

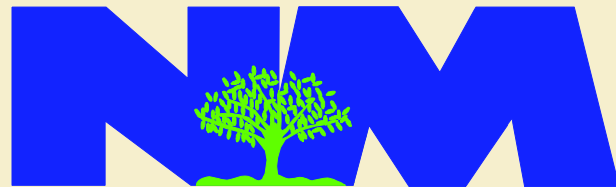
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# Pavement Management System Report

City of North Mankato, MN

October 2014

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## Submitted by:

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Consulting Engineers & Surveyors



## CERTIFICATION

Pavement Management System Report

for

City of North Mankato, Minnesota

Bolton & Menk, Inc. Project No. M18.108422

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

By: \_\_\_\_\_

Daniel R. Sarff, P.E.

License No. 17080

Date: \_\_\_\_\_



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## **I. INTRODUCTION**

The timing of maintenance and rehabilitation actions on bituminous pavements can greatly influence their effectiveness and cost as well as overall pavement life. In general, once a pavement needs treatment, the sooner maintenance or rehabilitation activity is undertaken, the more cost-effective it will be. North Mankato has nearly 65 miles of paved streets which represent a significant capital investment that needs to be well managed.

The goal of this report is to assist the City with understanding its current system condition, assist with management of these assets and provide recommendations for pavement management in the next 5 to 10 years.

In the fall of 2013 and spring of 2014, City staff conducted a visual condition survey of all the paved City streets. This process was undertaken to determine the current condition of these assets and rate their condition relative to each other. The City can use this baseline data for determining the appropriate timing of cost effective road treatments.

The visual conditions were evaluated using a numerical rating system quantifying several different types of pavement distress. These numerical values were used to identify locations of need and to prioritize those needs through comparative analysis of segment rating values.

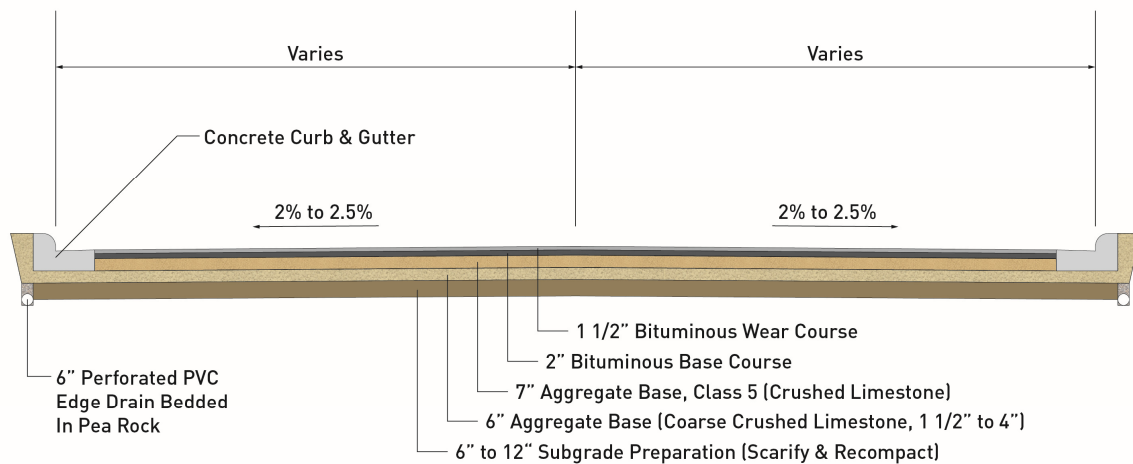
Total reconstruction of a street is a very costly procedure. Research has made known that periodic maintenance projects on streets in good condition can extend their service life at a reduced cost. Maintenance of streets after reconstruction is more cost effective than undergoing multiple reconstructions without maintenance.

### **Street Conditions**

Most of the paved streets in lower North Mankato were originally constructed in the 1950's or earlier. Many of the streets in the lower area have been reconstructed, but some consist of the original construction. Since the lower North Mankato area generally lies within the Minnesota River valley, the subgrade soils throughout the most of the lower area consist of free-draining sand and gravel, which is excellent material for a street sub-base. This is the primary reason that the streets in lower North Mankato, some of which are more than 40 years old, are in good condition.

Most of the streets in the upper North Mankato area were originally constructed after 1970, and most of the paved roadway system in the upper area was significantly expanded during the various commercial and residential development booms in the 1980's, 1990's and 2000's. In general, the soil in the upper North Mankato area consist of heavy clays and are, for the most part, impermeable. The typical pavement section that is used for new residential streets and most residential street reconstruction originated in the 1980's and consists of 6 inches of coarse crushed limestone, 7 inches of Class 5 crushed limestone aggregate base, a 2-inch bituminous base course, and a 1½-inch bituminous wearing course with perforated underdrains along the edges of the street to control subsurface moisture in the base and sub-base. This is a somewhat conservative pavement section and has yielded excellent results in terms of pavement condition and longevity, considering the poor subgrade soils.

**Figure 1: Typical Bituminous Pavement Section – New Residential Streets**



The pavement section used for non-residential streets in the upper and lower North Mankato areas has varied somewhat from the residential street section based on the volume and types of traffic. Generally, the heavier pavement sections have consisted of materials similar to the residential pavement section (coarse crushed limestone, crushed limestone aggregate base and two or more layers of bituminous pavement), but the thickness of each component varies depending of the soil conditions, traffic volumes and the extent of heavy truck traffic.

Exhibit 1 in the Appendix shows the existing City Street System.

## Street Lifecycle

The condition of a street pavement is affected by a number of factors, including:

- Street section (bituminous and gravel base thickness)
- Traffic characteristics and loading
- Subgrade soil (sand, clay, silt)
- Drainage (street profile, cross section, storm sewer)
- Age
- Maintenance program (crack route/seal coating, patching)

Each of the above listed items contributes to the overall condition and lifecycle of a public street. It is not uncommon for streets in the same area, constructed at the same time, to vary in condition.

In the past, the approach utilized by many cities was often rehabilitation and reconstruction to address the poorest condition road segments first with less attention paid to preventative maintenance. The approach that is advocated by pavement experts which recommends that more attention be placed on preventative maintenance and preserving pavement condition to extend the useful life of the road segment.

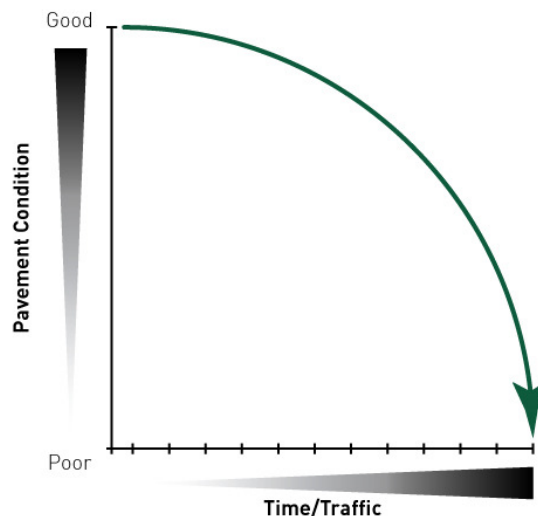
After the initial construction, bituminous pavements require periodic maintenance and rehabilitation in order to maximize the life of the pavement. In general, bituminous pavements perform well, deteriorating slowly during the first 15 to 20 years of the street lifecycle and then tend to deteriorate more rapidly. Proactive maintenance such as repairing cracks and seal coating in the earlier stages of a street lifecycle is recommended as a cost effective pavement maintenance practice. As the pavement condition deteriorates

and surface observations indicate a significant level of stress due to traffic loading, seal coat applications are no longer recommended as the most cost effective maintenance and a more extensive pavement rehabilitation, such as a mill and overlay, is required. Without the more extensive pavement rehabilitation measures, the pavement condition will continue to decline to the point where further maintenance and rehabilitation is not effective and complete reconstruction of the pavement is required. Figure 2 illustrates how the typical street condition will deteriorate 40% during the first 75% of its life and another 40% during the next 12% of its life. The street condition will deteriorate quickly beyond 75% of its life, which typically occurs 15 to 20 years after a street is constructed.

**Figure 2**

### Typical Pavement Lifecycle

No Seal Coating or Overlay

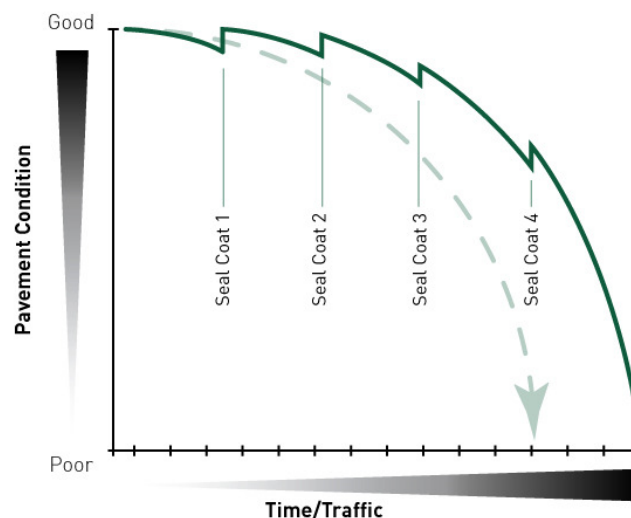


While crack filling and seal coating are very effective in extending the life of a pavement, at some point an overlay is required to replace the pavement strength lost due to the effects of traffic and the environment. Figure 3 shows how a typical pavement lifecycle can be extended with only seal coating.

**Figure 3:**

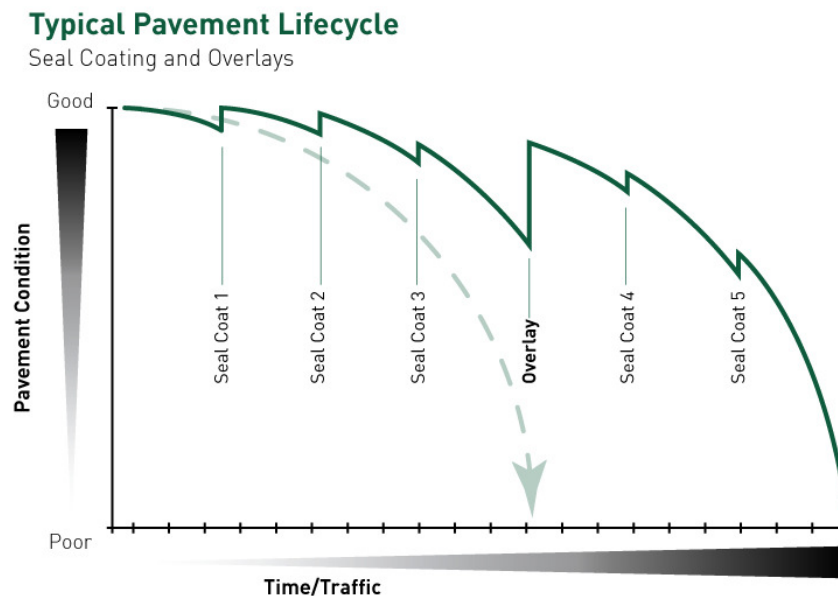
### Typical Pavement Lifecycle

Seal Coating Only



With the proper combination of crack filling, seal coating and periodic overlays, a pavement can be serviceable for 50 years or more. Figure 4 shows how the pavement lifecycle can be maximized using the proper combination of maintenance and rehabilitation.

**Figure 4: Typical Pavement Lifecycle – Seal Coating and Overlays**



Over the years, the City of North Mankato has been very diligent with their crack filling and seal coating program. In general, streets are crack filled and seal coated every 5 to 7 years. In many cases, the Public Works department also patches deteriorated sections of pavement before applying the seal coat. This practice has been effective in preserving the life of the streets within the City. However, some of the streets have reached the point the deterioration curve is accelerating and simply continuing to patch and seal coat will not preserve the pavement. This is especially true for the streets that are subject to higher volumes of traffic. For this reason, the addition of a mill and overlay program along with the current practice of crack filling, patching and seal coating is recommended to preserve the pavement before the condition deteriorates to the point where complete reconstruction is required.

## II. PAVEMENT EVALUATION

### Surface Evaluation

The bituminous streets in North Mankato were evaluated using a visual survey that observed the condition of the pavement surface. The pavement was rated using a numerical condition rating system for several types of pavement distress. The methodology is based on a consistent numeric rating scale ranging from 10 for a newly surfaced street to 1 for a failed surface. There are approximately 2.3 miles of concrete streets within the City of North Mankato, which is only 3.5% of the City's local street system. Concrete streets require significantly different maintenance and preservation strategies than bituminous streets. For this reason, the concrete streets are not included in this evaluation. The City Engineer and Public Works Staff will work together to develop a separate maintenance program for the concrete streets.

### Execution

Prior to conducting the field survey, a database was created for all of the streets using street data developed from the GIS system maintained by Bolton & Menk. Street data was broken down into individual block-by-block street segments to facilitate future analysis using the GIS system. The database provided considerable information about each street segment including street names, length, width, year constructed and year last improved.

Each street section was evaluated in the field by City staff during the fall of 2013.

During the field evaluation, repetitive deterioration conditions were noted and ratings were applied. In addition to surface cracking, the rating system considered other pavement defects including patching and general surface condition. A ride adjustment factor was also applied on higher speed streets (>30 mph) when the pavement condition rating was 6 or less.

### Rating Results

A summary of street segments, pavement condition ratings, and recommended improvements is shown in Exhibit 2 in the Appendix. Exhibit 3 in the Appendix shows the pavement condition rating in the form of a map.

Table 1 below illustrates the observed pavement condition rating versus the street miles within the City. A majority of the streets, over 84%, have a condition rating equal or greater than 5 and about 54% of the streets have a condition rating equal or greater than 7. These figures indicate that the vast majority of City streets have pavement life remaining that can be preserved and extended.

**Table 1: Pavement Rating vs. Paved Miles**

<b>Pavement Condition Rating</b>	<b>Mileage</b>	<b>% of Local Street Mileage</b>
9 – 10	9.0	13.9%
7 – 8	26.1	40.3%
5 – 6	19.0	29.4%
3 – 4	7.8	12.1%
1 – 2	0.5	0.8%
Concrete Streets	2.3	3.6%
<b>Total</b>	<b>64.7</b>	<b>100.0%</b>

Table 2 summarizes the average age of street pavement segments within specific condition categories.

**Table 2: Pavement Rating vs. Age**

<b>Pavement Condition Rating</b>	<b>Average Age of Street (yrs)</b>
9 - 10	9.0
7 - 8	22.3
5 - 6	41.1
3 - 4	41.2
1 - 2	52.9

### **Pavement Condition Rating Values**

The observed pavement condition ratings are shown in tabular form and in map form in Exhibit 2 and Exhibit 3 in the Appendix respectively. Generally, the street segments with ratings equal to or greater than 3 should have some form of maintenance or rehabilitation at this time to preserve and extend useful life. While a high percentage of streets are in good condition at this time, forecasted pavement condition ratings indicate a significant amount of these roadways are expected to deteriorate to a level requiring increased rehabilitation and reconstruction in 5 to 10 years if a do nothing approach is taken.

