2019 “State of the Streets”
Final Report

Prepared for:

Village of Calumet Park, Illinois &
Chicago Metropolitan Agency for Planning

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1 EXECUTIVE SUMMARY

1.1 History

In May of 2019, the Chicago Metropolitan Agency for Planning (CMAP) retained the services of Gorrondona and Associates, Inc. (G&AI) to implement a pavement management system for the Village of Calumet Park that will enable the Village to manage its roadway network in a more proactive, cost-effective, and sustainable way. To accomplish this objective, G&AI: 1) assessed the condition of the Village's roadways, 2) implemented and customized a pavement management system for the Village, and 3) developed near- and long-term pavement maintenance and rehabilitation (M&R) recommendations for the Village's roadways.

During June of 2019, G&AI's state-of-the-art PathRunner pavement condition data collection system (shown in Figure 1) was deployed to capture continuous, high-resolution pavement cracking, rutting, and roughness data of the Village's roads. Collected data were entered into the PAVER Pavement Management System (PAVER), and baseline pavement condition scores were determined for each roadway.

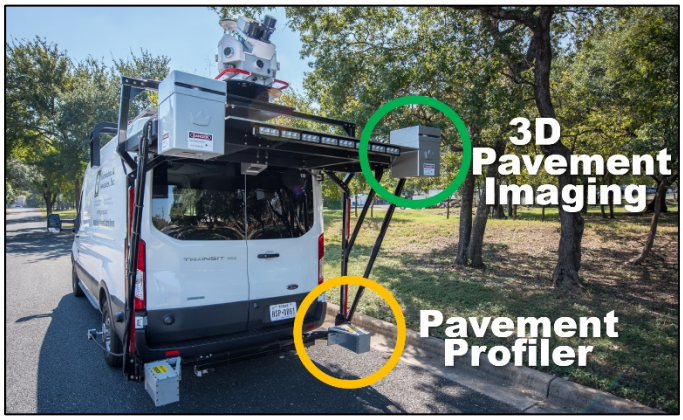


Figure 1. PathRunner pavement condition data collection system.

In September of 2019, preliminary results of the condition survey were presented to the Village. G&AI has since worked with the Village to collect additional pavement M&R records and M&R unit cost data with which to calibrate the PAVER system so that it is specific to the Village.

The collected pavement condition data along with both the historical M&R data and unit prices provided by the Village were used to develop network-level M&R recommendations presented herein for the Village's consideration.

1.2 The PAVER Pavement Management System

PAVER stores two primary "measures" of pavement condition. The most obvious measure of pavement condition is the **International Roughness Index (IRI)**, which describes the rideability (i.e., smoothness) of the roadway as experienced by the driver.

The second measure of pavement condition is the **Pavement Condition Index (PCI)**, which provides an indication of both the structural integrity and surface operational condition of the roadway. PAVER uses PCI values to determine the most cost-effective level of M&R likely needed. PAVER prioritizes funding for life-extending, lower-cost preventive maintenance activities (e.g., crack sealing, slurry seals, and localized patching) above more costly funding of last resort major M&R activities, such as resurfacing and reconstruction. This prioritization in the PAVER algorithm seeks a proactive and cost-effective approach to pavement management with the avoidance of – unless necessary – more costly reactive practices.

In addition to routinely collected IRI and PCI data, PAVER stores pavement inventory information, historical M&R records, and M&R unit cost data. The system uses this information to predict future

pavement conditions and identify network-level deterioration trends and M&R needs over time. It will also allow the Village to evaluate if present M&R methods are performing as expected.

1.3 Purpose and scope

The purpose of this project is to implement a comprehensive pavement management system for the Village's roadways. The scope of this project includes all roadways managed by the Village, which total approximately 16.6 centerline miles. This pavement management system will serve as a primary tool to assist the Village in more efficiently allocating its pavement M&R funding.

To this end, G&AI:

1. Developed an inventory of the Village's roadways in PAVER. The PAVER inventory contains pavement surface type, functional classification, M&R unit costs, and historical M&R data. *Note: Inventory development is a one-time effort that can be used by the Village if the PAVER system is retained, only requiring updates to address changes to the Village's roadway network and changes in M&R unit costs.*
2. Performed a pavement condition survey of the Village's roadways. This survey was used to determine PCI and IRI values for analysis purposes and will serve as an initial baseline of roadway conditions.
3. Used the condition survey with the developed PAVER inventory to determine the impact of different funding levels on the Village's roadways and identify potential network-level pavement M&R needs.

1.4 Results

Pavement Condition Index (PCI) and **International Roughness Index (IRI)** values were determined for each roadway. PCI values provide an indication of both the structural integrity and surface operational condition of a pavement. PCI values range from 0 (a failed pavement) to 100 (a pavement in excellent condition). Table 1 shows the categories chosen to represent the Village's PCI assessment criteria, which includes typical pavement distresses and levels of M&R needed within each category.

Table 1. Village's pavement condition categories.

Category	Typical Distresses and Typical Level of M&R Needed	PCI Range
Good	Longitudinal and transverse cracking and weathering of surface **Preventive maintenance:** *Crack sealing and surface treatments*	86-100
Satisfactory	More extensive longitudinal and transverse cracking and weathering of surface **Preventive maintenance:** *Crack sealing and surface treatments*	71-85
Fair	Extensive longitudinal and transverse cracking, early stage alligator (fatigue) cracking, early stage rutting, and weathering of surface **Global preventive maintenance and localized repairs:** *Localized surface and/or full-depth patching, surface treatments, and thin overlays*	56-70
Poor	More extensive and severe longitudinal and transverse cracking, alligator (fatigue) cracking, rutting, and weathering of surface **Major rehabilitation:** *Localized full-depth patching, mill and overlays, and traditional overlays*	41-55
Very Poor	More extensive and more severe longitudinal and transverse cracking, alligator (fatigue) cracking, rutting, weathering of surface, potholes **Major rehabilitation:** *Full-depth patching, mill and overlays, traditional overlays, and reconstruction*	26-40
Serious	Extensive and severe failure of pavement surface **Major rehabilitation:** *Reconstruction*	11-25
Failed	Complete failure of pavement surface **Major rehabilitation:** *Reconstruction*	0-10

At the time of G&AI's June 2019 inspection, the Village's pavements were found to have an average PCI of 54, indicating that the Village's roadways are in overall "poor" condition.

IRI values measure the roughness (vertical displacement over a fixed interval reported in inches per mile) of a roadway pavement:

- IRI values less than 200 inches/mile indicate "smooth" pavement.
- IRI values between 200 and 400 inches/mile indicate a "marginally rough" pavement.
- IRI values greater than 400 inches/mile indicate "rough" pavement.

The Village's roadways were found to have an average IRI value of 351 inches/mile, which indicates overall "marginally rough" pavement.

Maps 1 and 2, following this executive summary, show PCI and IRI categories for each roadway, respectively.

The causes of pavement deterioration as quantified by the PCI may be divided into three general categories:

- Vehicle load related.
- Climate/durability related.
- Other (construction defects and material issues).

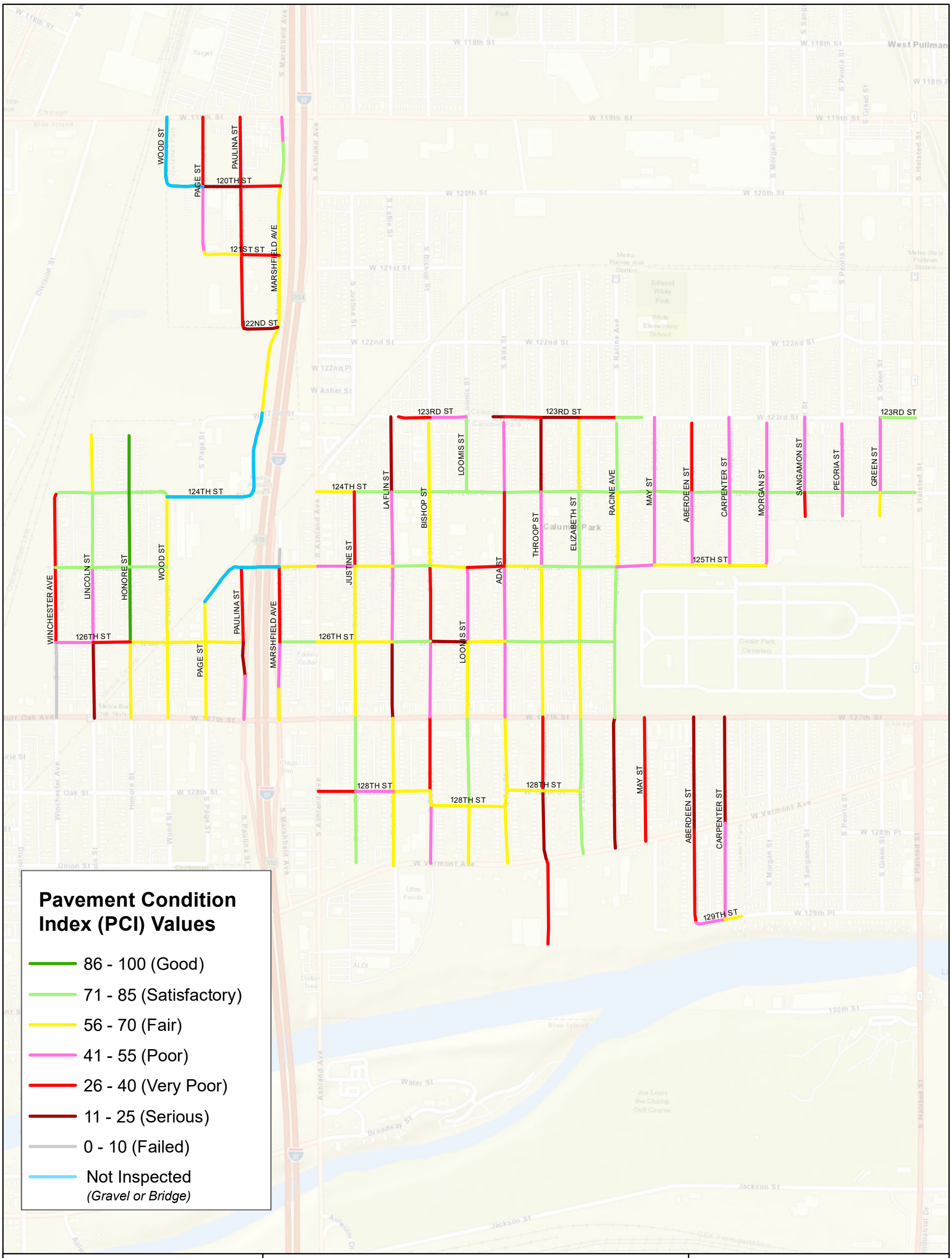
The deterioration observed on the Village's pavements at the time of inspection was caused by a mixture of vehicle load- and climate-related distresses. Vehicle load-related distresses, including alligator cracking and rutting, were pronounced on many of the Village's roadways and contributed most to lower PCI values. Significant climate-related distresses, including block cracking and weathering, were also observed on the Village's roadways.

1.5 Recommendations

For the Village to get the most return on their investment from the PAVER Pavement Management System, the system must be considered a living entity. The Village should:

1. Implement pavement preservation techniques to cost-effectively extend the life of its roadways.
2. Determine when resurfacing is no longer a cost-effective option and reconstruction is needed.
3. Annually update M&R activities performed on Village roadways in the PAVER database.
4. Annually update M&R unit costs (or whenever economic conditions cause changes in unit prices).
5. Commit future funding to the routine collection of pavement condition data (all roadways should be inspected on a two- to three-year cycle).
6. Use collected pavement condition data to assess the performance of the roadways and applied M&R activities.

With such attention, PAVER will become a repository of accurate, up-to-date data and the primary tool that the Village uses for more cost-effectively programming M&R funding.


WOOD ST
PAULINA ST
PAGE ST
120TH ST
121ST ST
MARSHFIELD AVE
122ND ST
123RD ST
124TH ST
LAFLIN ST
LOOMIS ST
BISHOP ST
JUSTINE ST
ADA ST
THROOP ST
ELIZABETH ST
RACINE AVE
MAY ST
ABERDEEN ST
CARPENTER ST
MORGAN ST
SANGAMON ST
PEORIA ST
GREEN ST
125TH ST
WINCHESTER AVE
LINCOLN ST
HONORE ST
126TH ST
127TH ST
128TH ST
129TH ST
Calumet Park
West Pullman
Pavement Condition Index (PCI) Values
86 - 100 (Good)
71 - 85 (Satisfactory)
56 - 70 (Fair)
41 - 55 (Poor)
26 - 40 (Very Poor)
11 - 25 (Serious)
0 - 10 (Failed)
Not Inspected
(Gravel or Bridge)
N
Feet
0
500
1,000
Map 1: Pavement Condition Index (PCI) Values
Village of Calumet Park, Illinois
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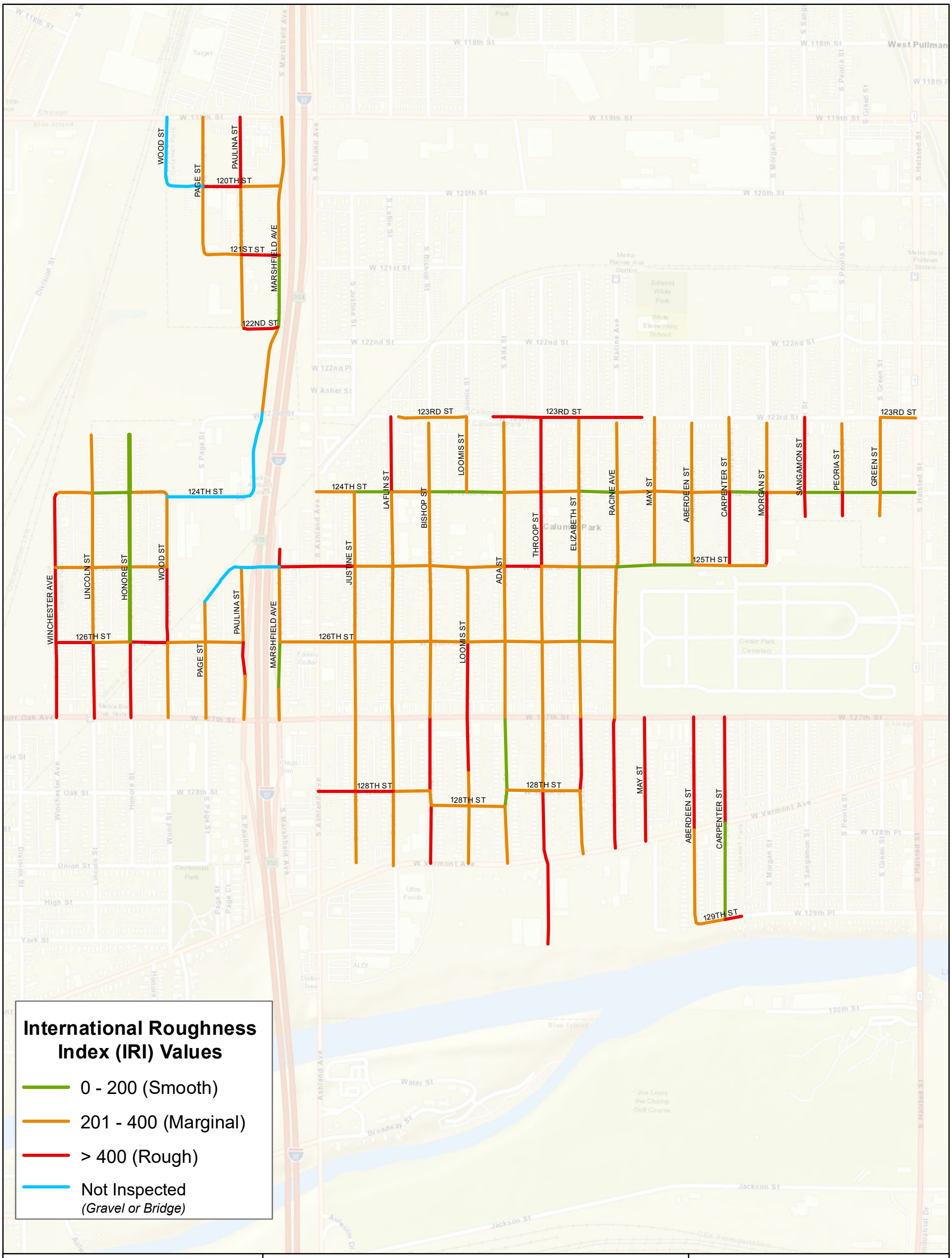

Map 2: International Roughness Index (IRI) Values

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2 INTRODUCTION

2.1 Foreword

This section of the report expands on the Executive Summary and provides the reader with information pertaining to the creation and implementation of this pavement management system for the Village.

At the core of a modern pavement management system is a geocentric database that contains pavement inventory and condition information. Combined with up-to-date M&R unit cost data, calibrated deterioration models, and owner-specific M&R practices, this information is used by analysis tools in the pavement management system to predict future pavement conditions, develop multi-year M&R plans, and forecast anticipated funding needs.

This section provides a conceptual overview of pavement management and follows with the benefits and costs of implementing a pavement management system. Implementation of the Village's pavement management system is detailed in Sections 3, 4 and 5. This section closes with an overview of effective preventive maintenance strategies that should be considered by the Village.

2.2 Background, scope, and objectives

In May of 2019, the Chicago Metropolitan Agency for Planning (CMAP) retained the services of Gorrondona and Associates, Inc. (G&AI) to assess the existing condition of the roadways maintained by the Village. The primary objectives of this project are to implement a comprehensive and Village-wide pavement management system, perform a network-level pavement condition survey, and identify future pavement M&R needs.

The project will provide the Village with a better understanding of the current condition of its roadways and network-level recommendations for future M&R based on the results of the pavement condition survey. Moving forward, the pavement management system will continue to serve as a repository for pavement condition data, historical M&R records, and pavement condition deterioration trends.

The PAVER Pavement Management System was implemented for the Village, and a state-of-the-art PathRunner pavement condition data collection system was deployed to capture continuous, high-resolution pavement cracking, rutting, and roughness data of the Village's roadways in June of 2019.

G&AI has since developed the PAVER inventory database and worked with the Village to collect additional pavement maintenance and rehabilitation (M&R) records and M&R unit cost data with which to calibrate the PAVER database so that it is Village specific. These M&R records and M&R unit costs, along with the collected pavement condition data, have been used to identify present network-level M&R needs.

2.3 Project tasks

To successfully accomplish the objectives of this project, G&AI performed the following tasks, which are covered in greater detail in Sections 3, 4, and 5 of this report, respectively:

1. Pavement management system implementation
   G&AI developed an inventory of the Village's roadway pavements and implemented PAVER.
2. Pavement condition survey
   G&AI performed a network-level pavement condition survey on the roadway pavements using a state-of-the-art pavement imaging and profiling data collection system. The pavement condition survey was performed in June of 2019.
3. M&R analyses
   G&AI reviewed the collected condition data and determined the impact of several funding scenarios on the Village's roadways and identified potential pavement M&R needs using PAVER.

The 3D pavement imaging and profiling technology used to assess the condition of the Village's roadway pavements is the most comprehensive and thorough available. This technology has evolved rapidly over the past several years, and it is now used across the United States by more than half of the state DOTs. Unlike the inherently subjective windshield pavement condition surveys of years past, high resolution cracking, rutting, and roughness condition data were captured continuously for each of the Village's roadways surveyed.

The collected data were then analyzed using a hybrid methodology that incorporates both automated crack detection and classification along with manual quality control. This approach yields a complete set of pavement condition data that may be used for both network-level (high-level budgeting) multi-year M&R planning as well as project-level (estimating M&R quantities) analyses. The collected data were then entered into and analyzed using the PAVER Pavement Management System. Continuously developed by the US Army Corps of Engineers, PAVER is a sophisticated, non-proprietary system widely used by municipal agencies across the United States and around the world.

2.4 Conceptual overview of pavement management

The use of a pavement management system is intended to provide municipal agencies with a systematic process for cost-effectively managing their pavement network, which may include roadways, parking lots, and alleys. The American Public Works Association (APWA) defines pavement management in the following way:

> *Pavement management is a systematic method for routinely collecting, storing, and retrieving the kind of decision-making information needed to make maximum use of limited maintenance (and construction) dollars.*

Combined with local knowledge and practical judgment, the recommendations from a pavement management system may be used to help make better pavement M&R decisions.

At the core of a pavement management system is the method for assessing pavement condition. The most widely used method for assessing pavement condition is the Pavement Condition Index (PCI), which is industry standard practice and defined in ASTM D6433. The PCI method outlines a process for more objectively assessing the condition of a pavement based on visual observations and measurements that take place during a field inspection. These observations and measurements are then distilled into a PCI

value that ranges between 0 and 100. A PCI value of 0 indicates a failed pavement, and a PCI value of 100 indicates a pavement in good condition.

PCI values help determine the level of M&R needed to cost-effectively maintain or rehabilitate the pavement. These values may also be used to prioritize roadway improvements for the purpose of developing strategic capital improvement programs. When a pavement is in good condition, preventive maintenance can be applied to extend the life of the pavement. However, once a pavement falls below critical condition, preventive maintenance may no longer be cost effective, and more significant and perhaps more costly rehabilitation strategies should be considered.

The "Critical PCI" value for a pavement is the PCI value below which cost-effective preventive maintenance is no longer a viable option, and more significant rehabilitation and sometimes reconstruction may be necessary. As shown in Figure 2, the primary objective of pavement management is to preserve pavements in good condition above the Critical PCI with less costly preventive M&R rather than allow them to deteriorate below the Critical PCI, resulting in the need for more costly major M&R (rehabilitation or reconstruction).

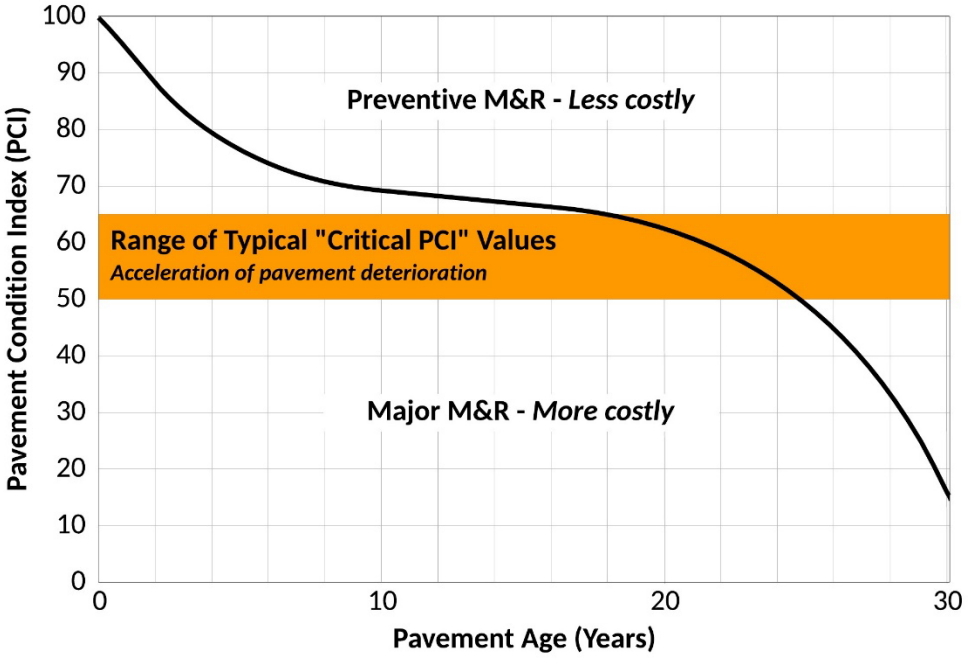


Figure 2. Example of the correct timing of preventive and major M&R relative to the Critical PCI.

The Critical PCI value is determined based on the repeated measurement of pavement condition over time as well as agency-specific M&R policies. Critical PCI values typically range between 50 and 65 (as shown in Figure 2) because the acceleration of pavement deterioration, and subsequent need for more costly M&R, typically occurs then. Setting a higher Critical PCI value simply results in pavements being recommended for major M&R earlier. Some agencies set higher Critical PCI values for their arterial roadways than for their local roadways to ensure that the roadways most heavily traveled (and often at higher speeds) are maintained to a higher standard.

