

# ASSET MANAGEMENT



## A New Direction For Transportation Management

### An Overview of the Michigan Department of Transportation's Asset Management Program and 2006 Pavement Ratings For Northwest Lower Michigan

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## I. PROGRAM OVERVIEW

### What Is Asset Management?

Asset management is a systematic process of maintaining, upgrading, and operating physical assets cost-effectively. It is an emerging concept in the transportation industry that has been used for years by utilities to manage networks by optimizing preservation, upgrades, and replacement of assets through effective programming and resource allocation. It involves collecting data about existing physical resources and managing conditions based on strategic goals. It is a systematic, rather than purely tactical, process of inventory, scenario evaluation, and action that results, ideally, in selecting the best method of implementation to achieve specified goals and objectives.

The major elements of asset management are:

- Establishing goals and objectives through the development of a strategic plan
- Collecting data to measure progress toward achieving the established goals and objectives
- Using management systems to control various processes
- Developing appropriate performance measures
- Identifying standards and benchmarks
- Developing alternative analysis procedures
- Making decisions based on these results and developing an appropriate program
- Implementing the program
- Monitoring and reporting results of actions taken

### Historical Background

The 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) was the first legislation to systematically address asset management and require state departments of transportation to develop management systems for bridge, congestion, intermodal, pavement, public transportation, and safety assets. The legislation also included performance measures and an opportunity for enhanced public involvement and input in the transportation planning process. The impetus for this legislation was a call for greater accountability and investment in the country's transportation network from voters and elected officials.

The Governmental and Performance Results Act of 1993 defined the direction of the process further by requiring federal agencies to develop a five-year strategic plan and to revise it at least every three years. The law also required the development of a performance plan.

Executive Order 12893 of 1994 required the systematic analysis of benefits and costs for federal infrastructure projects. States were encouraged to follow the same procedures. The intent behind this order was to allow for the development of a list of comparable project alternatives that would lead to the best one being implemented.

In 1994, the Governmental Accounting Standards Board (GASB) *Concepts Statement No. 2, Service Efforts and accomplishments Reporting* stated that government entities should ideally be following the same strategic process for planning, implementing, and evaluating projects. In 1999, GASB's *Statement 34* established expanded guidelines for reporting financial data for state and local governments. The new guidelines require government-wide assessment of net assets and depreciation, including infrastructure. The basis of this guideline rests in the understanding that a

community has an obligation as the fiduciary of public infrastructure and public resources, to set goals for management of that infrastructure. The impacts of GASB 34 require an up-to-date inventory of assets, a manner to perform condition assessments at least once every three years, a way to measure the results, and an estimate of the costs to maintain and preserve the assets at a determined condition level. An asset management system is one framework that provides a process to preserve the utility of infrastructure, and to promote effective stewardship of the community's resources and quality of life.

### **How Is MDOT Using The Asset Management Approach For Transportation Planning?**

MDOT is using asset management strategically and systematically. The development of the process is on going, and as advances are made in technology, better data and processing capabilities will undoubtedly improve the process and outcomes.

MDOT has incorporated the major elements of asset management into five fundamental components of sound management:

- Policy Goals and Objectives
- Information and Data Collection
- Planning and Programming
- Program Delivery
- Monitoring and Reporting

