The State of Michigan
Transportation Asset Management Council
2005 PASER Survey
Of
Lapeer County

Prepared by the Genesee County Metropolitan Planning Commission Staff

The State of Michigan
Transportation Asset Management Council
2005 PASER Road Survey
Lapeer County

Project overview:
On August 8, 10 and 11, GLS Region V staff along with representatives of the Lapeer County Road Commission (LCRC) and the Michigan Department of Transportation (MDOT) assessed the condition of Lapeer County federal aid eligible roads using the PASER road rating system as requested by the State of Michigan Asset Management Council.

PASER road rating system:
The PASER road rating system was developed by the University of Wisconsin-Madison Transportation Information Center to be use as the State of Wisconsin's standard road rating system. PASER is a "windshield" road rating system that uses a 0 to 10 rating scale, with a value of 10 representing a new road and a value of 0 representing a failed road. Condition ratings are assigned by monitoring the type and amount of visual defects along a road segment while driving the segment. The PASER system interprets these observations into a condition rating. PASER rating charts for asphalt, concrete, and gravel roads have been included with this report.

The State of Michigan Asset Management Council has requested that the information gathered in this survey be reported using the following categories:

- **Roads with PASER ratings of 8-10 require Routine Maintenance**. Routine maintenance is the day-to-day maintenance activities that are scheduled, such as street sweeping, drainage clearing, shoulder gravel grading, and sealing cracks, to prevent standing water and water penetration.

- **Roads with PASER ratings of 5-7 require Capital Preventive Maintenance**. Capital preventive maintenance is a planned set of cost effective treatments to an existing roadway system and its appurtenances that preserves, retards future deterioration and maintains or improves the functional condition of the system without significantly increasing structural capacity. The purpose of capital preventive maintenance fixes is to protect the pavement structure, slow the rate of pavement deterioration and/or correct pavement surface deficiencies. Surface treatments are targeted at pavement surface defects primarily caused by the environment and by pavement material deficiencies.

- **Roads with PASER ratings of 0-4 require Structural Improvements**. This category includes work identified as rehabilitation and reconstruction, which address the structural integrity of a road.

Computer Equipment and Software:

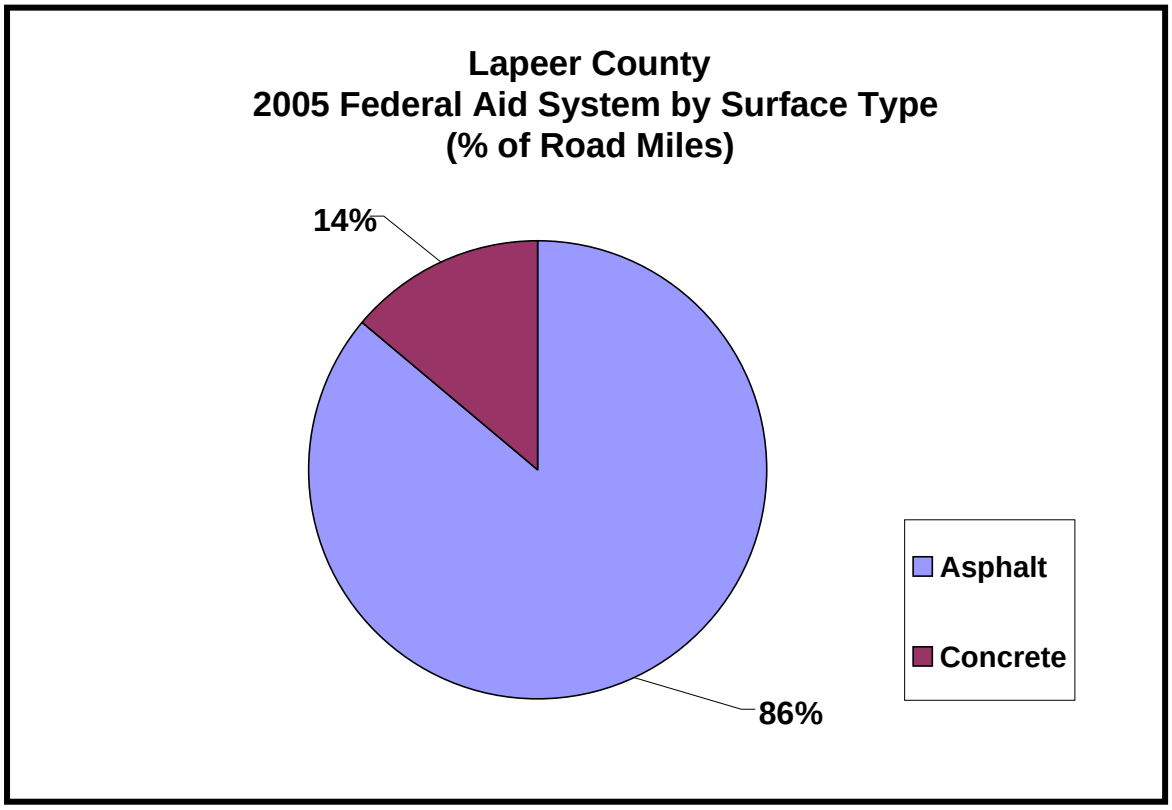
Staff collected data using a laptop computer with the RoadSoft GIS Laptop Data Collector 6.2.2 software loaded. A Garmin GPS 35/36 TracPak GPS unit was connected to the laptop to track position and locate road segments. *Note: Please contact RoadSoft staff for questions regarding a specific GPS units' compatibility with the RoadSoft program.* RoadSoft GIS is an asset management software package created and distributed free of charge by the Michigan Technology Institute's Technology Development Group. The current version of the program was designed with a special module to collect PASER rating data.

Staff Time:
3 staff members is the optimal amount to use for collecting PASER data. One drives, one navigates and rates the roads, and the third staff member enters information into the computer. For the Lapeer County road rating project there was always one Region V representative, one LCRC representative, and one MDOT representative present. It took 18.5 hours to rate approximately 461.817 miles of road.

Training:
All participants in the survey were required to attend a daylong training session at the Hannah Community Center in East Lansing, Michigan on June 30, 2005. Participants received an overview of the project and were given instruction on how to use the RoadSoft software and the PASER road rating system for data collection. Once out in the field, experienced staff members taught the new participants how to use the RoadSoft program and guided them through the rating process. Most participants felt comfortable after an hour of working the computer and rating the roads.

Overview of the Federal Aid Network

The Lapeer County Federal Aid network is comprised of 461.8 road miles. Of the total miles, 303.2 road miles are within Townships which are under the jurisdiction of the Lapeer County Road Commission (LCRC). Of the total roads surveyed, 398.1 miles (86%) were Asphalt, 63.7 miles (14%). Local Road agencies with the greatest amount of federal aid miles within their jurisdiction are the LCRC with 303.2 miles, MDOT with 136.0 miles, and the City of Lapeer with 10.3 miles of federal aid roads.


Lapeer County
2005 Federal Aid System by Surface Type
(% of Road Miles)
14%
86%
Asphalt
Concrete

Jurisdiction	Total Miles	% of PASER Miles in Jurisdiction
Almont	1.0	0.2%
Almont Twp	15.1	3.3%
Arcadia Twp	16.1	3.5%
Attica Twp	23.9	5.2%
Burlington Twp	18.9	4.1%
Burnside Twp	12.0	2.6%
Clifford	2.7	0.6%
Columbiaville	2.2	0.5%
Deerfield Twp	14.3	3.1%
Dryden	1.0	0.2%
Dryden Twp	11.9	2.6%
Elba Twp	24.4	5.3%
Goodland Twp	13.7	3.0%
Hadley Twp	15.6	3.4%
Imlay City	2.5	0.5%
Imlay Twp	18.3	4.0%
Lapeer	10.3	2.2%
Lapeer Twp	26.2	5.7%
Marathon Twp	18.5	4.0%
Mayfield Twp	19.1	4.1%
Metamora	1.3	0.3%
Metamora Twp	7.8	1.7%
North Branch	0.5	0.1%
North Branch Twp	11.6	2.5%
Oregon Twp	22.6	4.9%
Otter Lake	1.1	0.2%
Rich Twp	13.1	2.8%
MDOT	136.0	29.5%
Total	461.8	100.0%

*** Township federal aid roads are under the Jurisdiction of the Lapeer County Road Commission

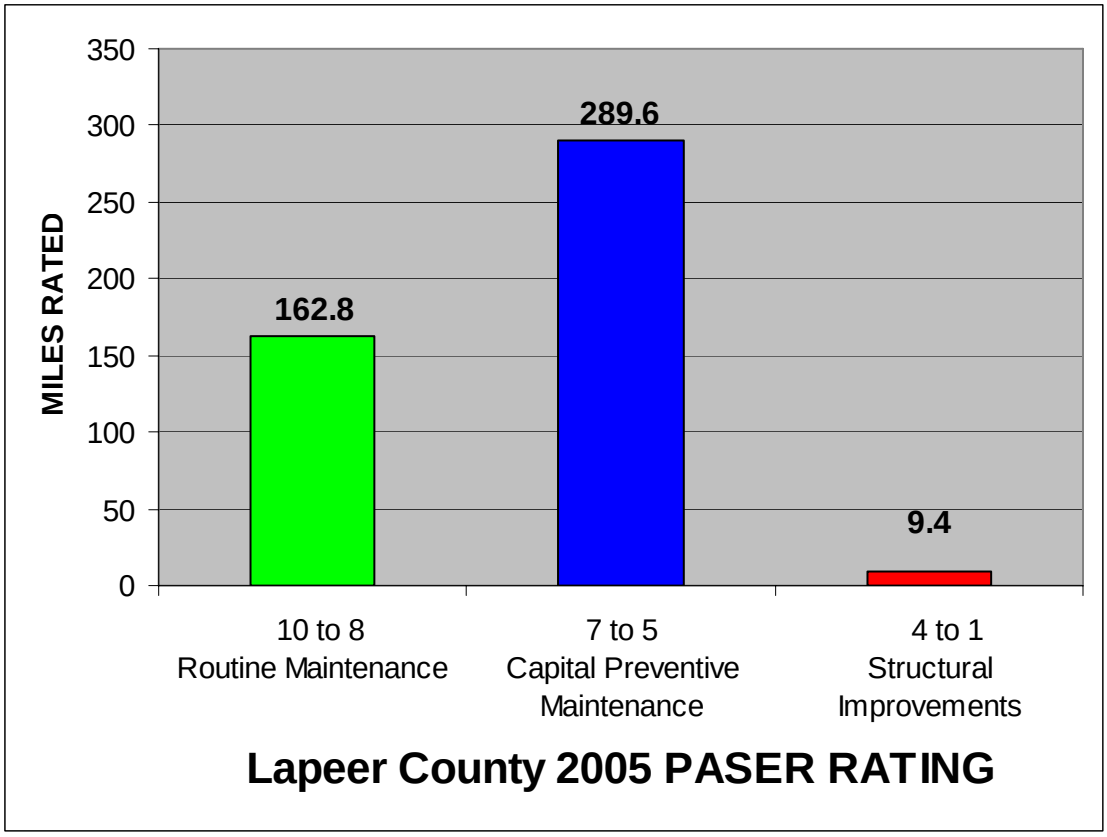
Results:

