are:

- The M&R pavement preservation categories
- The M&R pavement treatment type
- The PCI ranges assigned to the M&R categories
- The Critical PCI at which the rate of roadway deterioration will significantly increase
- Unit cost for each pavement treatment type
- Expected life of the treatment type
- Agency budget and length of the planning period
- Budget required to achieve a target PCI at the end of the planning period
- Desired backlog at the end of the planning period

2.2 PAVEMENT PRESERVATION

Figure 2-1 represents the American Public Works Association (APWA) industry standard pavement preservation curve.

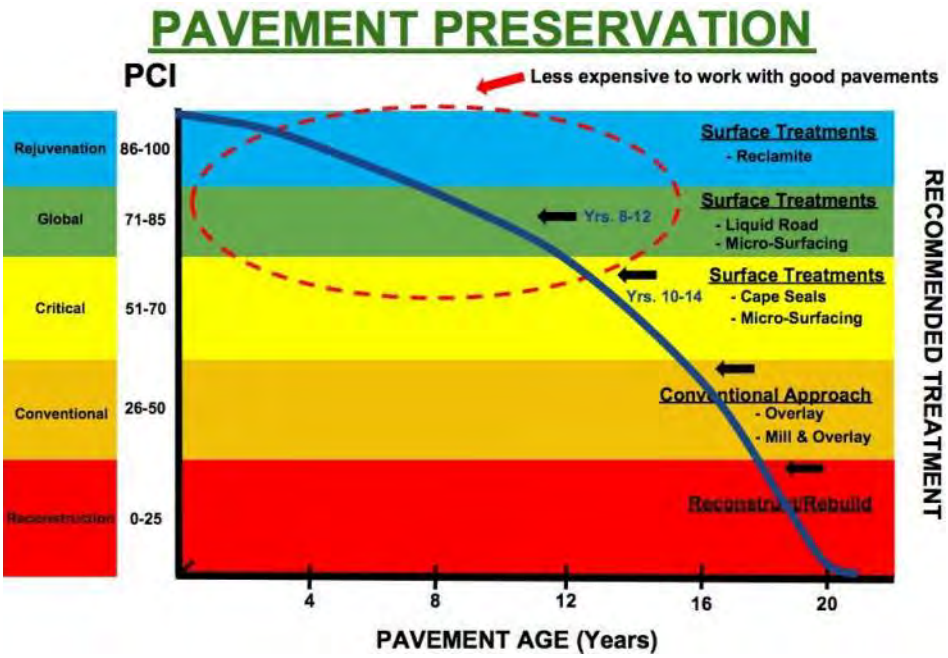


Figure 2-1 – Pavement Preservation

Figure 2-2 represents APWA's Pavement Toolbox. This toolbox looks at possible preservation treatments and how they are cost effective to use, as opposed to spending all funding on worst-first maintenance (rehabilitation/reconstruction).

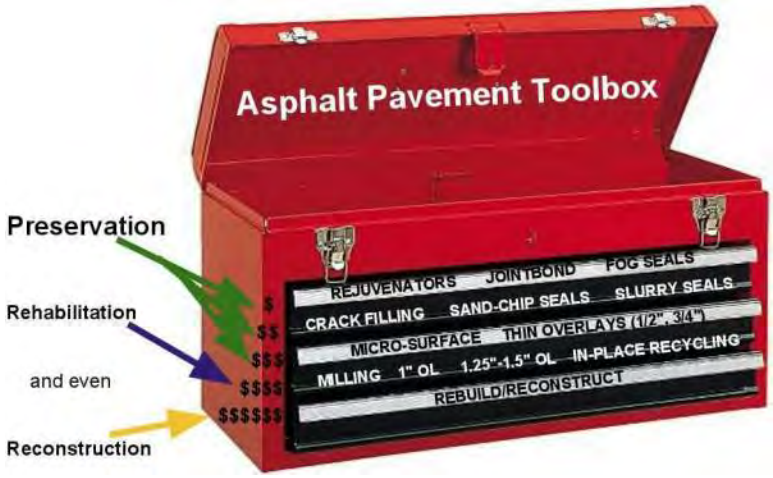


Figure 2-2 – Asphalt Pavement Preservation Toolbox

This hierarchical strategy ensures that roadways slated for reconstruction remain in the reconstruction pipeline, even if there's a funding shortfall. Available funds are used to preserve those streets that can be treated with surface treatments and overlays. No real equity is lost when those roads become unacceptable for use, since they were already scheduled for reconstruction.

2.3 PAVED NETWORK CURRENT CONDITIONS AND FINDINGS

The City of Stephenville has approximately 87 miles of pavement. Table 2-1 and Figure 2-3 show the mileage distribution by pavement type, number of miles, number of square yards and the weighted average Pavement Condition Index (PCI) for asphalt and concrete pavements.

Table 2-1 – Stephenville Pavement Type Distribution and Average PCI

Pavement Type	# of Miles	# of Square Yards	% by # of Square Yards	Weighted Average PCI
Asphalt	80.2	1,132,522	91.9%	56
Concrete	4.2	56,710	4.6%	89
Brick	3.0	43,750	3.5%	N/A
Total	**87.4**	**1,232,982**	**100%**	**58**

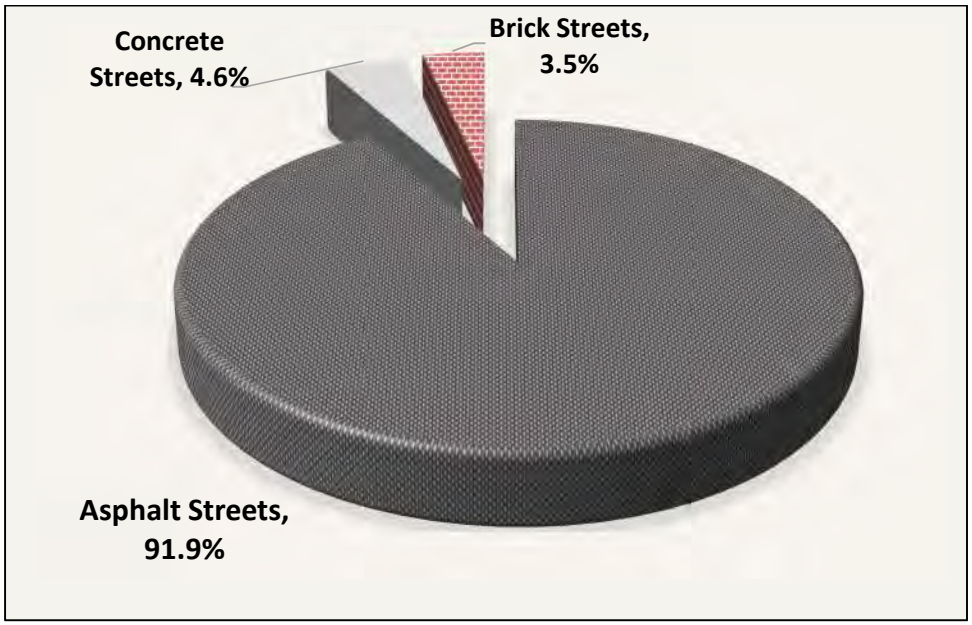


Figure 2-3 – Stephenville Pavement Type Distribution

Since there are only 4.2 miles of concrete pavements in the network and their average PCI is “good,” the remainder of the report will primarily discuss asphalt and brick pavements.

3.0 ASPHALT PAVEMENTS

3.1 FUNCTIONAL CLASSES

Pavements are grouped into "families" for further analysis using the MicroPAVER software for reasons such as similar construction, similar traffic loads or similar funding categories.

The asphalt pavement network for the City of Stephenville can be divided into three (3) functional classes: Arterial, Collector, and Local. The distribution for each functional class is shown in Table 3-1 and Figure 3-1.

Table 3-1 – Functional Class Distribution

MicroPAVER Functional Class Code	# of Sections	Miles	Square Yards	% of Network by Sq. Yd.	Weighted Avg. PCI
Code B Arterial	43	3.68	55,542	4.9%	**73**
Code C Collector	130	11.47	158,958	14.0%	**58**
Code E Local	751	65.05	918,022	81.1%	**55**
Total	**924**	**80.20**	**1,132,522**		**56**

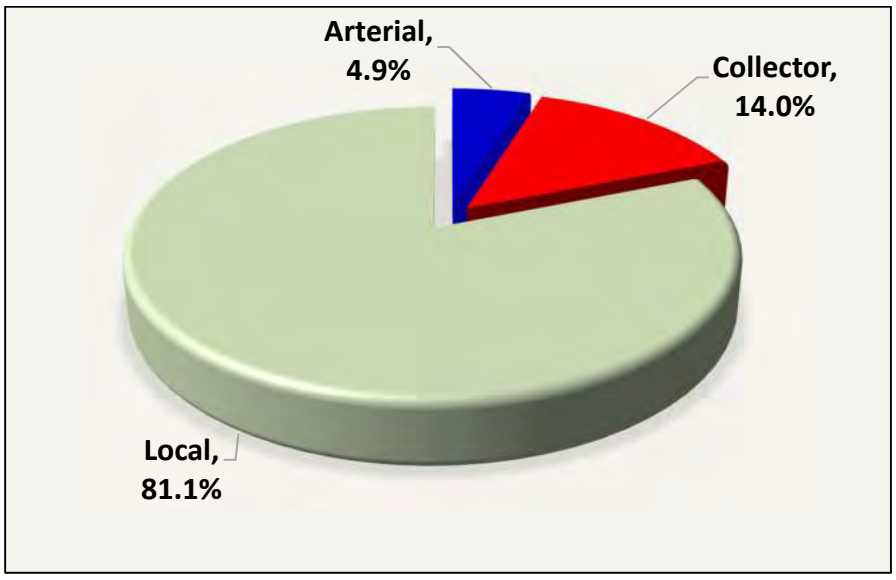


Figure 3-1 – Stephenville Functional Class Distribution

Using family groups, MicroPAVER establishes deterioration curves to predict the future performance and condition of the various street sections. The software's analysis is then able to establish priority to sections in the data analysis process, giving the highest priority to Arterials and the lowest to Local streets. Because higher traffic volumes and commercial traffic are more detrimental to pavements, they tend to reduce the life expectancy of a road.

In addition, in its first analysis, MicroPAVER uses estimated pavement ages to construct a pavement performance curve to predict the rate at which each pavement will deteriorate over time. The curve used for the analysis in this report is shown in Figure 3-2. As additional pavement analyses are conducted in future years, MicroPAVER will update the estimated deterioration curves using the new data. Each iteration of the data will increase the reliability of the curves and allow the software to better predict which streets should be scheduled for repair.

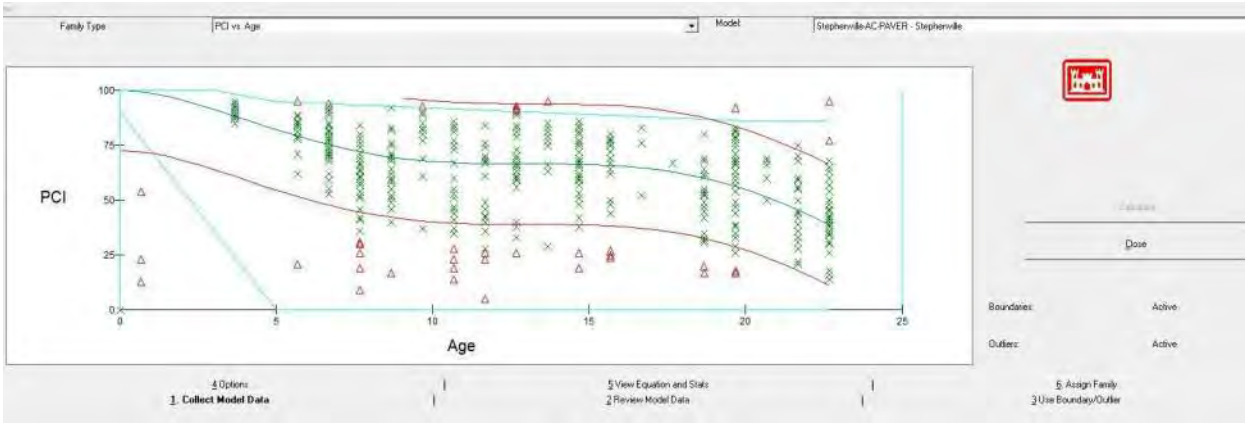


Figure 3-2 – Asphalt Pavement Deterioration Curve for Stephenville

3.2 ESTIMATED COSTS FOR MAINTENANCE AND REPAIR CATEGORIES

Asphalt Maintenance and Repair Category Matrix

The unit prices for M&R treatments were estimated from previous City of Stephenville bid tabulations. During the data review session, M&R Category ranges and unit prices were defined as shown in Table 3-2. The column titled "Expected Result" reflects the estimated life of the pavement after M&R.

Table 3-2 – Local Asphalt M&R Category Ranges and Treatments

M&R Category	# of Sections	# of Miles	Square Yards	Unit Cost per Square Yard	Total Backlog	Expected Result
Rejuvenator (PCI 86-100) Fog Seal	85	6.46	91,509	$1.00	$91,500	3 Years Stabilization
Global (PCI 61-85) Slurry/Chip Seal	339	29.88	425,955	$3.15	$1,341,800	4 Years Stabilization
Conventional (PCI 41-60) Edge Mill & 1.5 inch O.L.	233	20.73	293,258	$28.00	$8,211,200	10 Years (Reset PCI to 100)
Reconstruction (PCI 0-40) Reconstruction	267	23.14	321,800	$55.00	$17,699,000	20 Years (Reset PCI to 100)
Total	**924**	**80.21**	**1,132,522**		**$27,343,500**	

The Total Cost shown in Table 3-2, $27,343,500 is the current backlog. The backlog is the total amount of M&R which remains unfunded. As streets deteriorate into lower PCI scores, the backlog increases.

When a street section receives a light maintenance application such as a fog seal or slurry seal, its PCI will increase, but it will not necessarily reset to 100. A typical PCI increase following a slurry seal is 15 to 25 points. Once a pavement section is overlaid or reconstructed, it is reset to a PCI of 100 in MicroPAVER. It will then be re-evaluated and considered for lighter maintenance in future years.

4.0 ASPHALT PAVEMENTS BUDGET SCENARIOS

4.1 BUDGET SCENARIO ASSUMPTIONS

The budget analysis was completed using MicroPAVER software, version 6.5.7. The City of Stephenville's pavement performance model was developed by Transmap using historical construction data as an input to the MicroPAVER software.

The budget scenarios for asphalt pavements were completed using the following set of assumptions:

- The budget scenario was set-up for all asphalt pavements in the system, given the annual budget for each scenario, providing the resultant PCI.
- The Critical PCI for all asphalt pavements is 60. The Critical PCI is the point at which the rate of deterioration will significantly increase, resulting in increased maintenance cost.
- The M&R costs and budget amounts were adjusted for a 2.0% annual inflation rate. All output is expressed in today's dollars.

The recommendations generated by MicroPAVER are not intended to automatically be the final list of improvements each year. As with output from any computer model, engineering judgement and other factors must be applied to the results, such as:

- Grouping of projects for constructability and cost considerations.
- Coordination with the city's Master Thoroughfare Plan.
- Coordination with the city's Utility Risk Assessment.
- Traffic volume considerations, especially near schools and commercial areas.

Application of these factors allow the City to make decisions regarding the combining or deferring of projects. The final list of improvements should be imported into MicroPAVER each time the model is run to ensure that the database is up-to-date.