The PAVER system default Critical PCI value of 55 has been used for the Village's roadways. The Village may change this value as more condition data and historical M&R data are captured and the

deterioration rates of the Village's roadways are better understood. Typically, two to three PCI inspections are needed to converge on acceptable Critical PCI values. The Village may choose to set Critical PCI values for each functional classification of roadway based on desired policy goals.

When the appropriate preventive maintenance treatments (e.g., crack sealing, seal coats, and patching) are undertaken at the correct times during a pavement's service life, these relatively inexpensive preventive M&R treatments can extend the service life of the pavement, as shown in Figure 3.

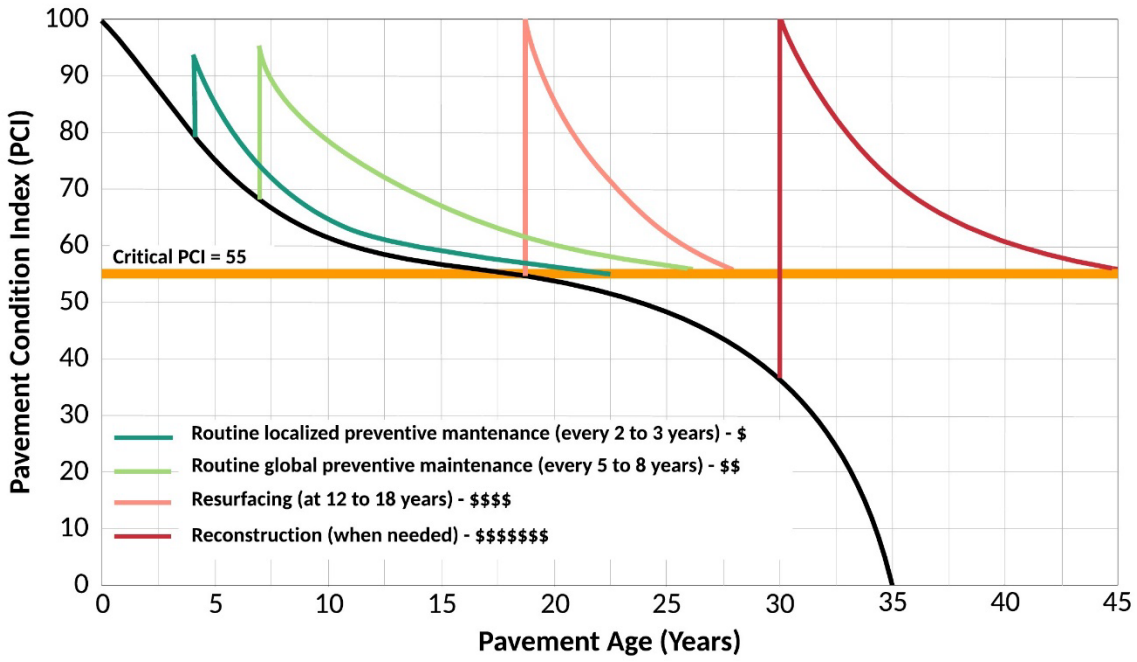


Figure 3. Example of the increasing prices and decreasing benefits of M&R.

It is important to note that the IRI, which provides a useful measure of pavement smoothness, does not correlate well to the level of M&R needed to correct smoothness issues. Consequently, IRI values are not considered when forecasting future M&R needs. Instead, IRI values are used in pavement management systems to identify pavements requiring a special inspection, or they may be used in conjunction with PCI values when prioritizing M&R projects.

As pavement management concepts have gained traction, computer-based pavement management systems have been developed to assist agencies in more optimally managing their pavements. Pavement management systems currently rely on a detailed pavement inventory, routine pavement condition assessments, pavement performance modeling, and sophisticated analysis tools that can forecast future pavement condition and estimate future M&R needs and costs.

2.5 Benefits and costs of implementing a pavement management system

Pavement management systems provide:

- A centralized location for storing pavement condition and inventory data, including construction, maintenance, and rehabilitation records.
- Decision-making support tools for:
  - ✓ Evaluating maintenance and rehabilitation alternatives.
  - ✓ Analyzing the consequences of alternative funding levels on pavement conditions.

  - ✓ Improved scheduling and coordination of pavement M&R projects and other infrastructure projects.
- Analysis tools for evaluating the effectiveness of historical methods of rehabilitation.
- Reporting tools for distilling complex data and justifying funding needs to elected officials.

The benefits of implementing and maintaining a pavement management system improve over time as more data are entered into the system. The costs associated with maintaining a pavement management system include:

- Pavement inventory data collection and routine updates (typically performed annually following the end of the paving season).
- Routine pavement condition data collection (arterials and collectors are typically surveyed every other year and local roadways are surveyed on a three-year cycle).
- Evaluating pavement performance and developing M&R plans (typically performed annually following the end of the paving season – or following a condition survey – to determine candidate roadways for the next paving season).
- Software acquisition, installation, system maintenance, and updates.
- Staff training, as needed.

To ensure the success of a pavement management system, agencies should develop a plan for staffing, maintaining, and funding the system appropriately.

2.6 Incorporating pavement preservation strategies

The implementation of a pavement management system has the added benefit of assisting agencies in determining which pavements may be candidates for preventive maintenance. The use of preventive maintenance early in the life of a pavement, before any significant deterioration, has been demonstrated to be a cost-effective way to extend a pavement's service life.

In the Federal Highway Administration (FHWA) publication, Pavement Preservation, A Road Map to the Future, preventive maintenance is defined as:

> *"…the planned strategy of cost-effective treatments to an existing roadway system and its appurtenances that preserves the system, retards future deterioration, and maintains or improves the functional condition of the system (without significantly increasing the structural capacity)."*

The FHWA adds that preventive maintenance:

> *"…is typically applied to pavements in good condition having significant remaining service life. As a major component of pavement preservation, preventive maintenance is a strategy of extending the service life by applying cost-effective treatments to the surface or near-surface of structurally sound pavements."*

The following preventive maintenance treatments have been demonstrated to be effective when applied at the right time during a pavement's service life:

- Crack sealing, crack filling, and joint sealing of flexible and rigid pavements
- Patching and edge repairs
- Chip seals, fog seals, and slurry seals
- Micro-surfacing
- Thin "functional" and "maintenance" overlay projects

Too frequently these activities are incorrectly applied as "stop-gap" or "cosmetic" treatments for pavements in poor condition rather than as true preservation activities. Preventive maintenance strategies should be applied to pavements that are in relatively good condition, and the activities should be planned and applied systematically following either the resurfacing or reconstruction of a pavement. The following FHWA website provides additional information for pavement preservation: https://www.fhwa.dot.gov/pavement/preservation/.

2.7 Summary

This section provided the reader with background information pertaining to the creation and implementation of the non-proprietary PAVER Pavement Management System for the Village. The section provided a conceptual overview of pavement management and discussed:

1. The benefits the Village will see from the implementation of the pavement management system.
2. The costs expected to be incurred with the maintenance of the system.
3. The additional functionality beyond the obvious support the system can provide by objectively assisting the Village in optimizing the allocation of its M&R funding.

Implementation of the Village's pavement management system is detailed in Sections 3, 4, and 5. This section closed with an overview of effective preventive maintenance strategies that should be considered by the Village moving forward.

3 PAVEMENT MANAGEMENT SYSTEM IMPLEMENTATION

3.1 Foreword

This section discusses the first task of this project: Implementing a pavement management system. One of the CMAP's primary desires was to have a non-proprietary pavement management system for participating agencies. This section provides an overview of the PAVER Pavement Management System, a brief description of the modules available to the Village in PAVER, and insight into the PAVER database development. *(Note: The information presented in the section may be supplemented by the PAVER User Manual, which is available as a navigable PDF file in the PAVER software.)*

3.2 Objective

The objective of this task was to implement a pavement management system for the Village's roadway pavements. G&AI implemented the PAVER Pavement Management System, which is developed and continually updated by the US Army Corps of Engineers. This task required developing an inventory of the Village's roadway pavements and collecting current pavement condition data and entering it in PAVER.

3.3 PAVER Pavement Management System overview

The PAVER pavement management system assists agencies in determining when, where, and what level of pavement M&R is required and approximately how much it will cost. The system provides a suite of pavement management tools, or "modules", that will help the Village with the following tasks:

- Developing and organizing their pavement inventory.
- Assessing the current condition of their pavements.
- Developing models to predict future pavement conditions.
- Reporting on past and future pavement performance.
- Developing scenarios for M&R based on either funding or pavement condition goals.
- Planning M&R projects.

PAVER modules include:

- Inventory
- M&R history
- Inspection
- Prediction modeling
- Condition analysis
- M&R planning
- Project planning
- Reporting

A brief description of these modules is presented in the following sub-sections. The PAVER software and licenses were purchased for the Village from Colorado State University (CSU) and should be renewed annually. Current pricing for PAVER may be found at: www.paver.colostate.edu.

3.3.1 Inventory and maintenance and rehabilitation (M&R) history modules

The PAVER **Inventory** and **M&R History** modules, shown in Figure 4 and Figure 5, are based on a hierarchical structure composed of networks (groups of roadways managed with one source of funding), branches (specific roadways), and sections. Sections are the smallest area for which conditions are reported and M&R activities recommended. Sections typically conform to existing GIS segmentation and are commonly defined from intersection to intersection by default.

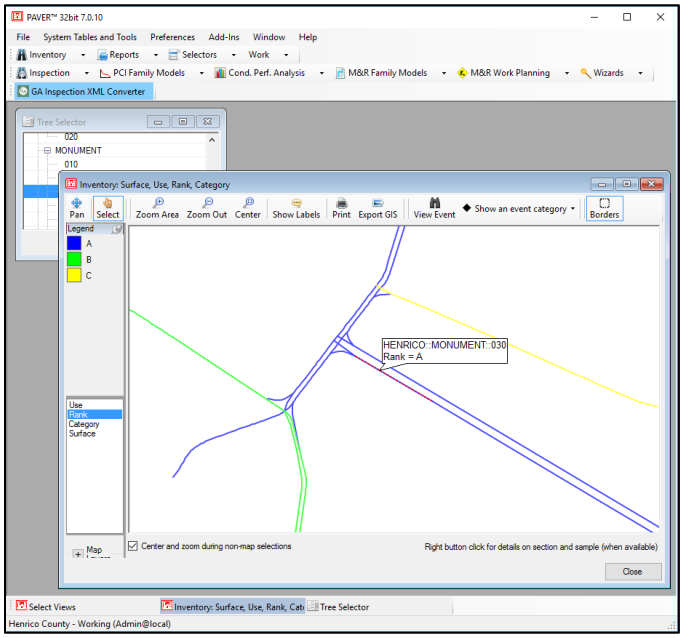


Figure 4. Example roadway functional classifications (ranks) stored in the Inventory module.

One network is defined for the Village and each roadway is a branch. Pavement sections are defined within each branch following the Village's existing GIS segmentation in the Illinois Roadway Information System (IRIS). This structure allows the Village to easily organize their inventory and historical M&R data and provides a simple and efficient way for rolling-up data to higher levels of the pavement hierarchy. The Village provided G&AI with historical M&R records, and this information was entered in PAVER.

3.3.2 Inspection module

PAVER uses the PCI as the primary measure of pavement condition. The **Inspection** module, shown in Figure 6, enables agencies to store raw pavement condition survey data and then calculate PCI values. IRI values are also stored in the **Inspection** module.

3.3.3 Prediction modeling module

The **Prediction Modeling** module in PAVER enables the user to group pavements of similar construction that are subjected to similar traffic, weather, and any other factors affecting pavement performance into "families." Historical pavement condition data are used to build models that can be used to predict future pavement performance. The **Prediction Modeling** module is a hands-on module and prediction models should be

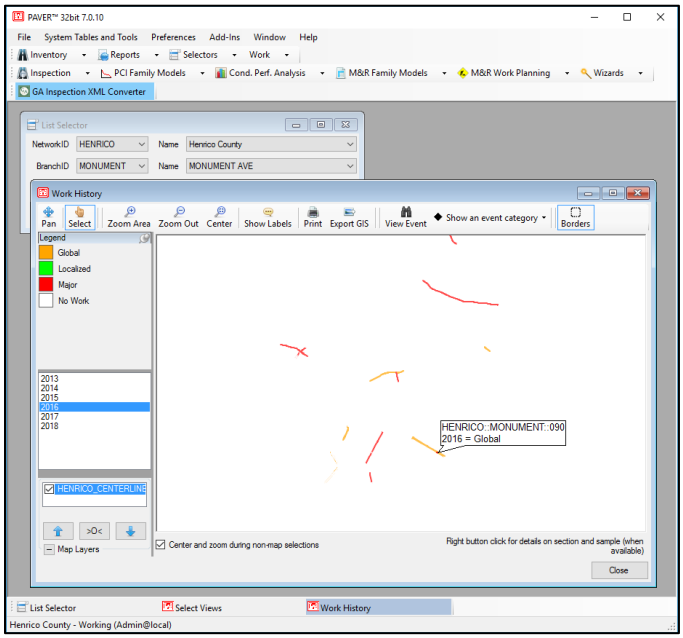


Figure 5. Example historical M&R records stored in the M&R History module.

updated by the Village following each condition survey. If historical pavement condition data are not available, PAVER provides default pavement prediction curves (shown in Figure 7) and allows the user to develop site specific prediction models.

3.3.4 Condition analysis module

The **Condition Analysis** module allows the Village to view the condition of the entire pavement network or any subset of the network over time. The module reports past conditions based on interpolated values between historical condition data, and it reports projected conditions based on the application of prediction models developed using the **Prediction Modeling** module.

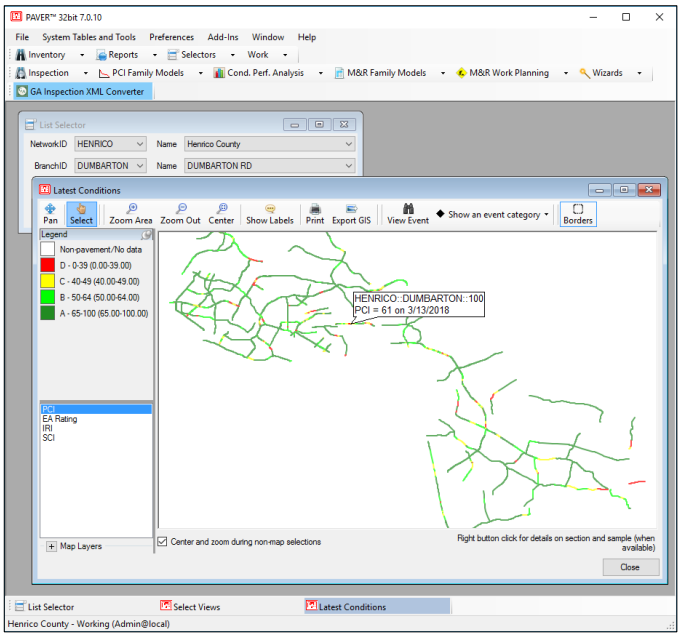


Figure 6. Example PCI values in the Inspection module.

3.3.5 M&R planning module

The **M&R Planning** module can determine the consequence of a predetermined funding level on pavement conditions and estimate the resulting backlog of major work. This information assists in determining funding requirements to meet specific Village pavement condition goals. These capabilities will enable the Village to develop more optimal M&R programs based on available resources and to justify M&R needs.

3.3.6 Reporting module

Each previously described module of PAVER can generate various reports that will assist the Village in analyzing, interpreting, and presenting pavement data. In addition to module-specific reports, PAVER also comes equipped with several "canned" reports, which include:

- GIS reports – *Internal/external reporting of inventory and condition data*
- Summary Charts – *Simple graphs and data tables of inventory and inspection data*
- Inspection Reports – *Summary of collected pavement condition data*
- Work History – *Summary of historical maintenance, repair, and rehabilitation data*
- Branch Listing – *Summary of overall pavement inventory data*
- Branch Condition – *Summary of overall pavement condition data*
- Section Condition – *Summary of individual section data*

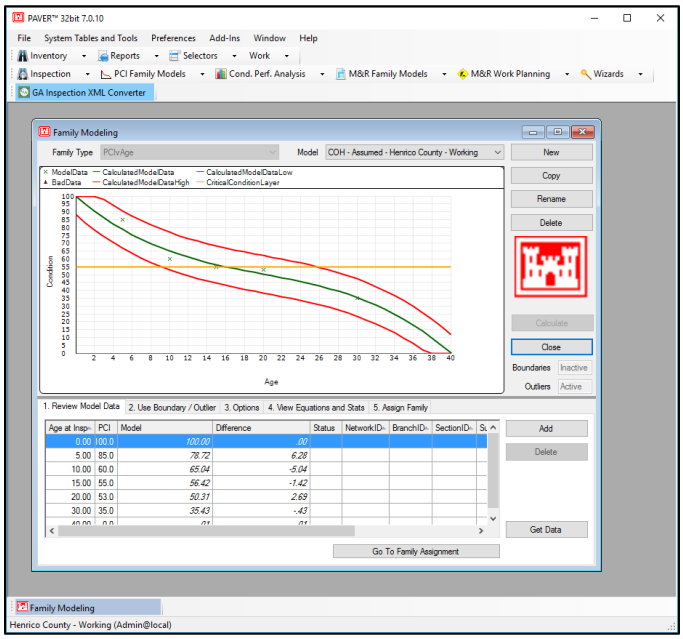


Figure 7. Example deterioration trend developed using the Prediction Modeling module.

PAVER can generate on-the-fly "user-defined" reports, which can be tailored to meet the Village's specific reporting needs. PAVER's user-defined reporting capability enables the user to extract any data stored in the system and export it to a GIS shapefile, spreadsheet, or text file.

3.4 Summary

This section discussed the first task of this project: Implementing a pavement management system. This section provided an overview of the non-proprietary PAVER Pavement Management System, a brief description of the modules available to the Village in PAVER, and insight into the PAVER database development. The Village's PAVER database has been developed to include specific and relevant data pertaining to the Village's roadway pavement network. PAVER's suite of analysis and planning tools will enable the Village to more effectively manage its roadway pavement network.

4 PAVEMENT INVENTORY

4.1 Foreword

This section describes the Village's roadway pavement inventory as it exists in the PAVER Pavement Management System. The data sources used in developing the inventory are discussed in this section, and summary data are presented.

4.2 Objective

The objective of this task was to develop a comprehensive inventory of the Village's roadway pavements for inclusion in PAVER. The roadway pavement inventory provides the underlying data on which analysis and reporting is performed with PAVER. In addition, the inventory provides the framework in which all routinely collected pavement condition data and historical work data are stored.

Moving forward, the Village should update the pavement inventory in PAVER to reflect the addition, realignment, widening, and/or removal of roadways managed by the Village. Typically, these types of changes are infrequent and may be done annually or prior to performing any analysis or reporting tasks with PAVER.

4.3 PAVER inventory development

The Village's PAVER inventory was based on the IRIS GIS provided by CMAP. Relevant pavement data available in the IRIS GIS were supplemented with aerial imagery and field observations and entered in the Village's PAVER database. These data included: number of lanes, pavement surface type, approximate roadway width, and from/to intersections for each pavement section.

Roadways were also assigned "ranks" (i.e., priorities) of primary (P), secondary (S), and tertiary (T). Federal aid eligible roads were assigned the rank of primary, since these tend to be the more heavily trafficked roadways. Residential roads were assigned the rank of secondary, and unpaved roadways and roadways in industrial zones were assigned the rank of tertiary.

A shapefile generated from the Village's GIS was linked to the PAVER database. This enables the Village to conveniently navigate the roadways within PAVER and generate a variety of map-based inventory and condition reports in PAVER. Historical M&R records provided by the Village were entered in the PAVER database as well as unit cost data.

4.4 Inventory summary

The Village's roadway network consists of approximately 16.6 centerline miles of predominantly asphalt surfaced, two-lane roadways. Table 2 shows the distribution of the Village's roadway network in mileage and area by pavement rank, and Table 3 shows the distribution by pavement surface type.

Table 2. Roadway summary data by pavement rank.

Rank	Centerline Miles	Lane Miles	Area (SY)
Primary, P	1.51	3.01	24,768
Secondary, S	14.56	29.27	243,379
Tertiary, T	0.54	1.09	7,420
Total	**16.61**	**33.37**	**275,567**

Table 3. Roadway summary data by pavement surface type.

Surface Type	Centerline Miles	Lane Miles	Area (SY)
Asphalt, AC	16.00	32.16	267,143
Concrete, PCC *(Bridge Decks)*	0.06	0.13	1,005
Gravel, GR	0.54	1.09	7,420
Total	**16.61**	**33.37**	**275,567**

Appendix A maps A-1 and A-2 present pavement rank and surface type data graphically.

5 PAVEMENT CONDITION INSPECTION

5.1 Foreword

This section discusses the second task of this project: Performing a comprehensive pavement condition survey of the Village's roadways. The condition survey included the collection of high-resolution pavement imagery and profile measurements using a state-of-the-art PathRunner pavement condition survey system. The collected data were analyzed and PCI and IRI values were calculated for each of the Village's roadways surveyed. This section describes the pavement condition survey system, the data collection methodology, how the collected data were analyzed, and a discussion of field observations. It concludes with several examples of pavement conditions from the Village's roadways.

5.2 Objective

The objective of the pavement condition survey is to assess the existing structural integrity and surface operational condition of the Village's roadways. The survey provides a comprehensive snapshot of pavement conditions at the time of data collection.

Moving forward, the Village should perform pavement condition surveys on a routine basis to objectively monitor pavement performance, determine near-term M&R needs, evaluate the effectiveness of M&R activities, develop pavement deterioration trends, and forecast near- and long-term pavement M&R needs.

5.3 Pavement condition data acquisition

G&AI deployed a state-of-the-art PathRunner pavement data collection system to capture high-resolution pavement imagery and surface data necessary to assess the condition of the Village's roadways. The PathRunner system is shown in Figure 8.

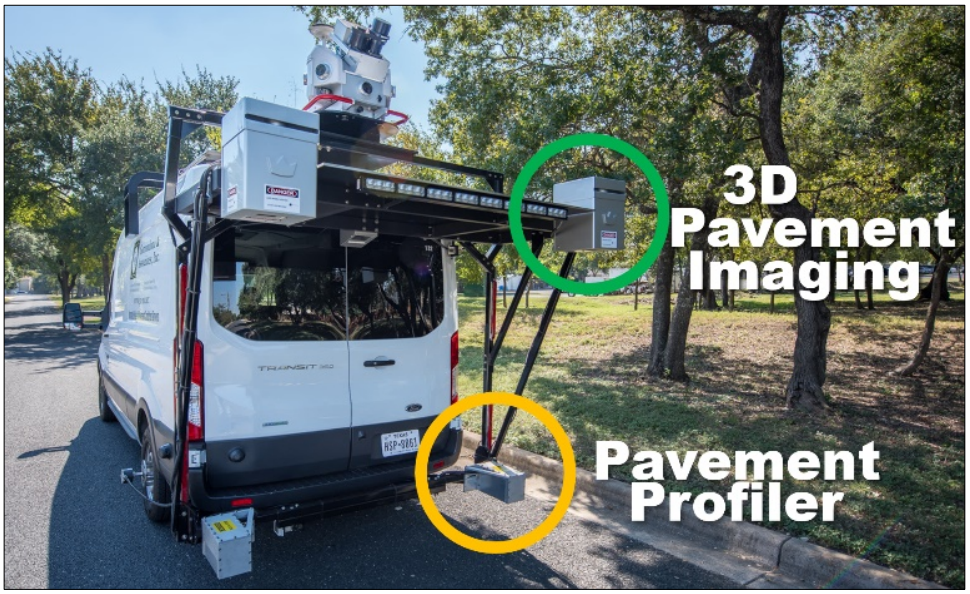


Figure 8. PathRunner pavement condition data collection system.

The PathRunner was driven on all roadways within the Village. By agreement with CMAP, only a single lane of two-lane roadways was collected and only the outmost lanes of four-lane and greater roadways were collected. Based on G&AI's experience, contiguous lanes are usually of similar character, and this

inspection approach was deemed to be cost effective for the Village while still providing sufficiently detailed information to assess existing pavement conditions. The PathRunner system continuously collected the following data for each roadway:

- High-resolution 2D and 3D pavement images for evaluating pavement distresses and determining Pavement Condition Index (PCI) values.
- Transverse profiles to measure rutting.
- Longitudinal profiles to calculate International Roughness Index (IRI) values.
- High-resolution, forward-facing, right-of-way images for manual review of all data.