Approximately 461.8 lane miles of federal aid eligible roads were rated for this project. The project was completed in 18.5 hours with an average rating speed of 25 miles per hour. The Chart on the following page summarizes the distribution of ratings by mileage and percentage of the total for all roads rated in the project. Thirty five percent of the roads rated received a rating of 8 or better, sixty three percent of the roads rated received a rating of 5, 6 or 7, and two percent received a rating less than or equal to 4. The Asset Management Council has prescribed a fix for each of the PASER rating categories:

- Roads receiving a rating of 8 or better require only Routine Maintenance
- Roads receiving a rating of 5-7 require Capital Preventative Maintenance
- Roads receiving a rating less than or equal to 4 require Structural Improvements

PASER Rating	Prescribed Fix	Miles	Percent of Total Miles Rated
10 - 8	Routine Maintenance	162.8	35.%
7 - 5	Capital Preventative Maintenance	289.6	63%
4 - 1	Structural Improvements	9.4	2.%

The following charts summarize the distribution of ratings by mileage for all roads rated in the project



The following tables provide a summary of the 2005 PASER survey rating by surface type by Jurisdiction

2005 PASER Surface Rating by Surface Type				
Description	**0 to 4 PASER Rating**	**5 to 7 PASER Rating**	**8 to 10 PASER Rating**	**Total Road Miles**
Asphalt	9.4	253.7	135.1	**398.1**
Concrete	0	35.9	27.8	**63.7**
Total	**9.4**	**289.6**	**162.9**	**461.8**
Percentage	**2.0%**	**62.7%**	**35.3%**	**100%**

2005 PASER Surface Rating by Jurisdiction				
Jurisdictions	**0 to 4**	**5 to 7**	**8 to 10**	**Total Road Miles**
Almont	0	0.8	0.1	**0.99**
Clifford	0	2.7	0	**2.7**
Columbiaville	0.1	1.2	0.9	**2.2**
Dryden	0	1.0	0	**1.0**
Imlay City	0	2.4	0.1	**2.5**
Lapeer	0.1	8.3	1.8	**10.3**
Metamora	0	1.3	0	**1.3**
North Branch	0	0.5	0	**0.5**
Otter Lake	0.2	0	0.9	**1.1**
LCRC	9.0	218.7	75.5	**303.2**
MDOT	0	52.6	83.4	**136.0**
Total	**9.4**	**289.6**	**162.8**	**461.8**
Percentages	**2.0%**	**62.7%**	**35.3%**	**100%**

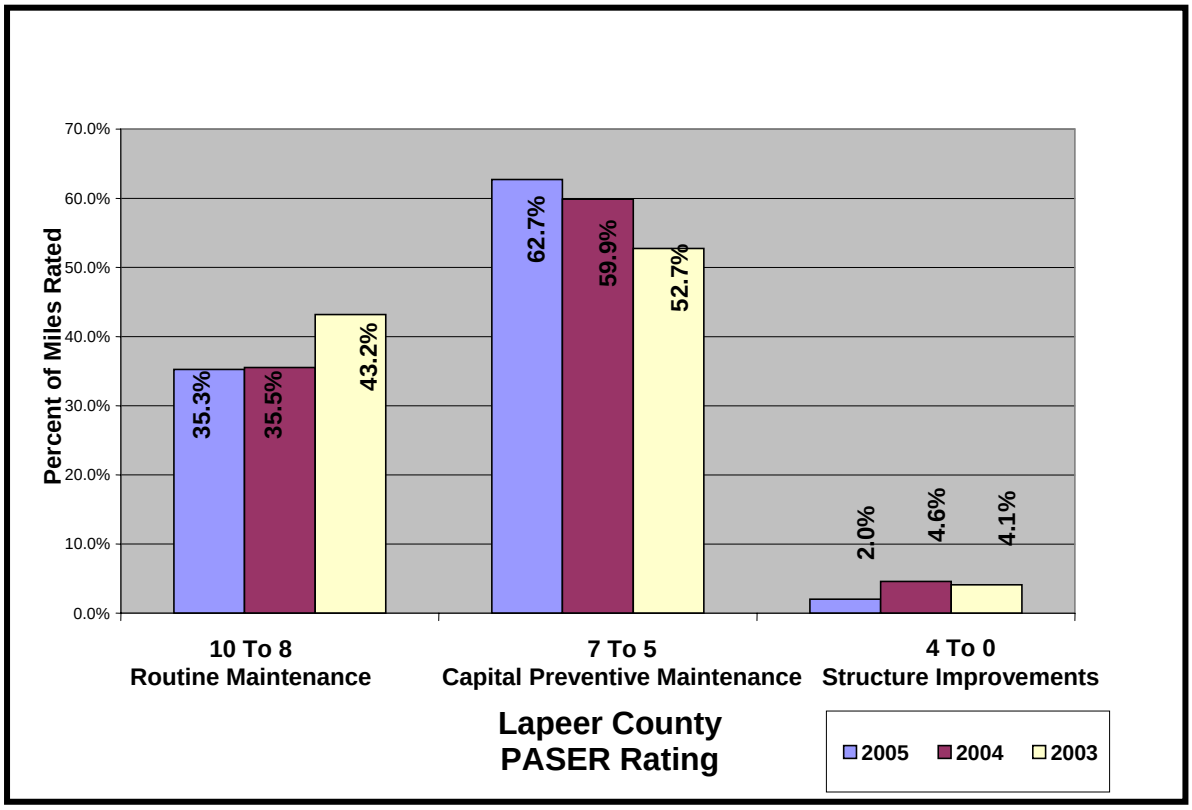
2005 LCRC Surface Rating by Township				
Jurisdiction	**0 to 4 PASER Rating (miles)**	**5 to 7 PASER Rating (miles)**	**8 to 10 PASER Rating (Miles)**	**Total Road Miles**
Almont Twp	0.0	6.5	8.6	15.1
Arcadia Twp	0.0	16.1	0.0	16.1
Attica Twp	0.0	21.6	2.4	23.9
Burlington Twp	0.0	14.1	4.8	18.9
Burnside Twp	0.0	12.0	0.0	12.0
Deerfield Twp	0.0	14.3	0.0	14.3
Dryden Twp	0.0	8.4	3.5	11.9
Elba Twp	1.0	12.3	11.2	24.4
Goodland Twp	0.0	12.4	1.3	13.7
Hadley Twp	0.0	6.0	9.6	15.6
Imlay Twp	0.7	17.5	0.1	18.3
Lapeer Twp	3.7	17.6	4.9	26.2
Marathon Twp	0.0	11.6	6.9	18.5
Mayfield Twp	1.1	12.1	5.8	19.1
Metamora Twp	1.2	3.3	3.3	7.8
North Branch Twp	0.0	7.1	4.5	11.6
Oregon Twp	0.0	14.6	8.0	22.6
Rich Twp	1.3	11.3	0.5	13.1
Total	**9.0**	**218.7**	**75.5**	**303.2**

To obtain a digital copy of the data collected in this study each Local Road Agency must submit a written request to GLS Region V staff. The data will be distributed as a RoadSoft GIS file, so each LRA must also obtain a copy of the latest Roadsoft GIS program from Michigan Tech prior to using the data.

A set of color thematic maps depicting the 461.82 miles of federal aid eligible roads rated for this project are provided in the back of this report.

Updating the ratings:
According to the new Governmental Accounting Standards Board Statement 34 (GASB 34), governmental units receiving, or applying for federal money must assess the condition of their roads at least once every three years. This project continues to provide the foundation to meet the requirements of GASB 34 and continues to demonstrate that it can be accomplished with minimal staff in a relatively short period of time.

Comparisons: 2003, 2004 to 2005 Lapeer County PASER Evaluation:



*** 2005 data does not include gravel roads

- In 2005, 2% or 9.4 miles of the Federal Aid Road system are in the PASER Rating Category of 4 to 0. Roads with 0 to 4 ratings require structural improvements that include full depth repairs, major overlay or reconstruction. This is a 50% decrease as compared to the 2003 rating distribution in the same category.

- In 2005, 63% or 289.6 miles of the Federal Aid Road system are in the PASER Rating Category of 5 to 7. Roads with 5 to 7 ratings require some partial depth joint repairs, sealcoat or crack filling. This is a 19% increase as compared to the 2003 rating distribution in the same category.

- In 2005, 35% or 162.8 miles of the Federal Aid Road system are in the PASER Rating Category of 8 to 10, Roads with 8 to 10 ratings require little or no maintenance. This is an 18% decrease as compared to the 2003 rating distribution in the same category.

In general, this comparison indicates an increased need for Capital/Preventive Maintenance improvements in Lapeer County, as a whole.

The following tables compare PASER Rating Categories, miles rated, and Percentage of miles from 2003, 2004 and 2005 PASER survey for each Lapeer County jurisdiction and the Lapeer County as a whole.