The most common pavement distress defects noted for the City streets were transverse and shrinkage cracks. During the field condition survey there were no pavement distresses noted that were associated with rutting, corrugations, shoving or excess asphalt. A majority of the streets in North Mankato are in good condition. Many of the transverse and longitudinal road cracks have been routed and sealed, an indication this maintenance procedure has been occurring.

Table 3 below shows a summary of typical recommended maintenance and rehabilitation options based on the current pavement condition rating.

**Table 3: Typical Pavement Condition Ranking**

<b>Pavement Rating Condition</b>	<b>Typical Recommended Maintenance</b>
5 - 10	Continue with Periodic Crack Fill/Patching/Seal Coat Program
3 - 4	Mill & Overlay
1 - 2	Full Depth Reconstruction

In general, the pavement condition rating determines the type of maintenance or rehabilitation that is required. In some cases, even though the pavement condition rating for a street segment may indicate that the pavement should receive pavement maintenance or rehabilitation (seal coat or a mill and overlay), underground utility deficiencies (sanitary sewer, watermain, storm sewer) may dictate that the street segment should be reconstructed. Based on information provided by City staff, a general assessment of the underground utility needs were included in the evaluation and the recommended improvement was modified accordingly.

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### III. PAVEMENT MANAGEMENT

#### Bituminous Pavement Treatment Options

Potential bituminous treatment options for the City of North Mankato to consider can be categorized as pavement maintenance or rehabilitation/reconstruction. Depending on the goals and budget for the City, various approaches can be taken dependent upon the rating evaluation results.

The following is a description of each proposed maintenance method and the potential benefits of each.

**Crack Fill** – A crack fill repair consists of routing out the crack to create a reservoir that is filled with a hot sealant. This procedure reduces the amount of moisture and debris entering the pavement sub-grade through surface cracks. This protection provides for a more stable roadway base and can reduce pavement breakup and potholes due to the effects of freeze/thaw cycles. The City has used crack filling in the past to address pavement cracking. Crack filling is effective for a few years and then must be repeated. It is, however, a very effective way for lengthening the pavement life.

**Seal Coat** – A seal coat consists of an application of bituminous material on the roadway followed by a coating of fine aggregate. The aggregate (or “chip”) is typically left on the roadway for a period of time to allow for traffic to drive on it, before a road sweeper is used to remove any excess and loose aggregate. This treatment method is used to minimize the infiltration of water through the surface, reduce surface oxidation, and potentially improve skid resistance/surface roughness of the pavement. This treatment provides for an extension of the pavement surface life by minimizing the effects of the sun and weather on the existing bituminous material and re-establishing a wearing surface with a desired level of friction. This approach will not prevent ultimate pavement failure due to age or poor sub-grade conditions. The life expectancy of a seal coat is approximately 5 to 7 years.

**Patching** – Provides for the correction of localized pavement deterioration and is generally done to “buy time” until a rehabilitation or reconstruction procedure can be done. Street patching is generally cost effective on small levels that have experienced pavement failure due to a soft base material or other contributing conditions. A roadway’s need for patching generally increases each year and therefore the annual costs of street patching exceed the cost of major maintenance procedures at some point. Patching also provides for a smoother driving surface and extends the life of the pavement. From past practice, we understand the City has used patching extensively, either as a stand-alone maintenance activity or in conjunction with crack filling and seal coating operations.

**Edge Mill and Overlay, Mill and Overlay or Simple Overlay** – A mill and overlay is where the upper 1.5 to 3 inches of pavement are milled (ground up and removed), and a new layer of asphalt pavement is applied with matching thickness. In urban sections, edge milling is done adjacent to the curb and gutter to maintain the current surface elevations and then a pavement overlay is placed. In some situations, the City may want to consider a mill and inlay approach which would result in the removal, by milling, of a thin layer of pavement in the driving lanes and replacement of the bituminous layer.

Mill and overlay treatment extends the life of the roadway by adding additional material to the surface, reestablishing the cross slope of the road to promote drainage and creating a smooth driving surface. A mill and overlay does not address existing pavement cracking in the underlying pavement. Generally, these cracks will propagate through (reflective cracking) the new overlay pavement appearing in the new surface in as soon as 6 months but more typically within 1 to 3 years, at which point crack sealing would be necessary. The life expectancy of a mill and overlay can range from approximately 10 to 20 years,

before the pavement has reached the same deficient condition again. The life expectancy will depend on existing pavement structure, traffic and other factors.

**Full Reconstruction** – A street reconstruction is where the existing layers of asphalt and aggregate base is removed and reconstructed with a new structural layer. In many cases some of the subgrade is also removed and replaced with a structural sand layer (subgrade correction), and portions or all of the curb and gutter may be replaced in urban sections. This is the most expensive option and is typically applied in areas where pavements are showing significant areas of major distress. However, this option provides a period of 20-30 years before major work is required.

**Wearing Course Construction on New Streets** – In the past, the streets in newly developed subdivisions have been constructed using a multi-year, staged construction sequence:

- Underground utility construction (sanitary sewer, watermain, storm sewer) and street construction up to and including aggregate base (Year 1)
- Curb and gutter, sidewalk, driveways and first layer (typically 2”) of bituminous surfacing (Year 2)
- The final layer of bituminous (typically 1½ “) was delayed, sometimes for multiple years, until the traffic associated with the construction of new houses was substantially complete.

As a result of the slowdown in residential development over the past several years, some of the streets constructed up to 8 years ago have not received the final layer of bituminous surfacing. While it is expected that the construction traffic in these areas will continue, some of the pavements are showing signs of distress due to lack of adequate pavement structure.

## Pavement Treatment Cost Estimating

The costs associated with street preventative maintenance, rehabilitation, and reconstruction, will vary depending on the process required. The costs to remove and reconstruct the existing bituminous and gravel base surfaces will be much greater than milling, patching, and overlaying streets. In addition, streets with existing curb and gutter and/or storm sewer will include additional costs for improvement or replacement of these features.

The following table summarizes the unit costs developed per treatment option per square yard of pavement area. The unit costs were developed based on previous City budget numbers (crack filling and seal coating) and local experience with similar type improvements.

**Table 4: Pavement Maintenance and Rehabilitation Options**

Maintenance Treatment	Cost Per Square Yard
Bituminous Patching, Crack Filling & Seal Coating	\$1.00 <sup>1</sup>
Edge Mill and Bituminous Overlay	\$20.00
Full Depth Reconstruction	\$85.00 <sup>3</sup>
Wearing Course Construction on New Streets	\$14.00
<sup>1</sup> Based on City of North Mankato past maintenance budget estimates; includes equipment and material costs only – no labor costs for City staff included.	

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## Pavement Management Cost

Based on the unit costs developed for each type of maintenance or rehabilitation activity, an estimate of pavement maintenance, rehabilitation and reconstruction need was determined by multiplying each rated segment length to the identified pavement treatment.

Based on this computation, the costs associated with the North Mankato pavement management need is summarized in Table 5.

**Table 5: North Mankato Pavement Management Cost Summary**

<b>Improvement</b>	<b>Miles</b>	<b>Estimated Cost</b>
Bituminous Patching, Crack Filling & Seal Coating	50.0	\$987,800
Edge Mill and Bituminous Overlay/Wearing Course construction	9.4	\$2,959,000
<sup>1</sup> Includes street segments recommended for reconstruction due to pavement condition or underground utility needs.		

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## IV. BUDGET ANALYSIS

### Maintenance & Budget

During the last three calendar years (2011 – 2013), the City has spent the following for street maintenance (bituminous patching, crack filling and seal coating):

**Table 6: 2011 – 2013 Street Maintenance Spending**

Year	Amount Spent for Street Maintenance
2011	\$168,834 (actual)
2012	\$120,896 (actual)
2013	\$127,164 (actual)

The average amount spent for street maintenance during the years 2011 – 2013 was \$138,965. The amount budgeted for street maintenance in 2014 was \$152,000. These funding levels are not adequate to allow for anticipated necessary maintenance (crack rout/sealing, pothole patching, and seal coating) or rehabilitation (mill & overlay) to preserve existing pavement asset life on the City’s streets. Without a significant increase, the City can expect continued deterioration of pavement condition and subsequent increases in management cost as treatment options move away from preservation and toward reconstruction.

### Pavement Management Program Options

In analyzing the best pavement management option for the City of North Mankato, the present street condition and preferred maintenance strategies were considered. The goal of this analysis is to find the most cost effective method for the City to use in managing its pavement in the future.

Several factors can be considered in the development of the pavement management plan. In the past, a common focus of pavement management was to address the worst segments first. What research has shown is that focusing funding on streets that are in the worst condition can often times be the least cost effective option. The new paradigm is to prioritize and maintain the City’s best streets to extend the lifecycle of the street and slow deterioration to a condition that requires much more costly rehabilitation. An approach such as this helps ensure the system as a whole is in the best possible condition and that maintenance funds are being maximized. We recommend that the City focus street maintenance funds on streets that are currently in relatively good condition. The City has traditionally applied this strategy with the annual seal coating program, but it is recommended that more extensive use of mill and overlays be incorporated to enhance and accelerate the pavement preservation process.

Segments recommended for reconstruction, either due to poor pavement condition or underground utility needs, have been included in the general pavement management budget scenarios as “unfunded” and are not included in budget scenario annual outlays. It is anticipated that these segments require further consideration in the Capital Planning process.

## Pavement Management Budget Scenarios

Several pavement management budget scenarios were analyzed to better understand the cost of different maintenance strategies on the City system as a whole. The first budget scenario requires an annual street pavement management budget of \$733,000. This scenario assumes that the streets currently designated for mill and overlay will be completed over a 5-year period. The streets that are not designated for mill & overlay or reconstruction would be crack filled and seal coated on a 7-year rotational basis. Some of the streets that currently have a pavement condition rating greater than 4 will likely continue to deteriorate over the 5-year period to a point where they will require a mill and overlay. It is estimated that an annual mill and overlay budget of approximately \$163,000 will be required for years 2021 through 2025.

**Table 7: 5-year Plan Budget Scenario**

Year	Seal Coat	Mill & Overlay/ Wearing Course	Total
2016	\$141,000	\$592,000	<b>\$733,000</b>
2017	\$141,000	\$592,000	<b>\$733,000</b>
2018	\$141,000	\$592,000	<b>\$733,000</b>
2019	\$141,000	\$592,000	<b>\$733,000</b>
2020	\$141,000	\$592,000	<b>\$733,000</b>
2021 - 2025	\$141,000	\$163,000 <sup>1</sup>	<b>\$304,000</b>

<sup>1</sup> Assumes 50% of street segments currently rated at 5 will require mill & overlay and will be completed over 5 year period.

The second budget scenario was developed that is similar to the first scenario, except the street segments currently designated for mill and overlay improvements are assumed to be completed over a 7-year period beginning in 2016. This scenario requires an annual street pavement management budget of \$564,000 for the first seven years and an annual mill and overlay budget of \$245,000 years 2023 through 2027.

**Table 8: 7-year Plan Budget Scenario**

Year	Seal Coat	Mill & Overlay/ Wearing Course	Total
2016	\$141,000	\$423,000	<b>\$564,000</b>
2017	\$141,000	\$423,000	<b>\$564,000</b>
2018	\$141,000	\$423,000	<b>\$564,000</b>
2019	\$141,000	\$423,000	<b>\$564,000</b>
2020	\$141,000	\$423,000	<b>\$564,000</b>
2021	\$141,000	\$423,000	<b>\$564,000</b>
2022	\$141,000	\$423,000	<b>\$564,000</b>
2023 - 2027	\$141,000	\$245,000 <sup>1</sup>	<b>\$386,000</b>

<sup>1</sup> Assumes 75% of street segments currently rated at 5 will require mill & overlay and will be completed over 5 year period.

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## V. FUNDING & FINANCING

### Current Funding

In general, the cost of the initial street construction is paid for by the benefiting property owners, in new subdivisions typically by the developer. In most cases, maintenance and rehabilitation of the pavement after the initial construction is usually funded by the local road jurisdiction (in this case the City of North Mankato) through its annual street maintenance fund. When a street has deteriorated to a point that reconstruction is required, a portion of the reconstruction cost is typically assessed to the property owners abutting the street and a portion is typically covered by the City.

The City's current (2014) street maintenance budget is \$152,000. Over the previous 3 years, the average street maintenance spending has been about \$138,965. Based on the information outlined in the previous section, this funding level will not be adequate to allow for anticipated necessary maintenance and rehabilitation (crack rout/sealing, pothole patching and seal coating) necessary to preserve the life of the City's street pavements.

In order to fund an increased pavement maintenance and rehabilitation budget, additional sources of revenue may need to be reviewed including:

- General Tax Levy
- Special Assessments
- Municipal State Aid Funding
- Federal Funding
- Utility Service Fees
- Franchise Fees
- Street Improvement District (Currently not allowed by Statute)

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

**General Tax Levy** - Minnesota cities are required by law to hold a yearly public hearing to receive comments on the types of services proposed for the upcoming year, as well as the associated costs. These public hearings are referred to as Truth-in-Taxation hearings. The proposed budget and proposed property tax levy and their percentage increases from the current year levels are typically discussed at the hearing. The pavement management plan and associated cost would therefore be addressed as part of the budget preparation process.

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

**Special Assessment** - Special assessments are an indirect form of taxation. They are a way for cities to charge certain properties for the cost of making a local improvement, or to collect certain charges that will benefit those properties. The following two Minnesota Statutes have been used for make street improvements:

- 
- Chapter 429, General Obligation Improvement Bonds, encompasses public improvements such as street improvement projects including grading, curb and gutter and surfacing, sidewalks, and street lighting.
  - Chapter 475, General Obligation Street Reconstruction Bonds, encompasses street reconstruction with limitations on street widening and the installation of new curb and gutter.

Cities may use special assessments to recover the cost of public improvements if the city has adopted an ordinance to provide for it. There are some advantages to using special assessments as a funding source. They are a means of raising money outside the general city tax resources. Special assessment bonds do not count towards statutory debt limitations. They provide a means of levying charges for public services against properties otherwise exempt from taxation.

The City of North Mankato's current assessment policy provides for assessment of a portion of the costs of reconstructing existing bituminous surfaced streets, maintenance and rehabilitation activities such as a crack route/sealing, seal coating and bituminous patching are currently non-assessable improvements. Some cities assess a portion of the cost of overlays to the benefitting properties and the City of North Mankato could consider amending its assessment policy to allow an assessment for mill and overlay projects. However, it may be difficult to demonstrate a benefit (defined as an increase in the property value of the property being assessed) due to street maintenance or rehabilitation activities.

