



## **Pavement Management Program**

### **ABOUT**

The City of Baxter's Pavement Management Program (PMP) is designed to track the condition of City streets and to outline the costs associated with regular street maintenance along with rehabilitation projects including mill & overlays, full depth reclamation, reconstruction, new construction, and utility installations. Maintenance activities are aimed at preventing or minimizing the deterioration of street pavements while rehabilitation activities (on degraded streets) are aimed at restoring pavements to a newer more maintainable condition.

In 2013, the City's streets had an overall average condition rating of 6.1 on a scale of 1 to 10 with 10 being a new street. A rating of 3 or lower would typically be considered a condition so poor that the public would generally avoid using the street. The City wholeheartedly began pavement maintenance and rehabilitation activities in 2014. In 2016 the City's streets had an increased overall condition rating of 6.6. Most cities in Minnesota strive to maintain their streets at an average condition rating of 7 to 8.

The City is on the lower end of the condition rating scale on a citywide basis. As a result, there is a large amount of street rehabilitation work that is needed. Recently there has been and there will continue to be significant and costly street rehabilitation projects in the near future.

Pavement Management is a recognized Best Management Practice where proper maintenance and rehabilitation activities applied at the proper times minimize overall pavement ownership costs. The City Council believes this proactive long-term approach to pavement maintenance and rehabilitation is necessary to responsibly address the ownership of this City infrastructure.

### **HISTORY**

The City started pavement maintenance and rehabilitation projects in 2014 as a result of recommendations provided in the 2013 Bolton & Menk pavement management study. PASER pavement ratings were performed in 2013 as a part of that study. Since then quite a few sealcoat, rehabilitation, and reconstruction projects have been completed in the City. Due to the condition of the streets, these projects were pursued citywide during 2014 and 2015 generally based on a worst first priority basis. Pursuing projects on this basis raised concerns over efficiency, public notifications, and impacts to property owners.

During early 2016 the City officially adopted a Pavement Management Plan (PMP) which provided direction on how to evaluate, prioritize, and develop street maintenance and improvement projects in a more deliberate and coordinated fashion in the City. The City was split into seven areas where maintenance and rehabilitation projects could be identified and consolidated over a seven year cycle - see attached exhibit "Pavement Management Areas". During 2016 identified streets in area 3 were sealcoated and PASER ratings were taken in all 7 areas.



The City requested PASER ratings which were obtained during April of 2016. The new ratings were intended to aid in future project prioritization and development along with evaluating the impact of the street projects recently completed across the City. The results of PASER ratings from 2013 and 2016 are shown in the following table. This information shows improvements in the overall network rating over the three years pavement management projects have been completed in the City. This indicates the overall condition of the streets in the City are improving.

Summary Table				
Street	Area	2013 Ave		2016 Ave
Residential	1	6.66		6.39
Residential	2	6.46		6.44
Residential	3	5.93		7.45
Residential	4	5.77		6.99
Residential	5	6.34		6.64
Residential	6	5.19		4.97
Residential	7	6.16		6.98
	Ave	6.10		6.57
MSA (Collector)	1	5.88		4.85
MSA (Collector)	2	6.64		6.84
MSA (Collector)	3	5.99		6.39
MSA (Collector)	4	5.77		7.96
MSA (Collector)	5	6.42		4.95
MSA (Collector)	6	na		na
MSA (Collector)	7	5.04		4.90
	Ave	6.04		6.52
Citywide	Ave	6.09		6.56



## **PROGRAM PURPOSE**

Delays in maintenance increase the quantity of pavement defects and their severity so that when corrected, the rehabilitation cost is much greater. It is beneficial from both a cost and user perspective to focus on preventive maintenance efforts, where possible, to extend pavement life and enhance system-wide performance in a cost-effective and efficient way by providing the right maintenance or repair at the right time. Therefore, the purpose of this program is to:

1. Preserve and perpetuate existing City owned local and MSA street pavements in a fiscally responsible manner
2. Correct pavement deficiencies and slow the rate of pavement deterioration
3. Consider immediate and long term needs of existing local street pavements
4. Coordinate pavement maintenance and rehabilitation with utility repairs and redevelopment efforts
5. Provide information for better informed and involved decision making

Providing a mechanism, to address the problem of deteriorating streets, is a responsible action for the City to take and will help avoid having a large portion of the network deteriorate at any one time.