ALMONT	2005 Miles	2004 Miles	2003 Miles	Change in Miles from 2003 to 2005
10 to 8	0.1	0.5	0.1	0.1
7 to 5	0.8	0.5	0.9	-1.1
4 to 1	0.0	0.0	0.0	0.0
Total	1.0	1.0	1.0	0.0

CLIFFORD	2005 Miles	2004 Miles	2003 Miles	Change in Miles from 2003 to 2005
10 to 8	0.0	1.5	1.9	-1.9
7 to 5	2.7	1.2	0.8	1.9
4 to 1	0.0	0.0	0.0	0.0
Total	2.7	2.7	2.7	0.0

COLUMBIAVILLE	2005 Miles	2004 Miles	2003 Miles	Change in Miles from 2003 to 2005
10 to 8	0.9	0.9	1.7	-0.8
7 to 5	1.2	1.2	0.5	0.8
4 to 1	0.1	0.1	0.1	0.0
Total	2.2	2.2	2.2	0.0

DRYDEN	2005 Miles	2004 Miles	2003 Miles	Change in Miles from 2003 to 2005
10 to 8	0.0	0.0	0.0	0.0

7 to 5	1.0	1.0	1.0	0.0
4 to 1	0.0	0.0	0.0	0.0
Total	1.0	1.0	1.0	0.0

IMLAY CITY	2005 Miles	2004 Miles	2003 Miles	Change in Miles from 2003 to 2005
10 to 8	0.1	0.3	0.0	0.1
7 to 5	2.4	2.0	2.4	0.0
4 to 1	0.0	0.1	0.1	-0.1
Total	2.5	2.3	2.5	.0

LAPEER	2005 Miles	2004 Miles	2003 Miles	Change in Miles from 2003 to 2005
10 to 8	1.8	4.3	3.5	-1.7
7 to 5	8.3	6.0	5.1	3.3
4 to 1	0.1	0.0	1.6	-1.5
Total	10.3	10.2	10.2	0.1

METAMORA	2005 Miles	2004 Miles	2003 Miles	Change in Miles from 2003 to 2005
10 to 8	0.0	0.3	0.3	-0.3
7 to 5	1.3	0.9	0.9	0.3
4 to 1	0.0	0.0	0.0	0.0
Total	1.3	1.3	1.3	0.0

NORTH BRANCH	2005 Miles	2004 Miles	2003 Miles	Change in Miles from 2003 to 2005
10 to 8	0.0	0.0	0.0	0.0
7 to 5	0.5	0.4	0.5	0.0
4 to 1	0.0	0.0	0.0	0.0
Total	0.5	0.4	0.5	0.0

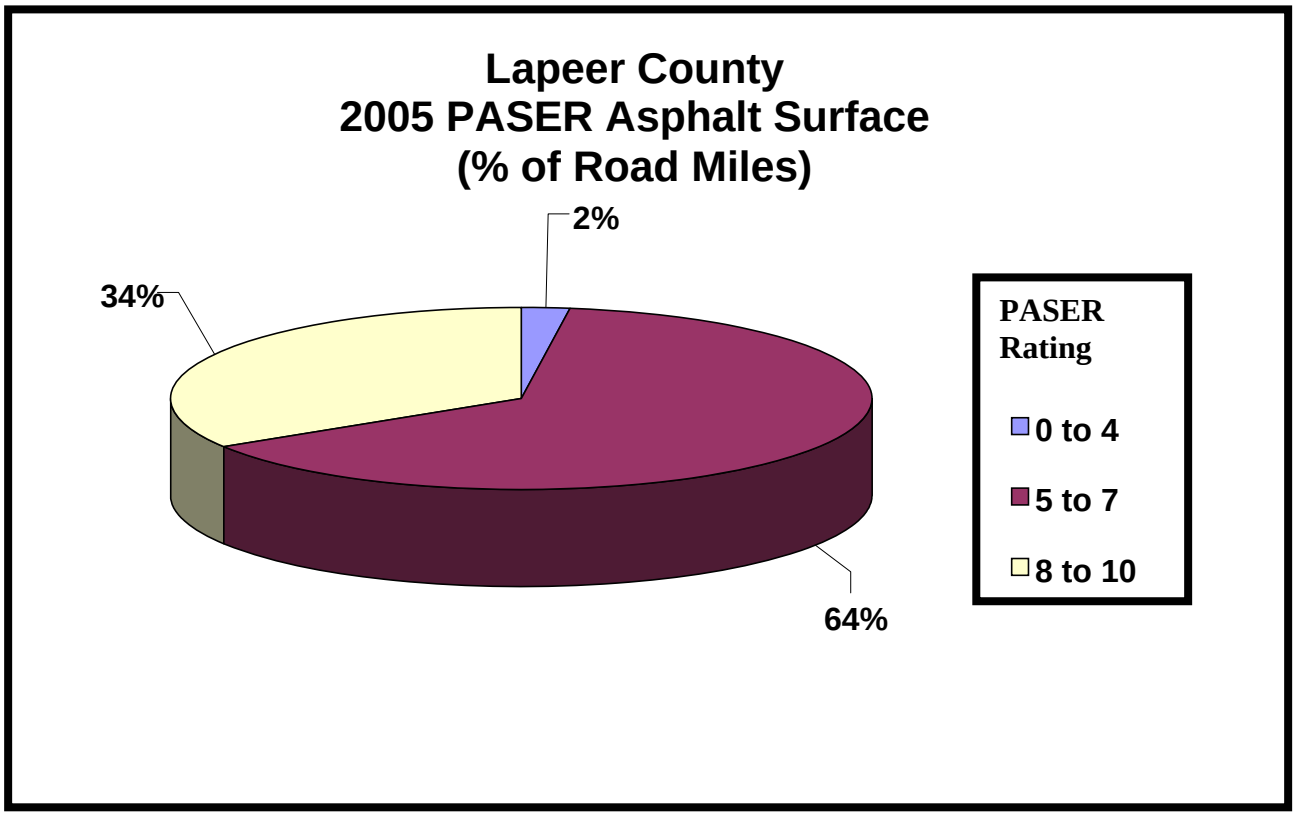
OTTER LAKE	2005 Miles	2004 Miles	2003 Miles	Change in Miles from 2003 to 2005
10 to 8	0.9	0.2	0.2	0.7
7 to 5	0.0	0.0	0.0	0.0

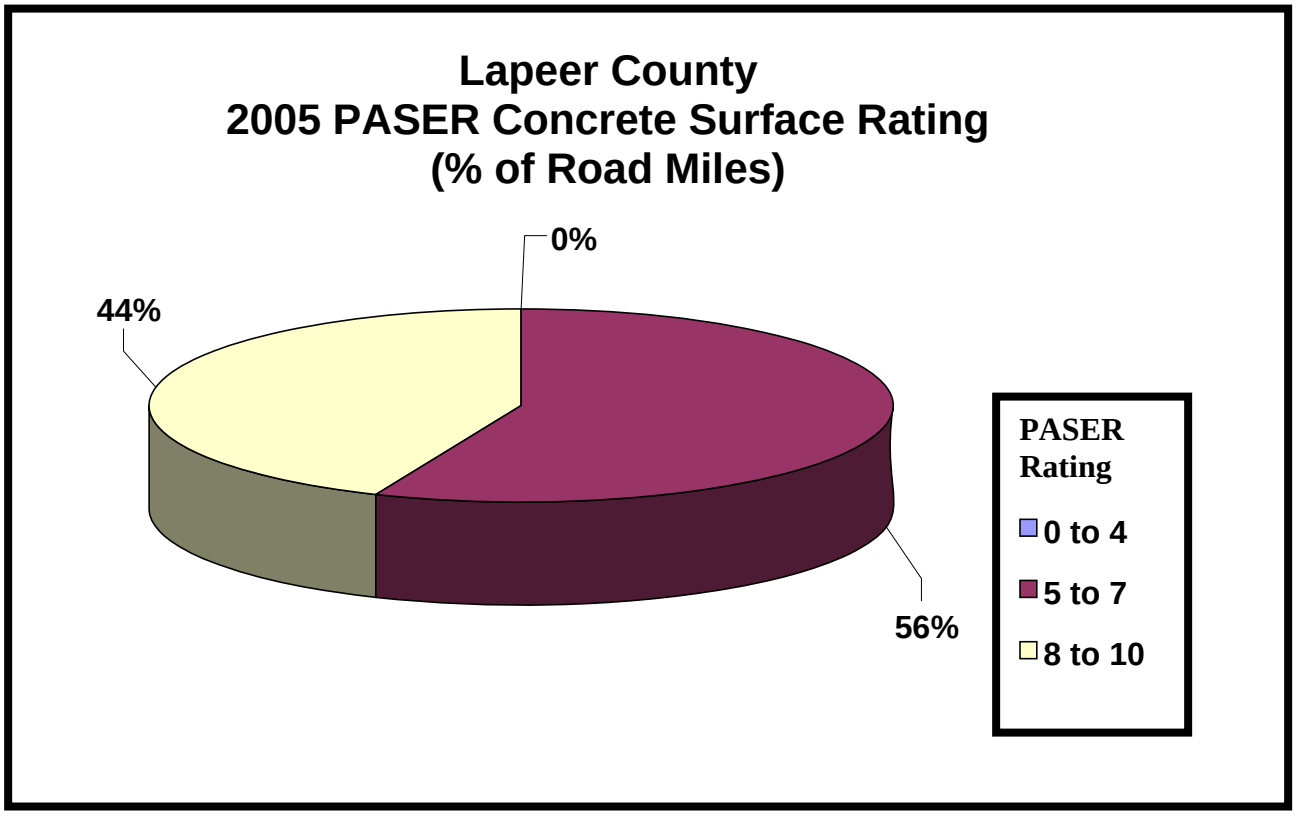
4 to 1	0.2	0.7	0.7	-0.5
Total	1.1	1.0	0.9	0.2

LCRC	2005 Miles	2004 Miles	2003 Miles	Change in Miles from 2003 to 2005
10 to 8	75.5	98.1	144.4	-68.7
7 to 5	218.7	242.6	200.2	18.6
4 to 1	9.0	23.1	18.5	-9.5
Total	303.2	363.8	363.0	-59.9