**Municipal State Aid Funding** - North Mankato's population is over 5,000; therefore it is eligible to receive state aid funds. North Mankato's state aid allocation in 2014 was approximately \$655,000 and is expected to decrease slightly in 2015 and future years due to a change in the method used for distributing the MSA funds to the eligible Cities throughout the state. North Mankato designated 15% of its annual MSA allocation for maintenance and interest payments on outstanding State Aid Bonds are also deducted from the total allocation. The remainder, approximately \$404,000 goes into an account designated for construction. MSA Funds for construction can be allocated to construction improvements only on state aid designated streets, including mill and overlay projects, but not seal coating. The City is also able to "borrow ahead" from future years' MSA allocations and can issue bonds that are payable using the annual MSA construction funds. Since the City's current and future MSA are presently allocated towards past and pending projects, Municipal State Aid Funds will not be available for pavement rehabilitation for at least five years.

**Utility Service Fees** - The City of North Mankato collects user fees for the Water Utility and Sanitary Sewer Utility Funds. A potential source of additional revenue to offset pavement management cost is to increase the user fee in each Fund based on the anticipated cost to replace the bituminous pavement in a width comparable to the utility excavation impact.

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

**Street Improvement District Fees** - (currently not allowed in State) - Street Improvement District Fees are proposed from time to time through the state legislative process, but have not been approved to date. Street Improvement District Fees provide a method for Cities to collect annual fees from land owners to supplement maintenance activities and reconstruction priorities.

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## VI. RECOMMENDATIONS

This report provides information to be used in determining an annual maintenance budget for the City streets and can be used as a policy for the future maintenance of the City streets. The results of this plan provide a summary of the potential costs and different budgetary scenarios that can be used as a model for the City system.

The City of North Mankato has several options to maintain and rehabilitate streets since many of the streets have not deteriorated to a point where complete reconstruction is required. Along with that are many different ways to budget for the pavement management system.

Some of the streets included in this report are proposed to undergo reconstruction due to poor pavement condition, underground utility deficiencies, or both. The City could choose to allow these streets to deteriorate further with limited or no maintenance, especially those identified for improvement in the next 5 years. This could be done in order to focus funding on critical maintenance of streets with a higher condition rating in an effort to extend the pavement lifecycle on those streets, while postponing more costly rehabilitation and reconstruction on the streets with lower condition ratings.

Recommendations are noted below:

- Adopt this plan as a framework for future maintenance of City streets.
- The City should continue the ongoing seal coat program to extend the life of the streets with condition ratings of 6 and higher.
- The City should formalize an ongoing mill and overlay program for streets with condition ratings of 3 and 4 that do not have underground utility deficiencies.
- The City should implement the 7-year Pavement Preservation Plan with the 2016 Budget. The total annual budget amount for street maintenance should be increased dramatically in order to maintain preserve all bituminous streets. This increase, based on a 7-year Preservation Budget Plan, would bring the proposed street funding levels for seal coating and mill and overlay to approximately \$564,000/year.
- Street reconstruction for streets with condition ratings of 1 and 2, and which have underground utility deficiencies, should be financed and completed separately as non-preservation improvements that would be implemented when other factors deem the timing appropriate. Financing could be done in multiple ways, including but not limited to, assessments and bonding.
- Although there are many budgeting options that can be developed, it is important the budget plan optimize the remaining pavement life by aggressively targeting preservation improvements first.
- The City should use the information provided within this report as part of the Comprehensive Capital Improvement Planning process. In so doing, the City will better prioritize improvement needs and more effectively manage assets.
- An update of the segment evaluation and management plan should be completed annually to monitor changes in the pavement condition ratings.
- The City should further investigate possible funding sources outlined in Chapter V of this report.



## APPENDIX

Exhibit 1.....	Map Showing Existing North Mankato Street System
Exhibit 2.....	Summary of Street Segments, Pavement Condition Ratings, and Recommended Improvements
Exhibit 3.....	Map Showing Existing Pavement Condition Ratings
Exhibit 4.....	Map Showing Recommended Improvements

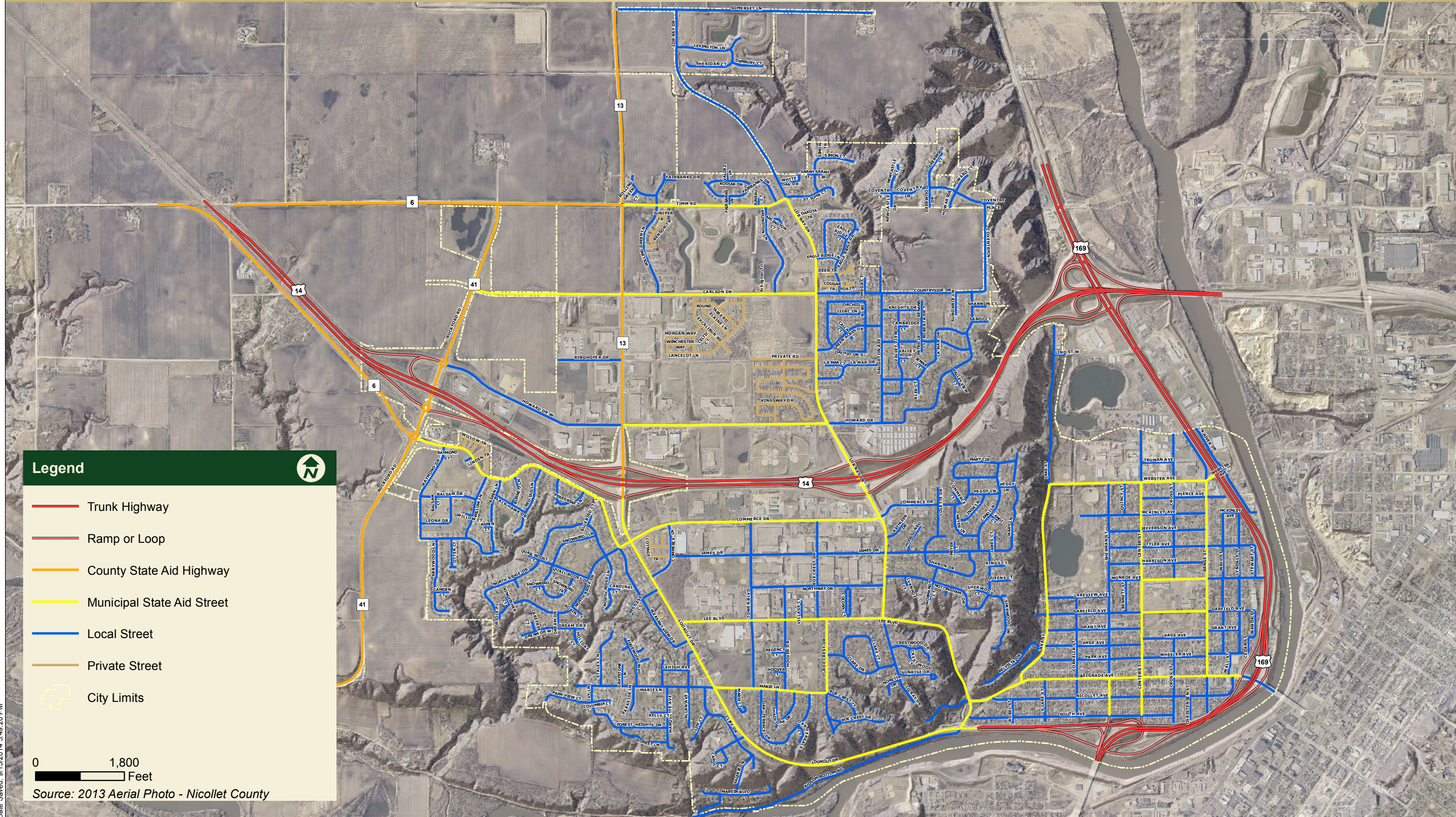


# Existing Street System

2014 Pavement Maintenance

Exhibit 1

September, 2014



## Legend



- Trunk Highway
- Ramp or Loop
- County State Aid Highway
- Municipal State Aid Street
- Local Street
- Private Street
- City Limits

0 1,800  
Feet

Source: 2013 Aerial Photo - Nicollet County

**EXHIBIT 2****NORTH MANKATO PAVEMENT MANAGEMENT SYSTEM****LISTING OF STREET SEGMENTS, CONDITION RATING AND RECOMMENDED IMPROVEMENTS**

STREET NAME:	STREET FROM:	STREET TO:	STREET AGE	PAVEMENT CONDITION RATING	RECOMMENDED IMPROVEMENT	PATCHING, CRACK FILLING & SEAL COATING COST	MILL & OVERLAY/WEARING COURSE COST
BELVISTA DR	END	LAKE ST	32	4	Mill & Overlay		\$97,910
CANDI LN	CANDI CT	PEGGY LN	43	4	Mill & Overlay		\$24,590
CANDI LN	JAMES DR	MEYER LN	43	4	Mill & Overlay		\$16,070
CANDI LN	MEYER LN	CANDI CT	43	4	Mill & Overlay		\$25,820
CANDI LN	PEGGY LN	MARY CIR	43	4	Mill & Overlay		\$10,320
CANDI LN	PEGGY LN	PEGGY LN	43	4	Mill & Overlay		\$7,130
CLIFF DR	CAROL CT	CLIFF CT	52	4	Mill & Overlay		\$41,990
CLIFF DR	CLIFF CT	MARIE LN	52	4	Mill & Overlay		\$26,570
CLIFF DR	END	VALERIE LN	52	4	Mill & Overlay		\$17,360
CLIFF DR	VALERIE LN	CAROL CT	52	2	Mill & Overlay		\$17,410
COMMERCE DR	COMMERCE LN	TOWER BLVD	37	4	Mill & Overlay		\$60,700
COMMERCE DR	TOWER BLVD	ROE CREST DR	37	4	Mill & Overlay		\$100,620
COMMERCE DR	ROE CREST DR	LOR RAY DR	37	4	Mill & Overlay		\$96,070
GARFIELD AVE	END	LAKE ST	62	2	Mill & Overlay		\$6,840
HOWARD DR W	LOOKOUT DR	KINGSWAY DR	32	4	Mill & Overlay		\$193,100
HOWARD DR W	KINGSWAY DR	LOR RAY DR	32	4	Mill & Overlay		\$66,330
LEE BLVD	LOOKOUT DR	TOWER BLVD	30	4	Mill & Overlay		\$92,230
LEE BLVD	TOWER BLVD	HOOVER DR	30	4	Mill & Overlay		\$42,800
LEE BLVD	HOOVER DR	VILLAGE CT	30	4	Mill & Overlay		\$20,540
LEE BLVD	VILLAGE CT	ROE CREST DR	30	4	Mill & Overlay		\$20,530
LEE BLVD	ROE CREST DR	ROE CREST DR	30	4	Mill & Overlay		\$11,150
LEE BLVD	ROE CREST DR	COLONY CT	30	4	Mill & Overlay		\$27,160
LEE BLVD	COLONY CT	LOR RAY DR	30	4	Mill & Overlay		\$43,840
LOOKOUT DR	CAROL CT	MARIE LN	24	4	Mill & Overlay		\$110,880
LOOKOUT DR	MARIE LN	ALLAN AVE	24	4	Mill & Overlay		\$80,790
LOOKOUT DR	ALLAN AVE	PLEASANT VIEW DR	24	4	Mill & Overlay		\$22,650
LOOKOUT DR	PLEASANT VIEW DR	LEE BLVD	24	4	Mill & Overlay		\$34,670
LOOKOUT DR	LEE BLVD	RESTLESS CT	24	4	Mill & Overlay		\$79,190
LOOKOUT DR	RESTLESS CT	COMMERCE LN	24	4	Mill & Overlay		\$27,460
LOOKOUT DR	COMMERCE LN	NORTH RIDGE DR	24	4	Mill & Overlay		\$79,250
LOR RAY DR	CRESTWOOD DR	LEE BLVD	54	4	Mill & Overlay		\$40,030
LOR RAY DR	CLARE DR	CRESTWOOD DR	54	4	Mill & Overlay		\$22,230
NICOLLET AVE	RANGE ST	BELGRADE AVE	23	4	Mill & Overlay		\$43,560
NORTH RIDGE DR	PLEASANT VIEW DR	LOOKOUT DR	34	4	Mill & Overlay		\$16,010
NORTH RIDGE DR	NORTH RIDGE DR	PLEASANT VIEW DR	34	4	Mill & Overlay		\$16,950
NORTH RIDGE DR	DREAM DR	ROBIN CT	34	5	Mill & Overlay		\$16,690
NORTHWAY DR	TOWER BLVD	HOOVER DR	31	4	Mill & Overlay		\$32,820
PLEASANT VIEW DR	PEREGRINE LN	NORTH RIDGE DR	13	4	Mill & Overlay		\$73,690
RANGE ST	NICOLLET AVE	BELGRADE AVE	23	4	Mill & Overlay		\$22,910
ROBEL ST	SOUTH AVE	NICOLLET AVE	62	4	Mill & Overlay		\$15,540
TOWER BLVD	LEE BLVD	NORTHWAY DR	44	4	Mill & Overlay		\$41,490
TOWER BLVD	NORTHWAY DR	JAMES DR	44	4	Mill & Overlay		\$41,130
TOWER BLVD	JAMES DR	COMMERCE DR	44	4	Mill & Overlay		\$42,300
WEBSTER AVE	RANGE ST	US 169	54	4	Mill & Overlay		\$18,210
WHEELER AVE	CENTER ST	CROSS ST	62	4	Mill & Overlay		\$36,470
WHEELER AVE	CROSS ST	RANGE ST	62	4	Mill & Overlay		\$41,700
CLIFF CT	END	CLIFF DR	52	2	Reconstr (0 - 5)		
CROSS ST	HARRISON AVE	TYLER AVE	24	7	Reconstr (0 - 5)		
CROSS ST	JEFFERSON AVE	MCKINLEY AVE	62	5	Reconstr (0 - 5)		
CROSS ST	MCKINLEY AVE	PIERCE AVE	62	5	Reconstr (0 - 5)		
CROSS ST	MONROE AVE	HARRISON AVE	24	7	Reconstr (0 - 5)		
CROSS ST	PIERCE AVE	WEBSTER AVE	41	7	Reconstr (0 - 5)		
CROSS ST	TYLER AVE	JEFFERSON AVE	62	6	Reconstr (0 - 5)		
GARFIELD AVE	CENTER ST	RANGE ST	62	4	Reconstr (0 - 5)		
GRANT AVE	SHERMAN ST	CENTER ST	51	4	Reconstr (0 - 5)		
HARRISON AVE	CROSS ST	RANGE ST	62	6	Reconstr (0 - 5)		
JEFFERSON AVE	CROSS ST	RANGE ST	62	4	Reconstr (0 - 5)		
MARVIN BLVD	END	VALERIE LN	50	1	Reconstr (0 - 5)		
MARVIN BLVD	VALERIE LN	END	46	1	Reconstr (0 - 5)		
MARVIN BLVD	VALERIE LN	VALERIE LN	50	1	Reconstr (0 - 5)		
MCKINLEY AVE	CENTER ST	CROSS ST	62	6	Reconstr (0 - 5)		