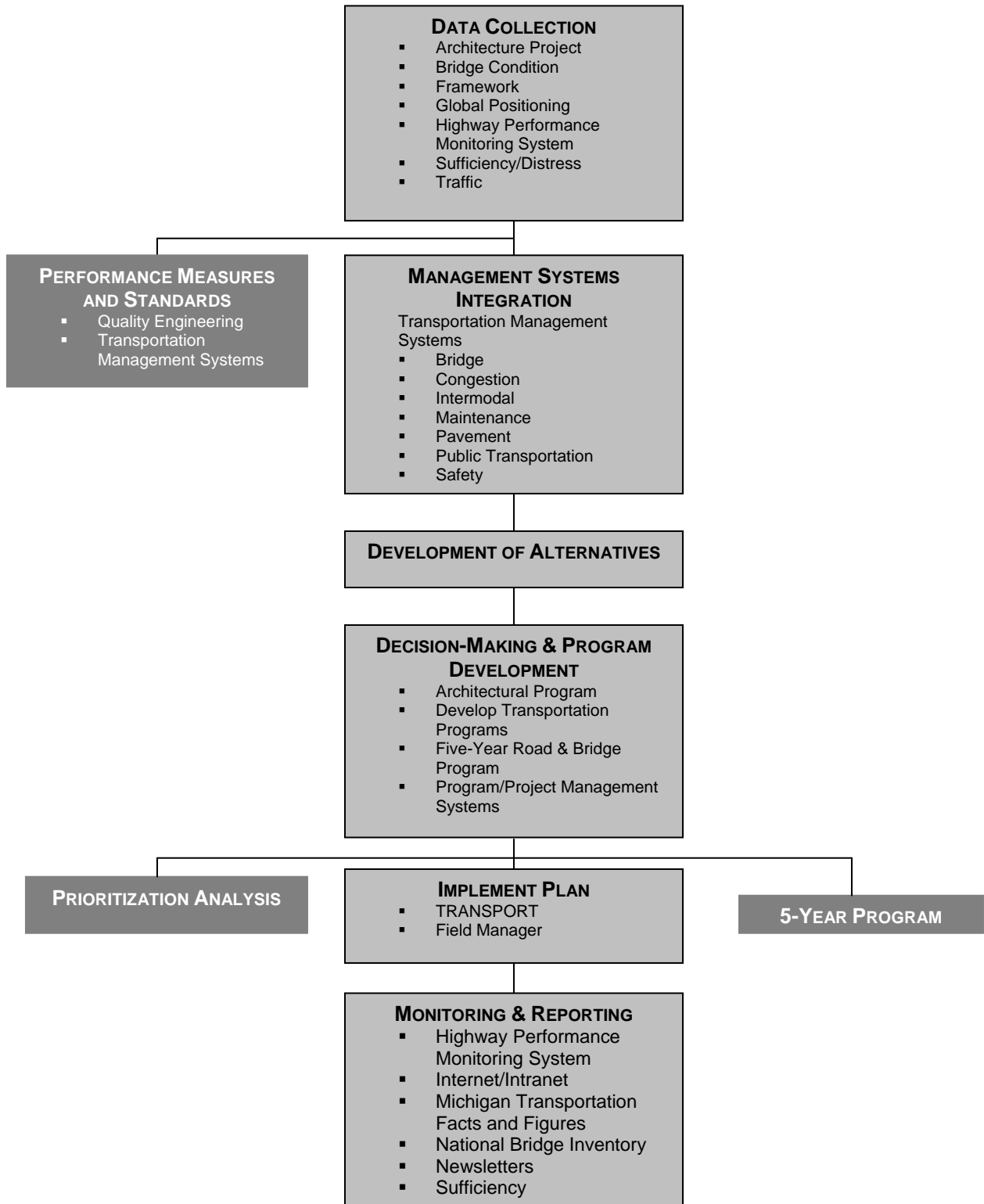
The activities associated with these five elements are described in Figure 1 below. MDOT uses an integrated, automated decision support tool called the Transportation Management System (TMS). TMS has the capability to identify condition, analyze use patterns, and determine deficiencies of the transportation infrastructure. Ideally, MDOT envisions the TMS as a single, unified management application that uses a logical, relational database.

### **What Role Does The Northwest Michigan Council of Governments Play In Transportation Asset Management?**

*Section (4) of Act 499 of the Public Acts of 2002 "...the state planning and development regions shall provide qualified technical assistance to the Council."*

In 2003, MDOT's newly formed Asset Management Council, which was appointed by the State Transportation Commission, contracted statewide, with the 21 regional planning agencies and metropolitan planning organizations to coordinate local pavement conditions assessments for the federal-aid road system in their region as a component of the State's asset management program. Each of these agencies was responsible for working with MDOT to provide training and education to local officials and staff, scheduling and participating in collection efforts with the road agencies and MDOT officials, and analyzing and reporting data. As the regional planning agency for northwest Lower Michigan, NWMCOG coordinated asset management activities in Antrim, Benzie, Charlevoix, Emmet, Grand Traverse, Kalkaska, Leelanau, Manistee, Missaukee, and Wexford Counties.

Figure 1. MDOT's Transportation Asset Management Model



## II. ELEMENTS OF PAVEMENT MANAGEMENT

A major goal of a road management agency is to ensure that roads are comfortable, safe, and maintained economically. Both environmental impacts, such as weather and aging, and structural impacts, such as traffic load and volume, affect the way a pavement surface deteriorates. Some pavements deteriorate at a faster rate than others. A full scale, comprehensive assessment of road conditions includes collecting and assessing data about the following characteristics: roughness (ride), surface distress (condition), surface skid characteristics, and structure (pavement strength and deflection). Planners can look at pavement data to develop short- and long-range plans that take available resources and budget constraints into account.

At the local government level, some of these assessments are managed informally. MDOT uses a simplified visual surface pavement evaluation system called PASER as one component of its pavement management program.

## III. ASSET MANAGEMENT ROAD ASSESSMENT TOOLS

The PASER system is a visual evaluation tool to measure and classify road surfaces based on their surface condition and appearance. There are seven different acceptable surface types within the PASER system: Asphalt, Concrete, Composite, Sealcoat, Brick, Gravel, or Unimproved. Each surface type has its own rating criteria based on the unique characteristics of that surface type. For example, when evaluating the condition of Asphalt, the extent of surface defects, surface deformation, cracking, patches, and potholes are visually assessed.