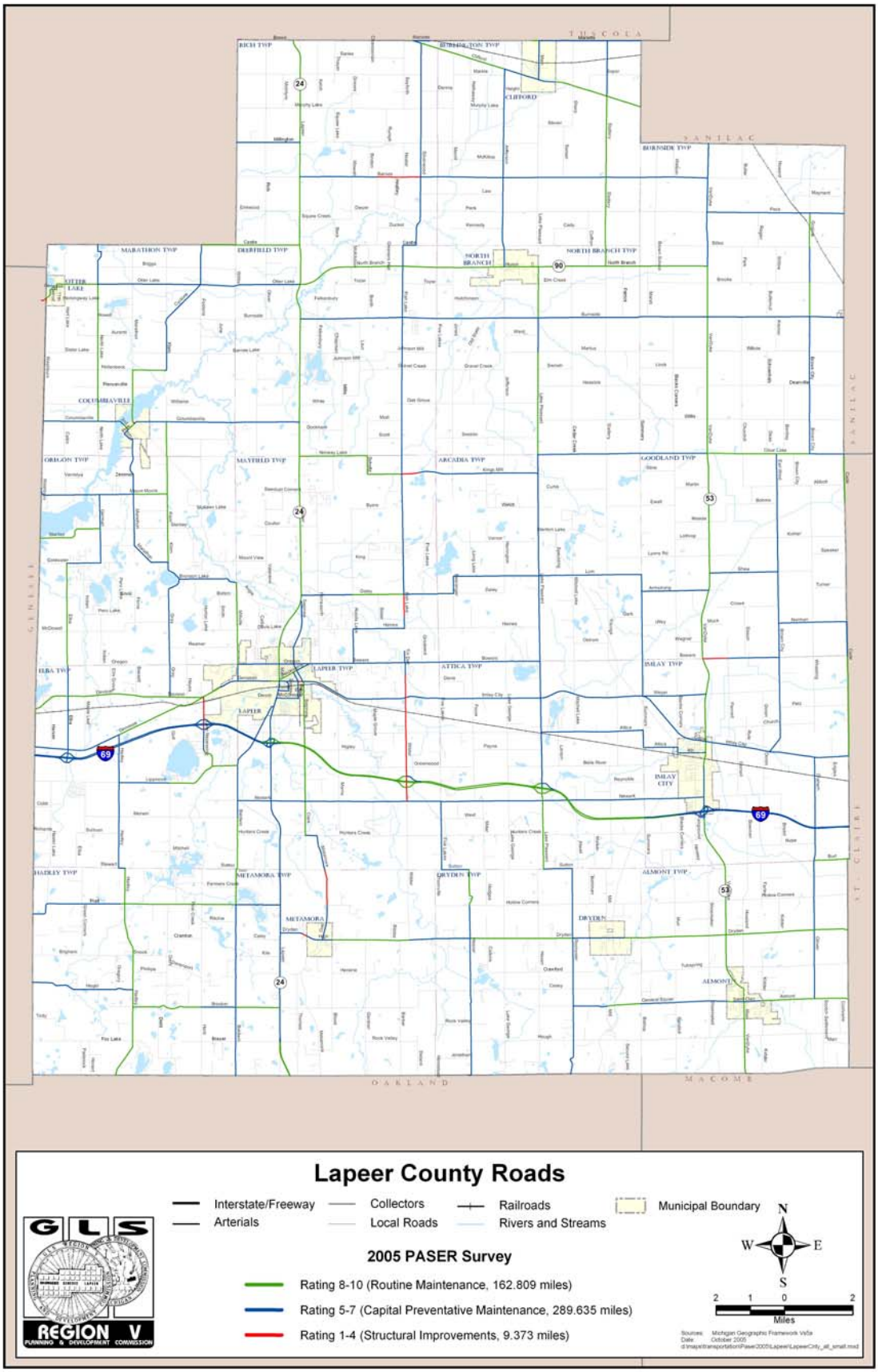
MDOT	2005 Miles	2004 Miles	2003 Miles	Change in Miles from 2003 to 2005
10 to 8	83.4	79.4	73.1	10.3
7 to 5	52.6	56.5	62.6	-10.0
4 to 1	0.0	0.0	0.4	-0.4
Total	136.0	135.9	136.1	-0.0

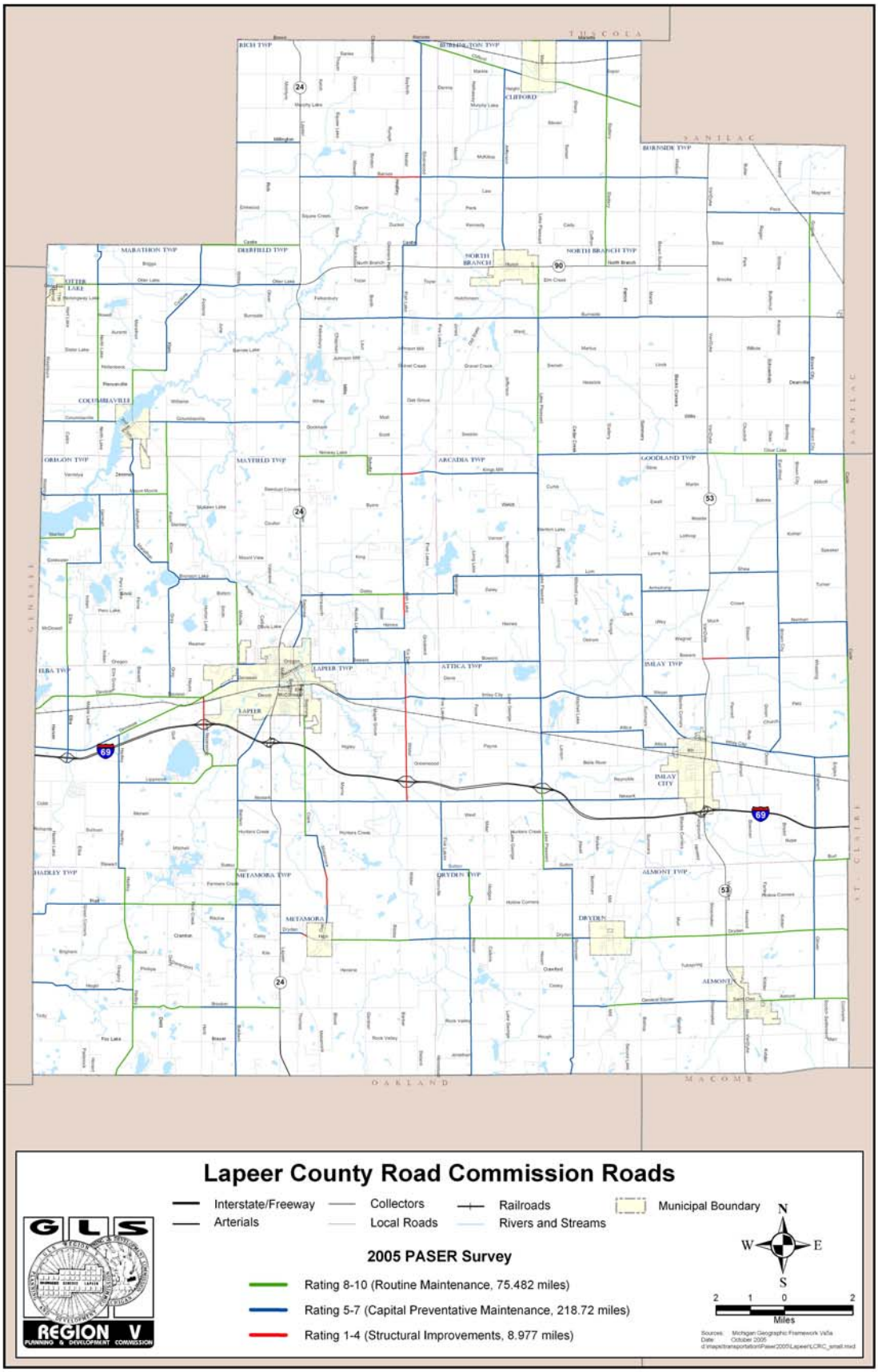
LAPEER COUNTY	2005 Miles	2004 Miles	2003 Miles	Change in Miles from 2003 to 2005
10 to 8	162.8	185.5	225.2	-62.4
7 to 5	289.6	312.5	274.9	14.8
4 to 1	9.4	24.0	21.3	-12.0
Total	461.8	521.9	521.4	-59.6

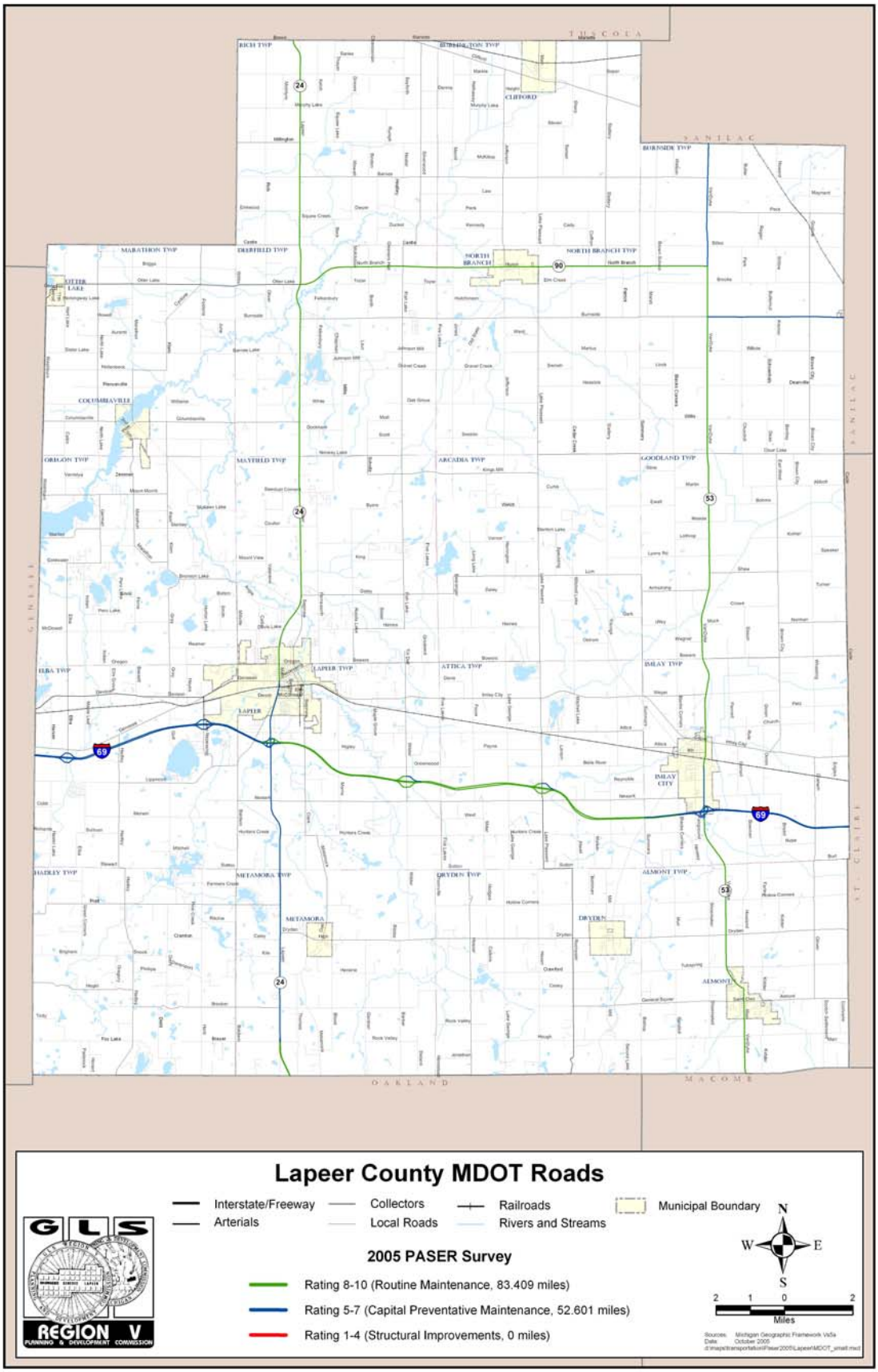

Lapeer County
2005 PASER Asphalt Surface
(% of Road Miles)
2%
34%
64%
PASER Rating
0 to 4
5 to 7
8 to 10