**EXHIBIT 2****NORTH MANKATO PAVEMENT MANAGEMENT SYSTEM****LISTING OF STREET SEGMENTS, CONDITION RATING AND RECOMMENDED IMPROVEMENTS**

STREET NAME:	STREET FROM:	STREET TO:	STREET AGE	PAVEMENT CONDITION RATING	RECOMMENDED IMPROVEMENT	PATCHING, CRACK FILLING & SEAL COATING COST	MILL & OVERLAY/WEARING COURSE COST
MCKINLEY AVE	CROSS ST	RANGE ST	62	6	Reconstr (0 - 5)		
MCKINLEY AVE	QUINCY ST	CENTER ST	62	6	Reconstr (0 - 5)		
MCKINLEY AVE	SHERMAN ST	QUINCY ST	62	6	Reconstr (0 - 5)		
MONROE AVE	CENTER ST	CROSS ST	62	3	Reconstr (0 - 5)		
MONROE AVE	CROSS ST	RANGE ST	62	3	Reconstr (0 - 5)		
PAGE AVE	CORNELIA ST	SHERMAN ST	62	3	Reconstr (0 - 5)		
PAGE AVE	LAKE ST	CORNELIA ST	62	3	Reconstr (0 - 5)		
PARK AVE	CORNELIA ST	SHERMAN ST	62	3	Reconstr (0 - 5)		
PARK AVE	LAKE ST	CORNELIA ST	62	5	Reconstr (0 - 5)		
QUINCY ST	MCKINLEY AVE	WEBSTER AVE	41	7	Reconstr (0 - 5)		
SHERMAN ST	BELGRADE AVE	PARK AVE	62	5	Reconstr (0 - 5)		
SHERMAN ST	GRANT AVE	GARFIELD AVE	62	5	Reconstr (0 - 5)		
SHERMAN ST	PAGE AVE	GRANT AVE	62	5	Reconstr (0 - 5)		
SHERMAN ST	PARK AVE	PAGE AVE	62	5	Reconstr (0 - 5)		
TYLER AVE	CROSS ST	RANGE ST	21	5	Reconstr (0 - 5)		
ABBYWOOD LN	CAMDEN CT	ASPEN LN	6	10	Seal Coat	\$4,000	
ABBYWOOD LN	END	CAMDEN CT	6	10	Seal Coat	\$2,360	
ALEK CT	END	LA MAR DR	20	8	Seal Coat	\$1,180	
ALLAN AVE	END	MARIE LN	42	5	Seal Coat	\$3,060	
ALLAN AVE	LEHIGH AVE	LOOKOUT DR	45	5	Seal Coat	\$1,670	
ALLAN AVE	MARIE LN	LEHIGH AVE	45	5	Seal Coat	\$1,240	
ARLINGTON CT	ARLINGTON LN	END	11	8	Seal Coat	\$1,550	
ARLINGTON LN	ARLINGTON CT	TIMM RD	11	8	Seal Coat	\$950	
ARLINGTON LN	CARLSON DR	ARLINGTON CT	12	8	Seal Coat	\$6,050	
ASPEN CT	END	ASPEN LN	7	9	Seal Coat	\$640	
ASPEN LN	ABBYWOOD LN	OTTER CT	6	9	Seal Coat	\$1,140	
ASPEN LN	ASPEN CT	BLACK HAWK DR	7	9	Seal Coat	\$2,430	
ASPEN LN	ASPEN LN	ASPEN CT	7	9	Seal Coat	\$1,840	
ASPEN LN	BLACK HAWK DR	PLEASANT VIEW DR	7	9	Seal Coat	\$1,240	
ASPEN LN	END	ASPEN LN	7	9	Seal Coat	\$1,010	
ASPEN LN	OTTER CT	WILLOW LN	6	9	Seal Coat	\$1,060	
ASPEN LN	RAYMOND DR	ABBYWOOD LN	6	9	Seal Coat	\$1,180	
ASPEN LN	WILLOW LN	ASPEN LN	7	9	Seal Coat	\$2,670	
BALSAM CT	END	BALSAM DR	6	10	Seal Coat	\$910	
BALSAM DR	BALSAM CT	LEONA DR	6	10	Seal Coat	\$1,140	
BALSAM DR	LEONA DR	WILLOW LN	10	9	Seal Coat	\$1,920	
BALSAM DR	RAYMOND DR	BALSAM CT	6	10	Seal Coat	\$1,110	
BELGRADE AVE	END	LEE BLVD	0	10	Seal Coat	\$2,180	
BELGRADE AVE	LEE BLVD	NICOLLET AVE	26	7	Seal Coat	\$2,340	
BELGRADE AVE	NICOLLET AVE	LAKE ST	26	7	Seal Coat	\$3,260	
BELGRADE AVE	LAKE ST	S LAKE ST	26	7	Seal Coat	\$1,940	
BELGRADE AVE	S LAKE ST	CORNELIA ST	26	7	Seal Coat	\$2,600	
BELGRADE AVE	CORNELIA ST	SHERMAN ST	26	7	Seal Coat	\$2,630	
BELGRADE AVE	SHERMAN ST	CENTER ST	26	7	Seal Coat	\$2,650	
BELGRADE AVE	CENTER ST	CROSS ST	26	7	Seal Coat	\$3,470	
BELGRADE AVE	CROSS ST	RANGE ST	26	7	Seal Coat	\$3,570	
BENNETT ST	GARFIELD AVE	MONROE AVE	6	10	Seal Coat	\$1,980	
BLACK HAWK DR	ASPEN LN	BURNETT LN	10	9	Seal Coat	\$1,340	
BLACK HAWK DR	BURNETT LN	RED TAIL LN	10	9	Seal Coat	\$1,210	
BLUEBIRD CT	NORTH RIDGE DR	END	34	7	Seal Coat	\$780	
BURNETT LN	BLACK HAWK DR	PLEASANT VIEW DR	10	9	Seal Coat	\$2,290	
CALLA CT	GREEN ACRES DR	END	25	7	Seal Coat	\$650	
CAMBRIDGE CT	VALLEY VIEW DR	END	19	8	Seal Coat	\$750	
CAMDEN CT	ABBYWOOD LN	END	6	10	Seal Coat	\$1,080	
CANDI CT	CANDI LN	END	43	5	Seal Coat	\$700	
CANDI LN	MARY CIR	MARY CIR	11	7	Seal Coat	\$1,060	
CARDINAL CT	NORTH RIDGE LN	END	19	8	Seal Coat	\$950	
CAREFREE CT	DREAM DR W	END	34	7	Seal Coat	\$770	
CARLSON DR	CITY LIMITS	CR 13	2	10	Seal Coat	\$14,590	
CARLSON DR	CR 13	ROLLING GREEN LN	16	8	Seal Coat	\$3,660	
CARLSON DR	ROLLING GREEN LN	EXCALIBUR RD	16	8	Seal Coat	\$3,590	

**EXHIBIT 2****NORTH MANKATO PAVEMENT MANAGEMENT SYSTEM****LISTING OF STREET SEGMENTS, CONDITION RATING AND RECOMMENDED IMPROVEMENTS**

STREET NAME:	STREET FROM:	STREET TO:	STREET AGE	PAVEMENT CONDITION RATING	RECOMMENDED IMPROVEMENT	PATCHING, CRACK FILLING & SEAL COATING COST	MILL & OVERLAY/WEARING COURSE COST
CARLSON DR	EXCALIBUR RD	LANCELOT LN	16	8	Seal Coat	\$5,060	
CARLSON DR	LANCELOT LN	ARLINGTON LN	16	8	Seal Coat	\$3,230	
CARLSON DR	ARLINGTON LN	LOR RAY DR	16	8	Seal Coat	\$4,200	
CAROL CT	CAROL CT	CLIFF DR	49	5	Seal Coat	\$4,780	
CAROL CT	CLIFF DR	LOOKOUT DR	10	8	Seal Coat	\$750	
CASTLE DR	HAUGHTON AVE	VALLEY VIEW DR	28	8	Seal Coat	\$1,260	
CASTLE DR	LA MAR DR	HOWARD DR	19	8	Seal Coat	\$2,690	
CASTLE DR	ROBERTA DR	LA MAR DR	22	8	Seal Coat	\$1,060	
CASTLE DR	VALLEY VIEW DR	ROBERTA DR	21	8	Seal Coat	\$1,700	
CEDAR ST	WHEELER AVE	CLEVELAND AVE	31	5	Seal Coat	\$880	
CHRISTENSEN ST	END	NICOLLET AVE	23	6	Seal Coat	\$1,660	
CLARE CT	CLARE DR	CLARE DR	49	6	Seal Coat	\$5,280	
CLARE DR	CLARE CT	CLARE CT	49	6	Seal Coat	\$2,930	
CLARE DR	CLARE CT	LOR RAY DR	49	6	Seal Coat	\$1,240	
CLARE DR	ROE CREST DR	CLARE CT	17	7	Seal Coat	\$1,210	
CLEVELAND AVE	CEDAR ST	WANDA ST	31	5	Seal Coat	\$430	
COLETTE DR	COMMERCE DR	END	44	5	Seal Coat	\$1,300	
COLETTE DR	SHARON DR	COMMERCE DR	44	5	Seal Coat	\$2,360	
COLUMBIA CT	IVY LN	END	6	8	Seal Coat	\$1,460	
COMMERCE CT	COMMERCE DR	END	37	6	Seal Coat	\$980	
COMMERCE DR	LOOKOUT DR	COMMERCE LN	14	7	Seal Coat	\$4,840	
COMMERCE DR	LOR RAY DR	COLETTE DR	37	7	Seal Coat	\$5,670	
COMMERCE DR	COLETTE DR	MEYER LN	37	6	Seal Coat	\$1,500	
COMMERCE DR	MEYER LN	COMMERCE CT	37	6	Seal Coat	\$390	
COMMERCE DR	COMMERCE CT	PEGGY LN	37	6	Seal Coat	\$910	
COMMERCE DR	PEGGY LN	MARY CIR	37	6	Seal Coat	\$1,190	
COMMERCE LN	COTTAGE TR	OAK LEAF TR	36	7	Seal Coat	\$1,080	
COMMERCE LN	LOOKOUT DR	COTTAGE TR	36	6	Seal Coat	\$3,930	
COMMERCE LN	OAK LEAF TR	COMMERCE DR	36	7	Seal Coat	\$2,400	
CORNELIA ST	BELGRADE AVE	PARK AVE	8	9	Seal Coat	\$1,570	
CORNELIA ST	GARFIELD AVE	LAKEVIEW AVE	8	9	Seal Coat	\$990	
CORNELIA ST	GRANT AVE	GARFIELD AVE	8	9	Seal Coat	\$1,340	
CORNELIA ST	NICOLLET AVE	BELGRADE AVE	23	5	Seal Coat	\$1,190	
CORNELIA ST	PAGE AVE	GRANT AVE	8	9	Seal Coat	\$1,350	
CORNELIA ST	PARK AVE	PAGE AVE	8	9	Seal Coat	\$1,150	
CORNELIA ST	SOUTH AVE	NICOLLET AVE	23	5	Seal Coat	\$1,110	
COUNTRYSIDE DR	LOR RAY DR	EAGLE RIDGE DR	16	9	Seal Coat	\$2,240	
COUNTRYSIDE DR	EAGLE RIDGE DR	OMEGA CT	16	9	Seal Coat	\$2,370	
COUNTRYSIDE DR	OMEGA CT	HAUGHTON AVE	16	9	Seal Coat	\$1,490	
COUNTRYSIDE DR	HAUGHTON AVE	SUNDANCE LN	18	8	Seal Coat	\$4,170	
COUNTRYSIDE DR	SUNDANCE LN	HOWARD DR	18	8	Seal Coat	\$920	
COUNTRYSIDE DR	HOWARD DR	COVENTRY LN	18	8	Seal Coat	\$730	
COUNTRYSIDE DR	HAUGHTON AVE	HAUGHTON AVE	16	9	Seal Coat	\$120	
CRESTWOOD CT	END	CRESTWOOD DR	48	6	Seal Coat	\$930	
CRESTWOOD DR	CRESTWOOD CT	END	48	6	Seal Coat	\$1,960	
CRESTWOOD DR	LOR RAY DR	CRESTWOOD CT	48	6	Seal Coat	\$1,380	
CROSS ST	BELGRADE AVE	WHEELER AVE	62	6	Seal Coat	\$1,550	
CROSS ST	END	SOUTH AVE	23	7	Seal Coat	\$520	
CROSS ST	NICOLLET AVE	BELGRADE AVE	23	7	Seal Coat	\$1,460	
CROSS ST	SOUTH AVE	NICOLLET AVE	23	7	Seal Coat	\$1,220	
CROSS ST	TRUMAN AVE	CITY LIMITS	24	6	Seal Coat	\$1,720	
CROSS ST	WEBSTER AVE	TRUMAN AVE	41	7	Seal Coat	\$1,620	
CROSS ST	WHEELER AVE	PAGE AVE	62	6	Seal Coat	\$1,490	
DREAM DR	DREAM DR W	NORTH RIDGE DR	34	7	Seal Coat	\$1,130	
DREAM DR E	DREAM DR	HOLIDAY CT	34	7	Seal Coat	\$1,250	
DREAM DR E	HOLIDAY CT	END	34	7	Seal Coat	\$730	
DREAM DR W	CAREFREE CT	DREAM DR	34	7	Seal Coat	\$1,760	
DREAM DR W	END	CAREFREE CT	34	7	Seal Coat	\$1,080	
EAGLE RIDGE CT	END	EAGLE RIDGE DR	16	8	Seal Coat	\$750	
EAGLE RIDGE DR	COUGAR TR	COUNTRYSIDE DR	16	8	Seal Coat	\$530	
EAGLE RIDGE DR	DEER TR	EAGLE RIDGE TR	16	9	Seal Coat	\$80	

**EXHIBIT 2****NORTH MANKATO PAVEMENT MANAGEMENT SYSTEM****LISTING OF STREET SEGMENTS, CONDITION RATING AND RECOMMENDED IMPROVEMENTS**