4.2 MAINTAIN CURRENT FUNDING LEVEL

A model scenario was created and run to determine the impact to the asphalt PCI in future years if the current annual funding level of $250,000 for capital improvements is maintained. Table 4-1 and Figure 4-1 show that the average PCI score will continue to fall at this funding level. The backlog in 2025 is projected to be $43,400,000.

Table 4-1 – $250,000 Annual Budget Resultant PCI

Year	Annual Budget	PCI Before	PCI After	PCI Change Percentage
2016	$250,000	56	53	-5%
2017	$250,000	53	50	-8%
2018	$250,000	50	46	-8%
2019	$250,000	46	43	-7%
2020	$250,000	43	40	-7%
2021	$250,000	40	38	-5%
2022	$250,000	38	35	-8%
2023	$250,000	35	33	-6%
2024	$250,000	33	32	-3%
2025	$250,000	32	30	-6%

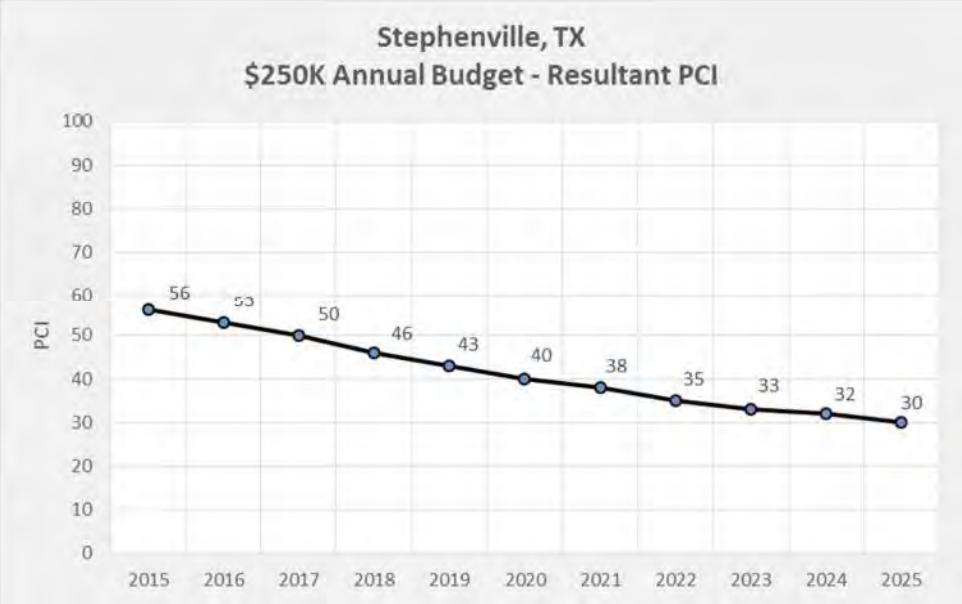


Figure 4-1 – $250,000 Annual Budget Resultant PCI

4.3 INCREASE FUNDING TO $1.0M PER YEAR

A model scenario was created and run to determine the impact to the asphalt PCI in future years if the funding level is increased to $1,000,000 per year. Table 4-2 and Figure 4-2 show that the PCI scores will continue to fall at this funding level, though the rate of deterioration is improved from existing levels. The 2025 backlog is projected to be $31,700,000.

Table 4-2 – $1,000,000 Annual Budget and Resultant PCI

Year	Annual Budget	PCI Before	PCI After	PCI Change Percentage
2016	$1,000,000	56	55	-2%
2017	$1,000,000	55	53	-4%
2018	$1,000,000	53	52	-2%
2019	$1,000,000	52	49	-6%
2020	$1,000,000	49	47	-4%
2021	$1,000,000	47	45	-4%
2022	$1,000,000	45	43	-4%
2023	$1,000,000	43	42	-2%
2024	$1,000,000	42	42	0%
2025	$1,000,000	42	41	-2%

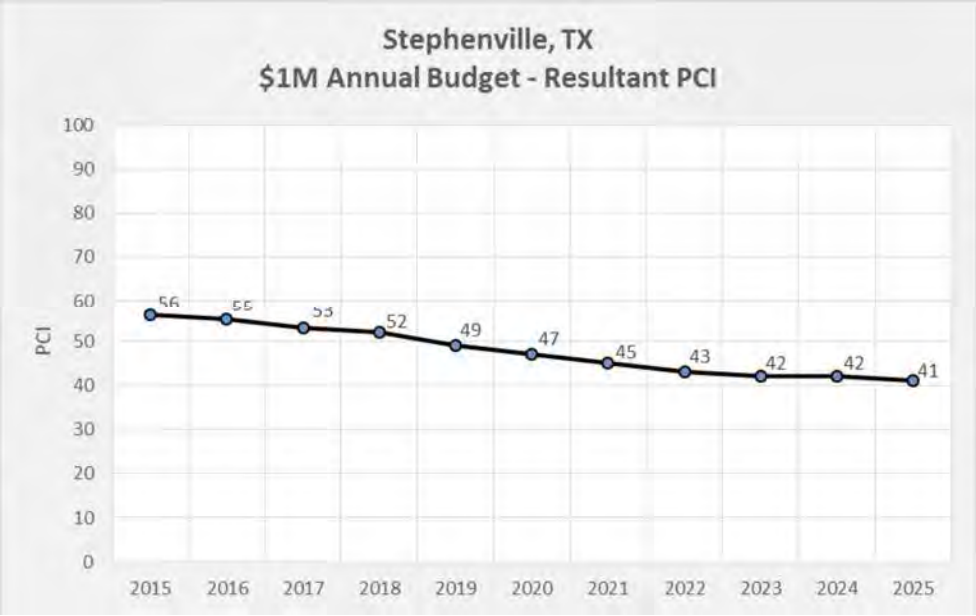


Figure 4-2 – $1,000,000 Annual Budget and Resultant PCI

4.4 BUDGET REQUIRED TO HOLD THE CURRENT PCI SCORE

A model scenario was created and run to determine the annual street maintenance budget needed to hold the current city-wide asphalt PCI score of 56. Table 4-3 and Figure 4-3 show that a $2.1M annual budget is required to keep the overall score at its current level for ten years. The backlog in 2025 in this scenario is projected to be $17,000,000. The model shows a jump in the PCI score the first year due to the rehabilitation of many of the lowest-scoring streets, then it levels out over the next ten years. Due to the various ages and conditions of Stephenville's streets, the rate of deterioration does not equal exactly $2.1M every year. This is the reason for the minor variations in predicted PCI scores from year to year.

Table 4-3 – $2.1M Annual Budget and Resultant PCI

Year	Annual Budget	PCI Before	PCI After	PCI Change Percentage
2016	$2,100,000	56	59	+5%
2017	$2,100,000	59	58	-2%
2018	$2,100,000	58	57	-2%
2019	$2,100,000	57	56	-2%
2020	$2,100,000	56	55	-2%
2021	$2,100,000	55	54	-2%
2022	$2,100,000	54	54	0%
2023	$2,100,000	54	55	+2%
2024	$2,100,000	55	56	+2%
2025	$2,100,000	56	57	+2%

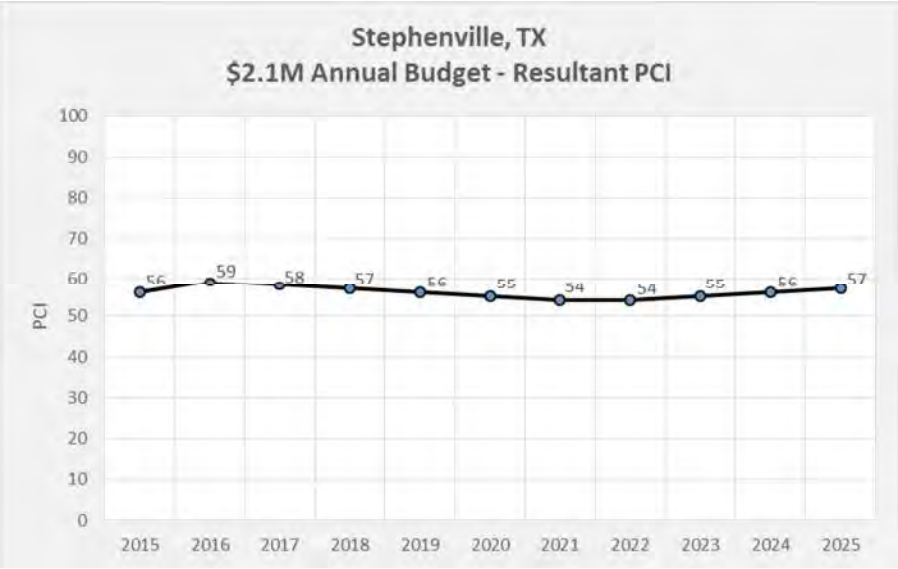


Figure 4-3 – $2.1M Annual Budget and Resultant PCI

4.5 BUDGET REQUIRED TO ATTAIN A SATISFACTORY PCI OF 71 OR HIGHER

A model scenario was created and run to determine the annual street maintenance budget needed to attain a "satisfactory" city-wide asphalt PCI score of 71 or higher within ten years. Table 4-4 and Figure 4-4 show that a $3.2M annual budget is required to attain this goal. The projected 2025 backlog is $3,300,000. Similar to the budget analyzed in Section 4.4, the model predicts a jump in PCI scores the first year, then the scores flatten out as the rate of deterioration is nearly equal to the budget. The average PCI scores are predicted to begin increasing again in 2021, rising to a "satisfactory" score in 2025.

Table 4-4 – $3.2M Annual Budget and Resultant PCI

Year	Annual Budget	PCI Before	PCI After	PCI Change Percentage
2016	$3,200,000	56	61	+9%
2017	$3,200,000	61	62	+2%
2018	$3,200,000	62	62	0%
2019	$3,200,000	62	62	0%
2020	$3,200,000	62	62	0%
2021	$3,200,000	62	64	+3%
2022	$3,200,000	64	66	+3%
2023	$3,200,000	66	68	+3%
2024	$3,200,000	68	70	+3%
2025	$3,200,000	70	72	+3%

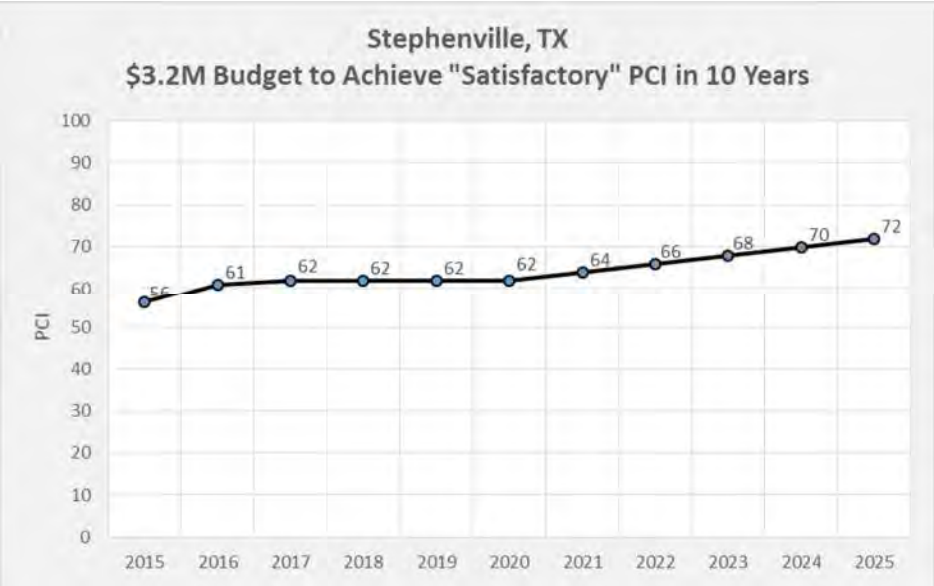


Figure 4-4 – $3.2M Annual Budget and Resultant PCI

4.6 ASPHALT PAVEMENT BUDGET SCENARIO COMPARISON

A comparison of the resultant system-wide PCI scores for all studied budget scenarios is provided in Figure 4-5, and Figure 4-6 shows the estimated backlog for each scenario.

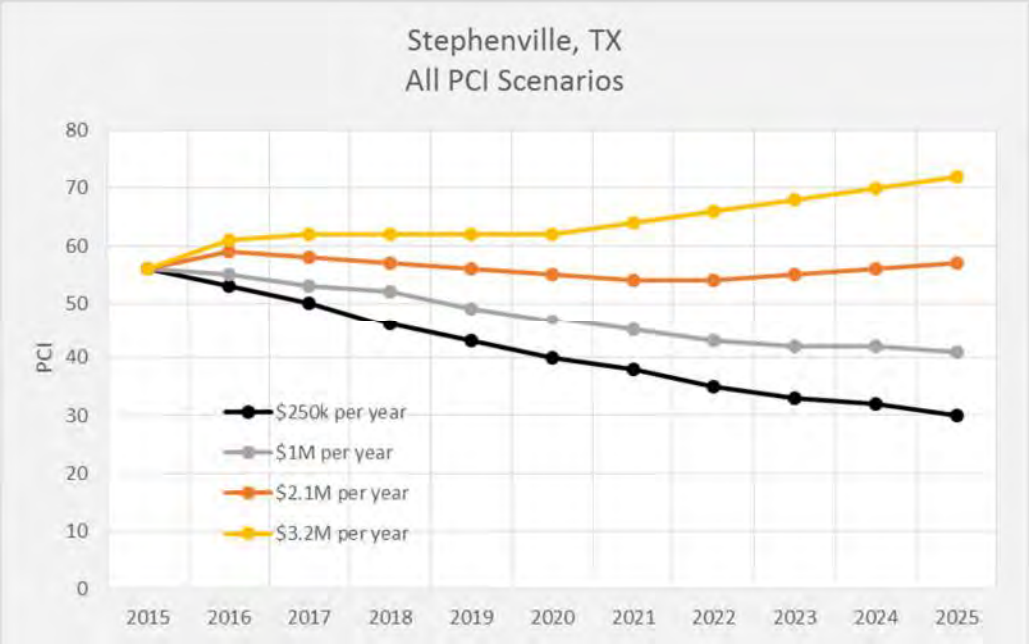


Figure 4-5 – Comparison of Resultant PCI for All Budget Scenarios

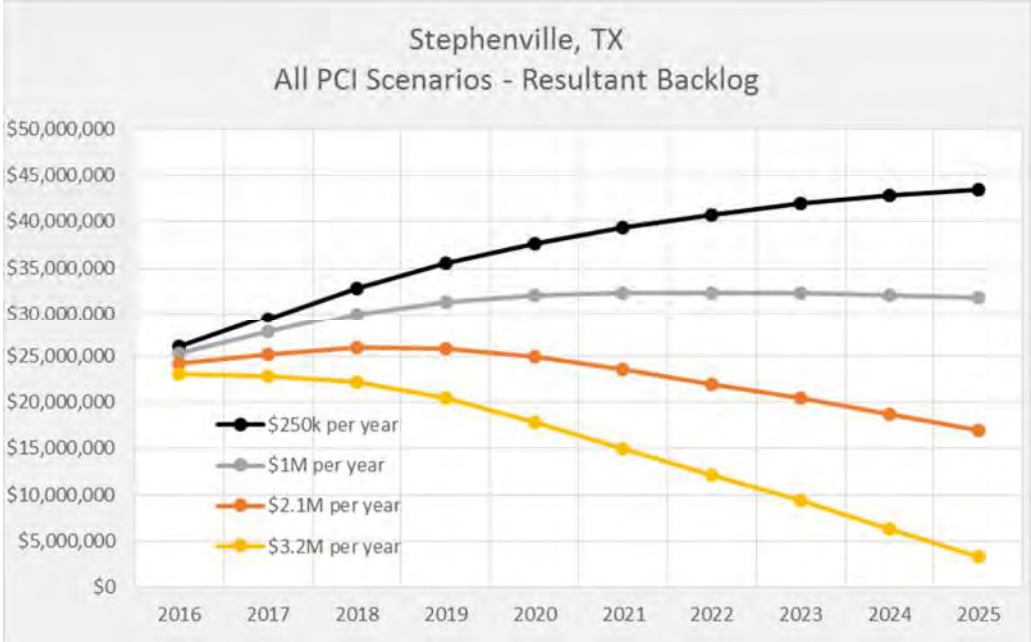


Figure 4-6 – Comparison of Backlog for All Budget Scenarios

5.0 BRICK PAVEMENTS

5.1 BRICK STREET ANALYSIS

The accepted standard for determining Pavement Condition Index, ASTM D6433, does not address brick pavement. Therefore, FNI performed a standalone assessment and analysis of each brick street in Stephenville. Rather than assign a 0-100 PCI score, each street section was assigned one of three ratings: good, fair, and poor.