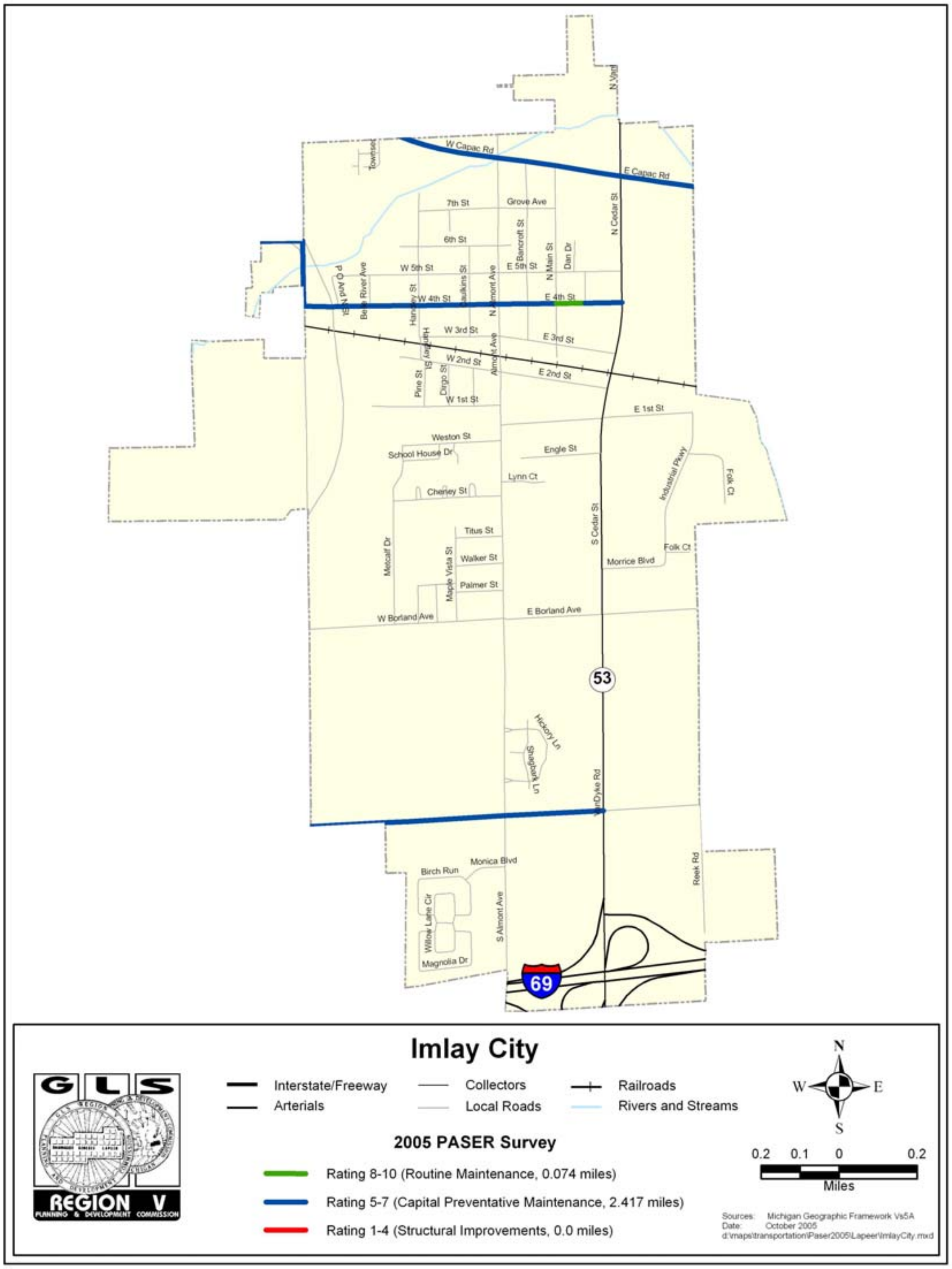

Lapeer County
2005 PASER Concrete Surface Rating
(% of Road Miles)
0%
44%
56%
PASER Rating
0 to 4
5 to 7
8 to 10

PASER THEMATIC MAPS


Lapeer County Roads
Interstate/Freeway
Arterials
Collectors
Local Roads
Railroads
Rivers and Streams
Municipal Boundary
2005 PASER Survey
Rating 8-10 (Routine Maintenance, 162.809 miles)
Rating 5-7 (Capital Preventative Maintenance, 289.635 miles)
Rating 1-4 (Structural Improvements, 9.373 miles)
N
W
E
S
2 1 0 2
Miles
REGION V
PLANNING & DEVELOPMENT COMMISSION


Lapeer County Road Commission Roads
Interstate/Freeway
Arterials
Collectors
Local Roads
Railroads
Rivers and Streams
Municipal Boundary
2005 PASER Survey
Rating 8-10 (Routine Maintenance, 75.482 miles)
Rating 5-7 (Capital Preventative Maintenance, 218.72 miles)
Rating 1-4 (Structural Improvements, 8.977 miles)
N
W
E
S
2 1 0 2
Miles
GLS
REGION V
PLANNING & DEVELOPMENT COMMISSION


Lapeer County MDOT Roads
Interstate/Freeway
Arterials
Collectors
Local Roads
Railroads
Rivers and Streams
Municipal Boundary
2005 PASER Survey
Rating 8-10 (Routine Maintenance, 83.409 miles)
Rating 5-7 (Capital Preventative Maintenance, 52.601 miles)
Rating 1-4 (Structural Improvements, 0 miles)
N
W
E
S
2 1 0 2
Miles
GLS
REGION V
PLANNING & DEVELOPMENT COMMISSION



Imlay City
Interstate/Freeway
Arterials
Collectors
Local Roads
Railroads
Rivers and Streams
2005 PASER Survey
Rating 8-10 (Routine Maintenance, 0.074 miles)
Rating 5-7 (Capital Preventative Maintenance, 2.417 miles)
Rating 1-4 (Structural Improvements, 0.0 miles)
N
W
E
S
0.2 0.1 0 0.2
Miles
REGION V
W Capac Rd
E Capac Rd
7th St
Grove Ave
6th St
W 5th St
E 5th St
W 4th St
E 4th St
W 3rd St
E 3rd St
W 2nd St
E 2nd St
W 1st St
E 1st St
N Cedar St
S Cedar St
N Almont Ave
S Almont Ave
Weston St
School House Dr
Engle St
Lynn Ct
Cheney St
Industrial Pkwy
Folk Ct
Titus St
Walker St
Palmer St
Metcalf Dr
Maple Vista St
Morrice Blvd
W Borland Ave
E Borland Ave
53
Hickory Ln
VanDyke Rd
Monica Blvd
Birch Run
Willow Lane Cir
Magnolia Dr
Reek Rd
69