STREET NAME:	STREET FROM:	STREET TO:	STREET AGE	PAVEMENT CONDITION RATING	RECOMMENDED IMPROVEMENT	PATCHING, CRACK FILLING & SEAL COATING COST	MILL & OVERLAY/WEARING COURSE COST
EAGLE RIDGE DR	EAGLE RIDGE CT	EAGLE RIDGE LN	16	9	Seal Coat	\$1,750	
EAGLE RIDGE DR	EAGLE RIDGE DR	EAGLE RIDGE CT	16	9	Seal Coat	\$1,020	
EAGLE RIDGE DR	EAGLE RIDGE LN	DEER TR	16	9	Seal Coat	\$1,070	
EAGLE RIDGE DR	EAGLE RIDGE LN	EAGLE RIDGE DR	16	8	Seal Coat	\$5,580	
EAGLE RIDGE DR	EAGLE RIDGE TR	COUGAR TR	16	9	Seal Coat	\$950	
EAGLE RIDGE DR	END	EAGLE RIDGE DR	16	9	Seal Coat	\$370	
EAGLE RIDGE LN	EAGLE RIDGE DR	EAGLE RIDGE DR	16	9	Seal Coat	\$1,000	
EAGLE RIDGE LN	LOR RAY DR	EAGLE RIDGE DR	16	9	Seal Coat	\$810	
EDGEWOOD BLVD	EDGEWOOD CIR	END	12	8	Seal Coat	\$760	
EDGEWOOD BLVD	EDGEWOOD CT	EDGEWOOD CIR	12	8	Seal Coat	\$540	
EDGEWOOD BLVD	MARIE LN	MEADOWBROOK CT	31	7	Seal Coat	\$2,150	
EDGEWOOD BLVD	MEADOWBROOK CT	EDGEWOOD CT	12	8	Seal Coat	\$740	
EDGEWOOD CIR	END	EDGEWOOD BLVD	12	9	Seal Coat	\$590	
EDGEWOOD CT	EDGEWOOD BLVD	END	12	7	Seal Coat	\$990	
FAIRBANKS DR	KODIAK DR	TIMM RD	11	8	Seal Coat	\$2,870	
FOREST HEIGHTS DR	FOREST LN	MARQUETTE AVE	14	8	Seal Coat	\$3,470	
FOREST LN	FOREST HEIGHTS DR	MARQUETTE AVE	26	5	Seal Coat	\$2,090	
GARFIELD AVE	BENNETT ST	CENTER ST	62	6	Seal Coat	\$1,320	
GARFIELD AVE	CORNELIA ST	SHERMAN ST	45	6	Seal Coat	\$2,730	
GARFIELD AVE	LAKE ST	CORNELIA ST	62	6	Seal Coat	\$2,340	
GARFIELD AVE	LYNDALE ST	WANDA ST	31	7	Seal Coat	\$1,020	
GARFIELD AVE	RANGE ST	WALL ST	31	7	Seal Coat	\$1,080	
GARFIELD AVE	SHERMAN ST	BENNETT ST	62	6	Seal Coat	\$1,390	
GARFIELD AVE	WALL ST	LYNDALE ST	31	7	Seal Coat	\$1,050	
GOLDFINCH CT	END	NORTH RIDGE DR	21	8	Seal Coat	\$710	
GRANT AVE	CORNELIA ST	SHERMAN ST	51	5	Seal Coat	\$2,130	
GRANT AVE	LAKE ST	CORNELIA ST	51	5	Seal Coat	\$1,920	
GRAYSTONE LN	MARIE LN	END	16	8	Seal Coat	\$1,610	
GREEN ACRES DR	CALLA CT	ORCHID DR N	25	7	Seal Coat	\$1,560	
GREEN ACRES DR	LOR RAY DR	ORCHID DR N	25	7	Seal Coat	\$1,310	
GREEN ACRES DR	ORCHID DR N	CALLA CT	25	7	Seal Coat	\$1,430	
GREEN ACRES DR	ORCHID DR N	HAUGHTON AVE	25	7	Seal Coat	\$1,220	
HARRISON AVE	CENTER ST	CROSS ST	19	7	Seal Coat	\$1,980	
HARRISON AVE	SHERMAN ST	CENTER ST	19	8	Seal Coat	\$1,980	
HAUGHTON AVE	CASTLE DR	GREEN ACRES DR	31	7	Seal Coat	\$1,440	
HAUGHTON AVE	COUNTRYSIDE DR	CITY LIMITS	11	9	Seal Coat	\$1,120	
HAUGHTON AVE	GREEN ACRES DR	KNIGHTS DR	31	7	Seal Coat	\$1,410	
HAUGHTON AVE	HOWARD DR	VALLEY VIEW DR	35	6	Seal Coat	\$2,630	
HAUGHTON AVE	KNIGHTS DR	COUNTRYSIDE DR	33	7	Seal Coat	\$1,540	
HAUGHTON AVE	LA MAR DR	CASTLE DR	31	7	Seal Coat	\$2,060	
HAUGHTON AVE	LA MAR DR	LA MAR DR	31	7	Seal Coat	\$1,330	
HAUGHTON AVE	VALLEY VIEW DR	LA MAR DR	31	6	Seal Coat	\$1,280	
HODGSON RD	JAMES DR	END	46	5	Seal Coat	\$2,220	
HOLIDAY CT	END	DREAM DR E	34	7	Seal Coat	\$1,190	
HOOVER CT	END	HOOVER DR	29	5	Seal Coat	\$890	
HOOVER DR	HOOVER CT	REGENCY CT	29	5	Seal Coat	\$1,770	
HOOVER DR	LEE BLVD	NORTHWAY DR	44	5	Seal Coat	\$2,530	
HOOVER DR	MARIE LN	HOOVER CT	29	5	Seal Coat	\$1,680	
HOOVER DR	REGENCY CT	LEE BLVD	29	5	Seal Coat	\$2,930	
HOWARD DR	LOR RAY DR	HAUGHTON AVE	40	7	Seal Coat	\$4,870	
HOWARD DR	HAUGHTON AVE	VALLEY VIEW CT	38	6	Seal Coat	\$7,890	
HOWARD DR	VALLEY VIEW CT	CASTLE DR	38	8	Seal Coat	\$2,420	
HOWARD DR	CASTLE DR	LA MAR DR	21	8	Seal Coat	\$1,210	
HOWARD DR	LA MAR DR	SANDI CT	21	8	Seal Coat	\$940	
HOWARD DR	SANDI CT	SHANNON CT	15	8	Seal Coat	\$1,130	
HOWARD DR	SHANNON CT	COUNTRYSIDE DR	15	8	Seal Coat	\$1,060	
HOWARD DR W	CITY LIMITS	HOWARD DR W	2	9	Seal Coat	\$10,710	
HOWARD DR W	HOWARD DR W	LOOKOUT DR	16	10	Seal Coat	\$5,930	
IRIS CT	END	GREEN ACRES DR	25	7	Seal Coat	\$650	
IVANHOE CT	END	NOTTINGHAM DR	43	6	Seal Coat	\$760	
IVY LN	PARK VIEW CT	FOREST LN	10	8	Seal Coat	\$3,280	

**EXHIBIT 2****NORTH MANKATO PAVEMENT MANAGEMENT SYSTEM****LISTING OF STREET SEGMENTS, CONDITION RATING AND RECOMMENDED IMPROVEMENTS**

STREET NAME:	STREET FROM:	STREET TO:	STREET AGE	PAVEMENT CONDITION RATING	RECOMMENDED IMPROVEMENT	PATCHING, CRACK FILLING & SEAL COATING COST	MILL & OVERLAY/WEARING COURSE COST
IVY LN	PARK VIEW CT	MARIE LN	26	7	Seal Coat	\$1,250	
JAMES CT	JAMES DR	END	46	5	Seal Coat	\$1,290	
JAMES DR	COMMERCE LN	TOWER BLVD	35	7	Seal Coat	\$7,190	
JAMES DR	LOR RAY DR	HODGSON RD	46	6	Seal Coat	\$1,700	
JAMES DR	HODGSON RD	SHARON DR	46	6	Seal Coat	\$1,240	
JAMES DR	TOWER BLVD	ROE CREST DR	31	7	Seal Coat	\$5,970	
JAMES DR	ROE CREST DR	LOR RAY DR	24	7	Seal Coat	\$6,180	
JAMES DR	SHARON DR	MEYER CT	46	6	Seal Coat	\$2,150	
JAMES DR	MEYER CT	SHARON DR	46	6	Seal Coat	\$1,130	
JAMES DR	SHARON DR	CANDI LN	46	6	Seal Coat	\$700	
JAMES DR	CANDI LN	NOTTINGHAM DR	46	6	Seal Coat	\$810	
JAMES DR	NOTTINGHAM DR	JAMES CT	46	6	Seal Coat	\$360	
JAMES DR	JAMES CT	MARY LN	46	6	Seal Coat	\$1,030	
JEFFERSON AVE	CENTER ST	CROSS ST	19	7	Seal Coat	\$1,980	
JEFFERSON AVE	SHERMAN ST	CENTER ST	19	7	Seal Coat	\$1,980	
JENNA CT	LA MAR DR	END	22	8	Seal Coat	\$570	
JUDSON BOTTOM RD	END	VALERIE LN	54	5	Seal Coat	\$320	
JUDSON BOTTOM RD	VALERIE LN	LOOKOUT DR	54	5	Seal Coat	\$13,890	
JUNEAU CT	TIMM RD	END	10	9	Seal Coat	\$620	
KATHLEEN DR	LOR RAY DR	END	16	6	Seal Coat	\$1,720	
KELLY CT	END	MARQUETTE AVE	14	8	Seal Coat	\$1,270	
KINGFISHER CT	NORTH RIDGE DR	END	21	8	Seal Coat	\$610	
KINGS CT	NOTTINGHAM DR	END	43	5	Seal Coat	\$1,150	
KNIGHTS DR	HAUGHTON AVE	VALLEY VIEW DR	30	8	Seal Coat	\$1,260	
KNIGHTS DR	VALLEY VIEW DR	RENANN CT	30	8	Seal Coat	\$1,700	
LA MAR CT	END	LA MAR DR	19	7	Seal Coat	\$1,480	
LA MAR DR	ALEK CT	JENNA CT	20	7	Seal Coat	\$1,010	
LA MAR DR	CASTLE DR	HOWARD DR	22	7	Seal Coat	\$3,210	
LA MAR DR	HAUGHTON AVE	VALLEY VIEW DR	31	7	Seal Coat	\$1,460	
LA MAR DR	JENNA CT	CASTLE DR	22	7	Seal Coat	\$2,370	
LA MAR DR	LA MAR CT	HAUGHTON AVE	19	7	Seal Coat	\$2,850	
LA MAR DR	LOR RAY DR	LA MAR CT	19	7	Seal Coat	\$2,590	
LA MAR DR	VALLEY VIEW DR	ALEK CT	20	7	Seal Coat	\$1,140	
LAKE ST	BELGRADE AVE	BELVISTA DR	30	6	Seal Coat	\$890	
LAKE ST	BELVISTA DR	PARK AVE	30	6	Seal Coat	\$1,830	
LAKE ST	PARK AVE	PAGE AVE	30	6	Seal Coat	\$840	
LAKE ST	PAGE AVE	GRANT AVE	30	6	Seal Coat	\$1,200	
LAKE ST	GRANT AVE	GARFIELD AVE	30	6	Seal Coat	\$1,190	
LAKE ST	GARFIELD AVE	LAKEVIEW AVE	30	6	Seal Coat	\$1,200	
LAKE ST	LAKEVIEW AVE	WEBSTER AVE	30	6	Seal Coat	\$8,530	
LAKE ST	LIND ST W	END	14	6	Seal Coat	\$1,460	
LAKE ST	WEBSTER AVE	LIND ST W	14	6	Seal Coat	\$7,040	
LAKEVIEW AVE	CORNELIA ST	SHERMAN ST	8	7	Seal Coat	\$2,140	
LAKEVIEW AVE	LAKE ST	CORNELIA ST	8	8	Seal Coat	\$1,930	
LEE BLVD	LOR RAY DR	BELGRADE AVE	5	9	Seal Coat	\$12,880	
LEE BLVD	BELGRADE AVE	SOUTH AVE	9	9	Seal Coat	\$1,820	
LEE BLVD	SOUTH AVE	LOOKOUT DR	10	9	Seal Coat	\$1,450	
LEHIGH AVE	MARQUETTE AVE	ALLAN AVE	45	6	Seal Coat	\$1,950	
LILAC LN	ORCHID DR N	ORCHID DR N	28	6	Seal Coat	\$2,810	
LIND ST W	LAKE ST	CITY LIMITS	36	6	Seal Coat	\$930	
LINDA LN	MEYER LN	PEGGY LN	35	5	Seal Coat	\$3,250	
LOOKOUT DR	US 169	LEE BLVD	10	8	Seal Coat	\$3,810	
LOOKOUT DR	LEE BLVD	CAROL CT	10	7	Seal Coat	\$21,910	
LOR RAY DR	LEE BLVD	NORTHWAY DR	0	10	Seal Coat	\$3,020	
LOR RAY DR	NORTHWAY DR	NOTTINGHAM DR	0	10	Seal Coat	\$820	
LOR RAY DR	NOTTINGHAM DR	JAMES DR	0	10	Seal Coat	\$2,180	
LOR RAY DR	JAMES DR	KATHLEEN DR	0	10	Seal Coat	\$1,450	
LOR RAY DR	KATHLEEN DR	COMMERCE DR	0	10	Seal Coat	\$1,970	
LOR RAY DR	HOWARD DR	KINGSWAY DR	14	8	Seal Coat	\$3,120	
LOR RAY DR	KINGSWAY DR	LA MAR DR	14	8	Seal Coat	\$1,230	
LOR RAY DR	LA MAR DR	PRIVATE RD	14	8	Seal Coat	\$1,850	

**EXHIBIT 2****NORTH MANKATO PAVEMENT MANAGEMENT SYSTEM****LISTING OF STREET SEGMENTS, CONDITION RATING AND RECOMMENDED IMPROVEMENTS**