These data were processed using automated tools verified by manual review to assess pavement conditions, and the results were entered in the Village’s PAVER database.

5.4 Pavement Condition Index (PCI) method

The pavement condition survey was performed following the PCI method. The PCI method is based on a set of definitions and procedures for measuring pavement distress types, severities, and quantities during a field inspection. This information is then distilled into a PCI value, which provides an indication of the structural integrity and surface operational condition (roughness) for a pavement section. The PCI method is widely used and provides a significantly more objective and repeatable method for assessing pavement condition than inherently subjective windshield surveys commonly used in the past.

The Village’s roadway network consists primarily of asphalt pavements with only a few concrete and gravel roadways. During a PCI inspection, several distress types are identified and evaluated for asphalt pavements, as shown in Table 4. The severity and quantity of each observed distress is recorded, and these data are then input into the PCI algorithm to calculate a PCI value, as shown in Figure 9.

Table 4. Asphalt and concrete pavement distress types.

Asphalt Pavement Distresses	
Distress	**Cause**
Alligator Cracking	Load
Bleeding	Other
Block Cracking	Climate/Durability
Bumps and Sags	Other
Corrugation	Other
Depression	Other
Edge Cracking	Load
Joint Reflection Cracking	Climate/Durability
Lane/Shoulder Drop-Off	Other
Longitudinal and Transverse Cracking	Climate/Durability
Patching and Utility Cut Patching	Other
Polished Aggregate	Other
Pothole	Load
Railroad Crossing	Other
Rutting	Load
Shoving	Other
Slippage Cracking	Other
Swell	Other
Raveling	Climate/Durability
Weathering	Climate/Durability

Concrete Pavement Distresses	
Distress	**Cause**
Blowup/Buckling	Climate/Durability
Corner Break	Load
Divided Slab	Load
Durability ("D") Cracking	Climate/Durability
Faulting	Other
Joint Seal Damage	Climate/Durability
Lane/Shoulder Drop-Off	Other
Linear Cracking	Load
Patching, Large and Utility Cuts	Other
Patching, Small	Other
Polished Aggregate	Other
Popouts	Other
Pumping	Other
Punchout	Load
Railroad Crossing	Other
Scaling, Map Cracking, and Crazing	Other
Shrinkage Cracks	Climate/Durability
Spalling, Corner	Climate/Durability
Spalling, Joint	Climate/Durability

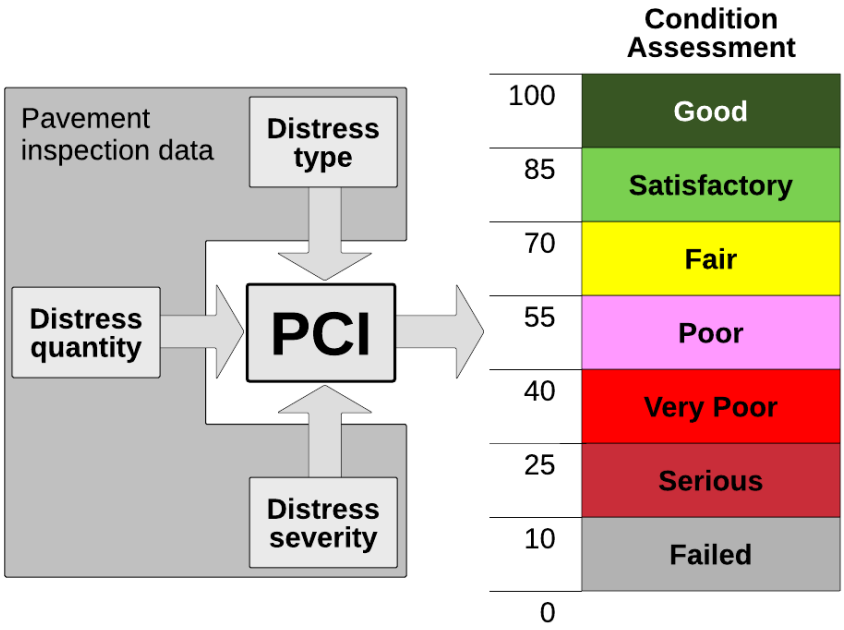


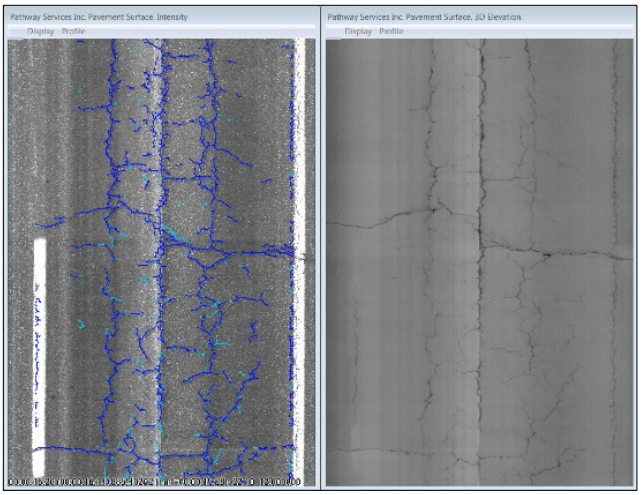
Figure 9. PCI inputs and the Village's assessment scale.

If properly designed and constructed, a new pavement begins its service life with a PCI of 100. Because of distress caused by vehicle loads, environmental factors, and aging, a pavement deteriorates over time. For each combination of distress type, severity level, and quantity observed during the inspection, points

are deducted from the initial value of 100, thereby decreasing the PCI. When multiple distresses are present, the "deduct values" are modified such that the impact of multiple distresses is not unnecessarily compounded. Due to the complexity of the PCI algorithm, PCI values are typically computed using a pavement management software package, such as PAVER. It is important to note that the PCI method does not directly measure the load carrying capacity or the rideability of a pavement. Structural testing combined with coring is needed to determine permissible pavement loadings.

5.5 Pavement Condition Index (PCI) data interpretation

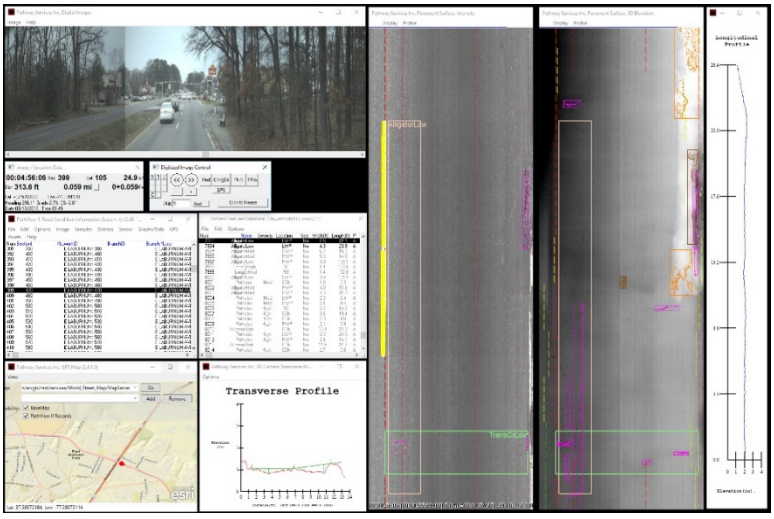
The PathRunner system captures 2D and 3D images of the roadway surface from which pavement surface distresses are evaluated. During the data collection effort, G&AI extracted pavement distress data from georeferenced digital images and rutting measurements from transverse profile measurement to determine PCI values. This process involves four distinct steps:



Steps 1 and 2: ***Initial Automated Crack Detection and Rutting Analyses***

1. **AutoCrack Software** – This software detects cracking in the pavement imagery.
2. **AutoClass Software** – This software classifies the type of cracking detected.
3. **Manual image rating** – G&AI's team of trained and experienced raters review the imagery and identify any distress types that the automated crack detection and classification software did not observe or incorrectly identified. Performing this manual image rating is considered the Quality Control (QC) review assuring detailed accuracy and completeness of the ratings.
4. **Quality Assurance (QA) rating** – An independent team of G&AI's raters and project engineers perform a systematic QA review of the rated data to ensure proper evaluation of the collected imagery prior to import into PAVER.

The QC and QA ratings are the most important steps in the project. G&AI uses the PathView software for evaluating distresses using both automated algorithms and manual supplemental rating. All QC/QA is performed by highly trained and experienced engineers and technicians using PathView. The same software system has been used for more than 25 state DOTs and several municipal agency pavement condition survey projects and is a well proven review tool.



Steps 3 and 4: ***Manual Rating and QC/QA of Pavements using PathView***

In addition to capturing 2D and 3D imagery from which pavement surface

distresses are evaluated, the PathRunner system also captures high-resolution longitudinal and transverse profiles of the roadway surface at 2mm intervals. The longitudinal profile data are analyzed to determine the IRI values, or the "roughness" of the roadway, and the transverse profiles are used to measure rutting.

5.6 Existing pavement conditions and field observations

The collected pavement survey data were used to calculate a PCI value for each pavement section in the Village. Table 5 shows the pavement condition assessment criteria used to analyze the pavement network.

Table 5. Village's pavement condition categories.

Category	Typical Distresses and Typical Level of M&R Needed	PCI Range
Good	Longitudinal and transverse cracking and weathering of surface **Preventive maintenance:** *Crack sealing and surface treatments*	86-100
Satisfactory	More extensive longitudinal and transverse cracking and weathering of surface **Preventive maintenance:** *Crack sealing and surface treatments*	71-85
Fair	Extensive longitudinal and transverse cracking, early stage alligator (fatigue) cracking, early stage rutting, and weathering of surface **Global preventive maintenance and localized repairs:** *Localized surface and/or full-depth patching, surface treatments, and thin overlays*	56-70
Poor	More extensive and severe longitudinal and transverse cracking, alligator (fatigue) cracking, rutting, and weathering of surface **Major rehabilitation:** *Localized full-depth patching, mill and overlays, and traditional overlays*	41-55
Very Poor	More extensive and more severe longitudinal and transverse cracking, alligator (fatigue) cracking, rutting, weathering of surface, potholes **Major rehabilitation:** *Full-depth patching, mill and overlays, traditional overlays, and reconstruction*	26-40
Serious	Extensive and severe failure of pavement surface **Major rehabilitation:** *Reconstruction*	11-25
Failed	Complete failure of pavement surface **Major rehabilitation:** *Reconstruction*	0-10

At the time of G&AI's June 2019 inspection, the Village's pavements were found be in overall "poor" condition and have an average PCI of 54. The condition distribution of the Village's pavements at the time of inspection is shown in Figure 10, and detailed condition maps can be found in Appendix A.

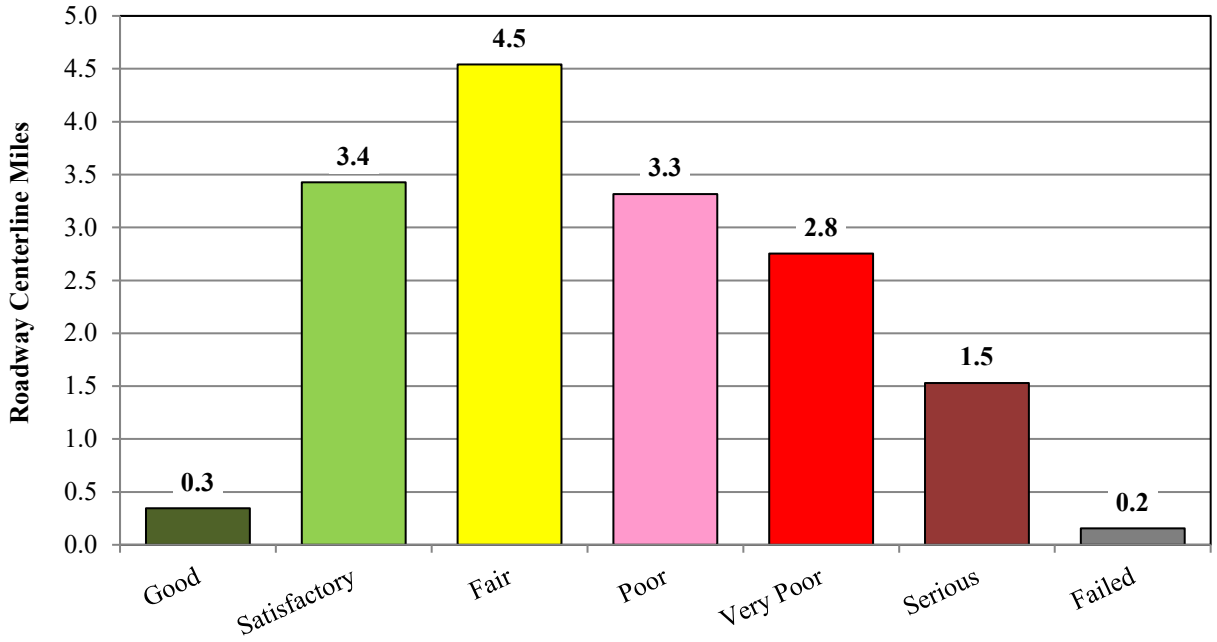


Figure 10. Village's roadway pavement condition distribution by PCI category.
(Note: Excludes gravel roadways.)

Pavement condition data summarized by pavement ranks and surface types are presented in the following two tables, respectively.

Table 6. Roadway summary condition data by pavement rank.

Rank	Centerline Miles	Lane Miles	Area (SY)	PCI	IRI
Primary, P	1.51	3.01	24,768	73	226
Secondary, S	14.56	29.27	243,379	52	363
Tertiary, T	0.54	1.09	7,420	--*	--*
Total	**16.61**	**33.37**	**275,567**	**54**	**351**

**Note: Tertiary roads were gravel and PCI values are not applicable. Concrete bridge decks were excluded.*

Table 7. Roadway summary condition data by pavement surface type.

Surface Type	Centerline Miles	Lane Miles	Area (SY)	PCI	IRI
Asphalt, AC	16.00	32.16	267,143	54	351
Concrete, PCC *(Bridge Decks)*	0.06	0.13	1,005	--*	--*
Gravel, GR	0.54	1.09	7,420	--*	--*
Total	**16.61**	**33.37**	**275,567**	**54**	**351**

**Note: PCI values are not applicable to gravel roads and concrete bridge decks.*

The causes of pavement deterioration as quantified by the PCI may be divided into three general categories:

- Vehicle load related.

- Climate/durability related.
- Other (construction defects and material issues).

Pavement deterioration and ultimate failure is a complex process that often involves a combination of several deterioration mechanisms working together. The deterioration observed on the Village's pavements was caused primarily by a mixture of load- and climate-related distresses. Vehicle load-related distresses, including alligator cracking and rutting, were pronounced on many of the Village's roadways and accounted for most of the distress negatively impacting overall roadway conditions. In addition, climate-related distresses, including longitudinal and transverse cracking and block cracking, were found across the Village's pavement inventory.

In practice, visually observed pavement distresses collected during a network-level condition survey are used to determine the likely mechanism(s) contributing to the deterioration of a roadway. However, prior to developing a specific M&R strategy, the root cause of pavement deterioration should be determined. Determining the root cause of pavement deterioration may be accomplished through an appropriate combination of traffic load analyses, drainage investigations, structural testing, coring, and material testing.

For example, vehicle load-related distresses such as alligator cracking may be addressed through load analyses and material testing. Contributing root causes may range from the roadway consistently exposed to loads in excess of its design loading to the pavement section having simply reached the end of its design life. Climate/durability-related distresses, such as transverse cracking, may result from a combination of freeze/thaw cycling and oxidation (embrittlement) of the asphalt layer. The cause(s) of "other" distresses may be determined through a combination of coring, boring, and material testing.

In addition to PCI values, IRI values were determined for each of the Village's roadways. IRI values, reported in inches per mile, describe the amount of roughness in both wheel paths over a given length of pavement. The IRI is a standard measure of roughness used worldwide. The Village's IRI assessment scale is shown in Table 8.

Table 8: Village's IRI assessment criteria.

Category	IRI Value
Smooth	0-200
Marginal	201-400
Rough	>401

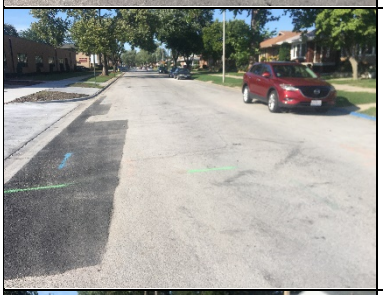
At the time of G&AI's June 2019 inspection, the Village's pavements were found to be in overall "marginally rough" condition, with an average IRI of 351 inches/mile. Detailed condition maps can be found in Appendix A.

It is worth noting that IRI and PCI values do not necessarily correlate with one another. A roadway can ride well yet still be structurally deficient and in need of major M&R, and vice versa. For example, asphalt-surfaced roadways supported by structurally adequate base (e.g., crushed rock) and subgrade (e.g., existing soil) layers may exhibit extensive cracking in the asphalt surface layer due to fatigue failure of the asphalt. In situations such as these, removal of the existing asphalt layer and replacement with a thicker layer may be enough to rehabilitate the pavement. Conversely, a roadway that rides poorly may be structurally adequate and may only require minimal rehabilitation. Poor construction practices may unfortunately lead to roughness being "built into" an otherwise structurally adequate roadway at the time

of construction. Roadways exhibiting this type of roughness may require grinding and/or an additional surface course to remedy the issue.

5.7 Example pavement conditions through the Village

Figure 11 illustrates a variety of pavement conditions observed throughout the Village during the June 2019 survey. The figure includes PCI and IRI values for each pavement section along with observed distress types and recommended M&R.

	Location + History	PCI *(IRI)*	Recommended M&R Activity (Typical)
	Loomis St. *North of W. 128th St.* *(Section 20)* *Last resurfacing date 2008*	84 *(294)*	Preventive maintenance *Seal joints between pavement and curb and gutter*
	W. 126th St. *East of S. Loomis St.* *(Section 110)* *Last resurfacing date unknown*	65 *(310)*	Preventive maintenance *Seal paving lane joint and joints between pavement and curb and gutter*
	Bishop St. *North of W. 125th St.* *(Section 60)* *Last resurfacing date unknown*	56 *(323)*	Preventive maintenance *Seal cracks, paving lane joint and joints between pavement and curb and gutter*
	Bishop St. *North of W. 126th St.* *(Section 50)* *Last resurfacing date unknown*	39 *(315)*	Major M&R *Localized structural patching + cold mill and overlay or reconstruction*

	Bishop St. *North of W. 128th St.* *(Section 30)* *Last resurfacing date unknown*	37 *(421)*	Major M&R *Localized structural patching + cold mill and overlay or reconstruction*
	123rd St. *Near S. Throop St.* *(Section 50)* *Last resurfacing date unknown*	17 *(713)*	Major M&R *Localized structural patching + cold mill and overlay or reconstruction*
	Winchester Ave. *South of 126th St.* *(Section 10)* *Last resurfacing date unknown*	10 *(458)*	Major M&R *Reconstruction*

Figure 11. Pavement conditions observed during PCI inspection.

A distress observed on some of the Village's pavements was unsealed paving lane seams (cracks), as shown in several of the photos above. If left unsealed, paving lane seams can deteriorate rapidly and significantly reduce the life of the pavement. By sealing paving lane seams immediately following paving and routinely resealing them, this type of deterioration may be minimized or prevented.

5.8 Summary

This section presented an overview of the methodology used to perform the 2019 pavement condition survey and the results of the survey. A state-of-the-art PathRunner pavement condition survey system was deployed to collect pavement imagery and profile data on the Village's roadways. The collected data were analyzed, and PCI values and IRI values were determined for each of the roadways surveyed. The Village's roadways were found to be in overall "poor" condition with an average PCI of 54. Furthermore, the Village's roadways were found to be in overall "marginally rough" condition, with an average IRI of 351 inches/mile.

6 MAINTENANCE AND REHABILITATION FUNDING ANALYSES

6.1 Foreword

This section discusses the third task of this project: M&R needs analyses. This section discusses the results of the analyses performed for the Village's consideration, assumptions which shaped the analyses, and results of the analyses. The recommendations of these analyses are provided in this section and in Appendixes A through D.

6.2 Objective

The M&R Planning module in PAVER provides *raw recommendations* of when and where pavement M&R activities are needed and approximately how much they will cost. The Village should use these raw recommendations to develop programmatic M&R plans for the Village's roadway network. These programmatic plans may be generated based on anticipated annual funding or with the goal of maintaining or achieving a desired pavement condition.

For the Village's roadways, two preliminary M&R analyses were performed:

- A series of **five-year analyses** was performed to determine the impact of several funding levels on overall roadway conditions. The analyses included:
    - Assessing the impact of the Village's existing funding level.
    - Determining the annual funding level needed to maintain the Village's existing overall average roadway condition.
    - Determining the annual funding level needed to modestly increase the Village's overall average roadway condition to 65.
    - Determining the annual funding level needed to eliminate the Village's major M&R backlog over a five-year period.
- A **one-year analysis** was performed to identify pavements that may benefit from preventive maintenance activities, such as crack sealing or localized patching. Only pavements with a PCI of 65 or better were considered in this analysis.

The purpose of these analyses is to determine the appropriate funding level needed to manage the Village's roadways and provide general recommendations that will assist the Village in developing and evolving its M&R program. Additional analyses may be performed to assess either the impact of anticipated funding levels or to determine the funding levels needed to achieve a desired overall, network-average condition.

6.3 Assumptions

The M&R analyses were based on the results of the June 2019 Pavement Condition Index (PCI) survey and the pavement inventory and historical work records provided by the Village and stored in the Village's PAVER database. The following assumptions were made in our analyses.

- Pavements considered candidates for preventive maintenance were determined based on their overall PCI values and the distresses observed on the pavement at the time of inspection. Pavements with PCI values of 65 or better were considered candidates for preventive maintenance.
- Recommended preventive maintenance policies for asphalt and concrete pavements are shown in Appendix D Tables D-1 and D-2, respectively. The policy tables show what type of repair activity should be applied to each distress type and severity combination. Table D-3

presents estimated unit costs for the maintenance activities recommended in tables D-1 and D-2.

- A pavement deterioration rate between three and five points per year was assumed based on the performance of the Village's resurfaced roads, which equates to a pavement life between resurfacings of nine and fifteen years. This deterioration rate will be refined as more historical work records are entered in PAVER and more PCI inspection data become available over time.
- A Critical PCI value (the PCI value below which a pavement is considered a candidate for major M&R) of 55 was assumed for all pavement sections. Pavements at or below the Critical PCI during the five-year analysis period triggered major M&R recommendations. *(Note: A PCI value of 55 has been initially chosen for all the Village's roadways as this numerical value straddles the "Fair" to "Poor" condition categories in the Village's PCI scale. Performing major M&R on pavements that are closer to a PCI of 55, rather than waiting for these pavements to deteriorate further is generally more cost effective.)*
- Unit costs used in these analyses were based on bid tabs provided by the Village and by costs reported by nearby villages.
    - ✓ Asphalt resurfacing ranged from approximately $1.50 to more than $5.00 a square foot depending on roadway condition (i.e., lower PCI values may result in more patching and thicker resurfacing). Reconstruction was set at $6.50 a square foot.
    - ✓ Concrete slab replacement costs ranged from $5.00 to $15.00 a square foot depending on roadway condition (i.e., lower PCI values result in more slab replacement). Reconstruction was set at $20.00 a square foot.
- All analyses began on the first of the year, and an inflation rate of 3% was assumed.

6.4 Results

The results of the PAVER M&R analyses are shown in the following two figures. Figure 12 illustrates the estimated five-year change in pavement condition resulting from the analyzed funding scenarios, and Figure 13 depicts the estimated change in the Village's major M&R backlog for each funding scenario.