City of Lapeer
Interstate/Freeway
Arterials
Collectors
Local Roads
Railroads
Rivers and Streams
2005 PASER Survey
Rating 8-10 (Routine Maintenance, 1.833 miles)
Rating 5-7 (Capital Preventative Maintenance, 8.344 miles)
Rating 1-4 (Structural Improvements, 0.134 miles)
N
W
E
S
0.4 0.2 0 0.4
Miles
Sources: Michigan Geographic Framework Vs5a
Date: October 2005
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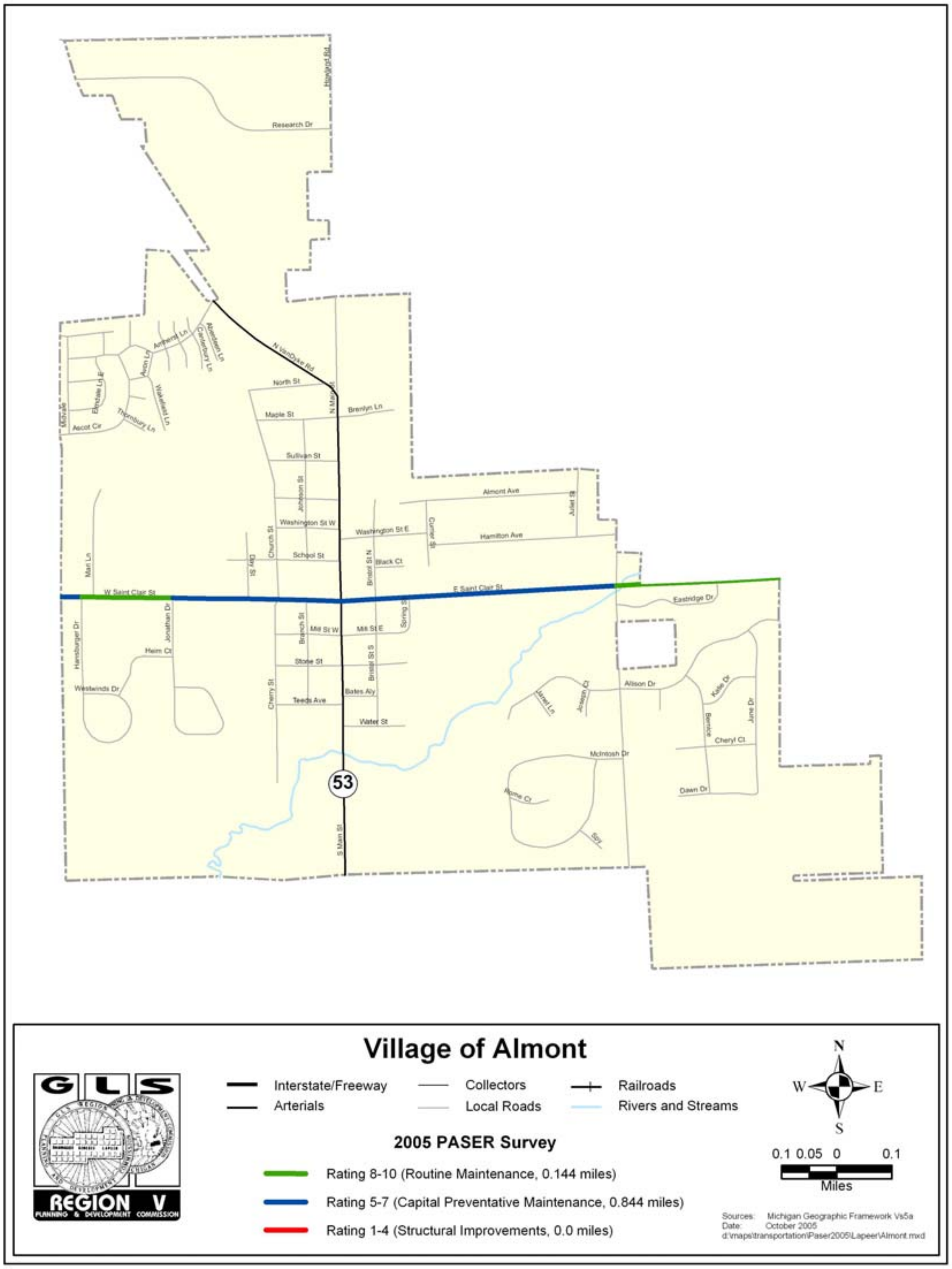
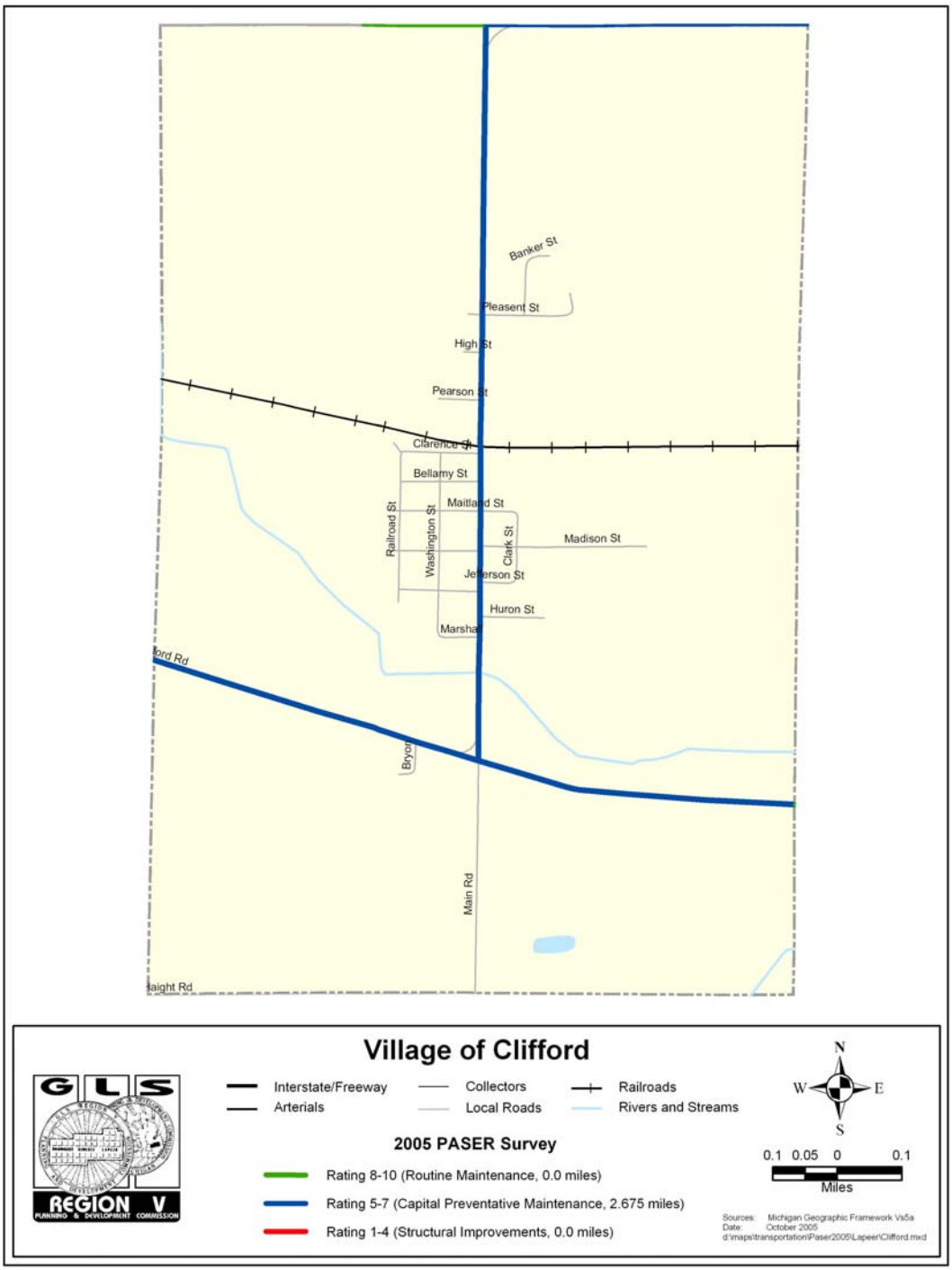
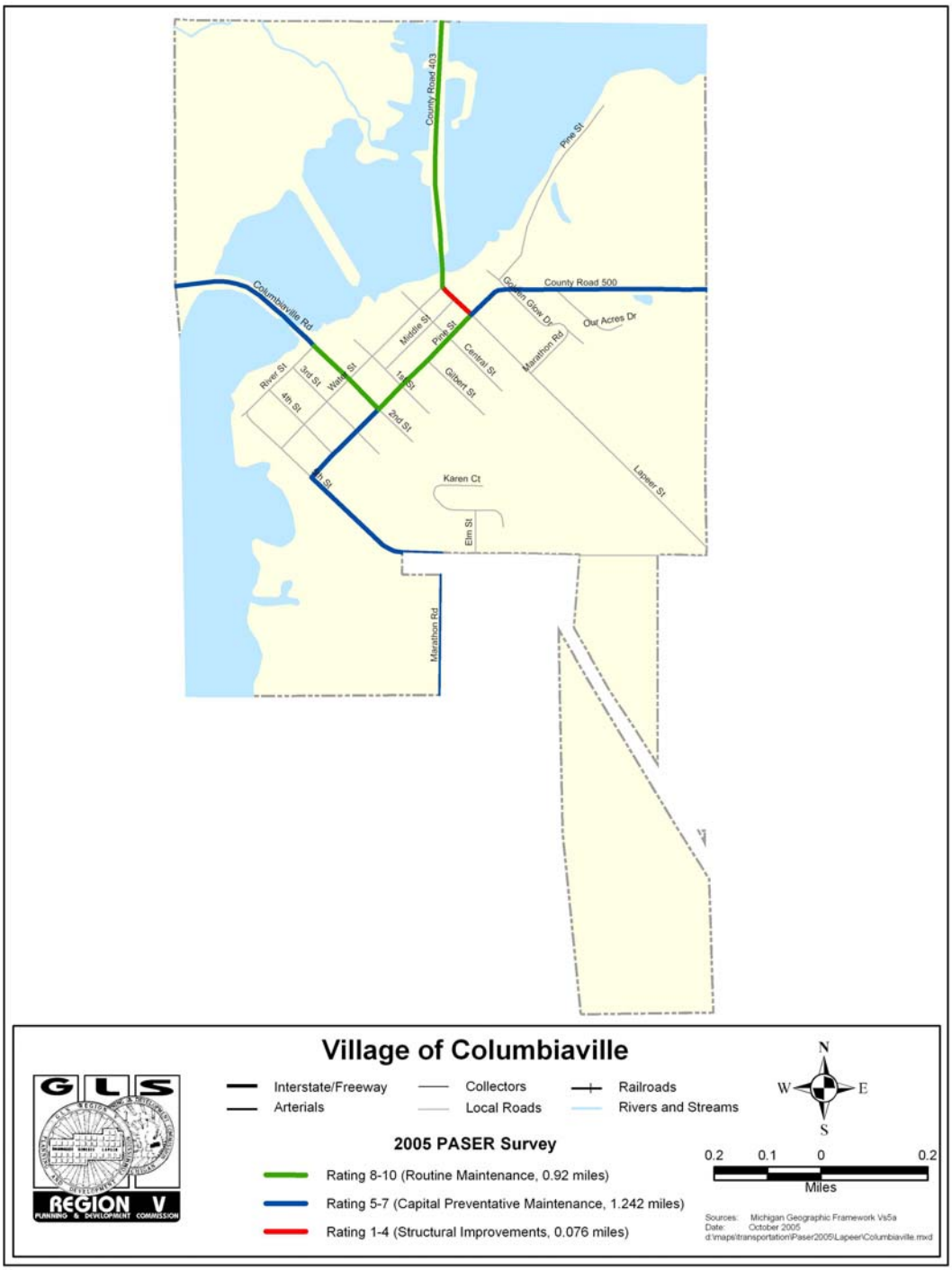
GLS
REGION V
PLANNING & DEVELOPMENT COMMISSION