Generally, "good" streets had consistent brick patterns, few asphalt patches, and little rutting. Streets rated "poor" exhibited brick displacement, rutting, vertical edge movement, or ponding. Streets that exhibited extensive asphalt patching were also rated as "poor" to reflect the fact that much of the existing pavement is no longer composed of brick. Figure 5-1 shows the distribution of ratings among Stephenville's brick streets, and Figures 5-2 and 5-3 provide detail of typical "poor" and "good" brick streets in Stephenville.

Based on recent bid tabulations from brick street repair in the City of Fort Worth, FNI estimated the cost of brick repair at $200 per square yard. The estimated repair costs for brick streets total $1,070,000, and details of the brick assessment are provided in Appendix D.

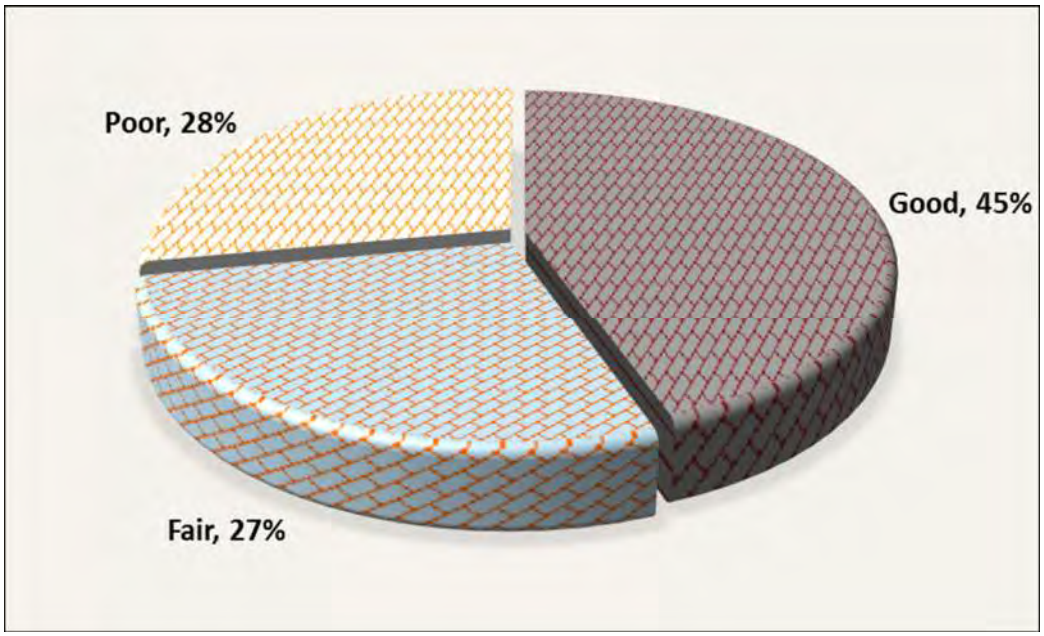


Figure 5-1 – Rating Distribution of Brick Streets

Figure 3-2 – North Belknap Street, rated "poor" due to asphalt patches, brick displacement, and standing water

Figure 5-3 – West Green Street, rated "good"

5.2 BRICK STREET RECOMMENDATIONS

FNI recognizes the historic significance of Stephenville's brick streets, and it may be desirable to preserve them in the downtown area and near the historical marker on Vanderbilt. We suggest, however, that the City determine if some heavily-traveled brick streets may be good candidates for being reconstructed with asphalt due to the comparatively high cost of maintaining brick pavement. Streets such as Clinton near Hook Elementary School, Belknap north of Tarleton, and Long may be good candidates for brick removal. In addition, FNI understands that Vanderbilt west of Ollie is planned to be reconstructed with asphalt, so repair costs for those sections were not included in the total estimated repair cost.

Once the City identifies the streets to remain as brick, a repair prioritization list should be prepared and a portion of the annual maintenance funds should be dedicated to those streets. Streets that the City no longer desires to maintain as brick should be entered into the MicroPAVER database with a low PCI score so that it can be included in future pavement maintenance plans.

6.0 FUNDING STRATEGIES

6.1 ALTERNATIVE FUNDING PROGRAMS

Typically, the initial cost of new street construction is paid for by the developer which passes the cost on to the benefiting property owners when streets, sidewalks and other improvements are constructed in new subdivisions. The perpetual maintenance and repair of the pavement following initial construction is funded by the City of Stephenville taxpayers through the annual street maintenance fund.

The city's typical capital street maintenance budget is $250,000. Based on the information outlined in this report, this funding level will not be adequate to allow for anticipated necessary maintenance (crack sealing, pothole patching and seal coating) necessary to preserve the life of the city's street pavements.

In order to fund an increased pavement maintenance and repair budget, additional sources of revenue may need to be reviewed. Possible sources include:

- General Tax Levy
- Reallocation of Sales Tax Revenues
- Transportation User Fees
- General Obligation Bonds
- Community Development Block Grants
- Special Assessments
- Franchise Utility Fees
- Public Improvement District Fees
- City-County Interlocal Agreements
- Utility Service Fees
- Roadway Impact Fees

A brief narrative outlining each of the listed potential revenue sources is provided below. To arrive at an acceptable and sustainable plan for financing the pavement management system, we recommend the city's financial staff, and potentially the city's financial consultant, be engaged early in the process.

General Tax Levy – Texas cities are required by law to hold a yearly public hearing to receive comments on the types of services proposed for the upcoming year, as well as the associated costs. These public hearings are referred to as Truth-in-Taxation hearings. The proposed budget and proposed property tax

levy and their percentage increases from the current year levels are typically discussed at the hearing. The pavement management plan and associated cost would therefore be addressed as part of the budget preparation process.

The main advantage of using funds from the general fund is that justification of direct benefit of a particular project to a property is not required. A major disadvantage is that priorities can change rapidly and dedicated funding may prove difficult to rely on from year to year, or even be inadequate.

Reallocation of Sales Tax Revenues – Some cities fund street maintenance with a portion of their sales tax revenues. We understand that the sales tax rate in Stephenville is already at its capped maximum, with most of the revenues going into the general fund and a portion allocated to the Economic Development Corporation. By earmarking a percentage of its sales tax revenues for street maintenance, the city could send a clear message to its citizens that maintaining roadways is a budget priority.

Transportation User Fees – A Transportation User Fee is a fee assessed to properties based on the traffic levels generated by residents and businesses. Recent implementations in Texas have added $5 to $15 to the monthly water bill for residential customers, with higher rates for commercial accounts based on developed acreage. Residents who are over 65 years of age or who do not drive can apply for exemption from this fee. Texas cities that have put these fees in place include Austin, Bryan, and Taylor.

General Obligation (GO) Bonds – GO bonds are debt instruments that are backed by the full faith and credit of the city. The debt is typically repaid with a portion of property tax revenues. GO bonds may be a good choice to fund street reconstruction projects, but they are not recommended for routine maintenance because the typical repayment duration of the bonds is longer than the lifespan of those types of projects. The issuance of GO bonds may coincide with the retirement of existing debt to reduce the need for tax increases.

Community Development Block Grants (CDBG) – Funded through the Texas Department of Agriculture for non-entitlement cities under 50,000 in population, CDBG's may be used to fund infrastructure improvements. The improvements must show benefits to low- and moderate-income citizens. A grant writer is typically engaged to prepare and submit the grant application.

Special Assessments – Special assessments are an indirect form of taxation. They are a way for cities to charge certain properties for a portion of the cost of making improvements to nearby infrastructure. However, for a special assessment to be levied, the City would have to show that the project enhances or

adds value to the street. Typical maintenance projects on residential streets do not usually add value, but this option could be explored for funding projects in commercial areas.

Franchise Utility Fees – Franchise fees can be charged to natural gas and electric providers as a fee to use public rights of way for their utility operations. Implementing franchise fees represents an opportunity to diversify revenue. These fees typically will be passed on to the utility customers.

Public Improvement District Fees – (Chapter 372, Local Government Code) – PID's offer cities a means for improving their infrastructure to promote economic growth in an area. The Public Improvement District Assessment Act allows cities to levy and collect special assessments on properties that are within the city or its extraterritorial jurisdiction (ETJ). This type of financing tool would allow the City to fund infrastructure within a designated reinvestment zone. Roadway improvements within the zone would be repaid by a portion of the tax revenue gained as a result of increased property values in the zone.

City-County Interlocal Agreement – Some counties in Texas enter into partnerships with cities in their boundaries to help fund street maintenance operations. For instance, labor and equipment may be provided by the County if the City pays for materials. Dallas, Denton, Hood, and Tarrant Counties are among those in Texas that have entered into these types of agreements.

Utility Service Fees – The City of Stephenville collects user fees for the Water Utility and Sanitary Sewer Utility Funds. A potential source of additional revenue to offset pavement management cost is to increase the user fee in each Fund based on the anticipated cost to replace the bituminous pavement in a width comparable to the utility excavation impact. This method is not preferred as the Water and Sewer Funds are treated as Enterprise Funds in the City of Stephenville.

Roadway Impact Fees – Impact fees are charges assessed on new developments to help fund infrastructure needed to serve the demand generated by the new development in accordance with Chapter 395 of the Texas Local Government Code. Typical fees range from $1,000 to $3,000 per single family residence. Revenues generated from roadway impact fees may not be used to fund routine maintenance, but they can be used to increase capacity on streets adjacent to new developments.

7.0 SUMMARY AND RECOMMENDATIONS

7.1 SUMMARY

The objectives of this pavement management report included an inventory and condition assessment of City streets, set-up of a network database in MicroPAVER, and analyses of various funding scenarios. With the completion of this project, city staff has an up-to-date MicroPAVER database with recent pavement condition data.

Overall, Stephenville's streets were determined to be in fair condition, with an average PCI score of 58. Asphalt pavements comprise about 92% of the pavement inventory, and have an average PCI score of 56. Concrete streets made up roughly 5% of the street system, and have an average PCI of 89. Brick pavements account for about 3% of the pavement inventory and were analyzed on a street-by-street basis.

Both the current funding level and an increase to $1,000,000 per year are not sufficient to maintain the current city-wide asphalt PCI score of 56. Funding would need to be roughly $2,100,000 per year in order to maintain the current PCI score. An investment of approximately $3,200,000 per year over a ten year period is required to bring the average score to a 71 "satisfactory" rating.

7.2 RECOMMENDATIONS

Because pavement maintenance is perpetual, FNI recommends the City of Stephenville maintain the MicroPAVER database on a yearly basis. Every street that receives maintenance work should be updated in MicroPAVER as well as a corresponding GIS map layer updated with a construction date, repair method, and a new PCI score. Additionally, projected M&R unit costs in the model should be adjusted regularly based on actual bid results.

Though the Pavement Management System software is a powerful tool for planning and budgeting, there are always special considerations, such as aesthetics, which the software cannot always incorporate fully into its prioritization method. The city is not bound by the recommendations of the software, and the software is not a substitute for sound engineering judgement. Projects can be manually added to or deleted from the list of recommended projects at any time.

The Pavement Management System is a dynamic process, and the accuracy of the models developed in MicroPAVER will improve as data is added. Newly constructed streets should be added to the model as

they enter service and be analyzed with each update to the system. In general, the city should schedule light maintenance such as crack sealing and fog seals on new pavements within the first three years of the pavement's life. After that time, a PCI score should be determined for each section and updated accordingly in the MicroPAVER database.

Major updates of the Pavement Management System should be performed every three to five years on arterial streets due to the rapid deterioration that can occur under heavy traffic. An arterial PCI score can decline rapidly in just a few years, and resulting cost increases can be significant. An update cycle of no more than five years is recommended for collectors and local streets.

Although the overall roadway network for the City of Stephenville is found to be in "fair" condition, the Pavement Management Report shows that future funding diligence is necessary immediately to preserve and improve city-wide pavement conditions. The findings in this report illustrate the impacts of severely low funding levels, and PCI ratings will continue to decrease causing maintenance and repair costs to also increase. Increased future roadway funding levels need to be implemented as soon as possible in order to attain an acceptable and sustainable PCI funding level.

If pre-emptive action is not taken, the large number of streets currently in need of preventative maintenance will rapidly digress to poorer conditions that would subject the city to far more expensive roadway work. The roadway network currently sits slightly below a "critical point" on the Pavement Deterioration Curve where the window of opportunity to perform cost-effective roadway repairs, in lieu of replacement, is located.

Pavement networks are one of the community's largest assets, and the City of Stephenville has a major investment in the pavement and roadway network. Considering the pavement surface alone, without improvements to water, sewer, drainage, curbing, or sidewalks assets, it would cost Stephenville approximately $27,300,000 in today's dollars to completely replace the existing pavement infrastructure.

The city should strive to secure at least $21,000,000 over the next ten years to aggressively address its roadway maintenance funding backlog, as identified in the funding scenarios presented in this report. This additional funding will help protect, preserve, and extend the life of Stephenville's pavement assets.