STREET NAME:	STREET FROM:	STREET TO:	STREET AGE	PAVEMENT CONDITION RATING	RECOMMENDED IMPROVEMENT	PATCHING, CRACK FILLING & SEAL COATING COST	MILL & OVERLAY/WEARING COURSE COST
LOR RAY DR	PRIVATE RD	GREEN ACRES DR	14	8	Seal Coat	\$770	
LOR RAY DR	GREEN ACRES DR	CARLSON DR	14	8	Seal Coat	\$5,250	
LOR RAY DR	CARLSON DR	EAGLE RIDGE LN	14	8	Seal Coat	\$3,210	
LOR RAY DR	EAGLE RIDGE LN	DAKOTA TR	11	8	Seal Coat	\$4,120	
LOR RAY DR	DAKOTA TR	TIMM RD	11	8	Seal Coat	\$2,160	
LOR RAY DR	TIMM RD	WHITE OAK DR	11	8	Seal Coat	\$1,250	
LOR RAY DR	WHITE OAK DR	LEXINGTON LN	54	3	Seal Coat	\$8,970	
LOR RAY DR	LEXINGTON LN	SOMERSET LN	54	3	Seal Coat	\$1,870	
LOR RAY DR	SUNRISE DR	CLARE DR	54	6	Seal Coat	\$1,020	
LOR RAY DR	NORETTA DR	SUNRISE DR	54	6	Seal Coat	\$420	
LOR RAY DR	END	NORETTA DR	49	6	Seal Coat	\$1,660	
LYNDALE ST	GARFIELD AVE	MONROE AVE	20	7	Seal Coat	\$1,980	
LYNDALE ST	GRANT AVE	GARFIELD AVE	31	7	Seal Coat	\$1,180	
LYNDALE ST	MONROE AVE	TYLER AVE	20	7	Seal Coat	\$1,980	
LYNDALE ST	TYLER AVE	MCKINLEY AVE	20	7	Seal Coat	\$1,990	
LYNDALE ST	WHEELER AVE	PAGE AVE	31	6	Seal Coat	\$1,400	
MARIE CT	MARIE CT	MARIE LN	50	5	Seal Coat	\$3,090	
MARIE LN	END	IVY LN	26	6	Seal Coat	\$480	
MARIE LN	IVY LN	STALEY LN	26	7	Seal Coat	\$830	
MARIE LN	STALEY LN	GRAYSTONE LN	31	7	Seal Coat	\$1,910	
MARIE LN	GRAYSTONE LN	PARKSIDE LN	31	7	Seal Coat	\$1,020	
MARIE LN	PARKSIDE LN	EDGEWOOD BLVD	31	7	Seal Coat	\$270	
MARIE LN	EDGEWOOD BLVD	MARQUETTE AVE	31	7	Seal Coat	\$2,340	
MARIE LN	MARQUETTE AVE	MARQUETTE AVE	42	7	Seal Coat	\$430	
MARIE LN	MARQUETTE AVE	ALLAN AVE	42	7	Seal Coat	\$1,940	
MARIE LN	ALLAN AVE	CLIFF DR	42	7	Seal Coat	\$1,470	
MARIE LN	CLIFF DR	LOOKOUT DR	42	7	Seal Coat	\$840	
MARIE LN	LOOKOUT DR	MARIE CT	36	6	Seal Coat	\$1,980	
MARIE LN	MARIE CT	TOWER BLVD	36	6	Seal Coat	\$1,560	
MARIE LN	TOWER BLVD	OAK TERRACE DR	36	6	Seal Coat	\$690	
MARIE LN	OAK TERRACE DR	SHADY OAK DR	36	6	Seal Coat	\$1,380	
MARIE LN	SHADY OAK DR	HOOVER DR	36	6	Seal Coat	\$800	
MARIE LN	HOOVER DR	SHADY OAK DR	36	6	Seal Coat	\$810	
MARIE LN	SHADY OAK DR	OAK TERRACE DR	36	6	Seal Coat	\$1,380	
MARIE LN	OAK TERRACE DR	ROE CREST DR	36	6	Seal Coat	\$1,550	
MARQUETTE AVE	END	FOREST LN	26	6	Seal Coat	\$610	
MARQUETTE AVE	FOREST HEIGHTS DR	KELLY CT	26	6	Seal Coat	\$1,100	
MARQUETTE AVE	FOREST LN	FOREST HEIGHTS DR	26	6	Seal Coat	\$640	
MARQUETTE AVE	KELLY CT	MARIE LN	26	6	Seal Coat	\$1,950	
MARQUETTE AVE	LEHIGH AVE	END	45	6	Seal Coat	\$800	
MARQUETTE AVE	MARIE LN	LEHIGH AVE	45	6	Seal Coat	\$1,240	
MARY CIR	CANDI LN	COMMERCE DR	11	8	Seal Coat	\$2,100	
MARY CIR	CANDI LN	MARY LN	11	8	Seal Coat	\$1,320	
MARY CIR	COMMERCE DR	CANDI LN	11	8	Seal Coat	\$5,270	
MARY LN	JAMES DR	PEGGY LN	46	5	Seal Coat	\$5,010	
MARY LN	MARY CIR	END	46	5	Seal Coat	\$630	
MARY LN	PEGGY LN	MARY CIR	46	5	Seal Coat	\$1,910	
MCKINLEY AVE	END	SHERMAN ST	62	6	Seal Coat	\$1,300	
MCKINLEY AVE	N RIVER DR	END	62	6	Seal Coat	\$290	
MCKINLEY AVE	WALL ST	LYNDALE ST	20	8	Seal Coat	\$1,320	
MEADOWBROOK CT	EDGEWOOD BLVD	END	31	7	Seal Coat	\$1,020	
MEYER CT	JAMES DR	END	40	5	Seal Coat	\$730	
MEYER LN	CANDI LN	LINDA LN	37	6	Seal Coat	\$2,490	
MEYER LN	LINDA LN	COMMERCE DR	44	6	Seal Coat	\$1,180	
MONROE AVE	BENNETT ST	CENTER ST	19	8	Seal Coat	\$970	
MONROE AVE	LYNDALE ST	STEWART ST	31	7	Seal Coat	\$970	
MONROE AVE	RANGE ST	WALL ST	20	8	Seal Coat	\$970	
MONROE AVE	SHERMAN ST	BENNETT ST	19	8	Seal Coat	\$1,020	
MONROE AVE	STEWART ST	US 169	31	7	Seal Coat	\$620	
MONROE AVE	WALL ST	LYNDALE ST	20	8	Seal Coat	\$1,010	
N RIVER DR	MCKINLEY AVE	WEBSTER AVE	54	6	Seal Coat	\$2,950	
N RIVER DR	WEBSTER AVE	CITY LIMITS	54	5	Seal Coat	\$3,090	
NICOLLET AVE	BELGRADE AVE	ROBEL ST	23	8	Seal Coat	\$1,580	
NICOLLET AVE	CENTER ST	CROSS ST	23	8	Seal Coat	\$2,380	

**EXHIBIT 2****NORTH MANKATO PAVEMENT MANAGEMENT SYSTEM****LISTING OF STREET SEGMENTS, CONDITION RATING AND RECOMMENDED IMPROVEMENTS**

STREET NAME:	STREET FROM:	STREET TO:	STREET AGE	PAVEMENT CONDITION RATING	RECOMMENDED IMPROVEMENT	PATCHING, CRACK FILLING & SEAL COATING COST	MILL & OVERLAY/WEARING COURSE COST
NICOLLET AVE	CHRISTENSEN ST	RANGE ST	23	8	Seal Coat	\$1,250	
NICOLLET AVE	CORNELIA ST	SHERMAN ST	23	8	Seal Coat	\$2,420	
NICOLLET AVE	CROSS ST	CHRISTENSEN ST	23	8	Seal Coat	\$1,230	
NICOLLET AVE	ROBEL ST	S LAKE ST	23	8	Seal Coat	\$2,430	
NICOLLET AVE	S LAKE ST	CORNELIA ST	23	8	Seal Coat	\$2,370	
NICOLLET AVE	SHERMAN ST	CENTER ST	23	8	Seal Coat	\$2,400	
NORETTA DR	END	LOR RAY DR	50	6	Seal Coat	\$1,230	
NORMANDY CT	END	NOTTINGHAM DR	43	6	Seal Coat	\$1,390	
NORMANDY ST	NOTTINGHAM DR	SHARON DR	38	5	Seal Coat	\$1,140	
NORTH RIDGE DR	QUAIL ROOST DR	NORTH RIDGE DR	34	5	Seal Coat	\$2,180	
NORTH RIDGE DR	PARTRIDGE PL	QUAIL ROOST DR	34	5	Seal Coat	\$1,060	
NORTH RIDGE DR	ROBIN CT	PARTRIDGE PL	34	5	Seal Coat	\$1,410	
NORTH RIDGE DR	BLUEBIRD CT	QUAIL ROOST CT	34	6	Seal Coat	\$5,210	
NORTH RIDGE DR	GOLDFINCH CT	ORIOLE PL	21	7	Seal Coat	\$4,400	
NORTH RIDGE DR	KINGFISHER CT	DREAM DR	21	7	Seal Coat	\$4,020	
NORTH RIDGE DR	NORTH RIDGE DR	SNOWBIRD LN	34	7	Seal Coat	\$1,710	
NORTH RIDGE DR	ORIOLE PL	KINGFISHER CT	21	8	Seal Coat	\$1,010	
NORTH RIDGE DR	QUAIL ROOST CT	GOLDFINCH CT	21	6	Seal Coat	\$2,400	
NORTH RIDGE DR	SNOWBIRD LN	BLUEBIRD CT	34	7	Seal Coat	\$1,020	
NORTH RIDGE LN	CARDINAL CT	NORTH RIDGE DR	19	8	Seal Coat	\$2,660	
NORTH RIDGE LN	END	CARDINAL CT	19	8	Seal Coat	\$1,680	
NORTHWAY DR	HOOVER DR	ROE CREST DR	31	7	Seal Coat	\$2,270	
NORTHWAY DR	ROE CREST DR	COLONY CT	29	7	Seal Coat	\$2,220	
NORTHWAY DR	COLONY CT	LOR RAY DR	29	7	Seal Coat	\$2,620	
NOTTINGHAM CT	END	NOTTINGHAM DR	43	6	Seal Coat	\$730	
NOTTINGHAM DR	IVANHOE CT	NORMANDY ST	43	6	Seal Coat	\$2,100	
NOTTINGHAM DR	KINGS CT	JAMES DR	43	6	Seal Coat	\$1,130	
NOTTINGHAM DR	LOR RAY DR	IVANHOE CT	43	6	Seal Coat	\$1,540	
NOTTINGHAM DR	NORMANDY ST	NOTTINGHAM CT	43	6	Seal Coat	\$1,170	
NOTTINGHAM DR	NOTTINGHAM CT	SHERWOOD CT	43	6	Seal Coat	\$4,630	
NOTTINGHAM DR	QUEENS CT	KINGS CT	43	6	Seal Coat	\$1,100	
NOTTINGHAM DR	SHERWOOD CT	QUEENS CT	43	6	Seal Coat	\$1,030	
OAK TERRACE CT	END	OAK TERRACE DR	38	6	Seal Coat	\$1,450	
OAK TERRACE DR	MARIE LN	OAK TERRACE CT	38	7	Seal Coat	\$6,990	
OAK TERRACE DR	OAK TERRACE CT	MARIE LN	38	7	Seal Coat	\$2,720	
OMEGA CT	COUNTRYSIDE DR	END	11	9	Seal Coat	\$1,210	
ORCHID DR N	END	ORCHID DR N	28	6	Seal Coat	\$140	
ORCHID DR N	END	ORCHID DR N	28	6	Seal Coat	\$160	
ORCHID DR N	GREEN ACRES DR	LILAC LN	28	6	Seal Coat	\$2,530	
ORCHID DR N	LILAC LN	GREEN ACRES DR	28	6	Seal Coat	\$890	
ORCHID DR N	LILAC LN	ORCHID DR N	28	6	Seal Coat	\$880	
ORCHID DR N	ORCHID DR N	LILAC LN	28	6	Seal Coat	\$870	
ORCHID DR N	ORCHID DR N	ORCHID DR N	28	6	Seal Coat	\$2,740	
ORCHID DR S	END	ORCHID DR S	25	6	Seal Coat	\$160	
ORCHID DR S	GREEN ACRES DR	ORCHID DR S	30	6	Seal Coat	\$2,500	
ORCHID DR S	ORCHID DR S	GREEN ACRES DR	25	6	Seal Coat	\$1,870	
ORIOLE PL	END	NORTH RIDGE DR	21	8	Seal Coat	\$1,150	
OTTER CT	END	OTTER CT	8	10	Seal Coat	\$810	
OTTER CT	END	OTTER CT	8	10	Seal Coat	\$210	
OTTER CT	OTTER CT	ASPEN LN	10	9	Seal Coat	\$2,130	
PAGE AVE	CENTER ST	CROSS ST	62	6	Seal Coat	\$2,390	
PAGE AVE	CROSS ST	RANGE ST	62	6	Seal Coat	\$2,460	
PAGE AVE	RANGE ST	WALL ST	20	8	Seal Coat	\$1,000	
PAGE AVE	SHERMAN ST	CENTER ST	62	5	Seal Coat	\$2,430	
PAGE AVE	WALL ST	LYNDALE ST	20	8	Seal Coat	\$980	
PARK AVE	SHERMAN ST	CENTER ST	62	5	Seal Coat	\$2,730	
PARK VIEW CT	END	IVY LN	24	7	Seal Coat	\$3,740	
PARKSIDE LN	END	MARIE LN	14	7	Seal Coat	\$1,920	
PARTRIDGE PL	END	NORTH RIDGE DR	34	7	Seal Coat	\$1,030	
PATRICIA CT	END	CASTLE DR	28	8	Seal Coat	\$790	
PEGGY LN	CANDI LN	MARY LN	43	5	Seal Coat	\$1,160	
PEGGY LN	COMMERCE DR	LINDA LN	35	6	Seal Coat	\$1,220	
PEGGY LN	LINDA LN	CANDI LN	35	6	Seal Coat	\$1,130	
PEREGRINE LN	END	PEREGRINE LN	16	9	Seal Coat	\$480	

**EXHIBIT 2****NORTH MANKATO PAVEMENT MANAGEMENT SYSTEM****LISTING OF STREET SEGMENTS, CONDITION RATING AND RECOMMENDED IMPROVEMENTS**