Village of Almont
GLS
REGION V
PLANNING & DEVELOPMENT COMMISSION
Interstate/Freeway
Arterials
Collectors
Local Roads
Railroads
Rivers and Streams
2005 PASER Survey
Rating 8-10 (Routine Maintenance, 0.144 miles)
Rating 5-7 (Capital Preventative Maintenance, 0.844 miles)
Rating 1-4 (Structural Improvements, 0.0 miles)
N
W
E
S
0.1 0.05 0 0.1
Miles
Sources: Michigan Geographic Framework Vs5a
Date: October 2005
d:\maps\transportation\Paser2005\Lapeer\Almont.mxd
53


Banker St
Pleasent St
High St
Pearson St
Clarence St
Bellamy St
Maitland St
Railroad St
Washington St
Clark St
Madison St
Jefferson St
Huron St
Marsha
ford Rd
Bryon
Main Rd
laight Rd
Village of Clifford
Interstate/Freeway
Arterials
Collectors
Local Roads
Railroads
Rivers and Streams
2005 PASER Survey
Rating 8-10 (Routine Maintenance, 0.0 miles)
Rating 5-7 (Capital Preventative Maintenance, 2.675 miles)
Rating 1-4 (Structural Improvements, 0.0 miles)
N
W
E
S
0.1 0.05 0 0.1
Miles
Sources: Michigan Geographic Framework Vs5a
Date: October 2005
d:\maps\transportation\Paser2005\Lapeer\Clifford.mxd
GLS
REGION V
PLANNING & DEVELOPMENT COMMISSION


County Road 403
Pine St
County Road 500
Golden Glow Dr
Out Acres Dr
Columbiaville Rd
Middle St
Pine St
Central St
Marathon Rd
River St
3rd St
Water St
1st St
Gilbert St
4th St
2nd St
Karen Ct
Lapeer St
Elm St
Marathon Rd
Village of Columbiaville
Interstate/Freeway
Arterials
Collectors
Local Roads
Railroads
Rivers and Streams
N
W
E
S
2005 PASER Survey
Rating 8-10 (Routine Maintenance, 0.92 miles)
Rating 5-7 (Capital Preventative Maintenance, 1.242 miles)
Rating 1-4 (Structural Improvements, 0.076 miles)
0.2 0.1 0 0.2
Miles
Sources: Michigan Geographic Framework Vs5a
Date: October 2005
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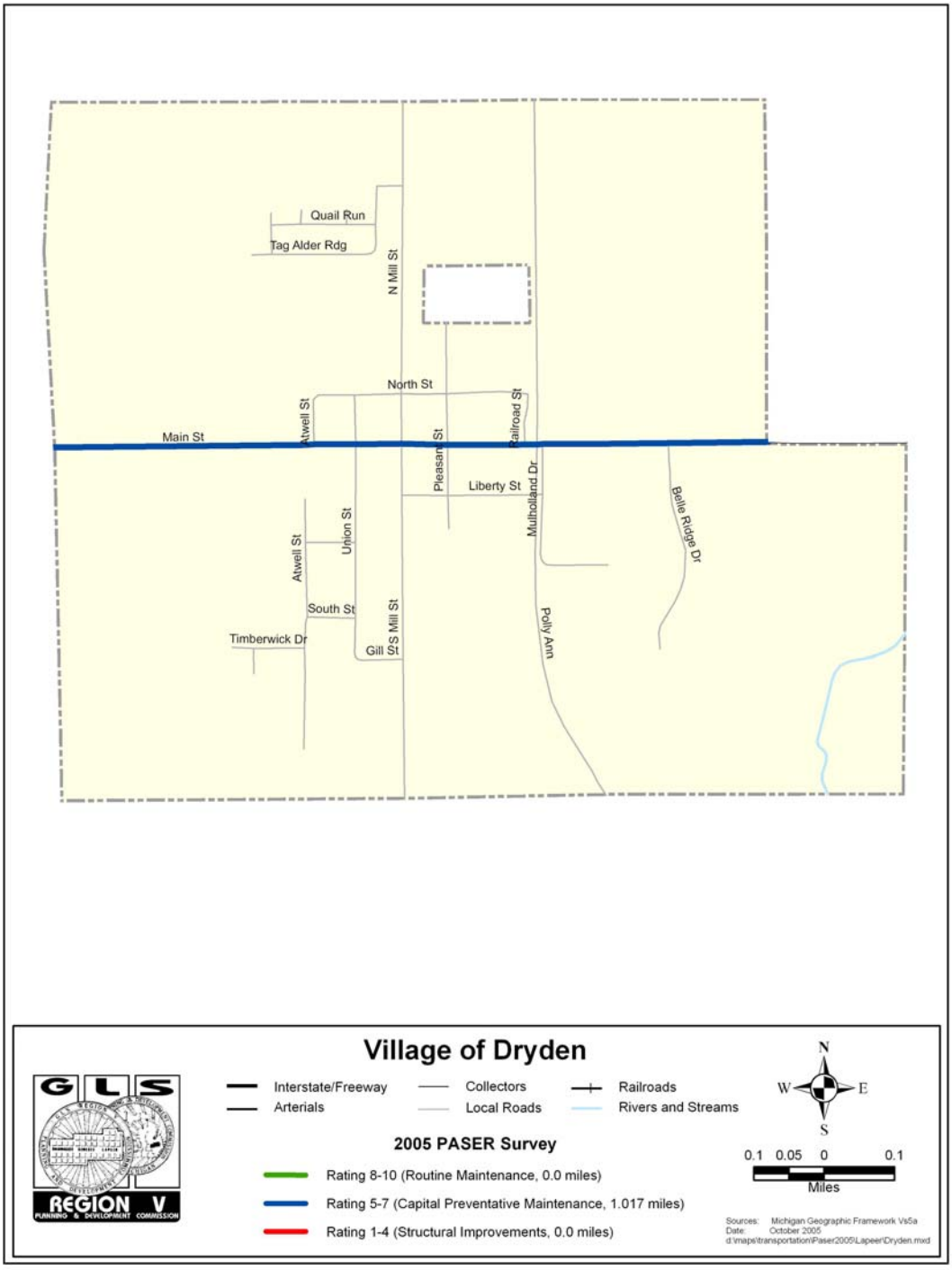
GLS
REGION V
PLANNING & DEVELOPMENT COMMISSION


Quail Run
Tag Alder Rdg
N Mill St
North St
Atwell St
Railroad St
Main St
Pleasant St
Liberty St
Mulholland Dr
Belle Ridge Dr
Union St
Atwell St
South St
S Mill St
Timberwick Dr
Gill St
Polly Ann
Village of Dryden
Interstate/Freeway
Arterials
Collectors
Local Roads
Railroads
Rivers and Streams
2005 PASER Survey
Rating 8-10 (Routine Maintenance, 0.0 miles)
Rating 5-7 (Capital Preventative Maintenance, 1.017 miles)
Rating 1-4 (Structural Improvements, 0.0 miles)
N
W
E
S
0.1 0.05 0 0.1
Miles
Sources: Michigan Geographic Framework Vs5a
Date: October 2005
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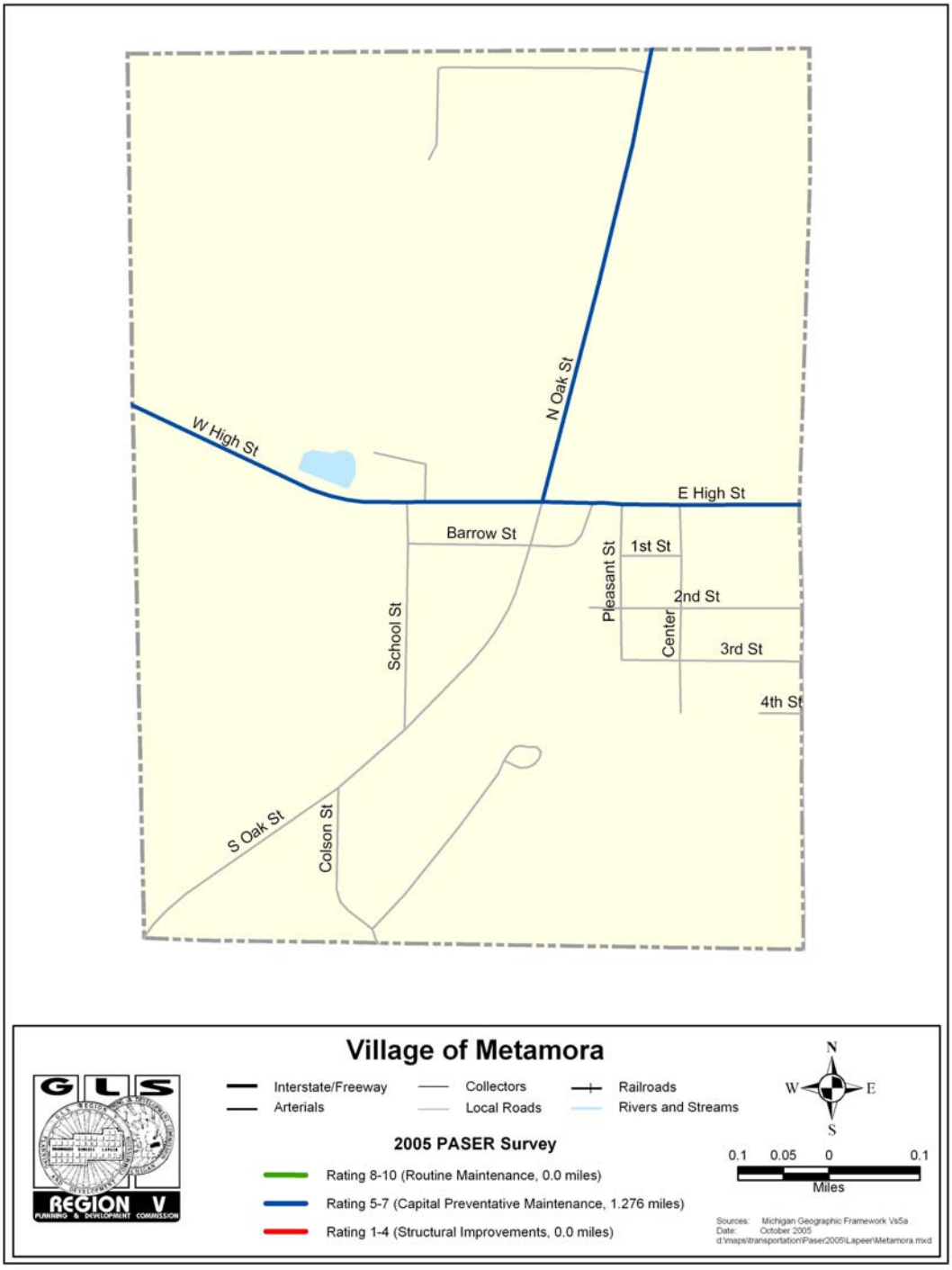
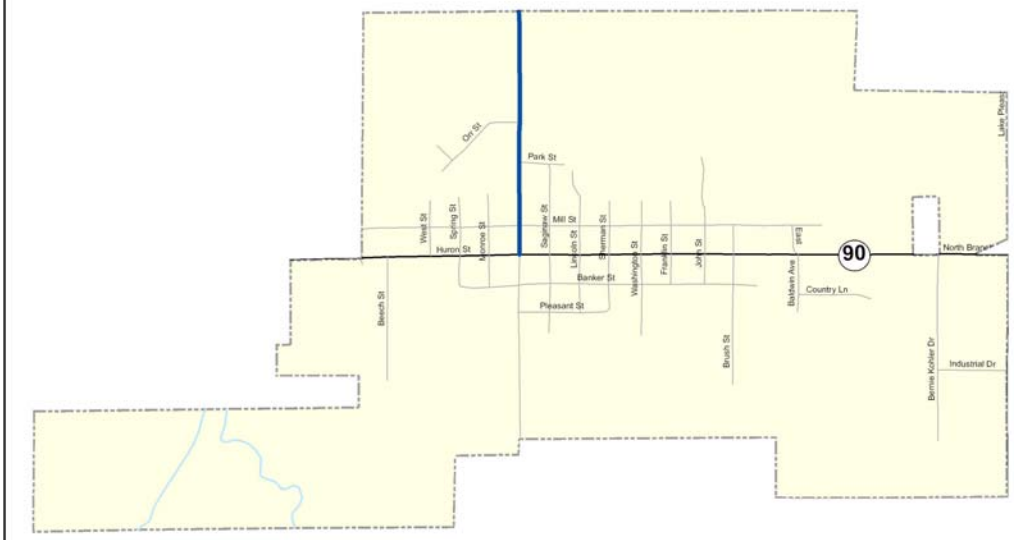
GLS
REGION V
PLANNING & DEVELOPMENT COMMISSION