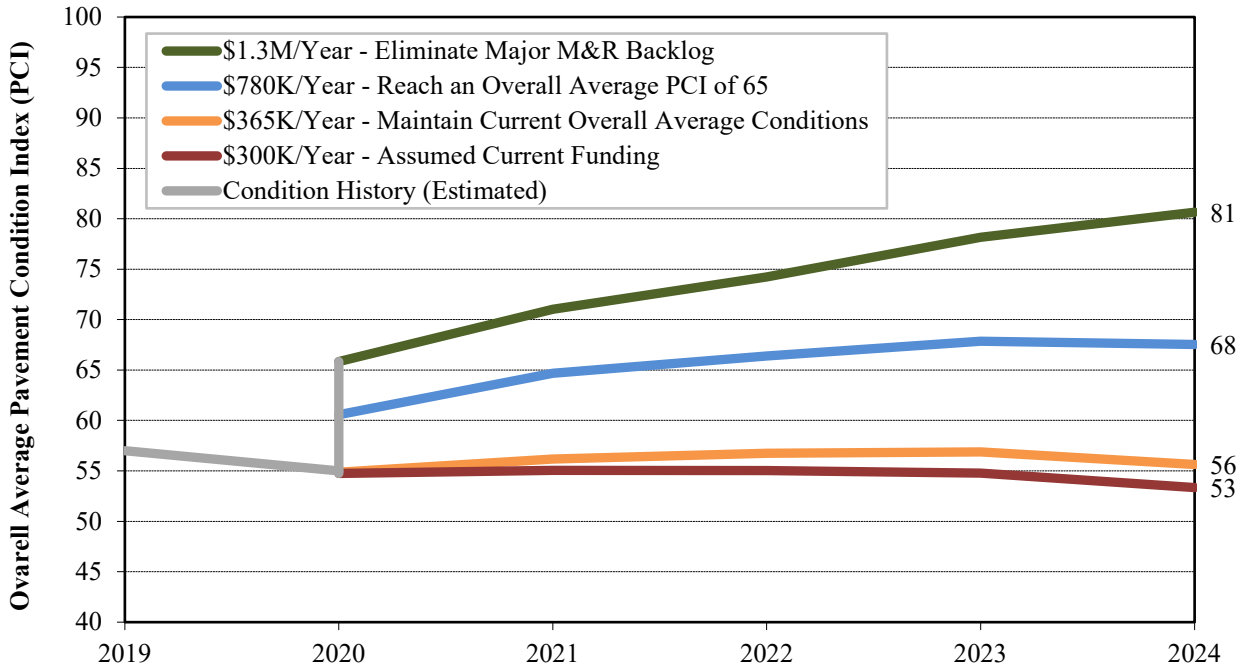


Figure 12: Impact of funding levels on overall pavement conditions by year.

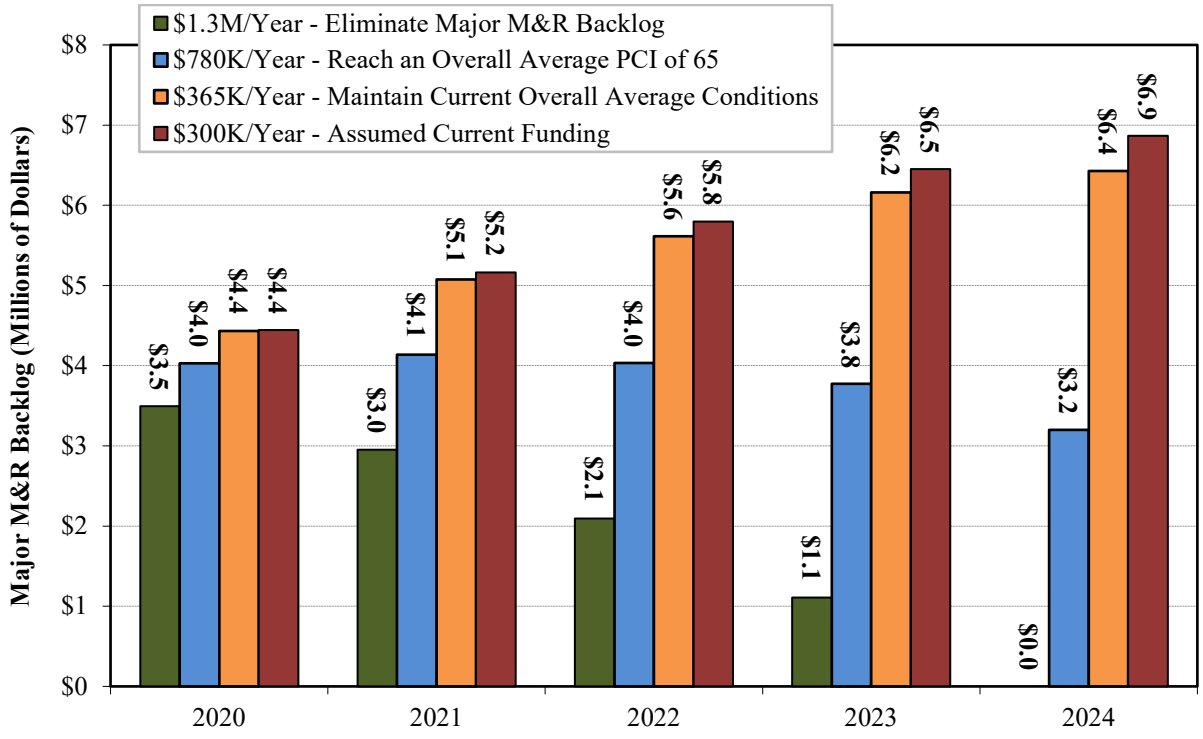


Figure 13: Impact of funding levels on major M&R backlog by year.

The consequences of the annual funding scenarios are shown in Table 9. This table illustrates the concept of "total cost." By treating both the total annual M&R expenditures and the remaining major M&R backlog at the end of the five-year period as costs to the Village, the benefit of increasing annual funding – which results in a smaller major M&R backlog – is clearly illustrated. Consequently, eliminating the major M&R backlog over a five-year period results in the lowest total cost to the Village.

Table 9. Estimated Five-year Pavement M&R Costs

Funding Scenario	Total Five-Year M&R Costs (2020-2024)	Remaining M&R Backlog[1)] (2024)	Total Five-year Cost[2)]	Projected PCI (2024)
$300K/YR (Assumed Current Funding)	$1.5M	$6.87M	$8.37M	53
Maintain Existing Overall Average Conditions ($365K/YR)	$1.83M	$6.43M	$8.26M	56
Increase Overall Average PCI to 65 ($780K/YR)	$3.9M	$3.2M	$7.1M	68
Backlog Elimination ($1.3M/YR)	$6.5M	$0M	$6.5M	81

1) "M&R Backlog" equals the lump-sum cost to resurface/reconstruct all pavements at or below their critical PCI value.
2) "Total five-year cost" equals the sum of the five-year major M&R expenditures plus the remaining major M&R backlog at the end of the five-year analysis period.

Appendix A maps A-5 and A-6 present major M&R recommendations. Map A-5 shows all roadways recommended for major M&R over the upcoming five years based on the Village's existing funding level. Map A-6 shows all roadways recommended for major M&R over the upcoming five years given an unlimited budget. The maps show which roadways are recommended each year by PAVER. These recommendations do not consider geographic proximity. Consequently, these recommendations should be grouped into practical projects during the Village's planning process.

Map A-7 shows all roads that are candidates for preventive maintenance, such as crack sealing and localized patching. While crack sealing can be an effective treatment for preserving roadways in good condition, its utility diminishes when applied to roadways that are already in poor condition or are exhibiting signs of structural failure.

Appendix B presents tabular data showing the estimated cost to repair each of the roads recommended for major M&R over the next five years based on the Village's existing funding level. Appendix C presents similar data assuming unlimited funding. *The costs presented in Appendixes B and C should be considered rough estimates only and should not be considered engineering estimates.* These costs are based on a simple relationship between predicted PCI value and typical level of major M&R. Unit costs used in developing these relationships were based on bid tabs provided by the Village and by costs reported by neighboring Villages.

Appendix E presents tabular data showing one-year estimated costs to apply preventive maintenance to each of the candidate roadways (i.e., roadways with PCI values of 65 or better). The total one-year preventive maintenance cost is estimated to be approximately $54,000, as shown in Table 10. *The estimated costs presented in Appendix E should be considered rough estimates based on the assumed unit costs only and should not be considered engineering estimates.*

Table 10. Preventive Maintenance Summary

Maintenance Type	Quantity	Units	Est. Cost
Crack Sealing - AC	36,871	FT	$36,871
Patching - AC Deep	1,489	SF	$16,378
Patching - AC Shallow	111	SF	$608
		Total:	**$53,857**

7 SUMMARY AND RECOMMENDATIONS

7.1 Summary

A pavement condition survey was performed in June 2019 on the Village's roadways. The results of the survey provide a snapshot of roadway conditions at the time of the survey. The PAVER Pavement Management System was implemented for the Village's roadways and was populated with collected pavement condition data and available M&R history data provided by the Village.

For the Village to get the most return on investment out of the PAVER Pavement Management System, the system must be considered a living entity and be updated regularly with M&R activities as they are performed, M&R unit cost data, and routinely collected pavement condition data. With such attention, PAVER becomes a repository of accurate, up-to-date data and can aid the Village in more cost-effectively programming M&R funding and objectively analyzing the true cost-effectiveness of presently employed M&R activities.

Five-year M&R funding analyses were performed on the Village's roadways using PAVER to: 1) evaluate the adequacy of the Village's existing funding level, 2) estimate the funding level needed to maintain the Village's existing roadway conditions, 3) estimate the funding level needed to modestly raise the overall condition of the Village's roadways, and 4) estimate the funding level needed to eliminate the Village's backlog of major M&R.

It was determined that the Village's existing funding level for major M&R is likely inadequate to maintain the current condition of the Village's roadway pavements. To maintain existing conditions, a slight increase in funding will likely be needed.

Based on this initial set of PCI data collection and analysis on the Village's roadways, G&AI respectfully offers the following broad recommendations.

7.2 Recommendations

7.2.1 Implement pavement preservation techniques

As discussed in Section 2.6, preventive maintenance activities, such as crack sealing, localized patching, and surface treatments, can cost-effectively extend the life of a pavement. The Village should incorporate these strategies into its M&R planning.

The Village does not appear to have an active crack sealing program for its roadways. Moisture penetrates unsealed cracks and compromises the base structure of the pavement. Freeze/thaw cycling exacerbates the damage. Sealing cracks on roadways that are in relatively good condition is a simple, cost-effective method for pavement preservation. Crack sealing is a preventive maintenance activity and should not be applied on roadways that require major M&R.

Furthermore, the Village should focus on applying routine preventive maintenance to newly resurfaced or reconstructed roadways. It was observed that some paving lane seams throughout the Village had not been sealed. Like crack sealing, sealing the paving lane seams is a simple method for pavement preservation, and it may be included in construction specifications.

7.2.2 Determine when pavements should be reconstructed rather than resurfaced

As the Village's asphalt-surfaced pavements age and are resurfaced multiple times, the performance of successive resurfacing projects will diminish. These "diminishing returns" occur because the sublayers of the pavement (the pavement structure below the asphalt surface) continue to deteriorate due to moisture infiltration, freeze-thaw damage, and damage due to vehicular loading. The M&R history and performance of resurfaced roadways should be closely tracked to determine the optimal number of resurfacing projects that may be performed prior to reconstructing the pavement.

7.2.3 Perform regular pavement condition inspections – every three years

To capitalize on the pavement condition survey and better track the condition of its pavements, the Village should continue to perform PCI surveys on a regular, three-year cycle. Doing so will enable the Village to:

1. Better track the deterioration of its pavements over time,
2. Identify pavement deterioration trends and use these trends to better predict future pavement conditions and then strategically apply M&R funding, and
3. Assess and track the effectiveness of its pavement preservation and major M&R activities.

The deterioration trends developed for this project were based on only one set of inspection data. Additional inspection data will help validate these trends and will improve forecasts, which may impact forecasted pavement conditions and recommended future M&R funding needs.

7.2.4 Routinely update the PAVER pavement management system

The PAVER system should be updated annually following the paving season to capture major M&R activities, routine maintenance activities, and pavement inventory changes (new roadways, jurisdictional changes, realignments). PAVER relies on updated inventory and work history data in order to generate meaningful recommendations.

7.2.5 Increase funding for pavement maintenance and rehabilitation

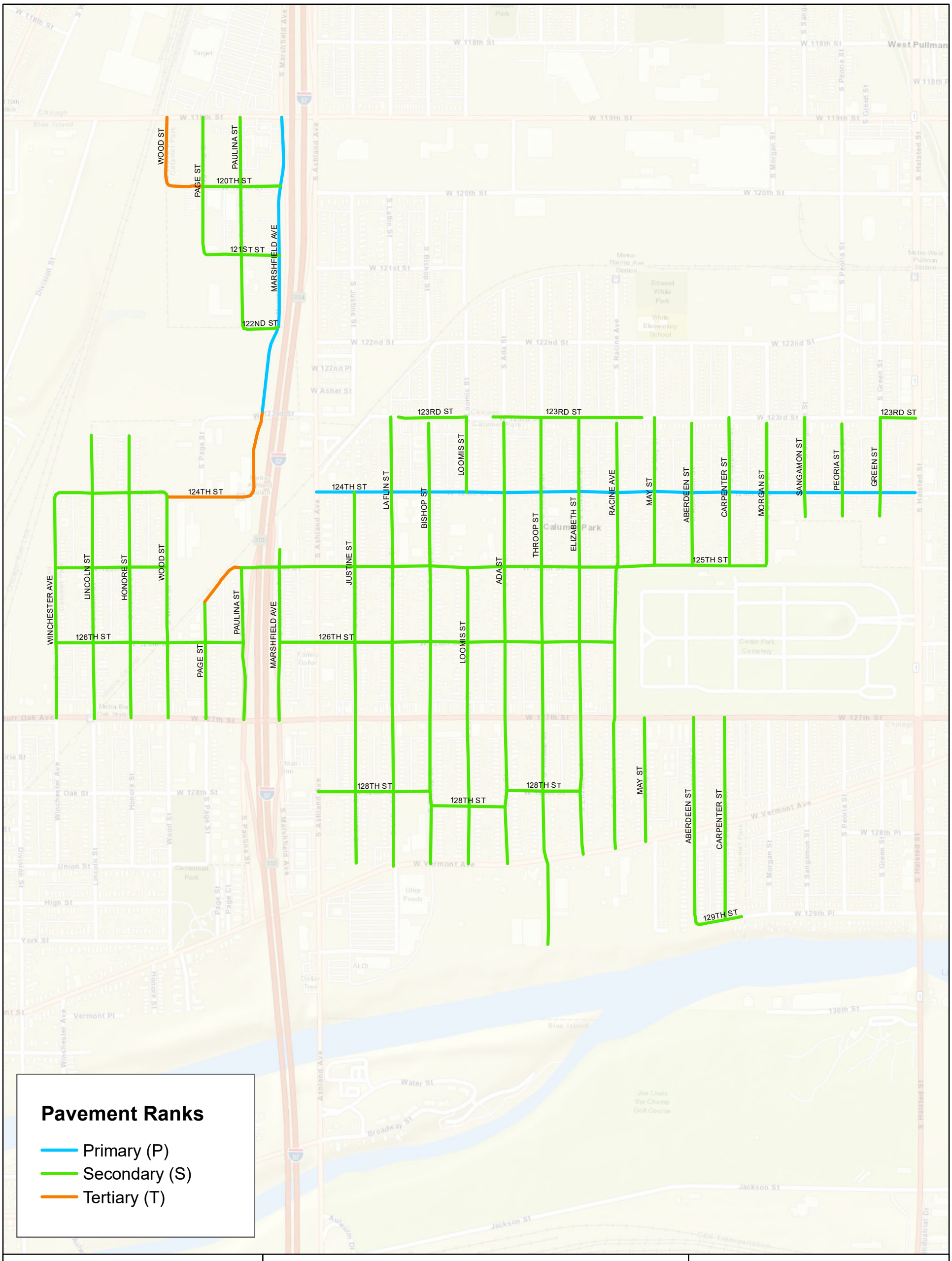
Based on the results of the pavement condition survey and forecasts of future pavement condition, the Village's current level of funding is likely inadequate to maintain the overall current condition of the Village's roadways. Managing a pavement network at an overall average PCI between 70 and 80 is more cost effective since funding is spent on less costly preventive maintenance and preservation activities rather than more expensive major M&R. As the Village moves forward, it is recommended that additional funding be allocated for M&R to improve the overall condition of the roadways so that they may be managed more cost-effectively.

7.2.6 Prioritize existing M&R funding to maximize shared benefit

Currently, the Village's roadway M&R funding needs exceed available funding. The Village should focus major M&R activities on its most trafficked roadways. Doing so will maximize the overall shared benefit of the funds spent.

APPENDIX A – PAVEMENT INVENTORY, CONDITION, AND RECOMMENDED M&R MAPS

Map A-1: Pavement Ranks
Map A-2: Pavement Surface Types
Map A-3: Pavement Condition Index (PCI) values
Map A-4: International Roughness Index (IRI) values
Map A-5: Five-year major M&R recommendations – *Recommendations assuming current funding*
Map A-6: Five-year major M&R recommendations – *Recommendations assuming unlimited funding*
Map A-7: Pavement preservation candidates – *Current recommendations*



Feet
0 500 1,000

Village of Calumet Park, Illinois

Pavement Management Program

Gorrondona & Associates, Inc.

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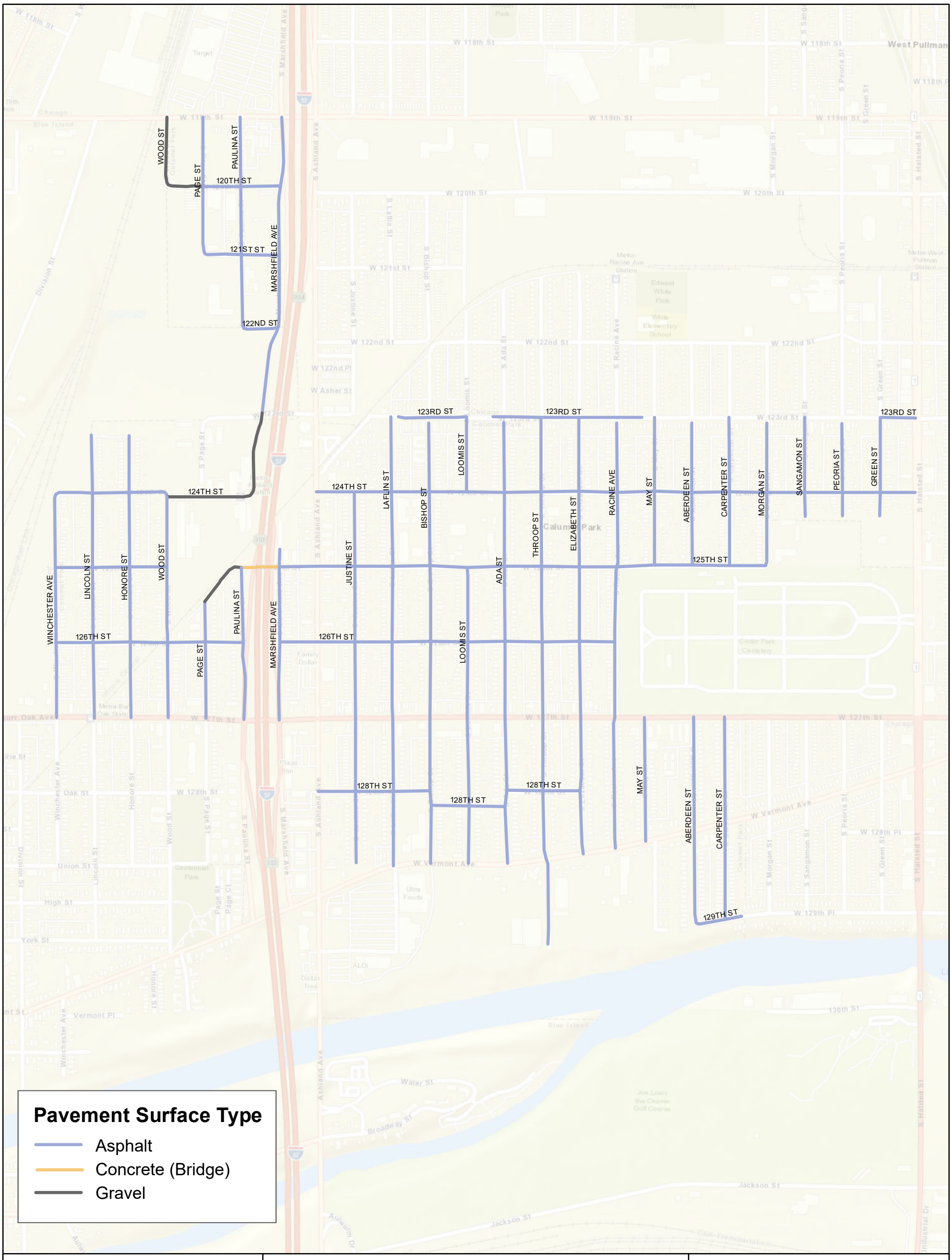
Map A-1:
Pavement Ranks



Village of Calumet Park, Illinois

Pavement Management Program

Map A-2:
Pavement Surface Types

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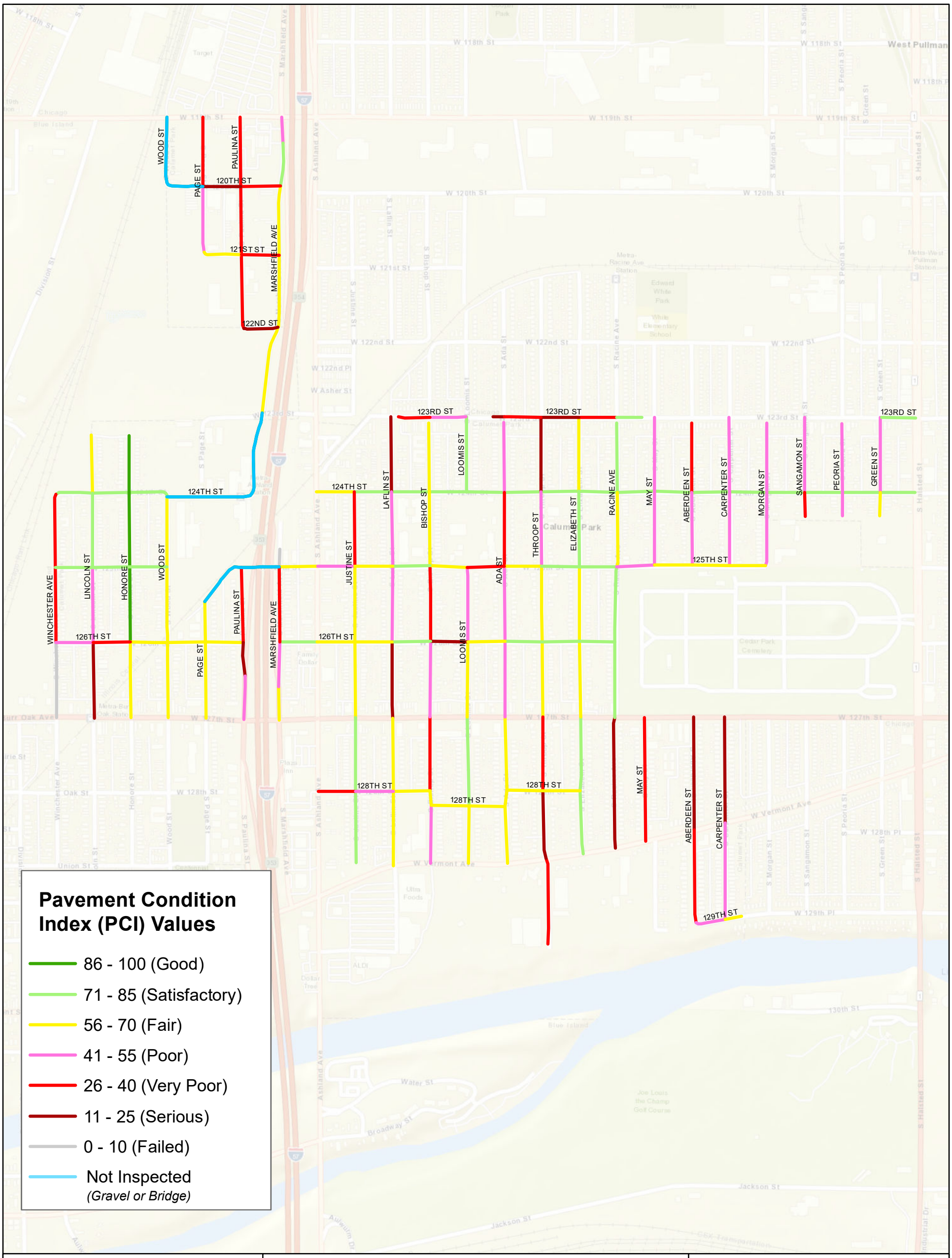