STREET NAME:	STREET FROM:	STREET TO:	STREET AGE	PAVEMENT CONDITION RATING	RECOMMENDED IMPROVEMENT	PATCHING, CRACK FILLING & SEAL COATING COST	MILL & OVERLAY/WEARING COURSE COST
PEREGRINE LN	PEREGRINE LN	PLEASANT VIEW DR	16	9	Seal Coat	\$2,410	
PEREGRINE LN	PLEASANT VIEW DR	PEREGRINE LN	16	9	Seal Coat	\$1,840	
PIERCE AVE	CENTER ST	CROSS ST	6	9	Seal Coat	\$2,130	
PIERCE AVE	CROSS ST	RANGE ST	41	7	Seal Coat	\$2,720	
PIERCE AVE	RANGE ST	END	27	7	Seal Coat	\$940	
PLEASANT VIEW DR	ASPEN LN	BURNETT LN	13	8	Seal Coat	\$1,160	
PLEASANT VIEW DR	BURNETT LN	RED TAIL LN	13	8	Seal Coat	\$2,650	
PLEASANT VIEW DR	CITY LIMITS	RAYMOND DR	12	8	Seal Coat	\$2,640	
PLEASANT VIEW DR	EVERGREEN TR	HEMLOCK TR	12	8	Seal Coat	\$750	
PLEASANT VIEW DR	HEMLOCK TR	LINDEN TR	12	8	Seal Coat	\$770	
PLEASANT VIEW DR	LINDEN TR	WILLOW TR	12	8	Seal Coat	\$1,850	
PLEASANT VIEW DR	NORTH RIDGE DR	RESTLESS CT	34	7	Seal Coat	\$4,210	
PLEASANT VIEW DR	PEREGRINE LN	PEREGRINE LN	19	8	Seal Coat	\$2,340	
PLEASANT VIEW DR	PLEASANT VIEW TR	LOOKOUT DR	21	7	Seal Coat	\$3,640	
PLEASANT VIEW DR	RAYMOND DR	EVERGREEN TR	12	8	Seal Coat	\$1,640	
PLEASANT VIEW DR	RED TAIL LN	PEREGRINE LN	16	8	Seal Coat	\$1,700	
PLEASANT VIEW DR	RESTLESS CT	PLEASANT VIEW TR	21	7	Seal Coat	\$1,780	
PLEASANT VIEW DR	WILLOW LN	ASPEN LN	7	8	Seal Coat	\$1,310	
PLEASANT VIEW DR	WILLOW TR	WILLOW LN	12	8	Seal Coat	\$200	
QUAIL ROOST CT	END	NORTH RIDGE DR	34	7	Seal Coat	\$880	
QUAIL ROOST DR	NORTH RIDGE DR	SNOWBIRD LN	34	8	Seal Coat	\$1,100	
QUAIL ROOST DR	SNOWBIRD LN	NORTH RIDGE DR	34	6	Seal Coat	\$1,100	
QUAIL ROOST DR	SNOWBIRD LN	SNOWBIRD LN	34	6	Seal Coat	\$1,720	
QUEENS CT	NOTTINGHAM DR	END	43	5	Seal Coat	\$1,580	
RANGE ST	END	NICOLLET AVE	23	7	Seal Coat	\$1,270	
RANGE ST	WEBSTER AVE	CITY LIMITS	49	5	Seal Coat	\$3,510	
RED TAIL LN	BLACK HAWK DR	PLEASANT VIEW DR	11	9	Seal Coat	\$3,590	
RED TAIL LN	END	BLACK HAWK DR	11	9	Seal Coat	\$1,830	
REGENCY CT	END	HOOVER DR	28	6	Seal Coat	\$1,050	
RENANN CT	KNIGHTS DR	END	28	8	Seal Coat	\$730	
RESTLESS CT	END	PLEASANT VIEW DR	31	7	Seal Coat	\$1,560	
RESTLESS CT	PLEASANT VIEW DR	LOOKOUT DR	34	7	Seal Coat	\$1,410	
RINGHOFFER DR	END	LOOKOUT DR	13	9	Seal Coat	\$5,970	
ROBEL ST	END	SOUTH AVE	62	5	Seal Coat	\$360	
ROBERTA DR	CASTLE DR	KNIGHTS DR	28	8	Seal Coat	\$2,350	
ROBIN CT	END	NORTH RIDGE DR	34	7	Seal Coat	\$960	
ROE CREST CT	ROE CREST DR	ROE CREST DR	54	5	Seal Coat	\$3,050	
ROE CREST DR	LEE BLVD	NORTHWAY DR	44	6	Seal Coat	\$2,400	
ROE CREST DR	NORTHWAY DR	JAMES DR	31	7	Seal Coat	\$2,900	
ROE CREST DR	JAMES DR	COMMERCE DR	31	7	Seal Coat	\$3,010	
ROE CREST DR	END	ROE CREST CT	49	6	Seal Coat	\$2,030	
ROE CREST DR	ROE CREST DR	MARIE LN	49	5	Seal Coat	\$1,660	
ROE CREST DR	ROE CREST DR	ROE CREST DR	49	5	Seal Coat	\$1,160	
ROE CREST DR	ROE CREST DR	ROE CREST DR	49	5	Seal Coat	\$1,370	
ROLLING GREEN LN	CARLSON DR	TIMM RD	11	8	Seal Coat	\$7,120	
S LAKE ST	END	SOUTH AVE	28	7	Seal Coat	\$310	
S LAKE ST	NICOLLET AVE	BELGRADE AVE	28	7	Seal Coat	\$1,190	
S LAKE ST	SOUTH AVE	NICOLLET AVE	28	7	Seal Coat	\$1,110	
SANDI CT	HOWARD DR	END	26	8	Seal Coat	\$1,260	
SARAH CIR	SIMON CT	END	12	9	Seal Coat	\$1,210	
SARAH ST	CITY LIMITS	SIMON CT	12	9	Seal Coat	\$570	
SHADY OAK DR	END	SHADY OAK DR	38	7	Seal Coat	\$1,310	
SHADY OAK DR	MARIE LN	SHADY OAK DR	38	7	Seal Coat	\$2,400	
SHADY OAK DR	SHADY OAK DR	MARIE LN	35	6	Seal Coat	\$2,740	
SHANNON CT	HOWARD DR	END	10	8	Seal Coat	\$1,090	
SHARON DR	COLETTE DR	JAMES DR	46	5	Seal Coat	\$1,660	
SHARON DR	END	COLETTE DR	46	5	Seal Coat	\$650	
SHARON DR	JAMES DR	NORMANDY ST	38	6	Seal Coat	\$1,700	
SHARON DR	NORMANDY ST	JAMES DR	38	6	Seal Coat	\$4,620	
SHERMAN ST	GARFIELD AVE	LAKEVIEW AVE	42	5	Seal Coat	\$1,270	
SHERMAN ST	HARRISON AVE	TYLER AVE	42	6	Seal Coat	\$1,240	
SHERMAN ST	JEFFERSON AVE	MCKINLEY AVE	42	6	Seal Coat	\$1,250	
SHERMAN ST	LAKEVIEW AVE	MONROE AVE	42	5	Seal Coat	\$1,230	
SHERMAN ST	MCKINLEY AVE	WEBSTER AVE	42	6	Seal Coat	\$2,490	

**EXHIBIT 2****NORTH MANKATO PAVEMENT MANAGEMENT SYSTEM****LISTING OF STREET SEGMENTS, CONDITION RATING AND RECOMMENDED IMPROVEMENTS**

STREET NAME:	STREET FROM:	STREET TO:	STREET AGE	PAVEMENT CONDITION RATING	RECOMMENDED IMPROVEMENT	PATCHING, CRACK FILLING & SEAL COATING COST	MILL & OVERLAY/WEARING COURSE COST
SHERMAN ST	MONROE AVE	HARRISON AVE	42	5	Seal Coat	\$1,250	
SHERMAN ST	NICOLLET AVE	BELGRADE AVE	44	6	Seal Coat	\$1,760	
SHERMAN ST	SOUTH AVE	NICOLLET AVE	44	6	Seal Coat	\$1,640	
SHERMAN ST	TYLER AVE	JEFFERSON AVE	42	6	Seal Coat	\$1,250	
SHERWOOD CT	END	NOTTINGHAM DR	38	6	Seal Coat	\$1,040	
SHERWOOD DR	END	SHERWOOD DR	43	5	Seal Coat	\$510	
SHERWOOD DR	END	SHERWOOD DR	43	5	Seal Coat	\$4,470	
SHERWOOD DR	SHERWOOD DR	NOTTINGHAM DR	43	5	Seal Coat	\$910	
SIMON CT	SARAH ST	SIMON TR	11	9	Seal Coat	\$1,590	
SIMON CT	SIMON TR	END	11	9	Seal Coat	\$2,400	
SIMON CT	ST JOHN CT	SARAH ST	11	9	Seal Coat	\$1,380	
SNOWBIRD CT	END	SNOWBIRD LN	19	8	Seal Coat	\$800	
SNOWBIRD LN	QUAIL ROOST DR	NORTH RIDGE DR	19	6	Seal Coat	\$4,290	
SNOWBIRD LN	QUAIL ROOST DR	SNOWBIRD TR	19	8	Seal Coat	\$1,310	
SNOWBIRD LN	SNOWBIRD CT	QUAIL ROOST DR	19	8	Seal Coat	\$1,720	
SNOWBIRD LN	SNOWBIRD TR	SNOWBIRD CT	19	8	Seal Coat	\$2,500	
SOUTH AVE	CENTER ST	CROSS ST	28	7	Seal Coat	\$2,240	
SOUTH AVE	CORNELIA ST	SHERMAN ST	28	7	Seal Coat	\$2,270	
SOUTH AVE	LEE BLVD	ROBEL ST	28	7	Seal Coat	\$2,740	
SOUTH AVE	ROBEL ST	S LAKE ST	28	7	Seal Coat	\$1,990	
SOUTH AVE	S LAKE ST	CORNELIA ST	28	7	Seal Coat	\$1,920	
SOUTH AVE	SHERMAN ST	CENTER ST	28	7	Seal Coat	\$2,250	
ST JOHN CT	LOR RAY DR	SIMON CT	12	9	Seal Coat	\$2,480	
ST JOHN CT	SIMON CT	END	12	9	Seal Coat	\$1,670	
STALEY LN	MARIE LN	END	26	6	Seal Coat	\$4,460	
STEWART ST	MONROE AVE	TYLER AVE	31	5	Seal Coat	\$2,130	
SUNDANCE LN	END	COUNTRYSIDE DR	15	9	Seal Coat	\$1,690	
SUNRISE DR	LOR RAY DR	SUNRISE DR	50	6	Seal Coat	\$2,990	
TIMM RD	CR 13	ROLLING GREEN LN	8	9	Seal Coat	\$2,860	
TIMM RD	ROLLING GREEN LN	FAIRBANKS LN	8	9	Seal Coat	\$5,710	
TIMM RD	FAIRBANKS LN	JUNEAU CT	8	9	Seal Coat	\$2,310	
TIMM RD	JUNEAU CT	ARLINGTON LN	8	9	Seal Coat	\$590	
TIMM RD	ARLINGTON LN	FAIRBANKS DR	8	9	Seal Coat	\$960	
TIMM RD	FAIRBANKS DR	LOR RAY DR	8	9	Seal Coat	\$910	
TOWER BLVD	MARIE LN	LEE BLVD	36	7	Seal Coat	\$6,140	
TRUMAN AVE	CENTER ST	CROSS ST	40	6	Seal Coat	\$2,710	
TYLER AVE	CENTER ST	CROSS ST	19	7	Seal Coat	\$1,980	
TYLER AVE	LYNDALE ST	STEWART ST	62	7	Seal Coat	\$1,040	
TYLER AVE	RANGE ST	WALL ST	62	7	Seal Coat	\$1,000	
TYLER AVE	SHERMAN ST	CENTER ST	19	7	Seal Coat	\$1,980	
TYLER AVE	WALL ST	LYNDALE ST	62	7	Seal Coat	\$980	
VALERIE LN	JUDSON BOTTOM RD	MARVIN BLVD	6	8	Seal Coat	\$1,430	
VALERIE LN	MARVIN BLVD	CLIFF DR	16	5	Seal Coat	\$3,240	
VALLEY HIGH CT	VALLEY VIEW DR	END	22	8	Seal Coat	\$710	
VALLEY VIEW CT	END	HOWARD DR	38	7	Seal Coat	\$1,320	
VALLEY VIEW DR	CAMBRIDGE CT	KNIGHTS DR	19	8	Seal Coat	\$1,180	
VALLEY VIEW DR	CASTLE DR	CAMBRIDGE CT	19	8	Seal Coat	\$1,180	
VALLEY VIEW DR	HAUGHTON AVE	LA MAR DR	31	6	Seal Coat	\$2,430	
VALLEY VIEW DR	LA MAR DR	VALLEY HIGH CT	22	7	Seal Coat	\$1,650	
VALLEY VIEW DR	VALLEY HIGH CT	CASTLE DR	22	8	Seal Coat	\$1,210	
VILLAGE CT	LEE BLVD	END	46	5	Seal Coat	\$1,380	
WALL ST	BELGRADE AVE	WHEELER AVE	4	10	Seal Coat	\$1,450	
WALL ST	GARFIELD AVE	MONROE AVE	20	8	Seal Coat	\$1,990	
WALL ST	GRANT AVE	GARFIELD AVE	20	8	Seal Coat	\$1,190	
WALL ST	MONROE AVE	TYLER AVE	20	8	Seal Coat	\$1,990	
WALL ST	TYLER AVE	MCKINLEY AVE	20	8	Seal Coat	\$2,280	
WALL ST	WHEELER AVE	GRANT AVE	20	8	Seal Coat	\$1,410	
WANDA ST	CLEVELAND AVE	GARFIELD AVE	31	5	Seal Coat	\$1,720	
WEBSTER AVE	LAKE ST	SHERMAN ST	41	7	Seal Coat	\$5,350	
WEBSTER AVE	SHERMAN ST	QUINCY ST	41	7	Seal Coat	\$1,430	
WEBSTER AVE	QUINCY ST	CENTER ST	41	7	Seal Coat	\$1,500	
WEBSTER AVE	CENTER ST	CROSS ST	41	7	Seal Coat	\$2,930	
WEBSTER AVE	CROSS ST	RANGE ST	41	7	Seal Coat	\$2,940	
WEBSTER AVE	US 169	N RIVER DR	41	7	Seal Coat	\$560	

**EXHIBIT 2****NORTH MANKATO PAVEMENT MANAGEMENT SYSTEM****LISTING OF STREET SEGMENTS, CONDITION RATING AND RECOMMENDED IMPROVEMENTS**