APPENDIX A
SYSTEM-WIDE PAVEMENT CONDITION INDEX

City of Stephenville, TX
Pavement Condition Index

PCI

- Good (86-100)
- Satisfactory (71-85)
- Fair (56-70)
- Poor (41-55)
- Very Poor (26-40)
- Serious (11-25)
- Failed (0-10)
- Centerline
- City of Stephenville, TX

0 0.5 1 2 Miles

transmap
3366 Riverside Dr Ste 103 | Upper Arlington, Ohio 43221
Tel (614) 481-6799 | Fax (614) 481-4017
www.TRANSMAP.com

Prepared By: Chris Crocker
Source: Stephenville, TX
Created On: 11/25/15

APPENDIX B
SYSTEM-WIDE PAVEMENT
INTERNATIONAL ROUGHNESS INDEX

Stephenville, TX
Pavement International Roughness Index
(IRI)
2015

N
W E
S

0 0.25 0.5 1 1.5 2 Miles

IRI (m/km)

- < 3.47 Good
- 3.47-6 Fair
- >6 Poor
- Stephenville Drivecode
- Centerline
- City of Stephenville, TX

transmap
3366 Riverside Dr Ste 103 | Upper Arlington, Ohio 43221
Tel (614) 481-6799 | Fax (614) 481-4017
www.TRANSMAP.com

Prepared By: Shelby Stults
Source: Stephenville, TX
Created On: 11/19/2015

APPENDIX C
PRELIMINARY THREE-YEAR PLAN
$1.0M ANNUAL MAINTENANCE BUDGET

M&R Year	Name	From	To	Length (Ft)	True Area (Ft^2)	True Area (Yd^2)	PCI	M&R Category	M&R Cost
2016	ALEXANDER RD	W WASHINGTON ST	S ALEXANDER RD	372.69	9,690	1,076.67	75	SLURRY SEAL	$4,134
2016	AZALEA LN	MIMOSA LN	AZALEA LN	724.07	18,102	2,011.33	66	SLURRY SEAL	$18,711
2016	BARTON AVE	W WALNUT ST	W ELM ST	251.16	5,023	558.11	62	SLURRY SEAL	$8,448
2016	BARTON AVE	W PECAN ST	W WALNUT ST	262.21	4,720	524.44	65	SLURRY SEAL	$5,701
2016	BARTON AVE	W PARK ST	W HURBERT ST	259.73	5,714	634.89	63	SLURRY SEAL	$8,727
2016	BATES AVE	E PARK ST	E LINGLEVILLE RD	500.08	13,002	1,444.67	62	SLURRY SEAL	$21,866
2016	BAXTER AVE	S BAXTER AVE	W McNEILL ST	298.29	7,756	861.78	63	SLURRY SEAL	$11,835
2016	BELKNAP AVE	N BELKNAP AVE	W WALNUT ST	260.02	5,720	635.56	62	SLURRY SEAL	$9,613
2016	BOB WHITE RD	BOSQUE RD	BOB WHITE RD	748.81	19,469	2,163.22	62	SLURRY SEAL	$32,742
2016	BROADWAY ST	S JACKSON AVE	S MAXWELL AVE	350.16	9,104	1,011.56	66	SLURRY SEAL	$9,410
2016	BYRON ST	E WASHINGTON ST	E SOUTH LOOP	2,108.57	54,823	6,091.44	67	SLURRY SEAL	$49,285
2016	CLARK LN	E WASHINGTON ST	EOP	1,190.39	21,427	2,380.78	66	SLURRY SEAL	$22,148
2016	CLIFTON ST	S MAXWELL AVE	S WILSON AVE	359.96	7,919	879.89	64	SLURRY SEAL	$10,841
2016	CLIFTON ST	S WILSON AVE	S DREW AVE	327.66	7,209	801.00	63	SLURRY SEAL	$11,000
2016	COLLINS ST	N BELKNAP AVE	N BARTON AVE	472.32	10,391	1,154.56	67	SLURRY SEAL	$9,341
2016	COX AVE	E CLIFTON ST	E BROADWAY ST	367.43	6,614	734.89	67	SLURRY SEAL	$5,946
2016	CRESTRIDGE DR	N WOODLAND DR	MIMOSA LN	1,142.17	29,696	3,299.56	62	SLURRY SEAL	$49,942
2016	DALE AVE	BLUEBONNET ST	ROSEBUD DR	329.98	8,580	953.33	62	SLURRY SEAL	$14,429
2016	DALE AVE	TAB ST	IDELLA	647.59	14,247	1,583.00	75	SLURRY SEAL	$6,081
2016	DALE AVE	IDELLA	W LINGLEVILLE RD	1,005.55	22,122	2,458.00	74	SLURRY SEAL	$9,683
2016	DALE AVE	W FREY ST	WISTERIA DR	1,215.36	31,599	3,511.00	63	SLURRY SEAL	$48,262
2016	DALE AVE	OVERHILL DR	NORTHWEST LOOP	738.68	19,206	2,134.00	65	SLURRY SEAL	$23,198
2016	DODGE ST	S BELMONT AVE	EAST RD	350.51	7,010	778.89	63	SLURRY SEAL	$10,698
2016	ELM ST	N PADDOCK AVE	N McCART AVE	517.80	12,427	1,380.78	62	SLURRY SEAL	$20,900
2016	FIFTH AVE	W LONG ST	S 5TH AVE	456.24	11,862	1,318.00	67	SLURRY SEAL	$10,664
2016	FREY ST	N LILLIAN AVE	N LILLIAN AVE	137.85	3,584	398.22	68	SLURRY SEAL	$2,862
2016	FREY ST	N HARBIN DR	N LYDIA AVE	404.39	9,705	1,078.33	71	SLURRY SEAL	$4,558
2016	FREY ST	MIMOSA LN	MOCKINGBIRD LN	323.10	8,401	933.44	69	SLURRY SEAL	$5,811
2016	GLENWOOD DR	GLENWOOD CT	ASHWOOD DR	643.41	16,729	1,858.78	68	SLURRY SEAL	$13,361
2016	HARBIN DR	W FREY ST	MIMOSA LN	1,130.40	29,390	3,265.56	68	SLURRY SEAL	$23,473
2016	HYMAN ST	S 5TH AVE	S 6TH AVE	468.66	12,185	1,353.89	62	SLURRY SEAL	$20,476
2016	INGLEWOOD DR	BLUEBONNET ST	TANGLEWOOD TRL	723.69	18,816	2,090.67	68	SLURRY SEAL	$15,028
2016	ISLA AVE	W LINGLEVILLE RD	SHEILA DR	379.51	9,867	1,096.33	67	SLURRY SEAL	$8,871
2016	KAYLOCK ST	S 2ND AVE	S LILLIAN AVE	841.89	21,889	2,432.11	62	SLURRY SEAL	$36,783
2016	KIGHT AVE	W FREY ST	W PECAN ST	513.44	13,349	1,483.22	69	SLURRY SEAL	$9,235
2016	LEWIS DR	S LENNOX AVE	EAST RD	786.15	15,723	1,747.00	63	SLURRY SEAL	$23,993
2016	LILLIAN AVE	S LILLIAN AVE	W TARLETON ST	558.52	14,522	1,613.56	65	SLURRY SEAL	$17,521
2016	MAPLE LN	N McCART AVE	BINGHAM AVE	299.03	7,775	863.89	67	SLURRY SEAL	$6,989
2016	MAPLEWOOD CT	BLUEBONNET ST	EOP	191.93	4,990	554.44	70	SLURRY SEAL	$2,899
2016	McCART AVE	W FREY ST	W PECAN ST	521.72	10,434	1,159.33	67	SLURRY SEAL	$9,380
2016	McCART AVE	W LINGLEVILLE RD	CHERRY LN	613.17	12,876	1,430.67	66	SLURRY SEAL	$13,310
2016	McNEILL ST	S VIRGINIA AVE	S FLORAL AVE	260.12	6,763	751.44	62	SLURRY SEAL	$11,365
2016	MEADOR LN	W SOUTH LOOP	EOP	489.94	12,738	1,415.33	67	SLURRY SEAL	$11,452
2016	MELISSA DR	S ALEXANDER RD	S 2ND AVE	832.52	21,646	2,405.11	62	SLURRY SEAL	$36,374
2016	NEBLETT AVE	W LINGLEVILLE RD	SHARP DR	325.73	7,166	796.22	64	SLURRY SEAL	$9,819
2016	OAK ST	N McCART AVE	N CLINTON AVE	680.93	15,661	1,740.11	62	SLURRY SEAL	$26,318
2016	OLLIE AVE	W FREY ST	W PECAN ST	520.23	13,526	1,502.89	67	SLURRY SEAL	$12,160
2016	OLLIE AVE	W OAK ST	W PARK ST	195.41	5,081	564.56	69	SLURRY SEAL	$3,508

M&R Year	Name	From	To	Length (Ft)	True Area (Ft^2)	True Area (Yd^2)	PCI	M&R Category	M&R Cost
2016	OLLIE AVE	W SLOAN ST	W VANDERBILT ST	334.64	8,701	966.78	79	SLURRY SEAL	$3,326
2016	ORR AVE	W McNEILL ST	W LONG ST	258.62	5,690	632.22	66	SLURRY SEAL	$5,881
2016	OVERHILL DR	N WOODLAND DR	CRESTRIDGE DR	303.53	7,892	876.89	62	SLURRY SEAL	$13,272
2016	OVERHILL DR	N ROSE DR	N WILDWOOD DR	316.40	8,226	914.00	64	SLURRY SEAL	$11,272
2016	PARK ST	N GRAHAM AVE	N BELKNAP AVE	258.74	5,175	575.00	63	SLURRY SEAL	$7,903
2016	PECAN ST	N McCART AVE	N STEPHEN AVE	274.19	6,032	670.22	64	SLURRY SEAL	$8,265
2016	PECAN ST	N STEPHEN AVE	N CLINTON AVE	411.68	10,704	1,189.33	65	SLURRY SEAL	$12,929
2016	RACE AVE	W SLOAN ST	W VANDERBILT ST	339.06	7,459	828.78	70	SLURRY SEAL	$4,333
2016	RIVER NORTH BLVD	RIVER NORTH BLVD	RIVER NORTH BLVD	301.71	7,844	871.56	63	SLURRY SEAL	$11,981
2016	RIVER VIEW DR	EOP	W SOUTH LOOP	551.51	11,030	1,225.56	67	SLURRY SEAL	$9,916
2016	SHEILA DR	N ISLA AVE	ALLEN DR	688.81	17,909	1,989.89	68	SLURRY SEAL	$14,304
2016	SLOAN ST	N OLLIE AVE	N McILHANEY AVE	327.14	7,197	799.67	67	SLURRY SEAL	$6,470
2016	SPRING BOUQUET ST	MIDNIGHT SHADOW	MOONLIGHT TRL	298.96	7,773	863.67	64	SLURRY SEAL	$10,651
2016	STEPHEN AVE	W FREY ST	W PECAN ST	517.76	9,320	1,035.56	65	SLURRY SEAL	$11,257
2016	SULLY CT	W LINGLEVILLE RD	MAPLE LN	1,125.75	29,270	3,252.22	69	SLURRY SEAL	$20,247
2016	SWAN ST	S 6TH AVE	S HARBIN DR	1,045.96	18,827	2,091.89	69	SLURRY SEAL	$12,999
2016	TARLETON ST	N FLORAL AVE	N VINE AVE	222.54	4,896	544.00	62	SLURRY SEAL	$8,234
2016	TEJAS LN	GOLF CLUB RD	TEJAS LN	663.60	13,272	1,474.67	68	SLURRY SEAL	$10,600
2016	THORNHILL	HIGHLAND VIEW DR	FOREST LN	837.41	16,748	1,860.89	65	SLURRY SEAL	$20,230
2016	WALNUT ST	N COLUMBIA AVE	N BARTON AVE	248.28	5,959	662.11	65	SLURRY SEAL	$7,197
2016	WILLOW LN	WILLOW LN	BLUEBONNET ST	596.81	15,517	1,724.11	67	SLURRY SEAL	$13,950
2016	WILLOW LN	BRENTWOOD ST	WILLOW LN	350.11	9,103	1,011.44	62	SLURRY SEAL	$15,309
								2016 Total M&R Cost =	**$999,677**

M&R Year	Name	From	To	Length (Ft)	True Area (Ft^2)	True Area (Yd^2)	PCI	M&R Category	M&R Cost
2017	BARTON AVE	W OAK ST	W PARK ST	282.93	6,224	691.56	71	SLURRY SEAL	$4,476
2017	BAXTER AVE	W WASHINGTON ST	S BAXTER AVE	220.62	5,736	637.33	75	SLURRY SEAL	$2,695
2017	BELKNAP AVE	W COLLINS ST	W DAVIS ST	302.94	7,271	807.89	73	SLURRY SEAL	$4,024
2017	BLUEBONNET ST	COTTONWOOD CT	DOGWOOD DR	281.08	7,308	812.00	73	SLURRY SEAL	$4,054
2017	BRITTAIN CIR	BRITTAIN CIR	NORTHWEST LOOP	677.00	17,602	1,955.78	76	SLURRY SEAL	$8,122
2017	CAIN AVE	W JONES ST	W SHIRLEY ST	411.17	9,868	1,096.44	68	SLURRY SEAL	$9,062
2017	CHARLOTTE AVE	W FREY ST	MIMOSA LN	1,080.93	28,104	3,122.67	80	SLURRY SEAL	$11,936
2017	CHARLOTTE AVE	OAKLAWN DR	NORTHWEST LOOP	710.34	18,469	2,052.11	77	SLURRY SEAL	$8,359
2017	CLIFTON ST	S COX AVE	S JACKSON AVE	237.05	5,215	579.44	76	SLURRY SEAL	$2,406
2017	CLIFTON ST	S JACKSON AVE	S MAXWELL AVE	345.93	7,610	845.56	74	SLURRY SEAL	$3,639
2017	CLINTON AVE	W FREY ST	W PECAN ST	522.63	12,543	1,393.67	72	SLURRY SEAL	$8,006
2017	COLLINS ST	N BARTON AVE	N BARTON AVE	37.99	988	109.78	46	MILL AND OVERLAY	$4,470
2017	COLUMBIA AVE	W SLOAN ST	N DONNA AVE	730.72	16,076	1,786.22	73	SLURRY SEAL	$8,919
2017	COLUMBIA AVE	W OAK ST	W PARK ST	282.56	6,499	722.11	68	SLURRY SEAL	$5,968
2017	COLUMBIA AVE	W PARK ST	W HURBERT ST	256.86	5,137	570.78	68	SLURRY SEAL	$4,718
2017	COTTONWOOD CT	BLUEBONNET ST	EOP	240.12	5,763	640.33	69	SLURRY SEAL	$4,959
2017	COUNTS ST	DUBLIN AVE	S ALEXANDER RD	445.45	11,582	1,286.89	75	SLURRY SEAL	$5,442
2017	CRESTRIDGE DR	N CLEVELAND AVE	N WOODLAND DR	307.41	7,993	888.11	71	SLURRY SEAL	$5,747
2017	DALE AVE	BRIARWOOD LN	TAB ST	770.98	16,961	1,884.56	60	MILL AND OVERLAY	$44,099
2017	ELK RIDGE DR	DEER RUN	S ALEXANDER RD	856.34	22,265	2,473.89	81	SLURRY SEAL	$9,235
2017	ELM ST	N KIGHT AVE	N OLLIE AVE	447.69	10,745	1,193.89	69	SLURRY SEAL	$9,245
2017	ELM ST	N CLINTON AVE	N KIGHT AVE	351.67	8,440	937.78	69	SLURRY SEAL	$7,262
2017	FIFTH AVE	W HYMAN ST	S 5TH AVE	901.15	23,430	2,603.33	83	SLURRY SEAL	$9,245
2017	FLORAL AVE	E TARLETON ST	E OXRORD ST	632.79	8,859	984.33	78	SLURRY SEAL	$3,929
2017	FREY ST	N ROME AVE	N CLEVELAND AVE	284.30	6,823	758.11	59	MILL AND OVERLAY	$19,063
2017	GLEN ROSE RD	RIVERSIDE DR	E BROADWAY ST	527.16	13,706	1,522.89	58	MILL AND OVERLAY	$40,858
2017	HARBIN DR	W TURNER ST	W TARLETON ST	290.30	7,548	838.67	56	MILL AND OVERLAY	$24,960
2017	HARBIN DR	W SLOAN ST	PHELPS ST	693.04	18,019	2,002.11	60	MILL AND OVERLAY	$46,849
2017	HARBIN DR	MIMOSA LN	OVERHILL DR	711.05	18,487	2,054.11	50	MILL AND OVERLAY	$75,561
2017	HURBERT ST	N COLUMBIA AVE	N BARTON AVE	259.73	5,714	634.89	71	SLURRY SEAL	$4,109
2017	KINGLAND DR	W LINGLEVILLE RD	CHERRY LN	614.14	15,968	1,774.22	77	SLURRY SEAL	$7,227
2017	LENNOX AVE	E DODGE ST	E DODGE ST	54.39	1,305	145.00	61	SLURRY SEAL	$3,134
2017	LILLIAN AVE	W SHIRLEY ST	N LILLIAN AVE	235.12	6,113	679.22	60	MILL AND OVERLAY	$15,894
2017	LILLIAN AVE	W GROESBECK ST	W HYMAN ST	461.59	12,001	1,333.44	58	MILL AND OVERLAY	$35,776
2017	LINDA LN	W TARLETON ST	LINDA LN	1,033.17	26,862	2,984.67	70	SLURRY SEAL	$21,305
2017	LYDIA AVE	OAKLAWN DR	NORTHWEST LOOP	969.83	25,216	2,801.78	72	SLURRY SEAL	$16,094
2017	LYDIA AVE	MIMOSA LN	OVERHILL DR	710.04	18,461	2,051.22	81	SLURRY SEAL	$7,659
2017	LYDIA AVE	W FREY ST	MIMOSA LN	1,131.68	27,160	3,017.78	75	SLURRY SEAL	$12,764
2017	MAGNOLIA DR	OAKLAWN DR	NORTHWEST LOOP	830.60	21,596	2,399.56	76	SLURRY SEAL	$9,964
2017	MAPLE LN	SULLY CT	MISTLETOE DR	146.40	3,806	422.89	78	SLURRY SEAL	$1,688
2017	McCART AVE	W PECAN ST	W WALNUT ST	273.64	7,115	790.56	76	SLURRY SEAL	$3,283
2017	McNEILL ST	S PADDOCK AVE	W McNEILL ST	188.40	4,898	544.22	75	SLURRY SEAL	$2,301
2017	MEADOWLARK LN	W FREY ST	MEADOWLARK LN	1,211.31	31,494	3,499.33	78	SLURRY SEAL	$13,969
2017	OLLIE AVE	W PECAN ST	W ELM ST	462.34	12,021	1,335.67	60	MILL AND OVERLAY	$31,238
2017	OLLIE AVE	W ELM ST	W OAK ST	308.38	8,018	890.89	59	MILL AND OVERLAY	$22,390
2017	OVERHILL DR	N HARBIN DR	N LYDIA AVE	405.06	9,722	1,080.22	72	SLURRY SEAL	$6,205
2017	OVERHILL DR	CRESTRIDGE DR	N HARBIN DR	327.12	8,505	945.00	71	SLURRY SEAL	$6,116
2017	PADDOCK AVE	W LINGLEVILLE RD	WEDGEWOOD DR	468.34	11,240	1,248.89	68	SLURRY SEAL	$10,322