N Oak St
W High St
E High St
Barrow St
1st St
Pleasant St
2nd St
Center
3rd St
4th St
School St
S Oak St
Colson St
Village of Metamora
Interstate/Freeway
Arterials
Collectors
Local Roads
Railroads
Rivers and Streams
2005 PASER Survey
Rating 8-10 (Routine Maintenance, 0.0 miles)
Rating 5-7 (Capital Preventative Maintenance, 1.276 miles)
Rating 1-4 (Structural Improvements, 0.0 miles)
N
W
E
S
0.1 0.05 0 0.1
Miles
Sources: Michigan Geographic Framework Vs5a
Date: October 2005
d:\maps\transportation\Paser2005\Lapeer\Metamora.mxd
GLS
REGION V
PLANNING & DEVELOPMENT COMMISSION



Village of North Branch

Interstate/Freeway
Arterials
Collectors
Local Roads
Railroads
Rivers and Streams

N
W
E
S

2005 PASER Survey

Rating 8-10 (Routine Maintenance, 0.0 miles)
Rating 5-7 (Capital Preventative Maintenance, 0.499 miles)
Rating 1-4 (Structural Improvements, 0.0 miles)

0.2 0.1 0 0.2
Miles

Sources: Michigan Geographic Framework Vs5a
Date: October 2005
d:\maps\transportation\Paser2005\Lapeer\NorthBranch.mxd

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Oak St
Sherman Dr
Sherman St
Otter Lake Rd
Avenue G
Genesee Ave
12th St
Lake St
Forest Ave
10th St
Benson Ave
Detroit St
11th St
Otter Lake Rd
Hemingway Lake Rd
Payne St
Lake Rd
Village of Otter Lake
Interstate/Freeway
Arterials
Collectors
Local Roads
Railroads
Rivers and Streams
N
W
E
S
2005 PASER Survey
Rating 8-10 (Routine Maintenance, 0.947 miles)
Rating 5-7 (Capital Preventative Maintenance, 0.0 miles)
Rating 1-4 (Structural Improvements, 0.186 miles)
0.08 0.04 0 0.08
Miles
Sources: Michigan Geographic Framework Vs5a
Date: October 2005
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GLS
REGION V
PLANNING & DEVELOPMENT COMMISSION

Concrete - PASER Manual Rating System

PASER — Rating System

Rating system

Surface rating	Visible distress *	General condition/ Treatment measures
10 Excellent	None	New pavement. No maintenance required.
9 Excellent	Traffic wear in wheelpath. Slight map cracking or pop-outs.	Recent concrete overlay or joint rehabilitation—like new. No maintenance required.
8 Very Good	Pop–outs, map cracking, or minor surface defects. Slight surface scaling. Partial loss of joint sealant. Isolated meander cracks, tight or well sealed. Isolated cracks at manholes, tight or well sealed.	More surface wear or slight defects. Recent asphalt overlay. Little or no maintenance required.
7 Good	More extensive surface scaling. Some open joints. Isolated transverse or longitudinal cracks, tight or well sealed. Some manhole displacement and cracking. First utility patch, in good condition. First noticeable settement or heave area.	First sign of transverse cracks (all tight) or utility patch. More extensive surface scaling. Seal open joints and other routine maintenance.
6 Good	Moderate scaling in several locations. A few isolated surface spalls. Shallow reinforcement causing cracks. Several corner cracks, tight or well sealed. Open (1/4" wide) longitudinal or transverse joints and more frequent transverse cracks (some open 1/4").	First signs of shallow reinforcement or corner cracking. Needs general joint and crack sealing. Scaled areas could be overlaid.

** Note: Individual roadways may not have all of the types of distress listed for any particular rating. They may have only one or two types.*

Rating system

Surface rating	Visible distress *	General condition/ Treatment measures
5 *Fair*	Moderate to severe polishing or scaling over 25% of the surface. High reinforcing steel causing surface spalling. Some joints and cracks have begun spalling. First signs of joint or crack faulting (1/4"). Multiple corner cracks with broken pieces. Moderate settlement or frost heave areas. Patching showing distress.	First signs of joint or crack spalling or faulting. Grind to repair surface defects. Some partial depth joint repairs needed.
4 *Fair*	Severe polishing, scaling, map cracking or spalling, over 50% of the area. Joints and cracks show moderate to severe spalling. Pumping and faulting of joints (1/2") with fair ride. Several slabs have multiple transverse or meander cracks with moderate spalling. Spalled area broken into several pieces. Corner cracks with missing pieces or patches. Pavement blowups.	Needs some full depth repairs, grinding, and/or asphalt overlay to correct surface defects.
3 *Poor*	Most joints and cracks are open, with multiple parallel cracks, severe spalling or faulting. D–cracking is evident. Severe faulting (1") giving poor ride. Extensive patching in fair to poor condition. Many transverse and meander cracks, open and severely spalled.	Needs extensive full depth patching plus some full slab replacement.
2 *Very Poor*	Extensive slab cracking, severely spalled and patched. Joints failed. Patching in very poor condition. Severe and extensive settlements or frost heaves.	Recycle and/or rebuild pavement.
1 *Failed*	Restricted speed. Extensive potholes. Almost total loss of pavement integrity.	Total reconstruction.

** Note: Individual roadways may not have all of the types of distress listed for any particular rating. They may have only one or two types.*

Asphalt - PASER Manual Rating System

PASER — Rating System

Surface Rating	Visible Distress*	General Condition/ Treatment Measures
5 Fair	Moderate to severe ravelling (loss of fine and coarse aggregate). Longitudinal and transverse cracks (open 1/2") show first signs of slight ravelling and secondary cracks. First signs of longitudinal cracks near pavement edge. Block cracking up to 50% of surface. Extensive to severe flushing or polishing. Some patching or edge wedging in good condition.	Surface aging, sound structural condition. Needs sealcoat or nonstructural overlay.
4 Fair	Severe surface ravelling. Multiple longitudinal and transverse cracking. with slight ravelling. Longitudinal cracking in wheel path. Block cracking (over 50% of surface). Patching in fair condition. Slight rutting or distortions (1/2" deep or less).	Significant aging and first signs of need for strengthening. Would benefit from recycling or overlay.
3 Poor	Closely spaced longitudinal and transverse cracks often showing ravelling and crack erosion. Severe block cracking. Some alligator cracking (less than 25% of surface). Patches in fair to poor condition. Moderate rutting or distortion (1" or 2" deep). Occasional potholes.	Needs patching and major overlay or complete recycling.
2 Very Poor	Alligator cracking (over 25% of surface). Severe distortions (over 2" deep). Extensive patching in poor condition. Potholes.	Severe deterioration. Needs reconstruction with extensive base repair.
1 Failed	Severe distress with extensive loss of surface integrity.	Failed. Needs total reconstruction.

* ***Note*: Individual pavements will *not* have all of the types of distress listed for any particular rating. They may have only one or two types.**

PASER — Rating System

Rating System

Surface Rating	Visible Distress*	General Condition/ Treatment Measures
10 **Excellent**	None.	New construction.
9 **Excellent**	None.	Recent overlay, like new.
8 **Very Good**	No longitudinal cracks except reflection of paving joints. Occasional transverse cracks, widely spaced (40' or greater). All cracks sealed or tight (open 1/4" or less).	Recent sealcoat or new road mix. Little or no maintenance required.
7 **Good**	Very slight or no ravelling, surface shows some traffic wear. Longitudinal cracks (open 1/4") due to reflection or paving joints. Transverse cracks (open 1/4") spaced 10 feet or more apart, little or slight crack ravelling. No patching or very few patches in excellent condition.	First signs of aging. Maintain with routine crack filling.
6 **Good**	Slight ravelling (loss of fines) and traffic wear. Longitudinal cracks (open 1/4"–1/2") due to reflection and paving joints. Transverse cracking (open 1/4" to 1/2") some spaced less than 10 feet. First sign of block cracking. Slight to moderate flushing or polishing. Occasional patching in good condition.	Show signs of aging, sound structural condition. Could extend life with sealcoat.

*** *Note*: Individual pavements will *not* have all of the types of distress listed for any particular rating. They may have only one or two types.**