STREET NAME:	STREET FROM:	STREET TO:	STREET AGE	PAVEMENT CONDITION RATING	RECOMMENDED IMPROVEMENT	PATCHING, CRACK FILLING & SEAL COATING COST	MILL & OVERLAY/WEARING COURSE COST
WHEELER AVE	LYNDALE ST	CEDAR ST	31	6	Seal Coat	\$600	
WHEELER AVE	RANGE ST	WALL ST	21	6	Seal Coat	\$1,220	
WHEELER AVE	WALL ST	LYNDALE ST	31	6	Seal Coat	\$1,130	
WHITE OAK DR	LOR RAY DR	CITY LIMITS	8	9	Seal Coat	\$1,950	
WILLOW CT	END	WILLOW LN	10	9	Seal Coat	\$600	
WILLOW LN	ASPEN LN	WILLOW CT	11	9	Seal Coat	\$1,770	
WILLOW LN	BALSAM DR	PLEASANT VIEW DR	11	9	Seal Coat	\$1,920	
WILLOW LN	WILLOW CT	BALSAM DR	11	9	Seal Coat	\$1,230	
COVENTRY CT	END	NEWCASTLE CT	8	8	Wearing Course		11,780
COVENTRY LN	COVENTRY PL	COUNTRYSIDE DR	8	7	Wearing Course		103,320
COVENTRY LN	DEERWOOD CT	HOWARD CT	8	8	Wearing Course		28,210
COVENTRY LN	HOWARD CT	COVENTRY PL	8	7	Wearing Course		31,370
COVENTRY LN	NEWCASTLE CT	DEERWOOD CT	8	8	Wearing Course		41,300
COVENTRY PL	COVENTRY LN	CITY LIMITS	8	8	Wearing Course		8,750
DANBURY CT	SHERIDAN CT	END	6	9	Wearing Course		33,630
DEERWOOD CT	COVENTRY LN	END	8	8	Wearing Course		40,530
DEERWOOD DR	CITY LIMITS	COVENTRY LN	8	8	Wearing Course		20,710
FAIRBANKS DR	END	KODIAK DR	7	8	Wearing Course		4,980
FAIRBANKS DR	FAIRBANKS LN	KODIAK DR	7	8	Wearing Course		27,550
FAIRBANKS DR	KODIAK DR	FAIRBANKS LN	7	8	Wearing Course		27,390
FAIRBANKS DR	ROLLING GREEN LN	END	5	9	Wearing Course		12,750
FAIRBANKS LN	TIMM RD	FAIRBANKS DR	7	9	Wearing Course		10,250
HOWARD CT	COVENTRY LN	END	8	9	Wearing Course		22,000
HOWARD DR	CITY LIMITS	COVENTRY LN	8	8	Wearing Course		17,830
KODIAK DR	FAIRBANKS DR	VALDEZ LN	7	8	Wearing Course		21,860
KODIAK DR	VALDEZ LN	FAIRBANKS DR	7	8	Wearing Course		26,640
LEONA DR	RAYMOND DR	BALSAM DR	6	8	Wearing Course		57,900
LEXINGTON LN	LOR RAY DR	SHERIDAN CT	6	9	Wearing Course		56,480
LEXINGTON LN	SHERIDAN CT	END	6	9	Wearing Course		16,580
NEWCASTLE CT	COVENTRY CT	END	8	8	Wearing Course		31,760
NEWCASTLE DR	CITY LIMITS	COVENTRY CT	8	8	Wearing Course		14,820
RAYMOND CT	RAYMOND DR	END	6	8	Wearing Course		9,590
RAYMOND DR	ASPEN LN	LEONA DR	6	8	Wearing Course		15,910
RAYMOND DR	BALSAM DR	RAYMOND CT	6	8	Wearing Course		47,120
RAYMOND DR	LEONA DR	BALSAM DR	6	8	Wearing Course		28,730
RAYMOND DR	RAYMOND CT	PLEASANT VIEW DR	6	8	Wearing Course		11,220
ROLLING GREEN CT	ROLLING GREEN LN	END	4	9	Wearing Course		7,130
ROLLING GREEN LN	FAIRBANKS DR	END	4	8	Wearing Course		6,600
ROLLING GREEN LN	ROLLING GREEN CT	END	4	8	Wearing Course		17,640
ROLLING GREEN LN	ROLLING GREEN LN	FAIRBANKS DR	4	8	Wearing Course		18,240
ROLLING GREEN LN	ROLLING GREEN LN	ROLLING GREEN CT	4	8	Wearing Course		21,450
ROLLING GREEN LN	TIMM RD	ROLLING GREEN LN	4	8	Wearing Course		10,350
SHERIDAN CT	DANBURY CT	LEXINGTON LN	6	9	Wearing Course		14,250
SHERIDAN CT	END	DANBURY CT	6	9	Wearing Course		50,750
VALDEZ LN	KODIAK DR	CITY LIMITS	7	9	Wearing Course		7,950
BELGRADE AVE	NICOLLET AVE	RAMP US 169	26	N/A	Concrete		
BELGRADE AVE	RAMP US 169	CITY LIMITS	26	N/A	Concrete		
BELGRADE AVE	RAMP US 169	RAMP US 169	26	N/A	Concrete		
BELGRADE AVE	RANGE ST	NICOLLET AVE	26	N/A	Concrete		
CENTER ST	BELGRADE AVE	PARK AVE	19	N/A	Concrete		
CENTER ST	GARFIELD AVE	MONROE AVE	19	N/A	Concrete		
CENTER ST	GRANT AVE	GARFIELD AVE	19	N/A	Concrete		
CENTER ST	HARRISON AVE	TYLER AVE	19	N/A	Concrete		
CENTER ST	JEFFERSON AVE	MCKINLEY AVE	19	N/A	Concrete		
CENTER ST	MCKINLEY AVE	PIERCE AVE	19	N/A	Concrete		
CENTER ST	MONROE AVE	HARRISON AVE	19	N/A	Concrete		
CENTER ST	NICOLLET AVE	BELGRADE AVE	24	N/A	Concrete		
CENTER ST	PAGE AVE	GRANT AVE	19	N/A	Concrete		
CENTER ST	PAGE AVE	PAGE AVE	19	N/A	Concrete		
CENTER ST	PARK AVE	PAGE AVE	19	N/A	Concrete		
CENTER ST	PIERCE AVE	WEBSTER AVE	19	N/A	Concrete		
CENTER ST	SOUTH AVE	NICOLLET AVE	24	N/A	Concrete		
CENTER ST	TRUMAN AVE	CITY LIMITS	38	N/A	Concrete		
CENTER ST	TYLER AVE	JEFFERSON AVE	19	N/A	Concrete		

**EXHIBIT 2****NORTH MANKATO PAVEMENT MANAGEMENT SYSTEM****LISTING OF STREET SEGMENTS, CONDITION RATING AND RECOMMENDED IMPROVEMENTS**

STREET NAME:	STREET FROM:	STREET TO:	STREET AGE	PAVEMENT CONDITION RATING	RECOMMENDED IMPROVEMENT	PATCHING, CRACK FILLING & SEAL COATING COST	MILL & OVERLAY/WEARING COURSE COST
CENTER ST	WEBSTER AVE	TRUMAN AVE	41	N/A	Concrete		
LOR RAY DR	COMMERCE DR	HOWARD DR	14	N/A	Concrete		
RANGE ST	BELGRADE AVE	WHEELER AVE	21	N/A	Concrete		
RANGE ST	GARFIELD AVE	MONROE AVE	21	N/A	Concrete		
RANGE ST	GRANT AVE	GARFIELD AVE	21	N/A	Concrete		
RANGE ST	HARRISON AVE	TYLER AVE	21	N/A	Concrete		
RANGE ST	JEFFERSON AVE	MCKINLEY AVE	21	N/A	Concrete		
RANGE ST	MCKINLEY AVE	PIERCE AVE	21	N/A	Concrete		
RANGE ST	MONROE AVE	HARRISON AVE	21	N/A	Concrete		
RANGE ST	PAGE AVE	GRANT AVE	21	N/A	Concrete		
RANGE ST	PIERCE AVE	WEBSTER AVE	21	N/A	Concrete		
RANGE ST	TYLER AVE	JEFFERSON AVE	21	N/A	Concrete		
RANGE ST	WHEELER AVE	PAGE AVE	21	N/A	Concrete		
RANGE ST	WHEELER AVE	WHEELER AVE	21	N/A	Concrete		

\$ 987,800.00 \$ 2,959,020.00

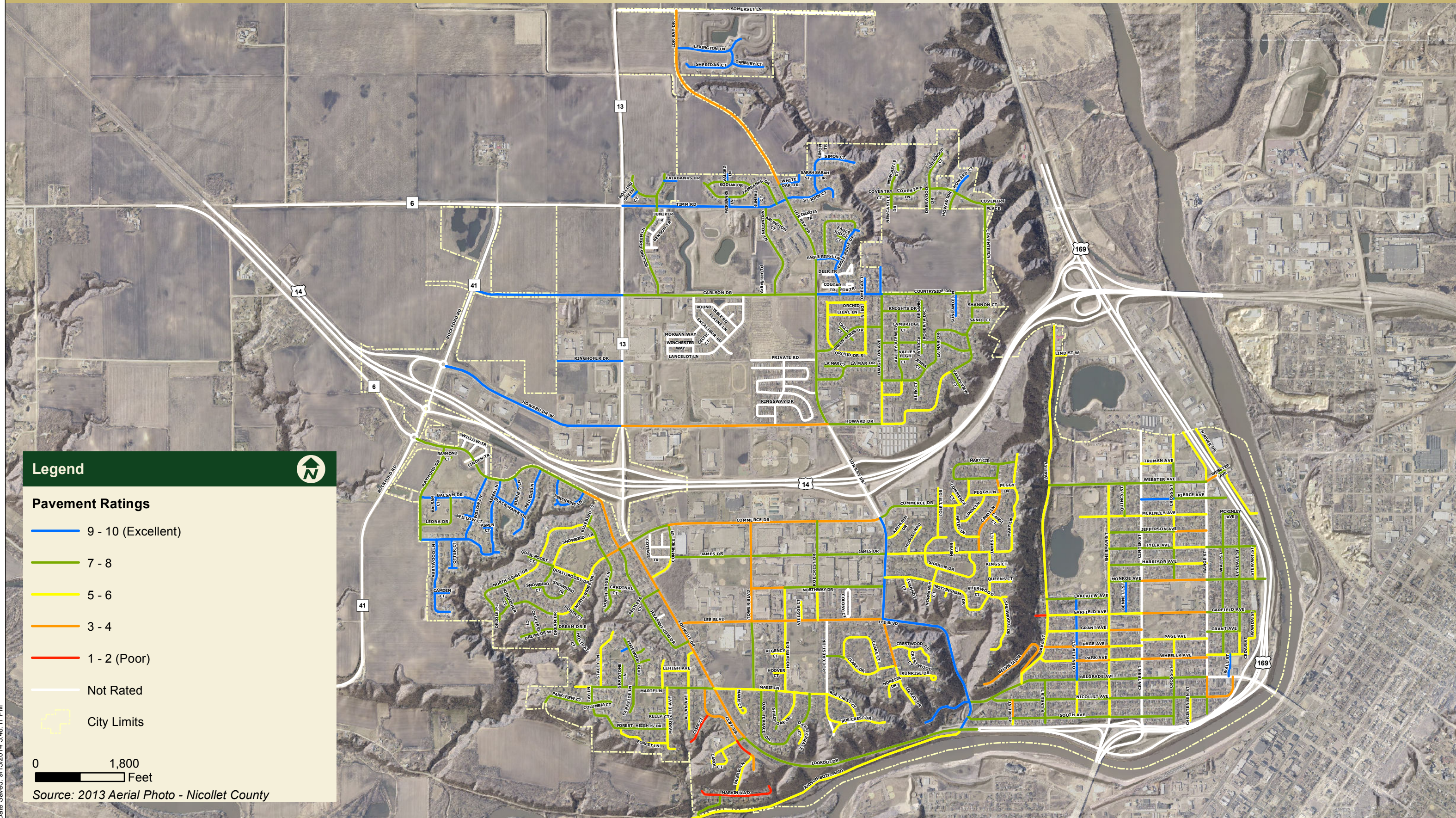


# Existing Pavement Ratings

2014 Pavement Maintenance

Exhibit 3

September, 2014



## Legend

### Pavement Ratings

- 9 - 10 (Excellent)
- 7 - 8
- 5 - 6
- 3 - 4
- 1 - 2 (Poor)
- Not Rated
- City Limits

0 1,800  
Feet

Source: 2013 Aerial Photo - Nicollet County

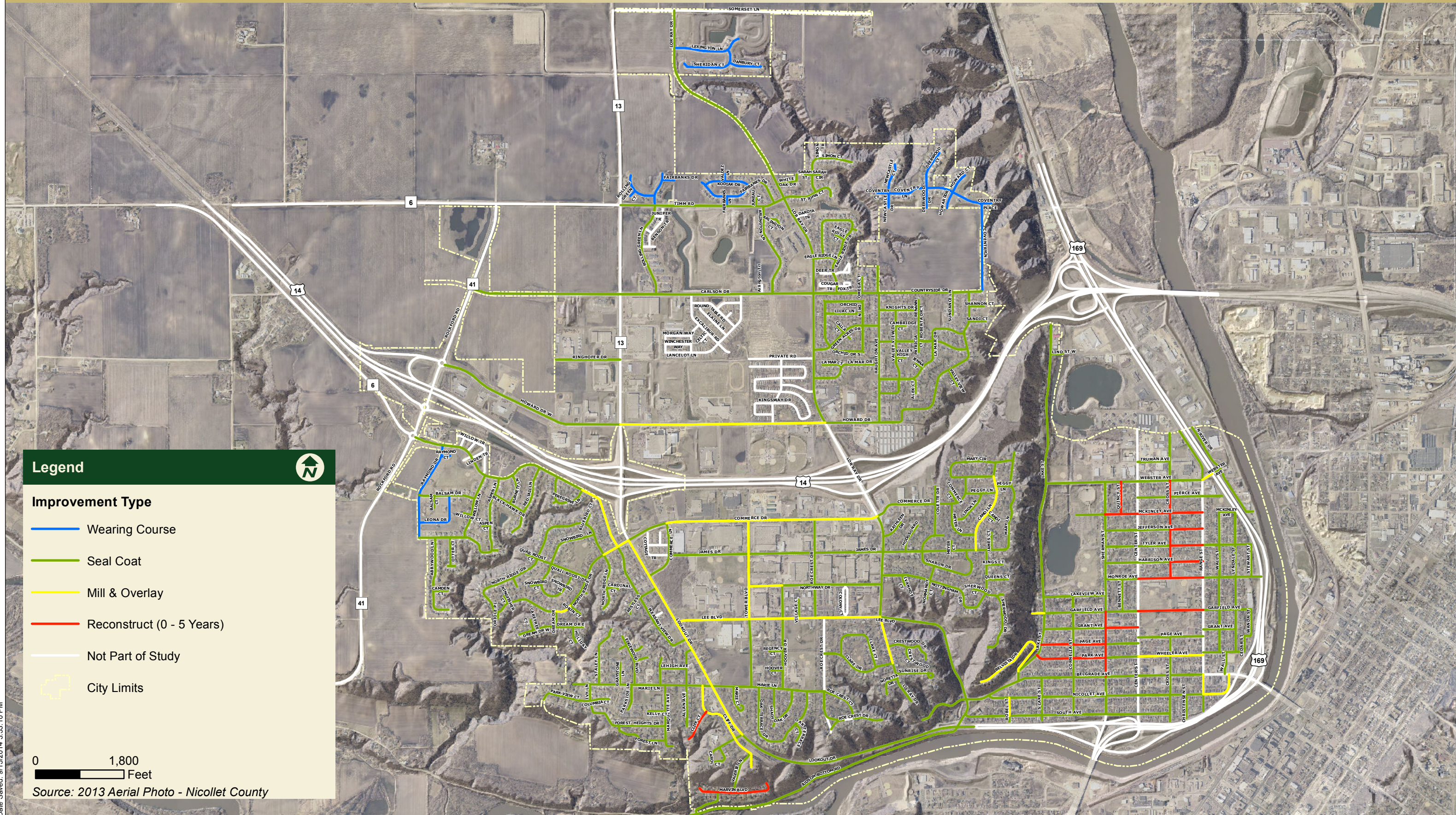


# Recommended Improvements

2014 Pavement Maintenance

Exhibit 4

September, 2014



## Legend

### Improvement Type

- Wearing Course
- Seal Coat
- Mill & Overlay
- Reconstruct (0 - 5 Years)
- Not Part of Study
- City Limits

0 1,800  
Feet

Source: 2013 Aerial Photo - Nicollet County