PASER evaluation criteria translate into condition values that are numeric and range from 1 to 10. Generally, ratings of 5-10 are considered “good,” while ratings from 1-4 are considered “poor.” The rating system is described more specifically in Figure 2 below.

Figure 2. Pavement Surface Evaluation and Rating System<sup>1</sup>

<b>SURFACE RATING</b>	<b>VISIBLE DISTRESS</b>	<b>GENERAL CONDITION/ TREATMENT MEASURES</b>
<b>10 Excellent</b>	None.	New construction.
<b>9 Excellent</b>	None.	Recent overlay. Like new.
<b>8 Very Good</b>	No longitudinal cracks except reflection of paving joints. Occasional transverse cracks, widely spaced (40' or greater). All cracks sealed or tight (open less than ¼").	Recent sealcoat or new cold mix. Little or no maintenance required.

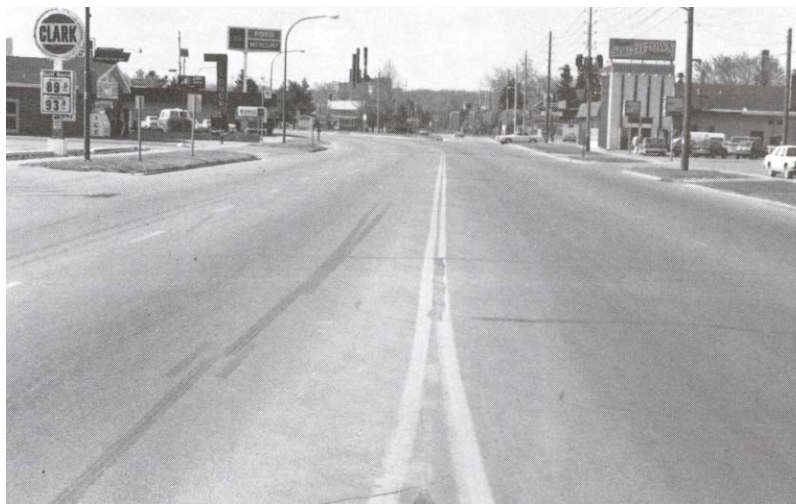
<sup>1</sup> *Asphalt-PASER Manual – Pavement Surface Evaluation and Rating*. 2002. Wisconsin Transportation Information Center. Madison, WI.

<p><b>7</b> <b>Good</b></p>	<p>Very slight or no raveling, surface shows some traffic wear. Longitudinal cracks (open ¼") due to reflection or paving joints. Transverse cracks (open ¼") spaced 10' or more apart, little or slight crack raveling. No patching or very few patches in excellent condition.</p>	<p>First signs of aging. Maintain with routine crack filling.</p>
<p><b>6</b> <b>Good</b></p>	<p>Slight raveling (loss of fines) and traffic wear. Longitudinal cracks (open ¼" to ½"), some spaced less than 10'. First sign of block cracking. Slight to moderate flushing or polishing. Occasional patching in good condition.</p>	<p>Show signs of aging. Sound structural condition. Could extend life with sealcoat.</p>
<p><b>5</b> <b>Fair</b></p>	<p>Moderate to severe raveling (loss of fine and coarse aggregate). Longitudinal and transverse cracks (open ½") show first signs of slight raveling 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.</p>	<p>Surface aging. Sound structural condition. Needs sealcoat or non-structural overlay (less than 2").</p>
<p><b>4</b> <b>Fair</b></p>	<p>Severe surface raveling. Multiple longitudinal and transverse cracking with slight raveling. Longitudinal cracking in wheel path. Block cracking (over 50% of surface). Patching in fair condition. Slight rutting or distortions (1/2" to 1" deep).</p>	<p>Significant aging and first signs of need for strengthening. Would benefit from structural overlay (2" or more).</p>
<p><b>3</b> <b>Poor</b></p>	<p>Closely spaced longitudinal and transverse cracks often showing raveling 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.</p>	<p>Needs patching and repair prior to major overlay. Milling and removal of deterioration extends the life of overlay.</p>
<p><b>2</b> <b>Very Poor</b></p>	<p>Alligator cracking (over 25% of surface). Severe distortions (over 2" deep). Extensive patching in poor condition. Potholes.</p>	<p>Severe deterioration. Needs reconstruction with extensive base repair. Pulverization of old pavement is effective.</p>
<p><b>1</b> <b>Failed</b></p>	<p>Severe distress with extensive loss of surface integrity.</p>	<p>Failed. Needs total reconstruction.</p>



To summarize, ratings of 8-10 require little or no maintenance, aside from routine, day-to-day activities such as street sweeping, drainage clearing, gravel shoulder grading, and sealing cracks to prevent water seepage. The photographs below are examples of roads in the routine maintenance category.