Village of Calumet Park, Illinois

Pavement Management Program

Map A-3:
Pavement Condition Index (PCI) Values

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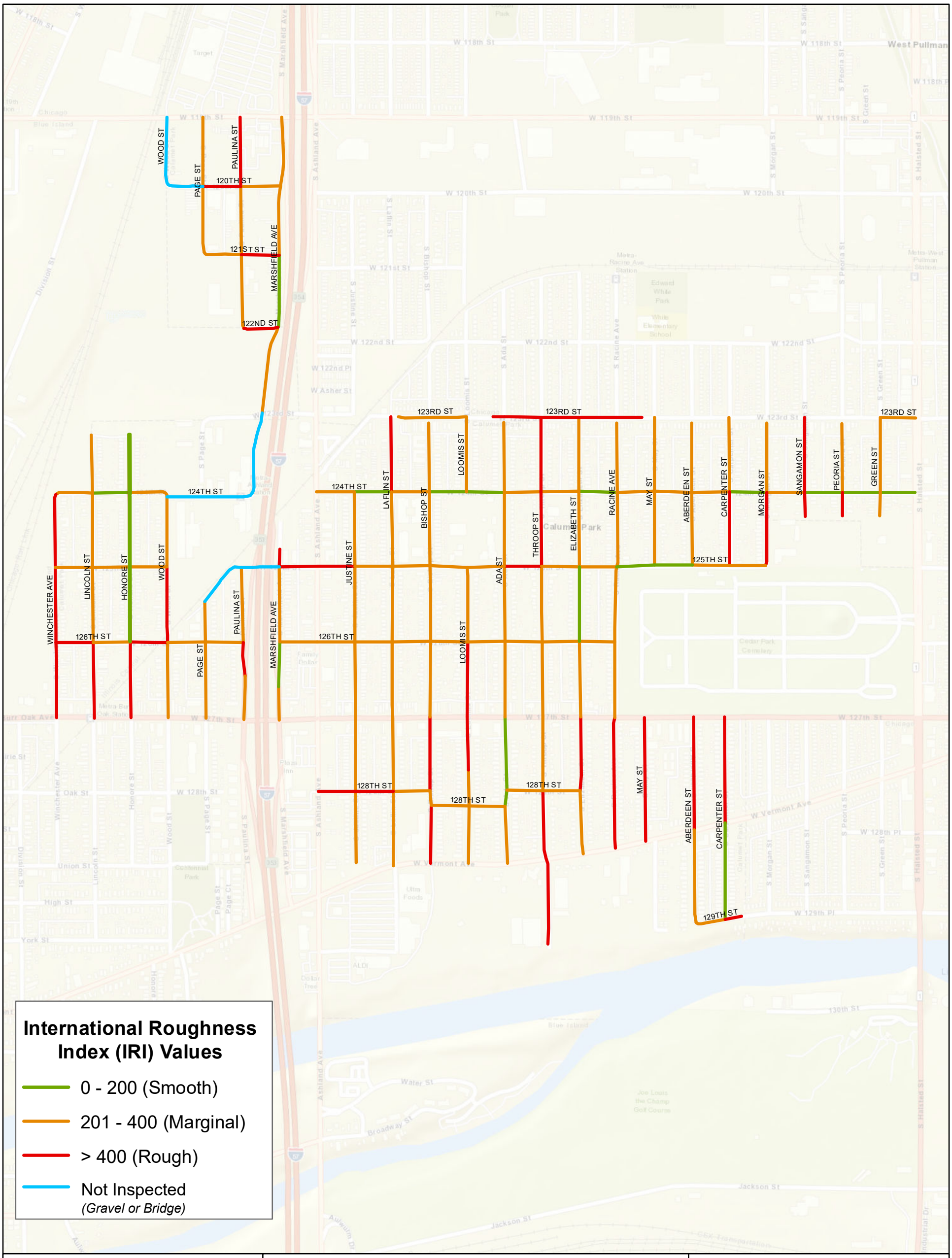

International Roughness Index (IRI) Values

- 0 - 200 (Smooth)
- 201 - 400 (Marginal)
- > 400 (Rough)
- Not Inspected *(Gravel or Bridge)*

N

Feet
0 500 1,000

Map A-4:
International Roughness Index (IRI) Values

Village of Calumet Park, Illinois

Pavement Management Program

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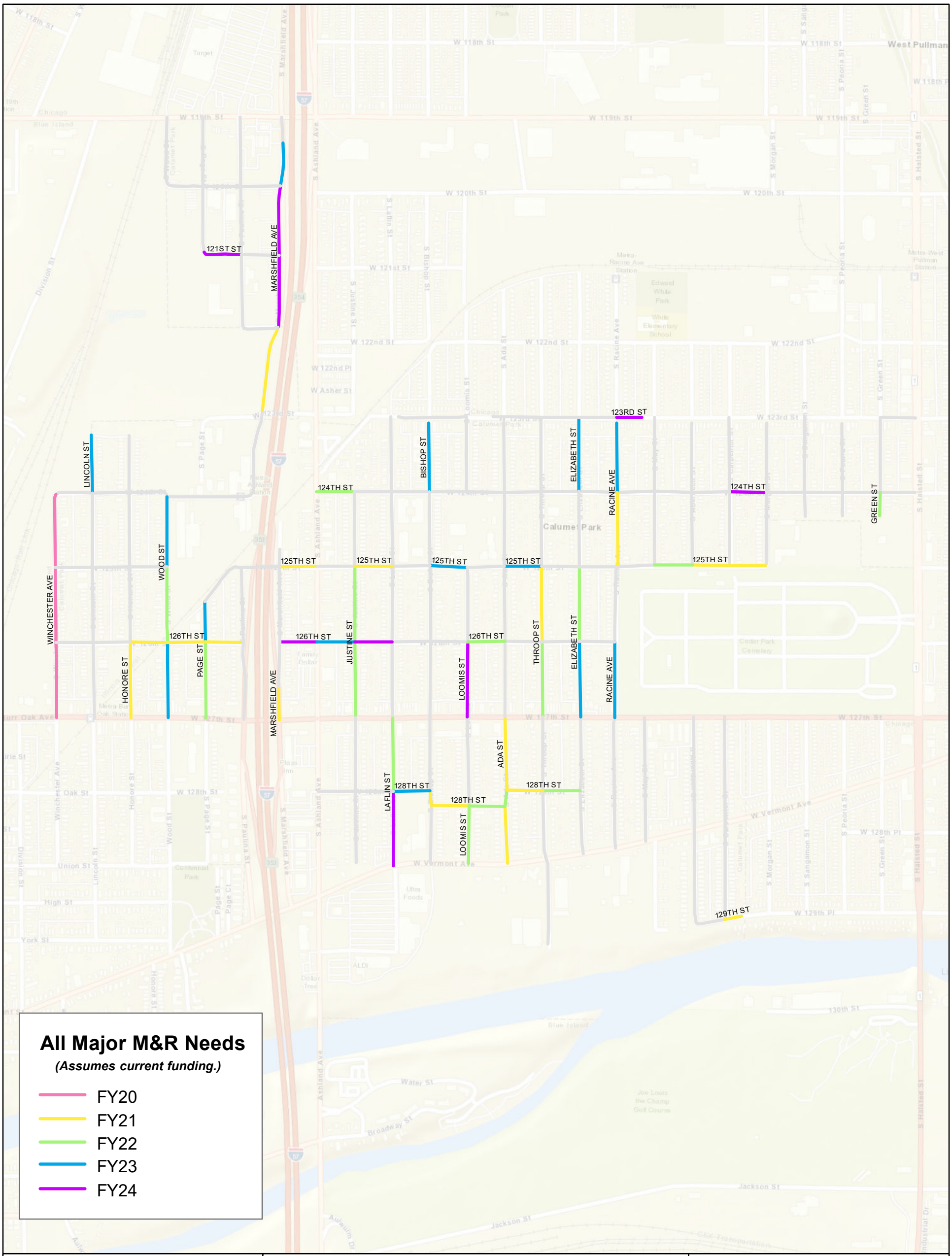
121ST ST
MARSHFIELD AVE
LINCOLN ST
WOOD ST
WINCHESTER AVE
HONORE ST
PAGE ST
126TH ST
124TH ST
125TH ST
123RD ST
BISHOP ST
ELIZABETH ST
RACINE AVE
GREEN ST
JUSTINE ST
LOOMIS ST
THROOP ST
ADA ST
LAFLIN ST
128TH ST
129TH ST
Calumet Park
West Pullman
All Major M&R Needs
(Assumes current funding.)
FY20
FY21
FY22
FY23
FY24
Feet
0
500
1,000
Village of Calumet Park, Illinois
Pavement Management Program
Map A-5:
All Major M&R Needs
(Assumes current funding.)
Gorrondona & Associates, Inc.
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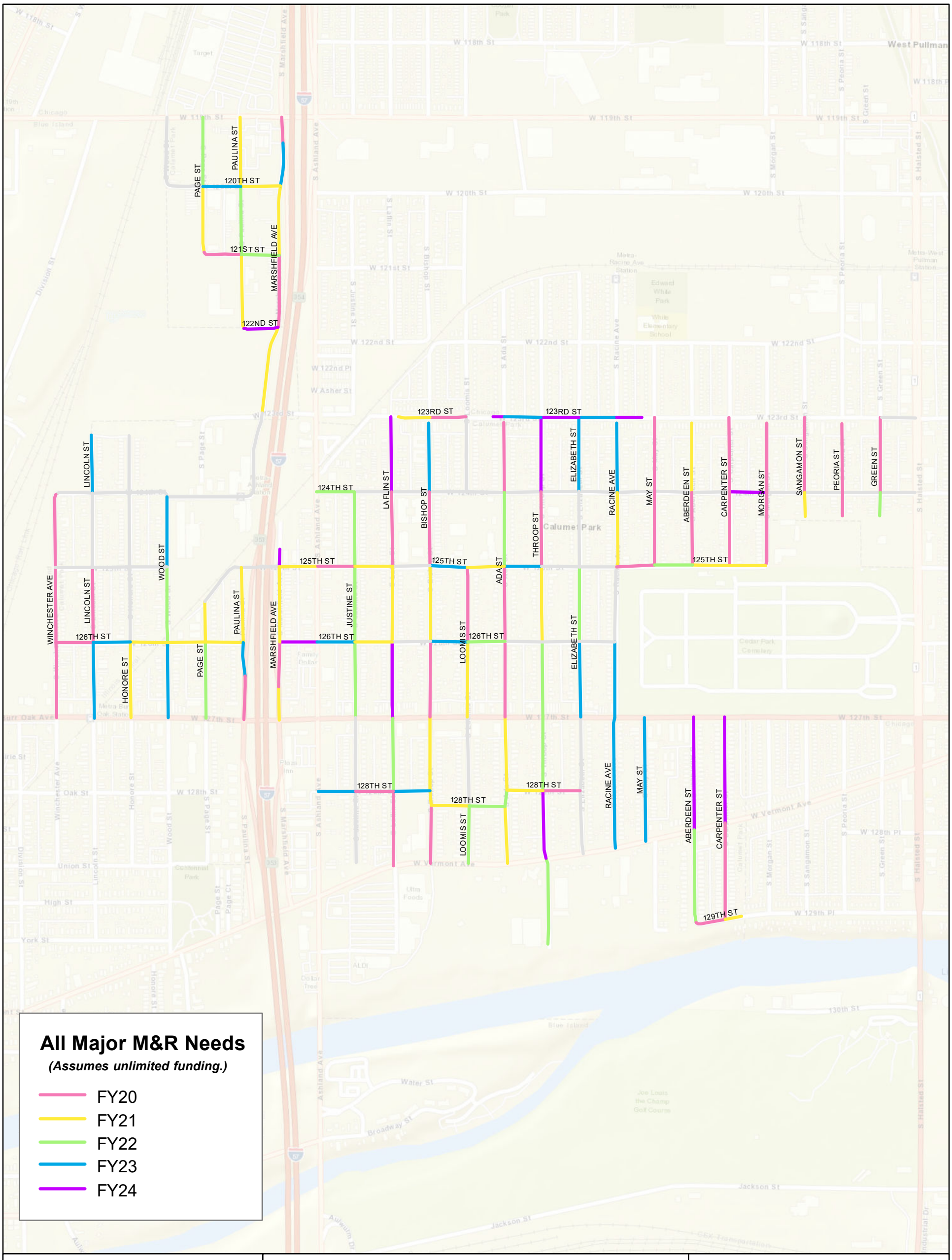

0 500 1,000 Feet

Map A-6:
All Major M&R Needs
(Assumes unlimited funding.)

Village of Calumet Park, Illinois

Pavement Management Program

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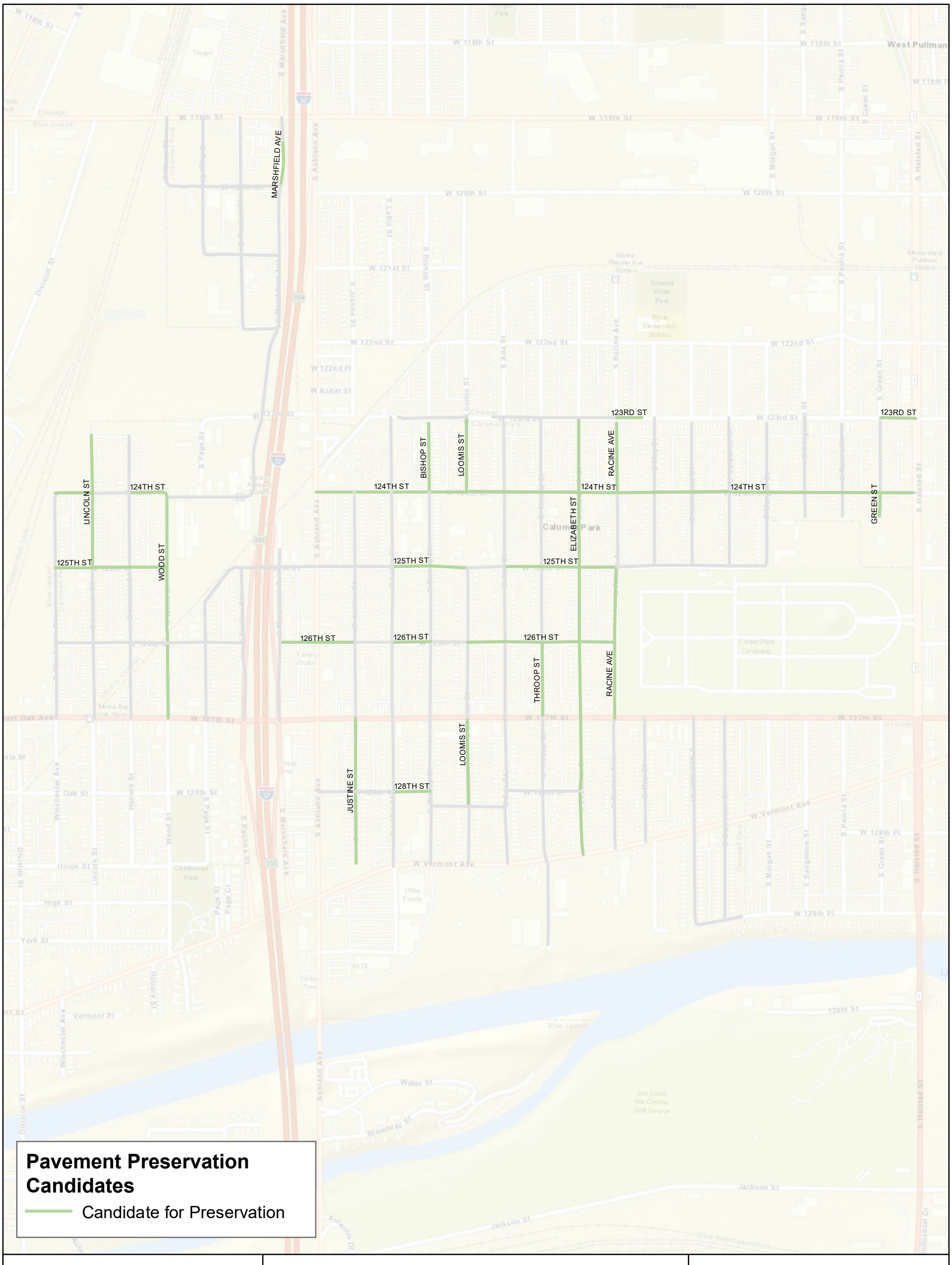

Map A-7:
Pavement Preservation Candidates

Village of Calumet Park, Illinois

Pavement Management Program

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APPENDIX B – TABULATED 5-YEAR MAJOR M&R RECOMMENDATIONS AND ESTIMATED COSTS – *ASSUMING CURRENT FUNDING*

Pavement ID	Road Name	From	To	Area	PCI	Year	Cost
CALPK::WNCHST AVE::10	WINCHESTER AVENUE	BURR OAK AVENUE	126TH STREET	18,552	8	2020	$ 120,588
CALPK::WNCHST AVE::20	WINCHESTER AVENUE	126TH STREET	WINCHESTER AVENUE	3,115	27	2020	$ 20,246
CALPK::WNCHST AVE::30	WINCHESTER AVENUE	WINCHESTER AVENUE	125TH STREET	15,574	24	2020	$ 101,231
CALPK::WNCHST AVE::40	WINCHESTER AVENUE	125TH STREET	124TH STREET	18,250	27	2020	$ 118,625
CALPK::125TH ST::80	125TH STREET	MARSHFIELD AVENUE	ASHLAND AVENUE	9,746	53	2021	$ 12,529
CALPK::125TH ST::100	125TH STREET	JUSTINE STREET	LAFLIN STREET	11,052	54	2021	$ 13,431
CALPK::125TH ST::190	125TH STREET	ABERDEEN STREET	CARPENTER STREET	7,640	54	2021	$ 9,285
CALPK::125TH ST::200	125TH STREET	CARPENTER STREET	MORGAN STREET	7,303	52	2021	$ 10,337
CALPK::126TH ST::30	126TH STREET	HONORE STREET	WOOD STREET	9,222	53	2021	$ 11,855
CALPK::126TH ST::40	126TH STREET	WOOD STREET	PAGE STREET	9,386	52	2021	$ 12,698
CALPK::126TH ST::50	126TH STREET	PAGE STREET	PAULINA STREET	9,365	53	2021	$ 12,040
CALPK::128TH ST::40	128TH STREET	BISHOP STREET	LOOMIS STREET	9,388	52	2021	$ 12,700
CALPK::128TH ST::60	128TH STREET	ADA STREET	THROOP STREET	9,600	54	2021	$ 11,667
CALPK::129TH ST::20	129TH STREET	CARPENTER STREET	END	5,499	52	2021	$ 7,440
CALPK::BSHP ST::20	BISHOP STREET	128TH STREET	128TH STREET	3,464	54	2021	$ 4,210
CALPK::D ST::10	ADA STREET	VERMONT AVENUE	128TH STREET	14,727	54	2021	$ 17,897
CALPK::D ST::30	ADA STREET	128TH STREET	127TH STREET	18,736	52	2021	$ 26,521
CALPK::HNR ST::10	HONORE STREET	127TH STREET	126TH STREET	19,484	51	2021	$ 28,725
CALPK::MRSHFL AVE::10	MARSHFIELD AVENUE	127TH STREET	MARSHFIELD AVENUE	11,957	52	2021	$ 16,925
CALPK::MRSHFL AVE::60	MARSHFIELD AVENUE	123RD STREET	122ND STREET	18,714	52	2021	$ 25,318
CALPK::RCN AVE::40	RACINE AVENUE	125TH STREET	124TH STREET	19,790	51	2021	$ 29,175
CALPK::THRP ST::50	THROOP STREET	126TH STREET	125TH STREET	20,050	51	2021	$ 29,559
CALPK::124TH ST::50	124TH STREET	ASHLAND AVENUE	JUSTINE STREET	9,438	54	2022	$ 12,393
CALPK::125TH ST::180	125TH STREET	MAY STREET	ABERDEEN STREET	7,712	51	2022	$ 11,735
CALPK::126TH ST::110	126TH STREET	LOOMIS STREET	ADA STREET	8,271	53	2022	$ 11,493
CALPK::128TH ST::50	128TH STREET	LOOMIS STREET	ADA STREET	8,960	51	2022	$ 13,634
CALPK::128TH ST::70	128TH STREET	THROOP STREET	ELIZABETH STREET	9,969	48	2022	$ 19,008
CALPK::D ST::20	ADA STREET	128TH STREET	128TH STREET	4,199	51	2022	$ 6,390
CALPK::GRN ST::10	GREEN STREET	124TH STREET	END	5,985	54	2022	$ 7,859
CALPK::JSTN ST::30	JUSTINE STREET	127TH STREET	126TH STREET	20,140	51	2022	$ 30,647
CALPK::JSTN ST::40	JUSTINE STREET	126TH STREET	125TH STREET	20,214	52	2022	$ 29,487
CALPK::LFLN ST::20	LAFLIN STREET	128TH STREET	127TH STREET	18,126	52	2022	$ 26,441
CALPK::LMS ST::10	LOOMIS STREET	VERMONT AVENUE	128TH STREET	14,388	52	2022	$ 20,988
CALPK::LZBTH ST::40	ELIZABETH STREET	126TH STREET	125TH STREET	17,853	54	2022	$ 23,442
CALPK::PG ST::10	PAGE STREET	127TH STREET	126TH STREET	18,990	52	2022	$ 27,703
CALPK::THRP ST::40	THROOP STREET	127TH STREET	126TH STREET	20,018	54	2022	$ 26,284
CALPK::WD ST::20	WOOD STREET	126TH STREET	125TH STREET	18,786	54	2022	$ 24,667
CALPK::125TH ST::120	125TH STREET	BISHOP STREET	LOOMIS STREET	10,847	51	2023	$ 16,699
CALPK::125TH ST::140	125TH STREET	ADA STREET	THROOP STREET	10,869	53	2023	$ 14,825
CALPK::126TH ST::70	126TH STREET	ASHLAND AVENUE	JUSTINE STREET	8,031	53	2023	$ 10,953
CALPK::128TH ST::30	128TH STREET	LAFLIN STREET	BISHOP STREET	9,457	52	2023	$ 13,783
CALPK::BSHP ST::70	BISHOP STREET	124TH STREET	END	16,985	51	2023	$ 26,147
CALPK::LNCLN ST::40	LINCOLN STREET	124TH STREET	END	14,805	53	2023	$ 20,193
CALPK::LZBTH ST::30	ELIZABETH STREET	127TH STREET	126TH STREET	18,095	53	2023	$ 24,679
CALPK::LZBTH ST::60	ELIZABETH STREET	124TH STREET	123RD STREET	19,692	51	2023	$ 30,314
CALPK::MRSHFL AVE::90	MARSHFIELD AVENUE	120TH STREET	MARSHFIELD AVENUE	13,355	55	2023	$ 16,770
CALPK::PG ST::20	PAGE STREET	126TH STREET	125TH STREET	9,932	46	2023	$ 22,745
CALPK::RCN AVE::20	RACINE AVENUE	127TH STREET	126TH STREET	12,040	55	2023	$ 15,118
CALPK::RCN AVE::50	RACINE AVENUE	124TH STREET	END	18,411	55	2023	$ 23,118
CALPK::WD ST::10	WOOD STREET	127TH STREET	126TH STREET	18,581	52	2023	$ 27,080
CALPK::WD ST::30	WOOD STREET	125TH STREET	124TH STREET	17,356	52	2023	$ 25,295
CALPK::121ST ST::10	121ST STREET	PAULINA STREET	PAGE STREET	9,635	42	2024	$ 29,295
CALPK::123RD ST::70	123RD STREET	RACINE AVENUE	END	6,306	52	2024	$ 9,776
CALPK::124TH ST::160	124TH STREET	CARPENTER STREET	MORGAN STREET	9,907	52	2024	$ 15,357