M&R Year	Name	From	To	Length (Ft)	True Area (Ft^2)	True Area (Yd^2)	PCI	M&R Category	M&R Cost
2017	PARK DR	S PARK DR	W SOUTH LOOP	684.36	16,425	1,825.00	71	SLURRY SEAL	$11,788
2017	PARK ST	N BARTON AVE	N RACE AVE	262.80	4,730	525.56	69	SLURRY SEAL	$4,070
2017	PARK ST	N PADDOCK AVE	N McCART AVE	517.42	13,453	1,494.78	75	SLURRY SEAL	$6,322
2017	PECAN ST	N KIGHT AVE	N OLLIE AVE	456.54	11,870	1,318.89	80	SLURRY SEAL	$5,041
2017	PRAIRIE WIND BLVD	SHARP DR	N OLLIE AVE	332.32	7,311	812.33	55	MILL AND OVERLAY	$25,161
2017	PRAIRIE WIND BLVD	N OLLIE AVE	SHARP DR	337.73	6,079	675.44	55	MILL AND OVERLAY	$20,921
2017	RACE AVE	W SHIRLEY ST	W FREY ST	341.72	8,201	911.22	60	MILL AND OVERLAY	$21,323
2017	RACE AVE	W FREY ST	W MINNIE ST	259.80	6,755	750.56	59	MILL AND OVERLAY	$18,872
2017	RIVER NORTH BLVD	RIVER NORTH BLVD	NORTHWEST LOOP	343.56	8,932	992.44	57	MILL AND OVERLAY	$28,299
2017	RIVER NORTH BLVD	NORTHWEST LOOP	RIVER NORTH BLVD	340.69	8,858	984.22	22	RECONSTRUCT	$55,204
2017	RIVER NORTH BLVD	RIVER NORTH BLVD	RIVER NORTH BLVD	366.67	9,533	1,059.22	59	MILL AND OVERLAY	$26,635
2017	RIVER NORTH BLVD	RIVER NORTH BLVD	VANTAGE DR	230.78	6,000	666.67	42	MILL AND OVERLAY	$29,340
2017	RIVERSIDE DR	E BROADWAY ST	OLD HICO RD	354.25	7,085	787.22	60	MILL AND OVERLAY	$18,411
2017	ROWLAND AVE	ROWLAND AVE	ROWLAND AVE	287.62	7,478	830.89	69	SLURRY SEAL	$6,434
2017	SECOND AVE	MELISSA DR	LOCKWOOD DR	298.51	7,761	862.33	68	SLURRY SEAL	$7,117
2017	SLOAN ST	N COLUMBIA AVE	N COLUMBIA AVE	49.20	1,181	131.22	47	MILL AND OVERLAY	$5,231
2017	SPRING BOUQUET ST	PRAIRIE WIND BLVD	CACTUS VALLEY	507.75	13,201	1,466.78	70	SLURRY SEAL	$10,470
2017	TANGLEWOOD CIR	TANGLEWOOD CIR	TANGLEWOOD TRL	546.86	14,218	1,579.78	73	SLURRY SEAL	$7,888
2017	TANGLEWOOD CIR	TANGLEWOOD TRL	TANGLEWOOD LN	736.43	19,147	2,127.44	74	SLURRY SEAL	$9,158
2017	TANGLEWOOD TRL	INGLEWOOD DR	TANGLEWOOD CIR	397.22	10,328	1,147.56	79	SLURRY SEAL	$4,485
2017	TANGLEWOOD TRL	TANGLEWOOD CIR	EOP	1,066.31	27,724	3,080.44	80	SLURRY SEAL	$11,774
2017	VINE AVE	N FLORAL AVE	E TARLETON ST	751.20	13,522	1,502.44	77	SLURRY SEAL	$6,120
2017	VINE AVE	E COLLEGE ST	E McNEILL ST	255.74	6,649	738.78	71	SLURRY SEAL	$4,781
2017	VIRGINIA AVE	E TARLETON ST	E OXRORD ST	624.69	9,995	1,110.56	86	FOG SEAL	$3,626
2017	WILDWOOD DR	W ASH ST	OVERHILL DR	1,009.02	26,234	2,914.89	76	SLURRY SEAL	$12,105
2017	WOODLAND DR	CRESTRIDGE DR	MIMOSA LN	821.32	21,354	2,372.67	75	SLURRY SEAL	$10,036
								2017 Total M&R Cost =	**$999,358**

M&R Year	Name	From	To	Length (Ft)	True Area (Ft^2)	True Area (Yd^2)	PCI	M&R Category	M&R Cost
2018	DALE AVE	SPICEWOOD ST	BRIARWOOD LN	371.76	9,666	1,074.00	58	MILL AND OVERLAY	$35,791
2018	DALE AVE	WISTERIA DR	OVERHILL DR	626.31	16,284	1,809.33	57	MILL AND OVERLAY	$63,007
2018	DALE AVE	NORTHWEST LOOP	BLUEBONNET ST	1,355.10	35,233	3,914.78	54	MILL AND OVERLAY	$153,039
2018	FOREST LN	NORTHWEST LOOP	GREENBRIAR	2,487.77	49,755	5,528.33	55	MILL AND OVERLAY	$208,512
2018	FOREST LN	THORNHILL	FOREST LN	599.02	10,782	1,198.00	58	MILL AND OVERLAY	$39,925
2018	FREY ST	N LILLIAN AVE	N GARFIELD AVE	265.22	6,365	707.22	57	MILL AND OVERLAY	$24,628
2018	FREY ST	N CHARLOTTE AVE	MIMOSA LN	302.21	7,857	873.00	53	MILL AND OVERLAY	$35,185
2018	GLEN ROSE RD	E BROADWAY ST	E SOUTH LOOP	496.93	12,920	1,435.56	54	MILL AND OVERLAY	$56,081
2018	LILLIAN AVE	W ASH ST	W PARK ST	652.88	16,975	1,886.11	48	MILL AND OVERLAY	$85,336
2018	LILLIAN AVE	N LILLIAN AVE	W FREY ST	231.80	5,100	566.67	50	MILL AND OVERLAY	$24,571
2018	LILLIAN AVE	CENTENNIAL LN	W McNEILL ST	514.92	13,388	1,487.56	53	MILL AND OVERLAY	$59,922
2018	LILLIAN AVE	W McNEILL ST	W LONG ST	256.99	6,682	742.44	54	MILL AND OVERLAY	$29,002
2018	LILLIAN AVE	W LONG ST	S LILLIAN AVE	415.59	10,805	1,200.56	55	MILL AND OVERLAY	$45,248
2018	LILLIAN AVE	W CAGE ST	W GROESBECK ST	469.21	12,199	1,355.44	53	MILL AND OVERLAY	$54,603
2018	OLLIE AVE	W PARK ST	W PARK ST	121.60	3,162	351.33	65	SLURRY SEAL	$6,127
2018	PHEASANT RIDGE RD	BOB WHITE RD	EOP	91.96	2,391	265.67	59	MILL AND OVERLAY	$8,438
2018	RACE AVE	W TARLETON ST	W SLOAN ST	303.33	6,673	741.44	52	MILL AND OVERLAY	$30,666
2018	RACE AVE	W VANDERBILT ST	W COLLINS ST	522.21	10,444	1,160.44	58	MILL AND OVERLAY	$38,673
								2017 Total M&R Cost =	**$998,754**

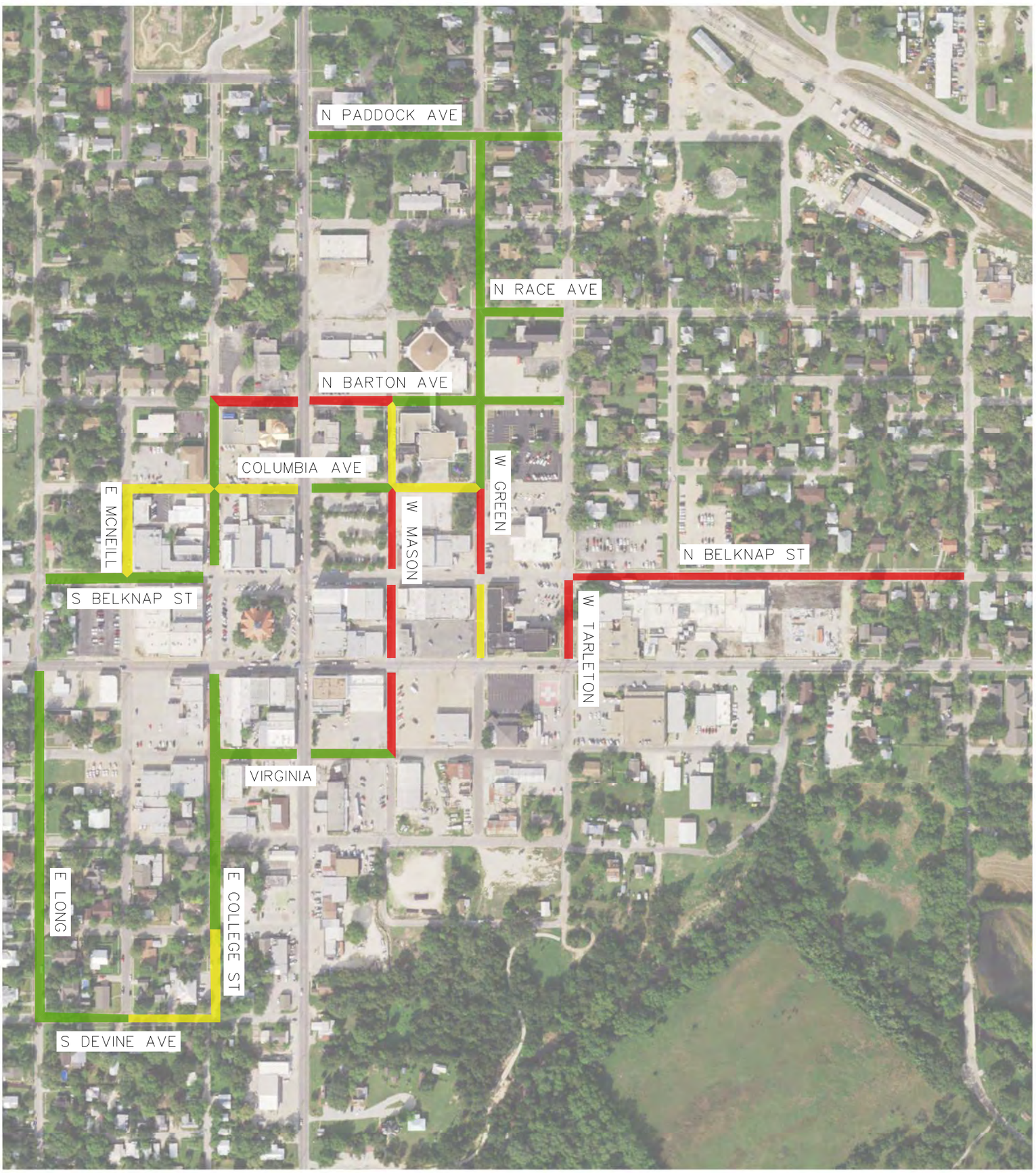
APPENDIX D
BRICK STREET CONDITION ASSESSMENT