## **PROGRAM GOAL**

The goal of the Pavement Management Program is to continuously maintain the City owned (local and MSA) street system in a safe and fiscally responsible manner. To accomplish this, the Public Works Department is to program and implement long-term, cost-effective maintenance and rehabilitation strategies in a manner intended to maximize street pavement lives at the lowest long term cost.

To accomplish this, preventive maintenance activities (crack sealing and sealcoats) should generally be performed on local streets with higher PASER ratings; and, rehabilitation activities (full depth reclamation and overlay projects) should be performed on streets with lower PASER ratings.

## **PROGRAM CONCEPTS**

The following major concepts are incorporated into the pavement management program:

1. Appropriate pavement maintenance and rehabilitation done at the proper time reduces City pavement costs over the long term
2. The PMS methodology used is the PASER system
3. Preventive maintenance strategies consist of patching, crack sealing, seal coating, and micro-surfacing
4. Rehabilitation strategies consists of overlays, reclamation, removal, and reconstruction
5. Preventive maintenance strategies are employed on streets with PASER ratings of 6 or higher - except streets older than 15 years in age
6. Rehabilitation strategies are employed on streets with PASER ratings of 6, when they are older than 15 years in age, and streets with PASER ratings of 5 and lower
7. The City is divided into seven (7) pavement management areas, of roughly comparable size, to the extent practicable
8. Rehabilitation projects are prioritized with worst being considered first
9. Future utility coordination and development efforts are factored into project identification and prioritization



## **PROGRAM CONCEPTS (continued)**

10. Future utility coordination and development efforts are factored into project identification and prioritization
11. This program is aimed at addressing existing City street pavement preservation and perpetuation needs
12. MSA streets are contained and acknowledged in the street database
13. Construction of new (additional) streets and enhancement or reconstruction of existing streets due to utility or redevelopment needs are acknowledged in the street database but are not funded under this program
14. All streets should be rated at least once every three (3) years to maintain accurate street condition ratings

## **PROGRAM SCHEDULE**

A seven-year rotation or cycle is utilized to allow maintenance and rehabilitation activities to be focused in one “area” of the City per year. A seven-year cycle was chosen based on preventive maintenance research which shows that roads, in good condition, should be sealcoated every 5-7 years. Based on this cycle, the City was divided into 7 management areas of comparable size. The areas were also divided along physical boundaries where possible. As can be seen in the attached exhibit “Pavement Management Areas”, preventive maintenance (sealcoating) is scheduled in area 4 and rehabilitation projects in area 7 for 2017. Maintenance and projects may vary slightly from this schedule due to past commitments and other development or utility related concerns that need to be addressed from time to time.

## **SUMMARY**

The historical approach to managing pavements has been reactive – wait until pavements fail then fix them. The investment in good or fair pavements and the use of quantitative data was limited. With the establishment of a Pavement Management Program, street segments and associated rehabilitation strategies, which benefit the network as a whole, are identified first. From there, individual projects are analyzed and verified at the project level. This new approach is proactive, and emphasizes preservation and perpetuation of the existing system along with enhanced system-wide performance through thoughtful, conscientious application of the right pavement management strategy at the right time.

## **ADDITIONAL INFORMATION**

Additional information can be obtained at:

1. Frequently Asked Questions (FAQ’s) - attached
2. Adopted Pavement Management Program (PMP) - <http://www.baxtermn.gov/departments/public-works/streets/>