Pavement ID	Road Name	From	To	Area	PCI	Year	Cost
CALPK::126TH ST::60	126TH STREET	MARSHFIELD AVENUE	ASHLAND AVENUE	9,266	52	2024	$ 14,363
CALPK::126TH ST::80	126TH STREET	JUSTINE STREET	LAFLIN STREET	8,230	43	2024	$ 24,122
CALPK::LFLN ST::10	LAFLIN STREET	VERMONT AVENUE	128TH STREET	18,508	41	2024	$ 58,241
CALPK::LMS ST::40	LOOMIS STREET	127TH STREET	126TH STREET	18,603	43	2024	$ 54,520
CALPK::MRSHFL AVE::70	MARSHFIELD AVENUE	122ND STREET	121ST STREET	16,001	42	2024	$ 48,652
CALPK::MRSHFL AVE::80	MARSHFIELD AVENUE	121ST STREET	120TH STREET	15,309	43	2024	$ 44,868

APPENDIX C – TABULATED 5-YEAR MAJOR M&R RECOMMENDATIONS AND ESTIMATED COSTS – *ASSUMING UNLIMITED FUNDING*

Pavement ID	Road Name	From	To	Area	PCI	Year	Cost
CALPK::121ST ST::10	121ST STREET	PAULINA STREET	PAGE STREET	9,635	54	2020	$ 11,310
CALPK::123RD ST::20	123RD STREET	BISHOP STREET	LOOMIS STREET	9,404	42	2020	$ 25,164
CALPK::125TH ST::90	125TH STREET	ASHLAND AVENUE	JUSTINE STREET	10,906	48	2020	$ 19,552
CALPK::125TH ST::170	125TH STREET	RACINE AVENUE	MAY STREET	7,676	53	2020	$ 10,065
CALPK::126TH ST::10	126TH STREET	WINCHESTER AVENUE	LINCOLN STREET	9,589	53	2020	$ 12,573
CALPK::128TH ST::20	128TH STREET	JUSTINE STREET	LAFLIN STREET	9,645	51	2020	$ 13,892
CALPK::128TH ST::70	128TH STREET	THROOP STREET	ELIZABETH STREET	9,969	54	2020	$ 11,702
CALPK::129TH ST::10	129TH STREET	ABERDEEN STREET	CARPENTER STREET	7,356	52	2020	$ 10,131
CALPK::BRDN ST::30	ABERDEEN STREET	125TH STREET	124TH STREET	18,758	47	2020	$ 37,032
CALPK::BSHP ST::10	BISHOP STREET	VERMONT AVENUE	128TH STREET	14,454	48	2020	$ 25,913
CALPK::BSHP ST::40	BISHOP STREET	127TH STREET	126TH STREET	18,092	52	2020	$ 24,917
CALPK::BSHP ST::60	BISHOP STREET	125TH STREET	124TH STREET	18,335	53	2020	$ 22,803
CALPK::CRPNTR ST::10	CARPENTER STREET	129TH STREET	VERMONT AVENUE	24,775	44	2020	$ 58,867
CALPK::CRPNTR ST::30	CARPENTER STREET	125TH STREET	124TH STREET	19,018	51	2020	$ 27,392
CALPK::CRPNTR ST::40	CARPENTER STREET	124TH STREET	123RD STREET	19,165	52	2020	$ 26,396
CALPK::D ST::40	ADA STREET	127TH STREET	126TH STREET	16,815	52	2020	$ 23,160
CALPK::D ST::50	ADA STREET	126TH STREET	125TH STREET	16,638	42	2020	$ 44,524
CALPK::D ST::70	ADA STREET	124TH STREET	END	17,908	45	2020	$ 39,865
CALPK::GRN ST::20	GREEN STREET	124TH STREET	123RD STREET	19,244	47	2020	$ 37,992
CALPK::LFLN ST::10	LAFLIN STREET	VERMONT AVENUE	128TH STREET	18,508	53	2020	$ 23,017
CALPK::LFLN ST::50	LAFLIN STREET	125TH STREET	124TH STREET	18,500	52	2020	$ 25,479
CALPK::LMS ST::50	LOOMIS STREET	126TH STREET	125TH STREET	17,744	44	2020	$ 42,160
CALPK::LNCLN ST::20	LINCOLN STREET	126TH STREET	125TH STREET	19,327	50	2020	$ 29,027
CALPK::MRGN ST::10	MORGAN STREET	125TH STREET	124TH STREET	18,857	41	2020	$ 53,289
CALPK::MRGN ST::20	MORGAN STREET	124TH STREET	END	17,710	49	2020	$ 30,369
CALPK::MRSHFL AVE::20	MARSHFIELD AVENUE	MARSHFIELD AVENUE	126TH STREET	11,085	49	2020	$ 17,895
CALPK::MRSHFL AVE::70	MARSHFIELD AVENUE	122ND STREET	121ST STREET	16,001	54	2020	$ 18,783
CALPK::MRSHFL AVE::100	MARSHFIELD AVENUE	MARSHFIELD AVENUE	119TH STREET	8,884	51	2020	$ 12,796
CALPK::MY ST::20	MAY STREET	125TH STREET	124TH STREET	18,287	44	2020	$ 43,451
CALPK::MY ST::30	MAY STREET	124TH STREET	123RD STREET	18,414	49	2020	$ 31,576
CALPK::PLN ST::10	PAULINA STREET	127TH STREET	PAULINA STREET	11,254	51	2020	$ 16,209
CALPK::PR ST::10	PEORIA STREET	124TH STREET	END	5,994	52	2020	$ 8,256
CALPK::PR ST::20	PEORIA STREET	124TH STREET	END	17,108	51	2020	$ 24,641
CALPK::SNGMN ST::20	SANGAMON STREET	124TH STREET	123RD STREET	19,241	50	2020	$ 28,898
CALPK::THRP ST::60	THROOP STREET	125TH STREET	124TH STREET	21,757	42	2020	$ 58,222
CALPK::WNCHST AVE::10	WINCHESTER AVENUE	BURR OAK AVENUE	126TH STREET	18,552	8	2020	$ 120,588
CALPK::WNCHST AVE::20	WINCHESTER AVENUE	126TH STREET	WINCHESTER AVENUE	3,115	27	2020	$ 20,246
CALPK::WNCHST AVE::30	WINCHESTER AVENUE	WINCHESTER AVENUE	125TH STREET	15,574	24	2020	$ 101,231
CALPK::WNCHST AVE::40	WINCHESTER AVENUE	125TH STREET	124TH STREET	18,250	27	2020	$ 118,625
CALPK::120TH ST::30	120TH STREET	MARSHFIELD AVENUE	PAULINA STREET	10,487	33	2021	$ 48,024
CALPK::123RD ST::10	123RD STREET	START	BISHOP STREET	8,014	33	2021	$ 36,697
CALPK::125TH ST::80	125TH STREET	MARSHFIELD AVENUE	ASHLAND AVENUE	9,746	53	2021	$ 12,529
CALPK::125TH ST::100	125TH STREET	JUSTINE STREET	LAFLIN STREET	11,052	54	2021	$ 13,431
CALPK::125TH ST::130	125TH STREET	LOOMIS STREET	ADA STREET	10,856	32	2021	$ 51,948
CALPK::125TH ST::190	125TH STREET	ABERDEEN STREET	CARPENTER STREET	7,640	54	2021	$ 9,285
CALPK::125TH ST::200	125TH STREET	CARPENTER STREET	MORGAN STREET	7,303	52	2021	$ 10,337
CALPK::126TH ST::30	126TH STREET	HONORE STREET	WOOD STREET	9,222	53	2021	$ 11,855
CALPK::126TH ST::40	126TH STREET	WOOD STREET	PAGE STREET	9,386	52	2021	$ 12,698
CALPK::126TH ST::50	126TH STREET	PAGE STREET	PAULINA STREET	9,365	53	2021	$ 12,040
CALPK::126TH ST::80	126TH STREET	JUSTINE STREET	LAFLIN STREET	8,230	51	2021	$ 12,134
CALPK::128TH ST::40	128TH STREET	BISHOP STREET	LOOMIS STREET	9,388	52	2021	$ 12,700
CALPK::128TH ST::60	128TH STREET	ADA STREET	THROOP STREET	9,600	54	2021	$ 11,667
CALPK::129TH ST::20	129TH STREET	CARPENTER STREET	END	5,499	52	2021	$ 7,440

Pavement ID	Road Name	From	To	Area	PCI	Year	Cost
CALPK::BRDN ST::40	ABERDEEN STREET	124TH STREET	END	17,810	31	2021	$ 88,897
CALPK::BSHP ST::20	BISHOP STREET	128TH STREET	128TH STREET	3,464	54	2021	$ 4,210
CALPK::BSHP ST::30	BISHOP STREET	128TH STREET	127TH STREET	18,320	32	2021	$ 87,669
CALPK::BSHP ST::50	BISHOP STREET	126TH STREET	125TH STREET	18,203	34	2021	$ 79,607
CALPK::D ST::10	ADA STREET	VERMONT AVENUE	128TH STREET	14,727	54	2021	$ 17,897
CALPK::D ST::30	ADA STREET	128TH STREET	127TH STREET	18,736	52	2021	$ 26,521
CALPK::HNR ST::10	HONORE STREET	127TH STREET	126TH STREET	19,484	51	2021	$ 28,725
CALPK::LFLN ST::40	LAFLIN STREET	126TH STREET	125TH STREET	18,796	36	2021	$ 74,458
CALPK::LMS ST::40	LOOMIS STREET	127TH STREET	126TH STREET	18,603	51	2021	$ 27,425
CALPK::MRSHFL AVE::10	MARSHFIELD AVENUE	127TH STREET	MARSHFIELD AVENUE	11,957	52	2021	$ 16,925
CALPK::MRSHFL AVE::30	MARSHFIELD AVENUE	126TH STREET	125TH STREET	18,614	33	2021	$ 85,239
CALPK::MRSHFL AVE::60	MARSHFIELD AVENUE	123RD STREET	122ND STREET	18,714	52	2021	$ 25,318
CALPK::MRSHFL AVE::80	MARSHFIELD AVENUE	121ST STREET	120TH STREET	15,309	51	2021	$ 22,570
CALPK::PG ST::20	PAGE STREET	126TH STREET	125TH STREET	9,932	51	2021	$ 14,643
CALPK::PG ST::30	PAGE STREET	121ST STREET	120TH STREET	16,338	36	2021	$ 64,718
CALPK::PLN ST::30	PAULINA STREET	126TH STREET	125TH STREET	19,305	35	2021	$ 80,451
CALPK::PLN ST::40	PAULINA STREET	122ND STREET	121ST STREET	22,820	28	2021	$ 125,386
CALPK::PLN ST::60	PAULINA STREET	120TH STREET	119TH STREET	18,378	32	2021	$ 87,947
CALPK::RCN AVE::40	RACINE AVENUE	125TH STREET	124TH STREET	19,790	51	2021	$ 29,175
CALPK::SNGMN ST::10	SANGAMON STREET	124TH STREET	END	6,259	35	2021	$ 26,083
CALPK::THRP ST::50	THROOP STREET	126TH STREET	125TH STREET	20,050	51	2021	$ 29,559
CALPK::121ST ST::20	121ST STREET	MARSHFIELD AVENUE	PAULINA STREET	9,243	19	2022	$ 63,740
CALPK::124TH ST::50	124TH STREET	ASHLAND AVENUE	JUSTINE STREET	9,438	54	2022	$ 12,393
CALPK::125TH ST::180	125TH STREET	MAY STREET	ABERDEEN STREET	7,712	51	2022	$ 11,735
CALPK::126TH ST::110	126TH STREET	LOOMIS STREET	ADA STREET	8,271	53	2022	$ 11,493
CALPK::128TH ST::50	128TH STREET	LOOMIS STREET	ADA STREET	8,960	51	2022	$ 13,634
CALPK::BRDN ST::10	ABERDEEN STREET	129TH STREET	VERMONT AVENUE	23,779	20	2022	$ 162,551
CALPK::D ST::20	ADA STREET	128TH STREET	128TH STREET	4,199	51	2022	$ 6,390
CALPK::D ST::60	ADA STREET	125TH STREET	124TH STREET	18,971	22	2022	$ 123,640
CALPK::GRN ST::10	GREEN STREET	124TH STREET	END	5,985	54	2022	$ 7,859
CALPK::JSTN ST::30	JUSTINE STREET	127TH STREET	126TH STREET	20,140	51	2022	$ 30,647
CALPK::JSTN ST::40	JUSTINE STREET	126TH STREET	125TH STREET	20,214	52	2022	$ 29,487
CALPK::JSTN ST::50	JUSTINE STREET	125TH STREET	124TH STREET	18,374	23	2022	$ 116,829
CALPK::LFLN ST::20	LAFLIN STREET	128TH STREET	127TH STREET	18,126	52	2022	$ 26,441
CALPK::LMS ST::10	LOOMIS STREET	VERMONT AVENUE	128TH STREET	14,388	52	2022	$ 20,988
CALPK::LZBTH ST::40	ELIZABETH STREET	126TH STREET	125TH STREET	17,853	54	2022	$ 23,442
CALPK::PG ST::10	PAGE STREET	127TH STREET	126TH STREET	18,990	52	2022	$ 27,703
CALPK::PG ST::40	PAGE STREET	120TH STREET	119TH STREET	20,183	23	2022	$ 128,329
CALPK::PLN ST::50	PAULINA STREET	121ST STREET	120TH STREET	20,054	18	2022	$ 138,297
CALPK::THRP ST::10	THROOP STREET	VERMONT AVENUE	END	26,679	19	2022	$ 183,989
CALPK::THRP ST::30	THROOP STREET	128TH STREET	127TH STREET	19,499	23	2022	$ 123,981
CALPK::THRP ST::40	THROOP STREET	127TH STREET	126TH STREET	20,018	54	2022	$ 26,284
CALPK::WD ST::20	WOOD STREET	126TH STREET	125TH STREET	18,786	54	2022	$ 24,667
CALPK::120TH ST::20	120TH STREET	PAULINA STREET	PAGE STREET	10,067	13	2023	$ 71,509
CALPK::123RD ST::40	123RD STREET	ADA STREET	THROOP STREET	9,358	14	2023	$ 66,473
CALPK::123RD ST::60	123RD STREET	ELIZABETH STREET	RACINE AVENUE	9,437	15	2023	$ 67,032
CALPK::125TH ST::120	125TH STREET	BISHOP STREET	LOOMIS STREET	10,847	51	2023	$ 16,699
CALPK::125TH ST::140	125TH STREET	ADA STREET	THROOP STREET	10,869	53	2023	$ 14,825
CALPK::126TH ST::20	126TH STREET	LINCOLN STREET	HONORE STREET	9,141	15	2023	$ 64,930
CALPK::126TH ST::70	126TH STREET	ASHLAND AVENUE	JUSTINE STREET	8,031	53	2023	$ 10,953
CALPK::126TH ST::100	126TH STREET	BISHOP STREET	LOOMIS STREET	8,234	10	2023	$ 58,490
CALPK::128TH ST::10	128TH STREET	ASHLAND AVENUE	JUSTINE STREET	9,330	14	2023	$ 66,274
CALPK::128TH ST::30	128TH STREET	LAFLIN STREET	BISHOP STREET	9,457	52	2023	$ 13,783

Pavement ID	Road Name	From	To	Area	PCI	Year	Cost
CALPK::BSHP ST::70	BISHOP STREET	124TH STREET	END	16,985	51	2023	$ 26,147
CALPK::LNCLN ST::10	LINCOLN STREET	127TH STREET	126TH STREET	19,393	13	2023	$ 137,752
CALPK::LNCLN ST::40	LINCOLN STREET	124TH STREET	END	14,805	53	2023	$ 20,193
CALPK::LZBTH ST::30	ELIZABETH STREET	127TH STREET	126TH STREET	18,095	53	2023	$ 24,679
CALPK::LZBTH ST::60	ELIZABETH STREET	124TH STREET	123RD STREET	19,692	51	2023	$ 30,314
CALPK::MRSHFL AVE::90	MARSHFIELD AVENUE	120TH STREET	MARSHFIELD AVENUE	13,355	55	2023	$ 16,770
CALPK::MY ST::10	MAY STREET	VERMONT AVENUE	127TH STREET	31,862	15	2023	$ 226,320
CALPK::PLN ST::20	PAULINA STREET	PAULINA STREET	126TH STREET	8,367	10	2023	$ 59,435
CALPK::RCN AVE::10	RACINE AVENUE	VERMONT AVENUE	127TH STREET	32,440	13	2023	$ 230,429
CALPK::RCN AVE::20	RACINE AVENUE	127TH STREET	126TH STREET	12,040	55	2023	$ 15,118
CALPK::RCN AVE::50	RACINE AVENUE	124TH STREET	END	18,411	55	2023	$ 23,118
CALPK::WD ST::10	WOOD STREET	127TH STREET	126TH STREET	18,581	52	2023	$ 27,080
CALPK::WD ST::30	WOOD STREET	125TH STREET	124TH STREET	17,356	52	2023	$ 25,295
CALPK::122ND ST::10	122ND STREET	MARSHFIELD AVENUE	PAULINA STREET	7,637	0	2024	$ 55,873
CALPK::123RD ST::30	123RD STREET	START	ADA STREET	2,845	6	2024	$ 20,816
CALPK::123RD ST::50	123RD STREET	THROOP STREET	ELIZABETH STREET	9,731	2	2024	$ 71,197
CALPK::123RD ST::70	123RD STREET	RACINE AVENUE	END	6,306	52	2024	$ 9,776
CALPK::124TH ST::160	124TH STREET	CARPENTER STREET	MORGAN STREET	9,907	52	2024	$ 15,357
CALPK::126TH ST::60	126TH STREET	MARSHFIELD AVENUE	ASHLAND AVENUE	9,266	52	2024	$ 14,363
CALPK::BRDN ST::20	ABERDEEN STREET	VERMONT AVENUE	127TH STREET	29,083	1	2024	$ 212,783
CALPK::CRPNTR ST::20	CARPENTER STREET	VERMONT AVENUE	127TH STREET	27,166	3	2024	$ 198,756
CALPK::LFLN ST::30	LAFLIN STREET	127TH STREET	126TH STREET	18,862	1	2024	$ 137,999
CALPK::LFLN ST::60	LAFLIN STREET	124TH STREET	END	18,577	1	2024	$ 135,916
CALPK::MRSHFL AVE::40	MARSHFIELD AVENUE	125TH STREET	END	4,444	0	2024	$ 32,514
CALPK::THRP ST::20	THROOP STREET	VERMONT AVENUE	128TH STREET	18,139	4	2024	$ 132,707
CALPK::THRP ST::70	THROOP STREET	124TH STREET	123RD STREET	19,253	6	2024	$ 140,860

APPENDIX D – PAVEMENT MAINTENANCE POLICIES AND UNIT COSTS

Table D-1. Recommended Asphalt Pavement Maintenance Policy.

Pavement Distress	Severity	Recommended Maintenance Type	Units
Alligator Cracking	Medium	Patching - AC Deep	SF
Alligator Cracking	High	Patching - AC Deep	SF
Block Cracking	Low	Crack Sealing - AC	FT
Block Cracking	Medium	Crack Sealing - AC	FT
Block Cracking	High	Patching - AC Shallow	SF
Bumps and Sags	Medium	Patching - AC Shallow	SF
Bumps and Sags	High	Patching - AC Deep	SF
Corrugation	Medium	Patching - AC Shallow	SF
Corrugation	High	Patching - AC Deep	SF
Depressions	Medium	Patching - AC Deep	SF
Depressions	High	Patching - AC Deep	SF
Edge Cracking	Low	Crack Sealing - AC	FT
Edge Cracking	Medium	Crack Sealing - AC	FT
Edge Cracking	High	Patching - AC Shallow	SF
Joint Reflection Cracking	Low	Crack Sealing - AC	FT
Joint Reflection Cracking	Medium	Crack Sealing - AC	FT
Joint Reflection Cracking	High	Patching - AC Shallow	SF
Lane/Shoulder Dropoff	Medium	Shoulder leveling	FT
Lane/Shoulder Dropoff	High	Shoulder leveling	FT
Long. and Trans. Cracking	Low	Crack Sealing - AC	FT
Long. and Trans. Cracking	Medium	Crack Sealing - AC	FT
Long. and Trans. Cracking	High	Patching - AC Shallow	SF
Patching and Utility Cuts	High	Patching - AC Deep	SF
Potholes	Low	Patching - AC Deep	SF
Potholes	Medium	Patching - AC Deep	SF
Potholes	High	Patching - AC Deep	SF
Rutting	Medium	Patching - AC Shallow	SF
Rutting	High	Patching - AC Deep	SF
Shoving	Medium	Grinding (Localized)	FT
Shoving	High	Grinding (Localized)	FT
Slippage Cracking	Low	Crack Sealing - AC	FT
Slippage Cracking	Medium	Patching - AC Shallow	SF
Slippage Cracking	High	Patching - AC Shallow	SF
Blow ups	Medium	Patching - PCC Full Depth	SF
Blow ups	High	Patching - PCC Full Depth	SF

Table D-2. Recommended Concrete Pavement Maintenance Policy.

Pavement Distress	Severity	Recommended Maintenance Type	Units
Corner Breaks	Low	Crack Sealing - PCC	FT
Corner Breaks	Medium	Patching - PCC Full Depth	FT
Corner Breaks	High	Patching - PCC Full Depth	SF
Divided (Shattered) Slabs	Low	Crack Sealing - PCC	FT
Divided (Shattered) Slabs	Medium	Slab Replacement - PCC	SF
Divided (Shattered) Slabs	High	Slab Replacement - PCC	SF
Durability (D) Cracking	Medium	Patching - PCC Full Depth	SF
Durability (D) Cracking	High	Slab Replacement - PCC	SF
Faulting	Medium	Grinding (Localized)	FT
Faulting	High	Grinding (Localized)	FT
Joint Seal Damage	Medium	Joint Seal (Localized)	FT
Joint Seal Damage	High	Joint Seal (Localized)	FT
Lane/Shoulder Dropoff	Medium	Shoulder leveling	FT
Lane/Shoulder Dropoff	High	Shoulder leveling	FT
Linear Cracking	Low	Crack Sealing - PCC	FT
Linear Cracking	Medium	Crack Sealing - PCC	FT
Linear Cracking	High	Patching - PCC Partial Depth	SF
Patches, Large	High	Patching - PCC Full Depth	SF
Patches, Small	High	Patching - PCC Partial Depth	SF
Punchouts	Medium	Patching - PCC Full Depth	SF
Punchouts	High	Slab Replacement - PCC	SF
Scaling	High	Slab Replacement - PCC	SF
Corner Spalls	Medium	Patching - PCC Partial Depth	SF
Corner Spalls	High	Patching - PCC Partial Depth	SF
Joint Spalls	Medium	Patching - PCC Partial Depth	SF
Joint Spalls	High	Patching - PCC Partial Depth	SF

Table D-3. Estimate Unit Cost for Maintenance Activities.