City of Stephenville
Brick Street Condition Assessment
April 2016

Name	From	To	Condition	Estimated Repair Cost	Observed Condition
Barton	College	Washington	Poor	$ 43,000	Extensive patching, minor rutting
Barton	Washington	Mason	Poor	$ 45,000	Extensive patching, minor rutting
Barton	Mason	Green	Good	$ -	Minor rutting
Barton	Green	Tarleton	Good	$ -	Minor rutting
Belknap	Tarleton	Sloan	Fair	$ 21,000	Patching, moderate rutting
Belknap	Sloan	Collins	Poor	$ 287,000	Extensive patching, moderate rutting, vertical edge movement
Belknap	Long	McNeill	Good	$ -	Minor rutting, minor displacement
Belknap	McNeill	College	Good	$ -	Minor rutting
Clinton	Sloan	Vanderbilt	Good	$ -	Minor rutting, vertical displacement
Clinton	Vanderbilt	Jones	Fair	$ 52,000	Moderate rutting, vertical displacement
Clinton	Jones	Shirley	Poor	$ 71,000	Vertical displacement, major ponding at Shirley intersection
Clinton	Shirley	Frey	Fair	$ 16,000	Moderate rutting, vertical displacement
College	Barton	Columbia	Good	$ -	Minor displacement, minor rutting
College	Columbia	Belknap	Good	$ -	Minor rutting
College	Graham	Virginia	Good	$ -	Minor rutting
College	Virginia	Floral	Good	$ -	Minor displacement, minor rutting
College	Floral	Vine	Good	$ -	Minor rutting, recent repairs
College	Vine	Devine	Fair	$ 27,000	Patching, vegetation, minor rutting, ponding at Devine intersection
Columbia	McNeill	College	Fair	$ 20,000	Ponding and displacement at the McNeill intersection
Columbia	College	Washington	Fair	$ 9,000	Moderate ruting, depressions
Columbia	Washington	Mason	Good	$ -	Minor rutting, recent repairs
Columbia	Mason	Green	Fair	$ 16,000	Patching, moderate rutting
Devine	Long	McNeill	Good	$ -	Minor rutting
Devine	McNeill	College	Fair	$ 14,000	Minor rutting, major depression
Everett	Tarleton	Sloan	Fair	$ 7,000	Moderate rutting, vertical displacement
Everett	Sloan	Vanderbilt	Good	$ -	Minor rutting
Green	Paddock	Erath	Good	$ -	Minor rutting
Green	Erath	Race	Fair	$ 23,000	Minor vertical displacement, ponding at Erath intersection
Green	Race	Barton	Good	$ -	Minor rutting
Green	Barton	Columbia	Good	$ -	Minor rutting
Green	Columbia	Belknap	Poor	$ 42,000	Extensive patching, minor rutting
Green	Belknap	Graham	Fair	$ 14,000	Moderate patching, minor rutting
Long	Graham	Virginia	Good	$ -	Minor displacement
Long	Virginia	Floral	Good	$ -	Minor displacement, minor rutting
Long	Floral	Vine	Good	$ -	Minor rutting
Long	Vine	Devine	Good	$ -	Minor rutting
Mason	Barton	Columbia	Fair	$ 65,000	Patching, minor rutting, ponding at Columbia intersection
Mason	Columbia	Belknap	Poor	$ 84,000	Extensive patching, minor rutting, minor displacement
Mason	Belknap	Graham	Poor	$ 52,000	Patching, moderate rutting, depressions
Mason	Graham	Virginia	Poor	$ 77,000	Extensive patching, minor rutting
Paddock	Washington	Green	Good	$ -	Minor rutting
Paddock	Green	Tarleton	Good	$ -	Minor rutting
Race	Green	Tarleton	Good	$ -	Minor rutting
Tarleton	Belknap	Graham	Poor	$ 50,000	Extensive patching
Vanderbilt	Lillian	Cain	Poor	$ 160,000	Extensive patching, minor rutting
Vanderbilt	Cain	Neblett	Poor	$ 117,000	Extensive patching, under construction
Vanderbilt	Nebletet	McIlhaney	Poor	$ 87,000	Extensive patching
Vanderbilt	McIlhaney	Ollie	Poor	$ 100,000	Extensive patching
Vanderbilt	Ollie	Clinton	Fair	$ 34,000	Minor rutting, vertical displacement, ponding
Vanderbilt	Clinton	Everett	Good	$ -	Minor rutting
Virginia	College	Washington	Good	$ -	Minor rutting, minor displacement
Virginia	Washington	Mason	Good	$ -	Minor rutting
		Total Estimated Repair Cost		**$ 1,533,000**	

APPENDIX E
BRICK STREET CONDITION MAP

MicroStation V8 User: sbm Office: Fort Worth
N:\F\Drawings\cv-trl-pl-ExistingConditions01.sht
Plotter: J:\Plotdrv_V8.11\PDF_File\PDF-Color-Half.plt
Plot Scale: 300.0000 '/ in. Model: Default
Date: Apr. 13, 2016 - 05:04:58 PM Project: Freese and Nichols, Inc.



SCALE IN FEET 0 50' 150' 300'

LEGEND: POOR, FAIR, GOOD

SEQ. SHEET	NO.	ISSUES	BY	DATE

F&N JOB NO. STE15434
DATE APR 2016
DESIGNED
DRAWN
REVISED
CHECKED
FILE NAME cv-trl-pl-ExistingConditions01.sht

VERIFY SCALE Bar is one inch on original drawing. If not one inch on this sheet, adjust scale.

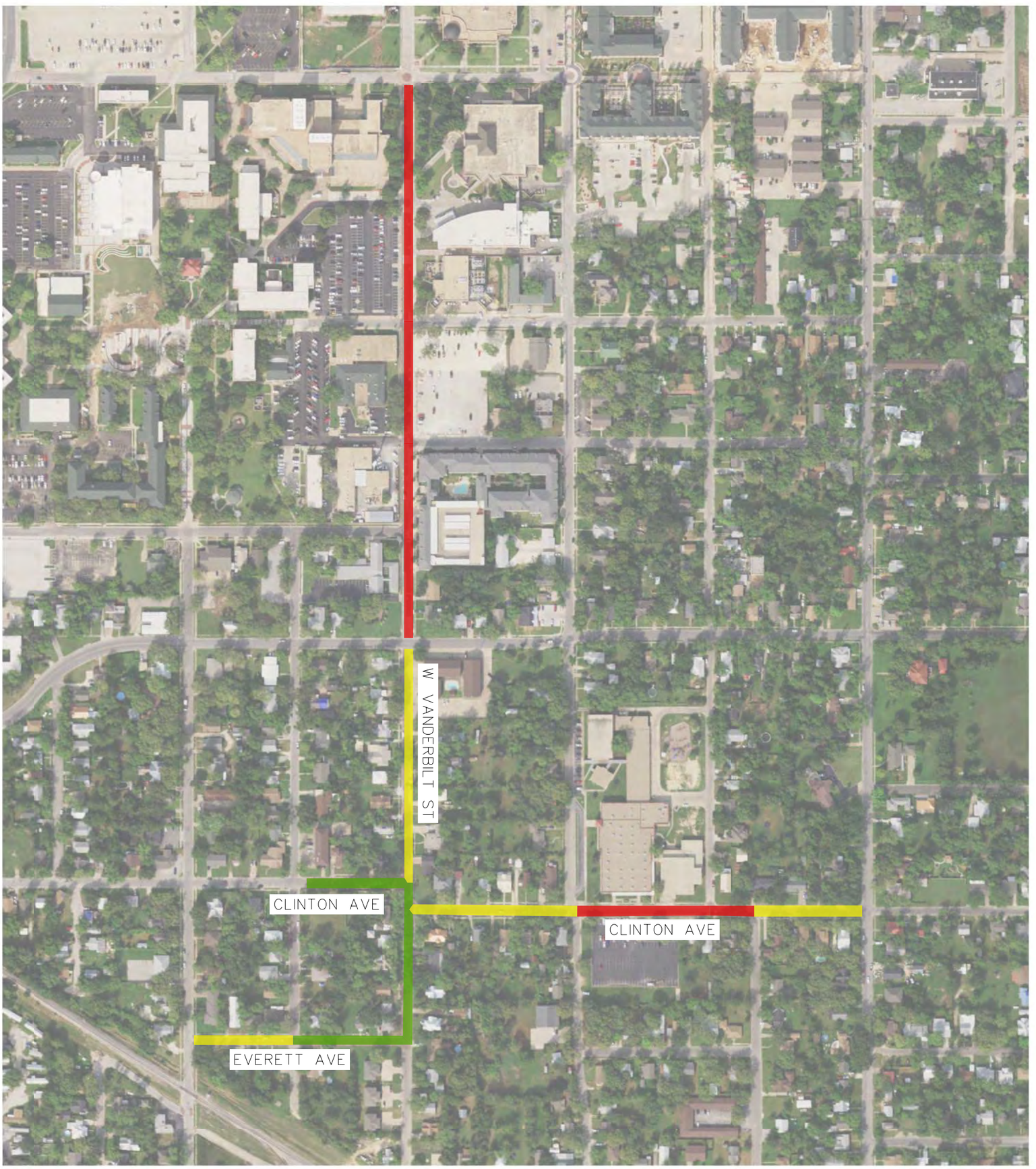
CITY OF STEPHENVILLE

STEPHENVILLE PAVEMENT MANAGEMENT

BRICK STREET ASSESSMENT DOWNTOWN AREA

FREESE AND NICHOLS
4055 International Plaza, Suite 200
Fort Worth, Texas 76109-4895
Phone - (817) 735-7300
Fax - (817) 735-7491
Web - www.freese.com

MicroStation V8 User: sbm Office: Fort Worth
N:\F\Drawings\cv-trt-pl-ExistingConditions02.sht
Plotter: J:\Plotdrv_V8.11\PDF_File\PDF-Color-Half.plt
Plot Scale: 300.0000 '/ in. Model: Default
Date: Apr. 13, 2016 - 05:05:43 PM Project: Freese and Nichols, Inc.



SCALE IN FEET 0 50' 150' 300'

LEGEND: POOR, FAIR, GOOD

SEQ.	NO.	ISSUES	BY	DATE
SHEET				

F&N JOB NO. STE15434
DATE APR 2016
DESIGNED
DRAWN
REVISED
CHECKED
FILE NAME cv-trt-pl-ExistingConditions02.sht

VERIFY SCALE Bar is one inch on original drawing. If not one inch on this sheet, adjust scale. 0 1"

CITY OF STEPHENVILLE

STEPHENVILLE PAVEMENT MANAGEMENT

BRICK STREET ASSESSMENT WEST NEIGHBORHOOD

FREESE AND NICHOLS
4055 International Plaza, Suite 200
Fort Worth, Texas 76109-4895
Phone - (817) 735-7300
Fax - (817) 735-7491
Web - www.freese.com

FREESE AND NICHOLS, INC.
TEXAS REGISTERED ENGINEERING FIRM F-2144

NOT FOR CONSTRUCTION

APPENDIX F
BRANCH CONDITION REPORT

Branch ID	Number of Sections	Sum Section Length (Ft)	Avg Section Width (Ft)	True Area (SqFt)	Use	Average PCI	PCI Standard Deviation	Weighted Average PCI
ADOBEDR (ADOBE DR)	1	404.65	26.00	10,520.99	ROADWAY	34.00	0.00	34.00
ALLENDR (ALLEN DR)	3	582.98	26.00	15,157.55	ROADWAY	43.00	15.77	45.25
ASHWOODDR (ASHWOOD DR)	5	1,641.71	26.00	42,684.48	ROADWAY	51.00	13.08	50.98
BEACHDR (BEACH DR)	1	558.82	26.00	14,529.29	ROADWAY	40.00	0.00	40.00
BENHOGANDR (BEN HOGAN DR)	2	2,098.86	26.00	54,570.26	ROADWAY	37.00	11.00	46.71
BINGHAMAVE (BINGHAM AVE)	1	1,104.51	26.00	28,717.28	ROADWAY	36.00	0.00	36.00
BLAKENEYDR (BLAKENEY DR)	2	1,079.18	26.00	28,058.58	ROADWAY	54.50	16.50	60.68
BLUEBONNET (BLUEBONNET ST)	11	6,172.42	26.00	160,482.86	ROADWAY	66.09	18.88	65.56
BLUEJAYDR (BLUE JAY DR)	3	2,539.53	22.00	55,869.57	ROADWAY	23.67	2.05	22.62
BLUEQUAILR (BLUE QUAIL RD)	2	171.62	18.00	3,089.08	ROADWAY	100.00	0.00	100.00
BOBWHITERD (BOB WHITE RD)	2	1,331.97	26.00	34,631.19	ROADWAY	56.50	5.50	57.18
BOSQUERD (BOSQUE RD)	1	1,101.25	26.00	28,632.43	ROADWAY	54.00	0.00	54.00
BOWMANRIDG (BOWMAN RIDGE RD)	1	371.04	26.00	9,646.95	ROADWAY	24.00	0.00	24.00
BRENDAST (BRENDA ST)	2	850.84	26.00	22,121.72	ROADWAY	61.00	24.00	58.47
BRENTWOODS (BRENTWOOD ST)	2	1,132.23	26.00	29,437.93	ROADWAY	24.50	4.50	23.45
BRIARWOODL (BRIARWOOD LN)	1	349.82	26.00	9,095.19	ROADWAY	49.00	0.00	49.00
BRITTAINCI (BRITTAIN CIR)	3	1,804.63	26.00	46,920.50	ROADWAY	70.33	13.27	74.37
BULLELK (BULL ELK)	1	280.20	26.00	7,285.22	ROADWAY	85.00	0.00	85.00
BYRONNELSO (BYRON NELSON ST)	1	1,108.14	26.00	28,811.51	ROADWAY	59.00	0.00	59.00
BYRONST (BYRON ST)	1	2,108.57	26.00	54,822.71	ROADWAY	67.00	0.00	67.00
CACTUSVALL (CACTUS VALLEY)	1	1,055.49	26.00	27,442.72	ROADWAY	84.00	0.00	84.00
CENTENNIAL (CENTENNIAL LN)	1	259.77	26.00	6,754.03	ROADWAY	19.00	0.00	19.00
CENTERDR (CENTER DR)	1	958.20	26.00	24,913.29	ROADWAY	39.00	0.00	39.00
CHANDLERDR (CHANDLER DR)	1	182.36	26.00	4,741.29	ROADWAY	81.00	0.00	81.00
CHERRYLN (CHERRY LN)	2	442.24	20.00	9,669.59	ROADWAY	68.00	10.00	73.59
CHEYENNEDR (CHEYENNE DR)	3	760.40	26.00	19,770.51	ROADWAY	49.67	2.49	48.40
CHOCTAWDR (CHOCTAW DR)	2	523.97	26.00	13,623.27	ROADWAY	50.00	5.00	50.63
CHRISTYPLZ (CHRISTY PLZ)	1	525.54	26.00	13,663.95	ROADWAY	26.00	0.00	26.00
CLARKLN (CLARK LN)	1	1,190.39	18.00	21,427.11	ROADWAY	66.00	0.00	66.00
COLLEGEFAR (COLLEGE FARM RD)	2	3,995.80	20.00	79,915.90	ROADWAY	41.00	4.00	41.97
COMANCHEST (COMANCHE ST)	1	371.19	26.00	9,651.06	ROADWAY	52.00	0.00	52.00
COTTONWOOD (COTTONWOOD CT)	1	240.12	24.00	5,762.94	ROADWAY	69.00	0.00	69.00
COUNTSST (COUNTS ST)	1	445.45	26.00	11,581.78	ROADWAY	75.00	0.00	75.00
COUNTYROAD (COUNTY ROAD 386)	6	6,262.67	26.00	162,829.35	ROADWAY	37.00	12.45	37.74
CRESTRIDGE (CRESTRIDGE DR)	3	2,160.15	26.00	56,163.80	ROADWAY	58.33	12.12	56.70
CYPRESSAVE (CYPRESS AVE)	1	626.77	26.00	16,296.10	ROADWAY	69.00	0.00	69.00
DAVISAVE (DAVIS AVE)	2	1,620.64	26.00	42,136.53	ROADWAY	26.00	5.00	28.62
DEERRUN (DEER RUN)	1	280.20	26.00	7,285.24	ROADWAY	85.00	0.00	85.00
DOGWOODDR (DOGWOOD DR)	6	1,607.84	26.00	41,803.75	ROADWAY	32.50	10.58	32.78
DONJANUARY (DON JANUARY ST)	1	637.39	26.00	16,572.25	ROADWAY	30.00	0.00	30.00
DOUBLEHORN (DOUBLEHORN ST)	1	613.17	26.00	15,942.30	ROADWAY	50.00	0.00	50.00
DUBLINAVE (DUBLIN AVE)	2	699.02	26.00	18,174.52	ROADWAY	83.00	0.00	83.00
EAIRPORTRD (E AIRPORT RD)	1	2,135.07	26.00	55,511.78	ROADWAY	81.00	0.00	81.00
EBALLOWST (E BALLOW ST)	1	1,572.80	16.00	25,164.81	ROADWAY	25.00	0.00	25.00
EBLAIRST (E BLAIR ST)	1	300.00	14.00	4,200.00	ROADWAY	28.00	0.00	28.00
EBROADWAYS (E BROADWAY ST)	6	1,773.13	26.00	46,101.50	ROADWAY	49.50	21.28	49.75
ECLIFTONST (E CLIFTON ST)	5	1,842.87	22.00	40,543.19	ROADWAY	62.60	14.28	58.55
ECOLEMANST (E COLEMAN ST)	1	316.30	20.00	6,325.98	ROADWAY	71.00	0.00	71.00
ECOLLINSST (E COLLINS ST)	2	934.47	20.00	18,689.42	ROADWAY	24.50	2.50	23.35
ECROWST (E CROW ST)	5	1,874.35	24.00	44,984.45	ROADWAY	63.40	18.70	54.87
EDODGEST (E DODGE ST)	5	1,296.33	18.80	24,678.92	ROADWAY	46.80	12.24	51.07
EELMST (E ELM ST)	3	1,064.54	22.00	23,424.82	ROADWAY	18.67	9.88	18.19
EFREYST (E FREY ST)	2	333.01	19.00	6,496.45	ROADWAY	70.00	25.00	56.34
EGREENST (E GREEN ST)	2	519.78	26.00	13,514.15	ROADWAY	92.00	3.00	91.98
EHOOKST (E HOOK ST)	4	1,392.77	22.50	30,963.16	ROADWAY	34.00	5.79	33.85
ELEWISDR (E LEWIS DR)	1	786.15	20.00	15,723.06	ROADWAY	63.00	0.00	63.00
ELKRIDGEDR (ELK RIDGE DR)	3	1,409.60	26.00	36,649.64	ROADWAY	74.67	11.90	78.62
ELONGST (E LONG ST)	2	2,085.32	26.00	54,218.35	ROADWAY	33.00	10.00	36.14
EMASONST (E MASON ST)	1	257.73	24.00	6,185.63	ROADWAY	94.00	0.00	94.00
EMcNEILLST (E McNEILL ST)	4	1,032.18	26.00	26,836.65	ROADWAY	55.25	23.94	55.23
EOXFORDST (E OXFORD ST)	2	439.96	22.00	9,454.40	ROADWAY	89.50	5.50	89.20
EPARKST (E PARK ST)	3	1,078.79	20.00	21,575.80	ROADWAY	30.33	8.34	30.36
EPEARLST (E PEARL ST)	2	931.74	26.00	24,225.32	ROADWAY	34.00	5.00	33.99
ETARLETONS (E TARLETON ST)	3	755.28	21.33	15,985.57	ROADWAY	45.33	12.04	44.49
FORESTLN (FOREST LN)	4	3,875.11	20.00	78,025.76	ROADWAY	45.50	14.60	52.36
GLENROSERD (GLEN ROSE RD)	2	1,024.09	26.00	26,626.41	ROADWAY	56.00	2.00	56.06
GLENWOODCT (GLENWOOD CT)	1	110.72	26.00	2,878.79	ROADWAY	83.00	0.00	83.00
GLENWOODDR (GLENWOOD DR)	3	1,998.75	26.00	51,967.57	ROADWAY	78.67	7.59	78.71
GOLFCLUBRD (GOLF CLUB RD)	1	553.18	18.00	9,957.16	ROADWAY	21.00	0.00	21.00
GOODTREEST (GOOD TREE ST)	1	1,198.93	26.00	31,172.13	ROADWAY	79.00	0.00	79.00
GREENBRIAR (GREENBRIAR)	3	1,831.81	25.33	46,505.02	ROADWAY	36.33	13.91	35.01
GREENSCREE (GREENS CREEK CIR)	1	190.38	26.00	4,949.79	ROADWAY	25.00	0.00	25.00