Maintenance Type	Est. Unit Cost	Units
Crack Sealing - AC	$1.00	FT
Joint Seal - Silicon	$2.75	FT
Crack Sealing - PCC	$1.50	FT
Grinding (Localized)	$4.00	FT
Joint Seal (Localized)	$1.50	FT
Patching - AC Deep	$11.00	SF
Patching - AC Leveling	$1.20	SF
Patching - AC Shallow	$5.50	SF
Patching - PCC Full Depth	$30.00	SF
Patching - PCC Partial Depth	$7.00	SF
Shoulder leveling	$1.20	FT
Slab Replacement - PCC	$20.00	SF

APPENDIX E – TABULATED PREVENTIVE MAINTENANCE RECOMMENDATIONS

Pavement ID	Road Name	From	To	Area	Distress Type	Density	Maint. Activity	Cost
CALPK::123RD ST::70	123RD STREET	RACINE AVENUE	END	6,306	L & T CR	5.0%	Crack Sealing - AC	$312
CALPK::123RD ST::70	123RD STREET	RACINE AVENUE	END	6,306	L & T CR	0.9%	Crack Sealing - AC	$56
CALPK::123RD ST::80	123RD STREET	GREEN STREET	HALSTED STREET	7,337	L & T CR	2.7%	Crack Sealing - AC	$195
CALPK::123RD ST::80	123RD STREET	GREEN STREET	HALSTED STREET	7,337	L & T CR	0.3%	Crack Sealing - AC	$24
CALPK::124TH ST::10	124TH STREET	WINCHESTER AVENUE	LINCOLN STREET	9,070	L & T CR	0.3%	Crack Sealing - AC	$28
CALPK::124TH ST::10	124TH STREET	WINCHESTER AVENUE	LINCOLN STREET	9,070	BLOCK CR	12.7%	Crack Sealing - AC	$352
CALPK::124TH ST::30	124TH STREET	HONORE STREET	WOOD STREET	10,217	L & T CR	0.3%	Crack Sealing - AC	$32
CALPK::124TH ST::50	124TH STREET	ASHLAND AVENUE	JUSTINE STREET	9,438	L & T CR	0.9%	Crack Sealing - AC	$84
CALPK::124TH ST::50	124TH STREET	ASHLAND AVENUE	JUSTINE STREET	9,438	ALLIGATOR CR	1.8%	Patching - AC Deep	$2,473
CALPK::124TH ST::50	124TH STREET	ASHLAND AVENUE	JUSTINE STREET	9,438	L & T CR	2.7%	Crack Sealing - AC	$253
CALPK::124TH ST::60	124TH STREET	JUSTINE STREET	LAFLIN STREET	9,319	L & T CR	2.4%	Crack Sealing - AC	$228
CALPK::124TH ST::60	124TH STREET	JUSTINE STREET	LAFLIN STREET	9,319	L & T CR	0.9%	Crack Sealing - AC	$84
CALPK::124TH ST::70	124TH STREET	LAFLIN STREET	BISHOP STREET	9,326	L & T CR	2.4%	Crack Sealing - AC	$227
CALPK::124TH ST::70	124TH STREET	LAFLIN STREET	BISHOP STREET	9,326	L & T CR	0.9%	Crack Sealing - AC	$84
CALPK::124TH ST::80	124TH STREET	BISHOP STREET	LOOMIS STREET	9,263	L & T CR	3.1%	Crack Sealing - AC	$285
CALPK::124TH ST::80	124TH STREET	BISHOP STREET	LOOMIS STREET	9,263	L & T CR	2.8%	Crack Sealing - AC	$256
CALPK::124TH ST::90	124TH STREET	LOOMIS STREET	ADA STREET	9,297	L & T CR	3.8%	Crack Sealing - AC	$353
CALPK::124TH ST::100	124TH STREET	ADA STREET	THROOP STREET	9,175	L & T CR	4.4%	Crack Sealing - AC	$399
CALPK::124TH ST::110	124TH STREET	THROOP STREET	ELIZABETH STREET	9,375	ALLIGATOR CR	0.6%	Crack Sealing - AC	$26
CALPK::124TH ST::110	124TH STREET	THROOP STREET	ELIZABETH STREET	9,375	L & T CR	3.0%	Crack Sealing - AC	$283
CALPK::124TH ST::120	124TH STREET	ELIZABETH STREET	RACINE AVENUE	9,853	L & T CR	4.5%	Crack Sealing - AC	$442
CALPK::124TH ST::120	124TH STREET	ELIZABETH STREET	RACINE AVENUE	9,853	L & T CR	0.3%	Crack Sealing - AC	$29
CALPK::124TH ST::130	124TH STREET	RACINE AVENUE	MAY STREET	9,582	L & T CR	0.9%	Crack Sealing - AC	$88
CALPK::124TH ST::130	124TH STREET	RACINE AVENUE	MAY STREET	9,582	L & T CR	4.0%	Crack Sealing - AC	$383
CALPK::124TH ST::140	124TH STREET	MAY STREET	ABERDEEN STREET	9,640	L & T CR	7.1%	Crack Sealing - AC	$680
CALPK::124TH ST::150	124TH STREET	ABERDEEN STREET	CARPENTER STREET	9,638	L & T CR	2.8%	Crack Sealing - AC	$265
CALPK::124TH ST::160	124TH STREET	CARPENTER STREET	MORGAN STREET	9,907	ALLIGATOR CR	0.5%	Patching - AC Deep	$963
CALPK::124TH ST::160	124TH STREET	CARPENTER STREET	MORGAN STREET	9,907	L & T CR	4.0%	Crack Sealing - AC	$397
CALPK::124TH ST::170	124TH STREET	MORGAN STREET	SANGAMON STREET	9,445	L & T CR	1.8%	Crack Sealing - AC	$170
CALPK::124TH ST::180	124TH STREET	SANGAMON STREET	PEORIA STREET	9,315	L & T CR	5.5%	Crack Sealing - AC	$513
CALPK::124TH ST::190	124TH STREET	PEORIA STREET	GREEN STREET	9,344	L & T CR	3.1%	Crack Sealing - AC	$285
CALPK::124TH ST::200	124TH STREET	GREEN STREET	HALSTED STREET	8,731	L & T CR	2.0%	Crack Sealing - AC	$176
CALPK::125TH ST::10	125TH STREET	WINCHESTER AVENUE	LINCOLN STREET	9,259	L & T CR	0.6%	Crack Sealing - AC	$58
CALPK::125TH ST::10	125TH STREET	WINCHESTER AVENUE	LINCOLN STREET	9,259	L & T CR	0.6%	Crack Sealing - AC	$58
CALPK::125TH ST::20	125TH STREET	LINCOLN STREET	HONORE STREET	9,149	L & T CR	0.3%	Crack Sealing - AC	$29
CALPK::125TH ST::30	125TH STREET	HONORE STREET	WOOD STREET	9,289	L & T CR	0.4%	Crack Sealing - AC	$34
CALPK::125TH ST::30	125TH STREET	HONORE STREET	WOOD STREET	9,289	L & T CR	1.1%	Crack Sealing - AC	$102
CALPK::125TH ST::110	125TH STREET	LAFLIN STREET	BISHOP STREET	11,054	L & T CR	6.7%	Crack Sealing - AC	$736
CALPK::125TH ST::110	125TH STREET	LAFLIN STREET	BISHOP STREET	11,054	L & T CR	0.3%	Crack Sealing - AC	$33
CALPK::125TH ST::120	125TH STREET	BISHOP STREET	LOOMIS STREET	10,847	RUTTING	0.1%	Patching - AC Shallow	$76
CALPK::125TH ST::120	125TH STREET	BISHOP STREET	LOOMIS STREET	10,847	L & T CR	3.4%	Crack Sealing - AC	$370
CALPK::125TH ST::120	125TH STREET	BISHOP STREET	LOOMIS STREET	10,847	ALLIGATOR CR	0.6%	Crack Sealing - AC	$29
CALPK::125TH ST::120	125TH STREET	BISHOP STREET	LOOMIS STREET	10,847	L & T CR	5.3%	Crack Sealing - AC	$572

Pavement ID	Road Name	From	To	Area	Distress Type	Density	Maint. Activity	Cost
CALPK::125TH ST::140	125TH STREET	ADA STREET	THROOP STREET	10,869	L & T CR	1.8%	Crack Sealing - AC	$199
CALPK::125TH ST::140	125TH STREET	ADA STREET	THROOP STREET	10,869	ALLIGATOR CR	0.8%	Patching - AC Deep	$1,379
CALPK::125TH ST::140	125TH STREET	ADA STREET	THROOP STREET	10,869	L & T CR	1.9%	Crack Sealing - AC	$201
CALPK::125TH ST::150	125TH STREET	THROOP STREET	ELIZABETH STREET	11,019	L & T CR	2.8%	Crack Sealing - AC	$303
CALPK::125TH ST::150	125TH STREET	THROOP STREET	ELIZABETH STREET	11,019	L & T CR	1.5%	Crack Sealing - AC	$167
CALPK::125TH ST::160	125TH STREET	ELIZABETH STREET	RACINE AVENUE	11,016	L & T CR	1.5%	Crack Sealing - AC	$166
CALPK::125TH ST::160	125TH STREET	ELIZABETH STREET	RACINE AVENUE	11,016	L & T CR	1.8%	Crack Sealing - AC	$201
CALPK::125TH ST::160	125TH STREET	ELIZABETH STREET	RACINE AVENUE	11,016	RUTTING	0.1%	Patching - AC Shallow	$59
CALPK::126TH ST::60	126TH STREET	MARSHFIELD AVENUE	ASHLAND AVENUE	9,266	L & T CR	2.8%	Crack Sealing - AC	$260
CALPK::126TH ST::60	126TH STREET	MARSHFIELD AVENUE	ASHLAND AVENUE	9,266	BLOCK CR	24.3%	Crack Sealing - AC	$687
CALPK::126TH ST::70	126TH STREET	ASHLAND AVENUE	JUSTINE STREET	8,031	L & T CR	4.9%	Crack Sealing - AC	$390
CALPK::126TH ST::70	126TH STREET	ASHLAND AVENUE	JUSTINE STREET	8,031	L & T CR	2.7%	Crack Sealing - AC	$218
CALPK::126TH ST::70	126TH STREET	ASHLAND AVENUE	JUSTINE STREET	8,031	ALLIGATOR CR	0.3%	Patching - AC Deep	$495
CALPK::126TH ST::70	126TH STREET	ASHLAND AVENUE	JUSTINE STREET	8,031	BLOCK CR	4.0%	Crack Sealing - AC	$98
CALPK::126TH ST::90	126TH STREET	LAFLIN STREET	BISHOP STREET	8,436	L & T CR	6.3%	Crack Sealing - AC	$533
CALPK::126TH ST::90	126TH STREET	LAFLIN STREET	BISHOP STREET	8,436	L & T CR	2.4%	Crack Sealing - AC	$204
CALPK::126TH ST::110	126TH STREET	LOOMIS STREET	ADA STREET	8,271	L & T CR	5.8%	Crack Sealing - AC	$483
CALPK::126TH ST::110	126TH STREET	LOOMIS STREET	ADA STREET	8,271	L & T CR	2.1%	Crack Sealing - AC	$177
CALPK::126TH ST::110	126TH STREET	LOOMIS STREET	ADA STREET	8,271	ALLIGATOR CR	2.0%	Crack Sealing - AC	$67
CALPK::126TH ST::110	126TH STREET	LOOMIS STREET	ADA STREET	8,271	ALLIGATOR CR	0.5%	Patching - AC Deep	$752
CALPK::126TH ST::120	126TH STREET	ADA STREET	THROOP STREET	8,222	L & T CR	0.9%	Crack Sealing - AC	$75
CALPK::126TH ST::130	126TH STREET	THROOP STREET	ELIZABETH STREET	8,350	L & T CR	1.9%	Crack Sealing - AC	$161
CALPK::126TH ST::140	126TH STREET	ELIZABETH STREET	RACINE AVENUE	7,820	L & T CR	0.3%	Crack Sealing - AC	$27
CALPK::128TH ST::30	128TH STREET	LAFLIN STREET	BISHOP STREET	9,457	L & T CR	2.8%	Crack Sealing - AC	$263
CALPK::128TH ST::30	128TH STREET	LAFLIN STREET	BISHOP STREET	9,457	ALLIGATOR CR	0.5%	Patching - AC Deep	$890
CALPK::128TH ST::30	128TH STREET	LAFLIN STREET	BISHOP STREET	9,457	L & T CR	1.9%	Crack Sealing - AC	$177
CALPK::128TH ST::30	128TH STREET	LAFLIN STREET	BISHOP STREET	9,457	BLOCK CR	5.6%	Crack Sealing - AC	$162
CALPK::BSHP ST::70	BISHOP STREET	124TH STREET	END	16,985	L & T CR	3.5%	Crack Sealing - AC	$597
CALPK::BSHP ST::70	BISHOP STREET	124TH STREET	END	16,985	L & T CR	6.5%	Crack Sealing - AC	$1,111
CALPK::GRN ST::10	GREEN STREET	124TH STREET	END	5,985	L & T CR	4.5%	Crack Sealing - AC	$271
CALPK::GRN ST::10	GREEN STREET	124TH STREET	END	5,985	ALLIGATOR CR	1.3%	Crack Sealing - AC	$35
CALPK::GRN ST::10	GREEN STREET	124TH STREET	END	5,985	L & T CR	1.0%	Crack Sealing - AC	$61
CALPK::JSTN ST::10	JUSTINE STREET	128TH STREET	END	17,719	L & T CR	2.1%	Crack Sealing - AC	$373
CALPK::JSTN ST::10	JUSTINE STREET	128TH STREET	END	17,719	L & T CR	0.3%	Crack Sealing - AC	$57
CALPK::JSTN ST::20	JUSTINE STREET	128TH STREET	127TH STREET	18,235	L & T CR	0.5%	Crack Sealing - AC	$84
CALPK::JSTN ST::20	JUSTINE STREET	128TH STREET	127TH STREET	18,235	L & T CR	3.9%	Crack Sealing - AC	$711
CALPK::LMS ST::20	LOOMIS STREET	128TH STREET	LOOMIS STREET	8,820	L & T CR	1.0%	Crack Sealing - AC	$85
CALPK::LMS ST::30	LOOMIS STREET	LOOMIS STREET	127TH STREET	13,230	L & T CR	1.7%	Crack Sealing - AC	$226
CALPK::LMS ST::30	LOOMIS STREET	LOOMIS STREET	127TH STREET	13,230	RUTTING	0.1%	Patching - AC Shallow	$50
CALPK::LMS ST::30	LOOMIS STREET	LOOMIS STREET	127TH STREET	13,230	L & T CR	3.0%	Crack Sealing - AC	$397
CALPK::LMS ST::60	LOOMIS STREET	124TH STREET	123RD STREET	18,528	ALLIGATOR CR	0.1%	Crack Sealing - AC	$12
CALPK::LMS ST::60	LOOMIS STREET	124TH STREET	123RD STREET	18,528	L & T CR	2.4%	Crack Sealing - AC	$449

Pavement ID	Road Name	From	To	Area	Distress Type	Density	Maint. Activity	Cost
CALPK::LMS ST::60	LOOMIS STREET	124TH STREET	123RD STREET	18,528	L & T CR	1.5%	Crack Sealing - AC	$268
CALPK::LMS ST::60	LOOMIS STREET	124TH STREET	123RD STREET	18,528	BLOCK CR	7.6%	Crack Sealing - AC	$428
CALPK::LNCLN ST::30	LINCOLN STREET	125TH STREET	124TH STREET	19,148	L & T CR	1.9%	Crack Sealing - AC	$354
CALPK::LNCLN ST::30	LINCOLN STREET	125TH STREET	124TH STREET	19,148	L & T CR	1.6%	Crack Sealing - AC	$296
CALPK::LNCLN ST::40	LINCOLN STREET	124TH STREET	END	14,805	ALLIGATOR CR	0.2%	Patching - AC Deep	$552
CALPK::LNCLN ST::40	LINCOLN STREET	124TH STREET	END	14,805	ALLIGATOR CR	0.1%	Crack Sealing - AC	$12
CALPK::LNCLN ST::40	LINCOLN STREET	124TH STREET	END	14,805	L & T CR	0.2%	Crack Sealing - AC	$29
CALPK::LNCLN ST::40	LINCOLN STREET	124TH STREET	END	14,805	L & T CR	1.4%	Crack Sealing - AC	$206
CALPK::LNCLN ST::40	LINCOLN STREET	124TH STREET	END	14,805	POTHOLE	0.0%	Patching - AC Deep	$296
CALPK::LZBTH ST::10	ELIZABETH STREET	VERMONT AVENUE	128TH STREET	15,601	L & T CR	3.9%	Crack Sealing - AC	$606
CALPK::LZBTH ST::10	ELIZABETH STREET	VERMONT AVENUE	128TH STREET	15,601	L & T CR	0.4%	Crack Sealing - AC	$64
CALPK::LZBTH ST::20	ELIZABETH STREET	128TH STREET	127TH STREET	18,329	L & T CR	2.8%	Crack Sealing - AC	$514
CALPK::LZBTH ST::20	ELIZABETH STREET	128TH STREET	127TH STREET	18,329	L & T CR	2.7%	Crack Sealing - AC	$485
CALPK::LZBTH ST::30	ELIZABETH STREET	127TH STREET	126TH STREET	18,095	L & T CR	5.4%	Crack Sealing - AC	$983
CALPK::LZBTH ST::30	ELIZABETH STREET	127TH STREET	126TH STREET	18,095	L & T CR	1.8%	Crack Sealing - AC	$329
CALPK::LZBTH ST::30	ELIZABETH STREET	127TH STREET	126TH STREET	18,095	RUTTING	0.1%	Patching - AC Shallow	$48
CALPK::LZBTH ST::40	ELIZABETH STREET	126TH STREET	125TH STREET	17,853	L & T CR	5.5%	Crack Sealing - AC	$985
CALPK::LZBTH ST::40	ELIZABETH STREET	126TH STREET	125TH STREET	17,853	L & T CR	6.3%	Crack Sealing - AC	$1,133
CALPK::LZBTH ST::50	ELIZABETH STREET	125TH STREET	124TH STREET	20,045	L & T CR	3.4%	Crack Sealing - AC	$673
CALPK::LZBTH ST::50	ELIZABETH STREET	125TH STREET	124TH STREET	20,045	L & T CR	1.2%	Crack Sealing - AC	$235
CALPK::LZBTH ST::50	ELIZABETH STREET	125TH STREET	124TH STREET	20,045	ALLIGATOR CR	0.6%	Crack Sealing - AC	$52
CALPK::LZBTH ST::60	ELIZABETH STREET	124TH STREET	123RD STREET	19,692	L & T CR	3.7%	Crack Sealing - AC	$718
CALPK::LZBTH ST::60	ELIZABETH STREET	124TH STREET	123RD STREET	19,692	L & T CR	7.6%	Crack Sealing - AC	$1,502
CALPK::LZBTH ST::60	ELIZABETH STREET	124TH STREET	123RD STREET	19,692	ALLIGATOR CR	0.4%	Crack Sealing - AC	$33
CALPK::MRSHFL AVE::90	MARSHFIELD AVENUE	120TH STREET	MARSHFIELD AVENUE	13,355	L & T CR	0.9%	Crack Sealing - AC	$115
CALPK::MRSHFL AVE::90	MARSHFIELD AVENUE	120TH STREET	MARSHFIELD AVENUE	13,355	L & T CR	6.1%	Crack Sealing - AC	$814
CALPK::RCN AVE::20	RACINE AVENUE	127TH STREET	126TH STREET	12,040	L & T CR	0.6%	Crack Sealing - AC	$75
CALPK::RCN AVE::20	RACINE AVENUE	127TH STREET	126TH STREET	12,040	RUTTING	0.3%	Patching - AC Shallow	$190
CALPK::RCN AVE::20	RACINE AVENUE	127TH STREET	126TH STREET	12,040	L & T CR	1.1%	Crack Sealing - AC	$133
CALPK::RCN AVE::30	RACINE AVENUE	126TH STREET	125TH STREET	12,014	L & T CR	0.5%	Crack Sealing - AC	$54
CALPK::RCN AVE::30	RACINE AVENUE	126TH STREET	125TH STREET	12,014	L & T CR	0.3%	Crack Sealing - AC	$37
CALPK::RCN AVE::30	RACINE AVENUE	126TH STREET	125TH STREET	12,014	ALLIGATOR CR	0.1%	Patching - AC Deep	$276
CALPK::RCN AVE::30	RACINE AVENUE	126TH STREET	125TH STREET	12,014	RUTTING	0.2%	Patching - AC Shallow	$136
CALPK::RCN AVE::50	RACINE AVENUE	124TH STREET	END	18,411	L & T CR	3.3%	Crack Sealing - AC	$609
CALPK::RCN AVE::50	RACINE AVENUE	124TH STREET	END	18,411	L & T CR	3.5%	Crack Sealing - AC	$639
CALPK::RCN AVE::50	RACINE AVENUE	124TH STREET	END	18,411	BLOCK CR	12.1%	Crack Sealing - AC	$681
CALPK::THRP ST::40	THROOP STREET	127TH STREET	126TH STREET	20,018	BLOCK CR	19.1%	Crack Sealing - AC	$1,164
CALPK::THRP ST::40	THROOP STREET	127TH STREET	126TH STREET	20,018	L & T CR	1.1%	Crack Sealing - AC	$213
CALPK::THRP ST::40	THROOP STREET	127TH STREET	126TH STREET	20,018	ALLIGATOR CR	0.1%	Crack Sealing - AC	$13
CALPK::THRP ST::40	THROOP STREET	127TH STREET	126TH STREET	20,018	BLOCK CR	3.6%	Crack Sealing - AC	$221
CALPK::THRP ST::40	THROOP STREET	127TH STREET	126TH STREET	20,018	L & T CR	2.0%	Crack Sealing - AC	$397
CALPK::WD ST::10	WOOD STREET	127TH STREET	126TH STREET	18,581	L & T CR	4.8%	Crack Sealing - AC	$882

Pavement ID	Road Name	From	To	Area	Distress Type	Density	Maint. Activity	Cost
CALPK::WD ST::10	WOOD STREET	127TH STREET	126TH STREET	18,581	L & T CR	2.8%	Crack Sealing - AC	$511
CALPK::WD ST::20	WOOD STREET	126TH STREET	125TH STREET	18,786	ALLIGATOR CR	1.7%	Patching - AC Deep	$4,244
CALPK::WD ST::20	WOOD STREET	126TH STREET	125TH STREET	18,786	L & T CR	1.2%	Crack Sealing - AC	$226
CALPK::WD ST::20	WOOD STREET	126TH STREET	125TH STREET	18,786	L & T CR	2.0%	Crack Sealing - AC	$367
CALPK::WD ST::20	WOOD STREET	126TH STREET	125TH STREET	18,786	ALLIGATOR CR	1.6%	Patching - AC Deep	$4,058
CALPK::WD ST::30	WOOD STREET	125TH STREET	124TH STREET	17,356	L & T CR	2.0%	Crack Sealing - AC	$342
CALPK::WD ST::30	WOOD STREET	125TH STREET	124TH STREET	17,356	L & T CR	4.4%	Crack Sealing - AC	$770
CALPK::WD ST::30	WOOD STREET	125TH STREET	124TH STREET	17,356	RUTTING	0.1%	Patching - AC Shallow	$50