Branch ID	Number of Sections	Sum Section Length (Ft)	Avg Section Width (Ft)	True Area (SqFt)	Use	Average PCI	PCI Standard Deviation	Weighted Average PCI
HARPERSMIL (HARPERS MILL RD)	4	1,071.02	26.00	27,846.65	ROADWAY	28.00	4.85	26.57
HIGHLANDVI (HIGHLAND VIEW DR)	3	2,547.92	20.67	54,894.59	ROADWAY	72.33	7.04	71.37
HILLCREST (HILLCREST)	4	1,973.24	26.00	51,304.23	ROADWAY	46.00	9.35	48.76
HOLLYST (HOLLY ST)	2	1,115.26	26.00	28,996.84	ROADWAY	47.00	14.00	45.53
IDELLA (IDELLA)	1	773.15	26.00	20,101.82	ROADWAY	42.00	0.00	42.00
INGLEWOODD (INGLEWOOD DR)	3	2,478.93	26.00	64,452.05	ROADWAY	48.33	17.25	40.99
JASMINEST (JASMINE ST)	2	1,198.90	25.00	29,928.64	ROADWAY	56.50	25.50	56.59
KAYLOCKST (KAYLOCK ST)	2	1,427.32	26.00	37,110.38	ROADWAY	63.00	1.00	62.82
KINGLANDDR (KINGLAND DR)	2	1,112.63	26.00	28,928.41	ROADWAY	65.00	12.00	66.25
LEETREVINO (LEE TREVINO ST)	1	330.31	26.00	8,588.07	ROADWAY	61.00	0.00	61.00
LOCKWOODDR (LOCKWOOD DR)	2	1,538.41	26.00	39,998.55	ROADWAY	43.00	11.00	42.14
MAPLELN (MAPLE LN)	8	2,748.94	26.00	71,472.50	ROADWAY	47.50	15.67	45.29
MAPLEWOODC (MAPLEWOOD CT)	1	191.93	26.00	4,990.30	ROADWAY	70.00	0.00	70.00
MAPLEWOODD (MAPLEWOOD DR)	2	1,729.01	26.00	44,954.22	ROADWAY	35.00	6.00	36.83
MEADORLN (MEADOR LN)	2	1,040.97	23.00	23,758.99	ROADWAY	75.50	8.50	74.89
MELISSADR (MELISSA DR)	2	1,668.84	26.00	43,389.80	ROADWAY	61.50	0.50	61.50
MESQUITEST (MESQUITE ST)	1	316.16	20.00	6,323.27	ROADWAY	77.00	0.00	77.00
MIDNIGHTSH (MIDNIGHT SHADOW)	3	1,516.35	26.00	39,425.03	ROADWAY	45.67	9.81	40.80
MIMOSALN (MIMOSA LN)	7	2,877.46	26.00	74,814.08	ROADWAY	43.29	10.37	41.70
MISTLETOED (MISTLETOE DR)	3	791.96	26.00	20,590.94	ROADWAY	60.00	9.27	57.05
MOONLIGHTT (MOONLIGHT TRL)	3	3,329.70	26.00	86,572.32	ROADWAY	45.67	3.30	46.25
MOORECIR (MOORE CIR)	1	91.81	26.00	2,387.06	ROADWAY	50.00	0.00	50.00
MORGANMILL (MORGAN MILL RD)	1	892.65	24.00	21,423.66	ROADWAY	62.00	0.00	62.00
NAZALEALN (N AZALEA LN)	1	724.07	25.00	18,101.64	ROADWAY	66.00	0.00	66.00
NBARKERAVE (N BARKER AVE)	2	1,406.00	26.00	36,555.89	ROADWAY	79.50	2.50	80.14
NBARTONAVE (N BARTON AVE)	9	2,610.13	21.33	56,389.84	ROADWAY	62.33	15.20	65.95
NBATESAVE (N BATES AVE)	3	1,478.66	22.67	33,843.66	ROADWAY	66.67	13.47	63.96
NBELKNAPAV (N BELKNAP AVE)	14	3,682.20	22.29	81,634.27	ROADWAY	45.07	21.89	47.85
NCAINAVE (N CAIN AVE)	3	1,349.44	24.00	32,386.58	ROADWAY	68.33	11.84	68.24
NCHAMBERLI (N CHAMBERLIN AVE)	7	2,054.41	21.14	42,875.67	ROADWAY	54.57	17.81	58.66
NCHARLOTTE (N CHARLOTTE AVE)	7	5,002.23	26.00	130,057.94	ROADWAY	76.29	8.71	73.98
NCLEVELAND (N CLEVELAND DR)	5	2,020.59	25.60	51,911.81	ROADWAY	52.00	12.21	52.86
NCLINTONAV (N CLINTON AVE)	7	2,377.92	22.86	53,981.43	ROADWAY	79.71	12.62	78.03
NCOLUMBIAA (N COLUMBIA AVE)	12	3,809.86	21.17	82,095.81	ROADWAY	55.17	21.22	58.23
NDALEAVE (N DALE AVE)	19	9,887.58	24.89	243,690.09	ROADWAY	78.00	15.37	70.90
NDONNAAVE (N DONNA AVE)	2	861.92	22.00	18,814.92	ROADWAY	29.00	6.00	28.97
NERATHAVE (N ERATH AVE)	2	774.87	26.00	20,146.62	ROADWAY	43.50	13.50	39.01
NESTESAVE (N ESTES AVE)	2	812.04	25.00	20,600.13	ROADWAY	67.50	6.50	70.11
NFLORALAVE (N FLORAL AVE)	4	1,392.60	21.00	26,547.38	ROADWAY	50.00	17.51	53.13
NGARFIELDA (N GARFIELD AVE)	8	3,073.36	21.75	68,718.13	ROADWAY	59.88	30.38	47.05
NHARBINDR (N HARBIN DR)	8	5,959.76	25.50	153,865.20	ROADWAY	64.88	9.05	64.57
NISLAAVE (N ISLA AVE)	10	3,661.60	26.00	95,201.54	ROADWAY	63.10	15.53	61.73
NIVYAVE (N IVY AVE)	3	1,187.61	24.33	29,785.75	ROADWAY	50.67	12.71	50.80
NKIGHTAVE (N KIGHT AVE)	5	2,056.61	25.60	52,859.52	ROADWAY	75.00	7.82	75.89
NLILLIANAV (N LILLIAN AVE)	9	3,564.84	24.00	86,325.07	ROADWAY	40.67	15.85	41.86
NLINDALN (N LINDA LN)	1	1,033.17	26.00	26,862.31	ROADWAY	70.00	0.00	70.00
NLYDIAAVE (N LYDIA AVE)	6	5,132.17	25.00	127,264.69	ROADWAY	80.83	6.36	80.29
NMAGNOLIAD (N MAGNOLIA DR)	1	830.60	26.00	21,595.55	ROADWAY	76.00	0.00	76.00
NMcCARTAVE (N McCART AVE)	11	4,520.26	22.09	97,724.61	ROADWAY	77.45	11.10	77.51
NMcILHANEY (N McILHANEY AVE)	2	1,086.61	25.00	26,701.48	ROADWAY	90.50	3.50	91.88
NMEADOWLAR (N MEADOWLARK LN)	3	2,465.90	26.00	64,113.38	ROADWAY	68.00	7.48	70.38
NMILLERAVE (N MILLER AVE)	1	828.60	18.00	14,914.85	ROADWAY	36.00	0.00	36.00
NMOCKINGBI (N MOCKINGBIRD LN)	6	3,789.16	26.00	98,518.11	ROADWAY	41.17	19.47	48.07
NNEBLETTAV (N NEBLETT AVE)	8	3,729.99	25.25	94,731.29	ROADWAY	60.88	29.87	63.23
NOLLIEAVE (N OLLIE AVE)	13	4,906.51	25.85	126,741.89	ROADWAY	78.38	13.46	79.79
NPADDOCKAV (N PADDOCK AVE)	15	5,432.44	23.40	128,073.08	ROADWAY	45.87	20.25	48.08
NRACEAVE (N RACE AVE)	14	4,342.88	23.14	98,911.04	ROADWAY	53.14	18.46	55.29
NRETAAVE (N RETA AVE)	2	1,417.68	21.00	30,150.01	ROADWAY	86.50	6.50	84.48
NROMEAVE (N ROME AVE)	3	1,345.99	22.67	30,556.26	ROADWAY	95.33	0.94	95.31
NROSEDR (N ROSE DR)	1	1,011.28	26.00	26,293.27	ROADWAY	33.00	0.00	33.00
NROWLANDAV (N ROWLAND AVE)	5	2,142.22	26.00	55,697.72	ROADWAY	80.80	6.58	83.05
NSHAPARDAV (N SHAPARD AVE)	1	245.19	18.00	4,413.35	ROADWAY	44.00	0.00	44.00
NSTEPHENAV (N STEPHEN AVE)	2	1,043.10	22.00	22,978.51	ROADWAY	77.50	12.50	79.86
NVINEAVE (N VINE AVE)	1	751.20	18.00	13,521.60	ROADWAY	77.00	0.00	77.00
NVIRGINIAA (N VIRGINIA AVE)	3	1,145.30	20.67	21,965.61	ROADWAY	88.33	4.03	88.00
NWILDWOODD (N WILDWOOD DR)	1	1,009.02	26.00	26,234.50	ROADWAY	76.00	0.00	76.00
NWOLFENURS (N WOLFE NURSERY RD)	13	7,875.16	22.46	181,190.79	ROADWAY	78.62	18.05	82.46
NWOODLANDD (N WOODLAND DR)	2	1,531.88	26.00	39,829.01	ROADWAY	65.00	10.00	65.72
OAKLAWNDR (OAKLAWN DR)	2	680.21	26.00	17,685.50	ROADWAY	59.00	2.00	58.97
OAKWOODDR (OAKWOOD DR)	3	1,330.04	26.00	34,580.94	ROADWAY	26.33	7.04	26.43
OLDGRANBUR (OLD GRANBURY RD)	1	1,404.81	18.00	25,286.52	ROADWAY	56.00	0.00	56.00
OLDHICORD (OLD HICO RD)	2	1,815.83	20.00	35,719.27	ROADWAY	35.50	1.50	35.07