APPENDIX F – PAVEMENT INVENTORY AND CONDITION TABULAR DATA

Pavement ID	Road Name	From	To	Surface	Rank	Length (FT)	Width (FT)	Area (SF)	PCI	IRI
CALPK::120TH ST::10	120TH STREET	PAGE STREET	WOOD STREET	Gravel	T	311	22	6,852	Gravel	Gravel
CALPK::120TH ST::20	120TH STREET	PAULINA STREET	PAGE STREET	Asphalt	S	336	30	10,067	25	704
CALPK::120TH ST::30	120TH STREET	MARSHFIELD AVENUE	PAULINA STREET	Asphalt	S	350	30	10,487	38	351
CALPK::121ST ST::10	121ST STREET	PAULINA STREET	PAGE STREET	Asphalt	S	344	28	9,635	57	350
CALPK::121ST ST::20	121ST STREET	MARSHFIELD AVENUE	PAULINA STREET	Asphalt	S	330	28	9,243	28	548
CALPK::122ND ST::10	122ND STREET	MARSHFIELD AVENUE	PAULINA STREET	Asphalt	S	305	25	7,637	15	554
CALPK::123RD ST::10	123RD STREET	START	BISHOP STREET	Asphalt	S	276	29	8,014	38	293
CALPK::123RD ST::20	123RD STREET	BISHOP STREET	LOOMIS STREET	Asphalt	S	324	29	9,404	44	369
CALPK::123RD ST::30	123RD STREET	START	ADA STREET	Asphalt	S	98	29	2,845	21	593
CALPK::123RD ST::40	123RD STREET	ADA STREET	THROOP STREET	Asphalt	S	323	29	9,358	26	483
CALPK::123RD ST::50	123RD STREET	THROOP STREET	ELIZABETH STREET	Asphalt	S	336	29	9,731	17	713
CALPK::123RD ST::60	123RD STREET	ELIZABETH STREET	RACINE AVENUE	Asphalt	S	337	28	9,437	27	576
CALPK::123RD ST::70	123RD STREET	RACINE AVENUE	END	Asphalt	S	225	28	6,306	72	511
CALPK::123RD ST::80	123RD STREET	GREEN STREET	HALSTED STREET	Asphalt	S	306	24	7,337	77	315
CALPK::124TH ST::10	124TH STREET	WINCHESTER AVENUE	LINCOLN STREET	Asphalt	S	324	28	9,070	81	211
CALPK::124TH ST::20	124TH STREET	LINCOLN STREET	HONORE STREET	Asphalt	S	327	28	9,153	85	155
CALPK::124TH ST::30	124TH STREET	HONORE STREET	WOOD STREET	Asphalt	S	365	28	10,217	83	253
CALPK::124TH ST::40	124TH STREET	WOOD STREET	MARSHFIELD AVENUE	Gravel	T	768	21	16,128	Gravel	Gravel
CALPK::124TH ST::50	124TH STREET	ASHLAND AVENUE	JUSTINE STREET	Asphalt	P	337	28	9,438	66	206
CALPK::124TH ST::60	124TH STREET	JUSTINE STREET	LAFLIN STREET	Asphalt	P	333	28	9,319	80	199
CALPK::124TH ST::70	124TH STREET	LAFLIN STREET	BISHOP STREET	Asphalt	P	333	28	9,326	81	217
CALPK::124TH ST::80	124TH STREET	BISHOP STREET	LOOMIS STREET	Asphalt	P	331	28	9,263	75	98
CALPK::124TH ST::90	124TH STREET	LOOMIS STREET	ADA STREET	Asphalt	P	332	28	9,297	82	152
CALPK::124TH ST::100	124TH STREET	ADA STREET	THROOP STREET	Asphalt	P	328	28	9,175	81	276
CALPK::124TH ST::110	124TH STREET	THROOP STREET	ELIZABETH STREET	Asphalt	P	335	28	9,375	80	290
CALPK::124TH ST::120	124TH STREET	ELIZABETH STREET	RACINE AVENUE	Asphalt	P	340	29	9,853	79	196
CALPK::124TH ST::130	124TH STREET	RACINE AVENUE	MAY STREET	Asphalt	P	330	29	9,582	78	227
CALPK::124TH ST::140	124TH STREET	MAY STREET	ABERDEEN STREET	Asphalt	P	332	29	9,640	79	245
CALPK::124TH ST::150	124TH STREET	ABERDEEN STREET	CARPENTER STREET	Asphalt	P	332	29	9,638	83	245
CALPK::124TH ST::160	124TH STREET	CARPENTER STREET	MORGAN STREET	Asphalt	P	330	30	9,907	72	198
CALPK::124TH ST::170	124TH STREET	MORGAN STREET	SANGAMON STREET	Asphalt	P	337	28	9,445	80	371
CALPK::124TH ST::180	124TH STREET	SANGAMON STREET	PEORIA STREET	Asphalt	P	333	28	9,315	81	189
CALPK::124TH ST::190	124TH STREET	PEORIA STREET	GREEN STREET	Asphalt	P	334	28	9,344	83	159
CALPK::124TH ST::200	124TH STREET	GREEN STREET	HALSTED STREET	Asphalt	P	312	28	8,731	82	195
CALPK::125TH ST::10	125TH STREET	WINCHESTER AVENUE	LINCOLN STREET	Asphalt	S	331	28	9,259	83	328
CALPK::125TH ST::20	125TH STREET	LINCOLN STREET	HONORE STREET	Asphalt	S	327	28	9,149	85	208
CALPK::125TH ST::30	125TH STREET	HONORE STREET	WOOD STREET	Asphalt	S	332	28	9,289	83	238

Pavement ID	Road Name	From	To	Surface	Rank	Length (FT)	Width (FT)	Area (SF)	PCI	IRI
CALPK::125TH ST::40	125TH STREET	PAGE STREET	PAULINA STREET	Gravel	T	472	15	7,087	Gravel	Gravel
CALPK::125TH ST::50	125TH STREET	PAULINA STREET	125TH STREET	Concrete	S	96	27	2,604	Bridge	Bridge
CALPK::125TH ST::60	125TH STREET	125TH STREET	125TH STREET	Concrete	S	165	27	4,458	Bridge	Bridge
CALPK::125TH ST::70	125TH STREET	125TH STREET	MARSHFIELD AVENUE	Concrete	S	73	27	1,982	Bridge	Bridge
CALPK::125TH ST::80	125TH STREET	MARSHFIELD AVENUE	ASHLAND AVENUE	Asphalt	S	336	29	9,746	61	506
CALPK::125TH ST::90	125TH STREET	ASHLAND AVENUE	JUSTINE STREET	Asphalt	S	330	33	10,906	49	463
CALPK::125TH ST::100	125TH STREET	JUSTINE STREET	LAFLIN STREET	Asphalt	S	335	33	11,052	62	397
CALPK::125TH ST::110	125TH STREET	LAFLIN STREET	BISHOP STREET	Asphalt	S	335	33	11,054	77	382
CALPK::125TH ST::120	125TH STREET	BISHOP STREET	LOOMIS STREET	Asphalt	S	329	33	10,847	68	321
CALPK::125TH ST::130	125TH STREET	LOOMIS STREET	ADA STREET	Asphalt	S	329	33	10,856	37	354
CALPK::125TH ST::140	125TH STREET	ADA STREET	THROOP STREET	Asphalt	S	329	33	10,869	70	463
CALPK::125TH ST::150	125TH STREET	THROOP STREET	ELIZABETH STREET	Asphalt	S	334	33	11,019	79	242
CALPK::125TH ST::160	125TH STREET	ELIZABETH STREET	RACINE AVENUE	Asphalt	S	334	33	11,016	76	281
CALPK::125TH ST::170	125TH STREET	RACINE AVENUE	MAY STREET	Asphalt	S	334	23	7,676	55	163
CALPK::125TH ST::180	125TH STREET	MAY STREET	ABERDEEN STREET	Asphalt	S	335	23	7,712	63	189
CALPK::125TH ST::190	125TH STREET	ABERDEEN STREET	CARPENTER STREET	Asphalt	S	332	23	7,640	62	350
CALPK::125TH ST::200	125TH STREET	CARPENTER STREET	MORGAN STREET	Asphalt	S	318	23	7,303	59	297
CALPK::126TH ST::10	126TH STREET	WINCHESTER AVENUE	LINCOLN STREET	Asphalt	S	331	29	9,589	55	473
CALPK::126TH ST::20	126TH STREET	LINCOLN STREET	HONORE STREET	Asphalt	S	326	28	9,141	27	295
CALPK::126TH ST::30	126TH STREET	HONORE STREET	WOOD STREET	Asphalt	S	329	28	9,222	61	522
CALPK::126TH ST::40	126TH STREET	WOOD STREET	PAGE STREET	Asphalt	S	335	28	9,386	60	257
CALPK::126TH ST::50	126TH STREET	PAGE STREET	PAULINA STREET	Asphalt	S	334	28	9,365	61	200
CALPK::126TH ST::60	126TH STREET	MARSHFIELD AVENUE	ASHLAND AVENUE	Asphalt	S	331	28	9,266	72	379
CALPK::126TH ST::70	126TH STREET	ASHLAND AVENUE	JUSTINE STREET	Asphalt	S	335	24	8,031	70	388
CALPK::126TH ST::80	126TH STREET	JUSTINE STREET	LAFLIN STREET	Asphalt	S	329	25	8,230	58	319
CALPK::126TH ST::90	126TH STREET	LAFLIN STREET	BISHOP STREET	Asphalt	S	337	25	8,436	75	296
CALPK::126TH ST::100	126TH STREET	BISHOP STREET	LOOMIS STREET	Asphalt	S	329	25	8,234	22	328
CALPK::126TH ST::110	126TH STREET	LOOMIS STREET	ADA STREET	Asphalt	S	331	25	8,271	65	310
CALPK::126TH ST::120	126TH STREET	ADA STREET	THROOP STREET	Asphalt	S	329	25	8,222	82	330
CALPK::126TH ST::130	126TH STREET	THROOP STREET	ELIZABETH STREET	Asphalt	S	334	25	8,350	78	367
CALPK::126TH ST::140	126TH STREET	ELIZABETH STREET	RACINE AVENUE	Asphalt	S	313	25	7,820	84	345
CALPK::128TH ST::10	128TH STREET	ASHLAND AVENUE	JUSTINE STREET	Asphalt	S	333	28	9,330	26	489
CALPK::128TH ST::20	128TH STREET	JUSTINE STREET	LAFLIN STREET	Asphalt	S	333	29	9,645	53	545
CALPK::128TH ST::30	128TH STREET	LAFLIN STREET	BISHOP STREET	Asphalt	S	326	29	9,457	69	266
CALPK::128TH ST::40	128TH STREET	BISHOP STREET	LOOMIS STREET	Asphalt	S	335	28	9,388	60	290
CALPK::128TH ST::50	128TH STREET	LOOMIS STREET	ADA STREET	Asphalt	S	320	28	8,960	63	328
CALPK::128TH ST::60	128TH STREET	ADA STREET	THROOP STREET	Asphalt	S	320	30	9,600	62	349

Pavement ID	Road Name	From	To	Surface	Rank	Length (FT)	Width (FT)	Area (SF)	PCI	IRI
CALPK::128TH ST::70	128TH STREET	THROOP STREET	ELIZABETH STREET	Asphalt	S	332	30	9,969	57	382
CALPK::129TH ST::10	129TH STREET	ABERDEEN STREET	CARPENTER STREET	Asphalt	S	263	28	7,356	54	262
CALPK::129TH ST::20	129TH STREET	CARPENTER STREET	END	Asphalt	S	149	37	5,499	60	692
CALPK::BRDN ST::10	ABERDEEN STREET	129TH STREET	VERMONT AVENUE	Asphalt	S	820	29	23,779	29	279
CALPK::BRDN ST::20	ABERDEEN STREET	VERMONT AVENUE	127TH STREET	Asphalt	S	1,003	29	29,083	16	411
CALPK::BRDN ST::30	ABERDEEN STREET	125TH STREET	124TH STREET	Asphalt	S	647	29	18,758	48	385
CALPK::BRDN ST::40	ABERDEEN STREET	124TH STREET	END	Asphalt	S	614	29	17,810	36	314
CALPK::BSHP ST::10	BISHOP STREET	VERMONT AVENUE	128TH STREET	Asphalt	S	516	28	14,454	49	488
CALPK::BSHP ST::20	BISHOP STREET	128TH STREET	128TH STREET	Asphalt	S	124	28	3,464	62	259
CALPK::BSHP ST::30	BISHOP STREET	128TH STREET	127TH STREET	Asphalt	S	654	28	18,320	37	421
CALPK::BSHP ST::40	BISHOP STREET	127TH STREET	126TH STREET	Asphalt	S	670	27	18,092	54	348
CALPK::BSHP ST::50	BISHOP STREET	126TH STREET	125TH STREET	Asphalt	S	674	27	18,203	39	315
CALPK::BSHP ST::60	BISHOP STREET	125TH STREET	124TH STREET	Asphalt	S	655	28	18,335	56	323
CALPK::BSHP ST::70	BISHOP STREET	124TH STREET	END	Asphalt	S	607	28	16,985	68	270
CALPK::CRPNTR ST::10	CARPENTER STREET	129TH STREET	VERMONT AVENUE	Asphalt	S	854	29	24,775	46	196
CALPK::CRPNTR ST::20	CARPENTER STREET	VERMONT AVENUE	127TH STREET	Asphalt	S	937	29	27,166	18	485
CALPK::CRPNTR ST::30	CARPENTER STREET	125TH STREET	124TH STREET	Asphalt	S	656	29	19,018	53	421
CALPK::CRPNTR ST::40	CARPENTER STREET	124TH STREET	123RD STREET	Asphalt	S	661	29	19,165	54	338
CALPK::D ST::10	ADA STREET	VERMONT AVENUE	128TH STREET	Asphalt	S	508	29	14,727	62	228
CALPK::D ST::20	ADA STREET	128TH STREET	128TH STREET	Asphalt	S	145	29	4,199	63	170
CALPK::D ST::30	ADA STREET	128TH STREET	127TH STREET	Asphalt	S	646	29	18,736	59	140
CALPK::D ST::40	ADA STREET	127TH STREET	126TH STREET	Asphalt	S	673	25	16,815	54	297
CALPK::D ST::50	ADA STREET	126TH STREET	125TH STREET	Asphalt	S	666	25	16,638	44	344
CALPK::D ST::60	ADA STREET	125TH STREET	124TH STREET	Asphalt	S	654	29	18,971	31	364
CALPK::D ST::70	ADA STREET	124TH STREET	END	Asphalt	S	618	29	17,908	47	302
CALPK::GRN ST::10	GREEN STREET	124TH STREET	END	Asphalt	S	206	29	5,985	66	386
CALPK::GRN ST::20	GREEN STREET	124TH STREET	123RD STREET	Asphalt	S	664	29	19,244	48	360
CALPK::HNR ST::10	HONORE STREET	127TH STREET	126TH STREET	Asphalt	S	672	29	19,484	58	468
CALPK::HNR ST::20	HONORE STREET	126TH STREET	125TH STREET	Asphalt	S	661	28	18,514	100	-
CALPK::HNR ST::30	HONORE STREET	125TH STREET	124TH STREET	Asphalt	S	659	29	19,118	100	-
CALPK::HNR ST::40	HONORE STREET	124TH STREET	END	Asphalt	S	504	28	14,112	100	-
CALPK::JSTN ST::10	JUSTINE STREET	128TH STREET	END	Asphalt	S	633	28	17,719	82	352
CALPK::JSTN ST::20	JUSTINE STREET	128TH STREET	127TH STREET	Asphalt	S	651	28	18,235	80	281
CALPK::JSTN ST::30	JUSTINE STREET	127TH STREET	126TH STREET	Asphalt	S	671	30	20,140	63	245
CALPK::JSTN ST::40	JUSTINE STREET	126TH STREET	125TH STREET	Asphalt	S	674	30	20,214	64	301
CALPK::JSTN ST::50	JUSTINE STREET	125TH STREET	124TH STREET	Asphalt	S	656	28	18,374	32	230
CALPK::LFLN ST::10	LAFLIN STREET	VERMONT AVENUE	128TH STREET	Asphalt	S	661	28	18,508	56	292

Pavement ID	Road Name	From	To	Surface	Rank	Length (FT)	Width (FT)	Area (SF)	PCI	IRI
CALPK::LFLN ST::20	LAFLIN STREET	128TH STREET	127TH STREET	Asphalt	S	647	28	18,126	64	262
CALPK::LFLN ST::30	LAFLIN STREET	127TH STREET	126TH STREET	Asphalt	S	674	28	18,862	16	348
CALPK::LFLN ST::40	LAFLIN STREET	126TH STREET	125TH STREET	Asphalt	S	671	28	18,796	41	248
CALPK::LFLN ST::50	LAFLIN STREET	125TH STREET	124TH STREET	Asphalt	S	661	28	18,500	54	315
CALPK::LFLN ST::60	LAFLIN STREET	124TH STREET	END	Asphalt	S	663	28	18,577	16	428
CALPK::LMS ST::10	LOOMIS STREET	VERMONT AVENUE	128TH STREET	Asphalt	S	514	28	14,388	64	304
CALPK::LMS ST::20	LOOMIS STREET	128TH STREET	LOOMIS STREET	Asphalt	S	315	28	8,820	84	294
CALPK::LMS ST::30	LOOMIS STREET	LOOMIS STREET	127TH STREET	Asphalt	S	473	28	13,230	75	451
CALPK::LMS ST::40	LOOMIS STREET	127TH STREET	126TH STREET	Asphalt	S	664	28	18,603	58	469
CALPK::LMS ST::50	LOOMIS STREET	126TH STREET	125TH STREET	Asphalt	S	657	27	17,744	46	246
CALPK::LMS ST::60	LOOMIS STREET	124TH STREET	123RD STREET	Asphalt	S	662	28	18,528	75	331
CALPK::LNCLN ST::10	LINCOLN STREET	127TH STREET	126TH STREET	Asphalt	S	669	29	19,393	25	432
CALPK::LNCLN ST::20	LINCOLN STREET	126TH STREET	125TH STREET	Asphalt	S	666	29	19,327	52	269
CALPK::LNCLN ST::30	LINCOLN STREET	125TH STREET	124TH STREET	Asphalt	S	660	29	19,148	78	277
CALPK::LNCLN ST::40	LINCOLN STREET	124TH STREET	END	Asphalt	S	511	29	14,805	70	216
CALPK::LZBTH ST::10	ELIZABETH STREET	VERMONT AVENUE	128TH STREET	Asphalt	S	557	28	15,601	81	363
CALPK::LZBTH ST::20	ELIZABETH STREET	128TH STREET	127TH STREET	Asphalt	S	655	28	18,329	76	445
CALPK::LZBTH ST::30	ELIZABETH STREET	127TH STREET	126TH STREET	Asphalt	S	670	27	18,095	70	303
CALPK::LZBTH ST::40	ELIZABETH STREET	126TH STREET	125TH STREET	Asphalt	S	661	27	17,853	66	188
CALPK::LZBTH ST::50	ELIZABETH STREET	125TH STREET	124TH STREET	Asphalt	S	668	30	20,045	77	231
CALPK::LZBTH ST::60	ELIZABETH STREET	124TH STREET	123RD STREET	Asphalt	S	656	30	19,692	68	255
CALPK::MRGN ST::10	MORGAN STREET	125TH STREET	124TH STREET	Asphalt	S	650	29	18,857	43	456
CALPK::MRGN ST::20	MORGAN STREET	124TH STREET	END	Asphalt	S	611	29	17,710	50	377
CALPK::MRSHFL AVE::10	MARSHFIELD AVENUE	127TH STREET	MARSHFIELD AVENUE	Asphalt	S	299	40	11,957	59	303
CALPK::MRSHFL AVE::20	MARSHFIELD AVENUE	MARSHFIELD AVENUE	126TH STREET	Asphalt	S	396	28	11,085	51	186
CALPK::MRSHFL AVE::30	MARSHFIELD AVENUE	126TH STREET	125TH STREET	Asphalt	S	665	28	18,614	38	264
CALPK::MRSHFL AVE::40	MARSHFIELD AVENUE	125TH STREET	END	Asphalt	S	159	28	4,444	6	766
CALPK::MRSHFL AVE::50	MARSHFIELD AVENUE	124TH STREET	123RD STREET	Gravel	T	722	30	21,667	Gravel	Gravel
CALPK::MRSHFL AVE::60	MARSHFIELD AVENUE	123RD STREET	122ND STREET	Asphalt	P	780	24	18,714	60	350
CALPK::MRSHFL AVE::70	MARSHFIELD AVENUE	122ND STREET	121ST STREET	Asphalt	P	640	25	16,001	57	192
CALPK::MRSHFL AVE::80	MARSHFIELD AVENUE	121ST STREET	120TH STREET	Asphalt	P	612	25	15,309	58	201
CALPK::MRSHFL AVE::90	MARSHFIELD AVENUE	120TH STREET	MARSHFIELD AVENUE	Asphalt	P	382	35	13,355	71	222
CALPK::MRSHFL AVE::100	MARSHFIELD AVENUE	MARSHFIELD AVENUE	119TH STREET	Asphalt	P	234	38	8,884	53	232
CALPK::MY ST::10	MAY STREET	VERMONT AVENUE	127TH STREET	Asphalt	S	1,099	29	31,862	27	516
CALPK::MY ST::20	MAY STREET	125TH STREET	124TH STREET	Asphalt	S	653	28	18,287	46	287
CALPK::MY ST::30	MAY STREET	124TH STREET	123RD STREET	Asphalt	S	658	28	18,414	50	329
CALPK::PG ST::10	PAGE STREET	127TH STREET	126TH STREET	Asphalt	S	678	28	18,990	64	282

Pavement ID	Road Name	From	To	Surface	Rank	Length (FT)	Width (FT)	Area (SF)	PCI	IRI
CALPK::PG ST::20	PAGE STREET	126TH STREET	125TH STREET	Asphalt	S	355	28	9,932	58	284
CALPK::PG ST::30	PAGE STREET	121ST STREET	120TH STREET	Asphalt	S	583	28	16,338	41	296
CALPK::PG ST::40	PAGE STREET	120TH STREET	119TH STREET	Asphalt	S	612	33	20,183	32	394
CALPK::PLN ST::10	PAULINA STREET	127TH STREET	PAULINA STREET	Asphalt	S	388	29	11,254	53	330
CALPK::PLN ST::20	PAULINA STREET	PAULINA STREET	126TH STREET	Asphalt	S	299	28	8,367	22	471
CALPK::PLN ST::30	PAULINA STREET	126TH STREET	125TH STREET	Asphalt	S	666	29	19,305	40	277
CALPK::PLN ST::40	PAULINA STREET	122ND STREET	121ST STREET	Asphalt	S	652	35	22,820	33	347
CALPK::PLN ST::50	PAULINA STREET	121ST STREET	120TH STREET	Asphalt	S	608	33	20,054	27	389
CALPK::PLN ST::60	PAULINA STREET	120TH STREET	119TH STREET	Asphalt	S	613	30	18,378	37	467
CALPK::PR ST::10	PEORIA STREET	124TH STREET	END	Asphalt	S	207	29	5,994	54	465
CALPK::PR ST::20	PEORIA STREET	124TH STREET	END	Asphalt	S	611	28	17,108	53	299
CALPK::RCN AVE::10	RACINE AVENUE	VERMONT AVENUE	127TH STREET	Asphalt	S	1,159	28	32,440	25	402
CALPK::RCN AVE::20	RACINE AVENUE	127TH STREET	126TH STREET	Asphalt	S	669	18	12,040	71	264
CALPK::RCN AVE::30	RACINE AVENUE	126TH STREET	125TH STREET	Asphalt	S	667	18	12,014	76	208
CALPK::RCN AVE::40	RACINE AVENUE	125TH STREET	124TH STREET	Asphalt	S	660	30	19,790	58	326
CALPK::RCN AVE::50	RACINE AVENUE	124TH STREET	END	Asphalt	S	614	30	18,411	71	322
CALPK::SNGMN ST::10	SANGAMON STREET	124TH STREET	END	Asphalt	S	216	29	6,259	40	817
CALPK::SNGMN ST::20	SANGAMON STREET	124TH STREET	123RD STREET	Asphalt	S	663	29	19,241	52	425
CALPK::THRP ST::10	THROOP STREET	VERMONT AVENUE	END	Asphalt	S	762	35	26,679	28	511
CALPK::THRP ST::20	THROOP STREET	VERMONT AVENUE	128TH STREET	Asphalt	S	605	30	18,139	19	680
CALPK::THRP ST::30	THROOP STREET	128TH STREET	127TH STREET	Asphalt	S	650	30	19,499	32	386
CALPK::THRP ST::40	THROOP STREET	127TH STREET	126TH STREET	Asphalt	S	667	30	20,018	66	312
CALPK::THRP ST::50	THROOP STREET	126TH STREET	125TH STREET	Asphalt	S	668	30	20,050	58	331
CALPK::THRP ST::60	THROOP STREET	125TH STREET	124TH STREET	Asphalt	S	659	33	21,757	44	400
CALPK::THRP ST::70	THROOP STREET	124TH STREET	123RD STREET	Asphalt	S	664	29	19,253	21	495
CALPK::WD ST::10	WOOD STREET	127TH STREET	126TH STREET	Asphalt	S	664	28	18,581	69	382
CALPK::WD ST::20	WOOD STREET	126TH STREET	125TH STREET	Asphalt	S	671	28	18,786	66	408
CALPK::WD ST::30	WOOD STREET	125TH STREET	124TH STREET	Asphalt	S	620	28	17,356	69	205
CALPK::WD ST::40	WOOD STREET	120TH STREET	119TH STREET	Gravel	T	602	25	15,048	Gravel	Gravel
CALPK::WNCHST AVE::10	WINCHESTER AVENUE	BURR OAK AVENUE	126TH STREET	Asphalt	S	663	28	18,552	10	458
CALPK::WNCHST AVE::20	WINCHESTER AVENUE	126TH STREET	WINCHESTER AVENUE	Asphalt	S	111	28	3,115	29	998
CALPK::WNCHST AVE::30	WINCHESTER AVENUE	WINCHESTER AVENUE	125TH STREET	Asphalt	S	556	28	15,574	26	432
CALPK::WNCHST AVE::40	WINCHESTER AVENUE	125TH STREET	124TH STREET	Asphalt	S	652	28	18,250	29	447