Branch ID	Number of Sections	Sum Section Length (Ft)	Avg Section Width (Ft)	True Area (SqFt)	Use	Average PCI	PCI Standard Deviation	Weighted Average PCI
OMAHAST (OMAHA ST)	2	440.26	26.00	11,446.69	ROADWAY	36.50	5.50	40.03
OVERHILLDR (OVERHILL DR)	13	5,785.57	25.85	149,614.71	ROADWAY	50.85	19.61	41.52
PARKWOODCT (PARKWOOD CT)	1	246.06	26.00	6,397.61	ROADWAY	55.00	0.00	55.00
PEACHORCHA (PEACH ORCHARD RD)	1	1,757.60	23.00	40,424.73	ROADWAY	34.00	0.00	34.00
PECANHILLD (PECAN HILL DR)	3	3,362.48	18.00	60,524.64	ROADWAY	59.00	27.53	54.07
PHEASANTRI (PHEASANT RIDGE RD)	1	91.96	26.00	2,391.00	ROADWAY	59.00	0.00	59.00
PHELPSST (PHELPS ST)	6	2,015.90	25.67	51,609.54	ROADWAY	64.67	14.20	67.86
PRAIRIEWIN (PRAIRIE WIND BLVD)	21	12,251.04	24.67	310,266.01	ROADWAY	45.43	12.77	44.61
RIVERNORTH (RIVER NORTH BLVD)	12	3,608.35	26.00	93,816.99	ROADWAY	61.50	14.63	61.15
RIVERSIDED (RIVERSIDE DR)	3	1,617.99	20.67	34,973.52	ROADWAY	71.00	9.90	70.32
RIVERVIEWD (RIVER VIEW DR)	1	551.51	20.00	11,030.26	ROADWAY	67.00	0.00	67.00
ROSEBUDDR (ROSEBUD DR)	3	1,929.76	26.00	50,173.74	ROADWAY	52.33	12.55	47.37
SAINTFELIX (SAINT FELIX AVE)	3	853.20	24.67	20,886.81	ROADWAY	35.33	1.89	35.37
SAINTPETER (SAINT PETER AVE)	1	522.61	20.00	10,452.11	ROADWAY	39.00	0.00	39.00
SALEXANDER (S ALEXANDER RD)	9	3,692.43	25.56	95,855.22	ROADWAY	87.00	14.79	87.19
SANDRAPALM (SANDRA PALMER ST)	2	2,278.00	26.00	59,227.89	ROADWAY	51.00	7.00	50.02
SBARTONAVE (S BARTON AVE)	2	510.70	26.00	13,278.31	ROADWAY	52.00	16.00	51.87
SBAXTERAVE (S BAXTER AVE)	3	779.70	24.00	18,707.48	ROADWAY	73.67	8.22	72.26
SBELKNAPAV (S BELKNAP AVE)	3	981.04	23.33	22,779.43	ROADWAY	48.67	29.49	47.85
SBELMONTAV (S BELMONT AVE)	2	617.52	23.00	13,818.83	ROADWAY	44.50	4.50	44.86
SBRYANAVE (S BRYAN AVE)	1	390.80	16.00	6,252.80	ROADWAY	85.00	0.00	85.00
SBUCKAVE (S BUCK AVE)	1	257.88	16.00	4,126.14	ROADWAY	79.00	0.00	79.00
SCOLUMBIAA (S COLUMBIA AVE)	1	257.86	26.00	6,704.31	ROADWAY	95.00	0.00	95.00
SCOXAVE (S COX AVE)	1	367.43	18.00	6,613.76	ROADWAY	67.00	0.00	67.00
SDALEAVE (S DALE AVE)	2	1,476.73	22.50	30,877.10	ROADWAY	26.50	9.50	23.44
SDEVINEAVE (S DEVINE AVE)	2	898.07	22.00	20,507.18	ROADWAY	44.00	4.00	45.96
SDREWAVE (S DREW AVE)	3	865.34	17.33	14,429.91	ROADWAY	46.33	24.28	39.82
SEMINOLEDR (SEMINOLE DR)	3	758.34	26.00	19,716.88	ROADWAY	43.33	16.50	46.47
SERATHAVE (S ERATH AVE)	1	261.35	24.00	6,272.30	ROADWAY	22.00	0.00	22.00
SFAIRFAXAV (S FAIRFAX AVE)	2	571.96	19.00	10,785.21	ROADWAY	41.00	16.00	42.46
SFIFTHAVE (S FIFTH AVE)	3	1,819.61	25.33	46,385.40	ROADWAY	57.67	25.37	64.56
SFIRSTAVE (S FIRST AVE)	5	2,067.40	22.80	46,406.44	ROADWAY	26.20	11.37	26.49
SFLORALAVE (S FLORAL AVE)	3	775.42	21.33	16,550.54	ROADWAY	49.67	8.34	48.89
SHARBINDR (S HARBIN DR)	6	3,911.77	26.00	101,706.00	ROADWAY	89.50	4.03	89.92
SHARPCIR (SHARP CIR)	1	145.48	26.00	3,782.38	ROADWAY	44.00	0.00	44.00
SHARPDR (SHARP DR)	4	1,946.40	26.00	50,606.39	ROADWAY	43.25	12.03	45.45
SHEILADR (SHEILA DR)	3	1,283.13	26.00	33,361.40	ROADWAY	48.33	14.61	54.13
SJACKSONAV (S JACKSON AVE)	3	947.97	21.33	19,833.58	ROADWAY	37.33	20.53	36.63
SLEEAVE (S LEE AVE)	1	328.16	18.00	5,906.97	ROADWAY	38.00	0.00	38.00
SLENNOXAVE (S LENNOX AVE)	6	1,602.06	22.33	34,821.03	ROADWAY	58.67	12.54	61.21
SLILLIANAV (S LILLIAN AVE)	13	4,959.36	25.15	128,388.91	ROADWAY	52.38	18.86	49.08
SLOCKHARTR (S LOCKHART RD)	3	3,573.82	25.33	91,026.35	ROADWAY	57.67	7.54	55.75
SMAXWELLAV (S MAXWELL AVE)	3	899.84	18.67	16,935.16	ROADWAY	36.00	10.80	32.94
SMcILHANEY (S McILHANEY AVE)	1	516.80	20.00	10,335.98	ROADWAY	32.00	0.00	32.00
SMINTERAVE (S MINTER AVE)	1	635.11	20.00	12,702.23	ROADWAY	85.00	0.00	85.00
SORRAVE (S ORR AVE)	2	516.35	22.00	11,359.68	ROADWAY	80.50	14.50	80.48
SPADDOCKAV (S PADDOCK AVE)	2	520.04	26.00	13,521.12	ROADWAY	55.00	26.00	55.01
SPARKDR (S PARK DR)	5	1,764.05	24.00	42,132.87	ROADWAY	47.20	12.42	52.65
SPICEWOODS (SPICEWOOD ST)	3	1,105.07	26.00	28,731.89	ROADWAY	61.67	0.94	61.52
SPRINGBOUQ (SPRING BOUQUET ST)	3	1,107.34	26.00	28,790.85	ROADWAY	61.33	8.38	62.95
SPRINGMEAD (SPRING MEADOW ST)	3	1,827.87	26.00	47,524.52	ROADWAY	48.33	12.26	37.96
SPRUCEWOOD (SPRUCEWOOD AVE)	1	636.59	20.00	12,731.82	ROADWAY	76.00	0.00	76.00
SRACEAVE (S RACE AVE)	1	239.31	18.00	4,307.67	ROADWAY	20.00	0.00	20.00
SSECONDAVE (S SECOND AVE)	8	3,791.19	24.50	92,970.73	ROADWAY	37.63	18.87	34.95
SSIXTHAVE (S SIXTH AVE)	5	2,237.30	23.60	51,813.61	ROADWAY	50.40	26.73	48.92
STHIRDAVE (S THIRD AVE)	3	1,393.16	25.33	35,291.87	ROADWAY	17.33	9.74	16.99
SULLYCT (SULLY CT)	1	1,125.75	26.00	29,269.52	ROADWAY	69.00	0.00	69.00
SUMMITAVE (SUMMIT AVE)	1	592.73	20.00	11,854.65	ROADWAY	57.00	0.00	57.00
SUNBURST (SUNBURST)	2	552.98	26.00	14,377.41	ROADWAY	83.00	0.00	83.00
SUNDANCE (SUNDANCE)	2	782.93	26.00	20,356.25	ROADWAY	79.50	3.50	77.56
SUNDOG (SUN DOG)	1	164.76	16.00	2,636.15	ROADWAY	24.00	0.00	24.00
SUNDOWN (SUN DOWN)	2	1,528.59	25.00	37,544.42	ROADWAY	81.50	1.50	80.89
SVINEAVE (S VINE AVE)	3	773.00	26.00	20,098.05	ROADWAY	58.33	26.85	57.83
SVIRGINIAA (S VIRGINIA AVE)	2	514.28	23.00	11,841.22	ROADWAY	32.00	11.00	30.48
SWHITEAVE (S WHITE AVE)	1	331.36	20.00	6,627.18	ROADWAY	42.00	0.00	42.00
SWILSONAVE (S WILSON AVE)	3	887.56	17.33	15,645.09	ROADWAY	55.67	2.62	55.26
TABST (TAB ST)	2	818.26	21.00	17,614.63	ROADWAY	31.50	5.50	28.42
TANGLEWOOD (TANGLEWOOD LN)	8	4,655.83	25.00	116,150.34	ROADWAY	76.00	8.73	76.31
TEJASLN (TEJAS LN)	2	1,212.16	21.00	25,340.20	ROADWAY	47.50	20.50	48.47
THORNHILL (THORNHILL)	2	1,438.29	20.00	28,765.82	ROADWAY	69.50	4.50	68.76
VANTAGEDR (VANTAGE DR)	3	723.96	25.33	18,239.96	ROADWAY	54.67	11.59	55.73
WASHST (W ASH ST)	5	1,646.25	25.20	41,221.26	ROADWAY	45.60	18.83	43.97

Branch ID	Number of Sections	Sum Section Length (Ft)	Avg Section Width (Ft)	True Area (SqFt)	Use	Average PCI	PCI Standard Deviation	Weighted Average PCI
WBLACKJACK (W BLACKJACK ST)	1	394.41	22.00	8,676.94	ROADWAY	33.00	0.00	33.00
WCAGEST (W CAGE ST)	6	2,774.61	20.33	56,468.34	ROADWAY	27.50	9.14	27.59
WCOLLEGEST (W COLLEGE ST)	4	1,197.50	23.50	28,774.59	ROADWAY	44.50	19.32	36.10
WCOLLINSST (W COLLINS ST)	5	1,035.17	23.20	22,418.96	ROADWAY	59.80	23.59	62.50
WDAVISST (W DAVIS ST)	1	368.44	16.00	5,895.02	ROADWAY	37.00	0.00	37.00
WDENMANST (W DENMAN ST)	4	1,063.29	23.00	24,408.31	ROADWAY	85.25	2.86	85.63
WEDGEWOODD (WEDGEWOOD DR)	4	913.63	26.00	23,754.31	ROADWAY	73.50	6.06	72.03
WELMST (W ELM ST)	12	4,672.45	24.42	113,691.44	ROADWAY	69.25	16.56	68.65
WESTWOODCT (WESTWOOD CT)	1	153.74	26.00	3,997.17	ROADWAY	39.00	0.00	39.00
WFREYST (W FREY ST)	42	19,532.51	24.38	471,828.06	ROADWAY	65.98	28.57	73.45
WGREENST (W GREEN ST)	3	1,725.11	18.67	33,985.78	ROADWAY	29.33	7.59	26.85
WGROESBECK (W GROESBECK ST)	7	3,503.27	22.71	79,653.14	ROADWAY	28.14	13.66	30.33
WHITEFIELD (WHITEFIELD ST)	1	224.44	26.00	5,835.31	ROADWAY	17.00	0.00	17.00
WHURBERTST (W HURBERT ST)	4	1,033.21	23.00	23,743.13	ROADWAY	73.25	8.14	73.95
WHYMANST (W HYMAN ST)	6	2,800.82	21.67	60,698.50	ROADWAY	44.00	15.78	45.01
WILLOWLN (WILLOW LN)	2	946.93	26.00	24,620.07	ROADWAY	64.50	2.50	65.15
WISTERIADR (WISTERIA DR)	3	956.67	26.00	24,873.52	ROADWAY	53.33	11.26	53.72
WJONESST (W JONES ST)	7	3,636.69	24.00	88,536.34	ROADWAY	72.43	24.90	64.33
WLONGST (W LONG ST)	15	6,152.06	23.07	142,908.58	ROADWAY	87.53	15.47	86.72
WMASONST (W MASON ST)	1	245.63	22.00	5,403.95	ROADWAY	46.00	0.00	46.00
WMcNEILLST (W McNEILL ST)	10	4,261.20	23.80	102,144.24	ROADWAY	58.80	22.71	58.76
WMINNIEST (W MINNIE ST)	2	722.90	21.00	15,488.37	ROADWAY	68.50	1.50	67.80
WMULBERRYS (W MULBERRY ST)	2	813.32	26.00	21,146.38	ROADWAY	76.00	15.00	76.34
WOAKST (W OAK ST)	9	3,540.62	22.00	78,765.15	ROADWAY	55.67	16.96	58.78
WPARKST (W PARK ST)	13	5,387.60	24.00	128,559.33	ROADWAY	71.15	15.54	73.23
WPECANST (W PECAN ST)	11	4,081.83	22.91	96,326.31	ROADWAY	66.73	16.35	70.44
WSHIRLEYST (W SHIRLEY ST)	11	4,408.64	22.00	100,065.92	ROADWAY	56.27	24.94	54.79
WSLOANST (W SLOAN ST)	9	3,030.56	22.56	68,565.47	ROADWAY	54.33	25.62	49.92
WSWANST (W SWAN ST)	9	4,115.67	22.00	86,959.56	ROADWAY	49.33	32.68	46.15
WTARLETONS (W TARLETON ST)	16	6,897.73	24.69	170,587.99	ROADWAY	45.69	21.41	44.74
WTURNERST (W TURNER ST)	2	801.74	20.00	20,065.25	ROADWAY	63.50	36.50	30.31
WVANDERBIL (W VANDERBILT ST)	4	2,042.24	22.00	48,546.65	ROADWAY	53.25	35.58	40.14
WWALNUTST (W WALNUT ST)	4	1,296.03	21.00	26,419.55	ROADWAY	62.00	19.61	66.22

APPENDIX G
PHOTOGRAPHS OF EXAMPLE PAVEMENT DISTRESSES

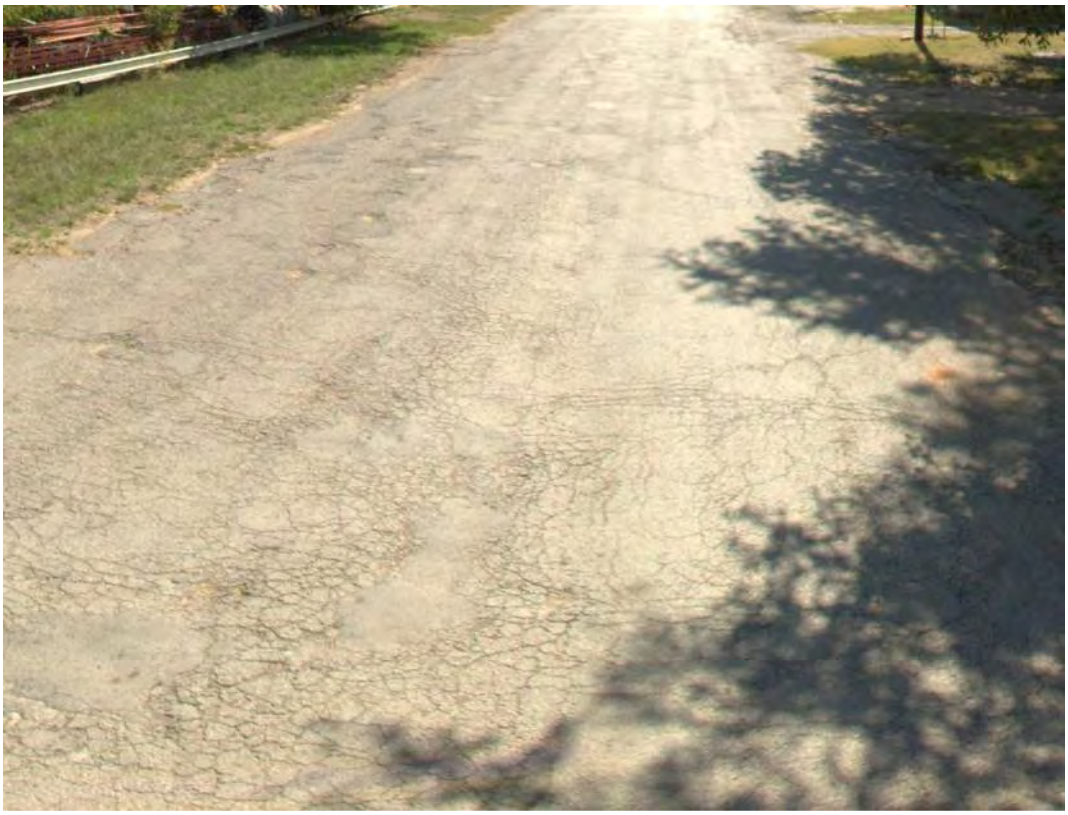


Figure G-1 – Example of high-severity alligator cracking on E. Elm Street.

Figure G-2 – Example of high-severity alligator cracking, potholes, and utility cuts on S. 3rd Ave.

Figure G-3 – Example of high-severity alligator cracking, weathering, and patches on Inglewood Dr.

Figure G-4 – Example of medium-severity alligator cracking and weathering on W. Oak St.

Figure G-5 – Example of medium-severity longitudinal and transverse cracking on W. Oak St.

Figure G-6 – Example of medium-severity utility cuts on W. Jones St.