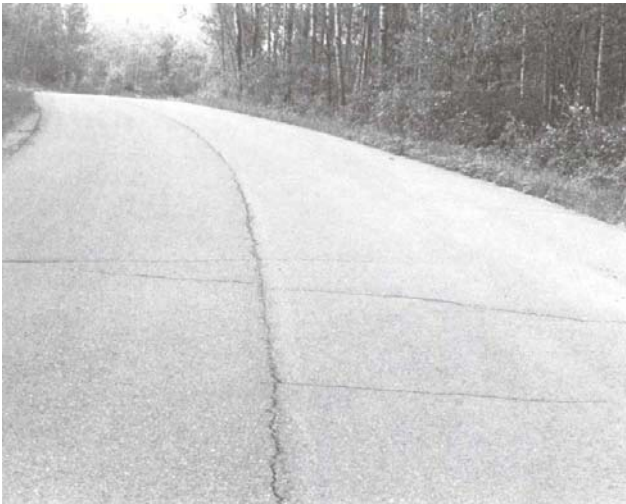
**Routine, Little or No Maintenance – Ratings 8-10. Source: Asphalt PASER Manual. Transportation Information Center, University of Wisconsin-Madison.**





Ratings of 5-7 require capital preventative maintenance. These are roads that are beginning to show the first signs of wear. The roads are still structurally supported, but the surface may be starting to deteriorate. Capital preventative maintenance fixes protect the pavement structure and slow the rate of deterioration, which maintains and improves the functional condition of the road. The photographs below show roads in the capital preventative maintenance category.

**Capital or Preventative Maintenance – Ratings 5-7. Source: Asphalt PASER Manual. Transportation Information Center, University of Wisconsin-Madison.**







Ratings of 1-4 require structural improvements such as resurfacing or major reconstruction. The photographs below are examples of roads that need structural improvements.

**Structural Improvements – Ratings 1-4. Source: Asphalt PAsER Manual. Transportation Information Center, University of Wisconsin-Madison.**



#### **IV. REGIONAL DATA COLLECTION PROCESS**

NWMCOG staff participated in rating 3,000 miles of federal-aid-eligible roads in northwest Michigan in 2005. The pavement condition data collection effort involved a three-person team in each county. The team was composed of a NWMCOG staff member, a County Road Commission employee, and a representative from a local MDOT office. In counties where there was a city with a significant amount of federal-aid roads, city engineers or managers were invited to participate in the collection and rating effort as well.

The transportation asset management data collection process is intensive and time-consuming. As with any data collection effort, the data must be gathered, stored, and analyzed effectively and appropriately. For each county's respective data collection effort, these participants typically met at the County Road Commission office in the morning on dates previously scheduled. Existing county data was exported from the county's RoadSoft GIS program and imported into the Laptop Data Collector managed by NWMCOG that was connected to a GPS unit. After determining an initial data collection route, the participants started out driving. When entering a new road segment, the Number of Lanes present for the majority of the segment and the Surface Type were the first data entered. Next, the road was classified by surface condition.

The third piece of data collected was the Pavement Surface Evaluation and Rating (PASER). The PASER system is a subjective, visual rating process that assigns a value to a road segment based on its condition at the time of the rating. Manuals developed by the Wisconsin Transportation Information Center were used to help determine a road's PASER value. After driving the full length of a road segment the participants came to a consensus based on the current road surface condition and entered the value into the Laptop Data Collector. Data were collected in the daylight and when the conditions were dry. Data collection began in late summer and was finished by late fall.

After all of the federal-aid-eligible roads were rated in the county, the data were exported out of the Laptop Data Collector and then imported back into the County's RoadSoft program for review. Inventory Logs and Miles Rated Reports were printed out from RoadSoft. Copies of the dataset and reports were then sent on to the MDOT Asset Management Council in Lansing.

## V. EXPLORING THE DATA COLLECTION RESULTS

### Antrim County

Data were collected in Antrim County from August 28-29, 2006. Staff present for the rating included Burt Thompson, Engineer/Manager, Antrim County Road Commission; Jeff Hunt, Traverse City Transportation Service Center, MDOT North Region; and Sarah Merz, GIS Analyst, Northwest Michigan Council of Governments.

Map 1 displays the surface ratings for Antrim County's roads. Figure 3 shows the PASER values for Antrim County's roads and how they compared to the average regional PASER values. 39.6 % of the roads rated in Antrim County received a PASER value of 8-10 (Very Good to Excellent). Only 8.1% of Antrim County's roads were rated 1-4 (Failing to Fair). This percentage is significantly lower than the regional median of 29.1%. Additionally, 52.2% of the roads rated were given a rating of 5-7 (Fair to Good). Figure 4 shows a comparison of the last three years of data collected.

Map 1. Antrim County PASER Values (2006)

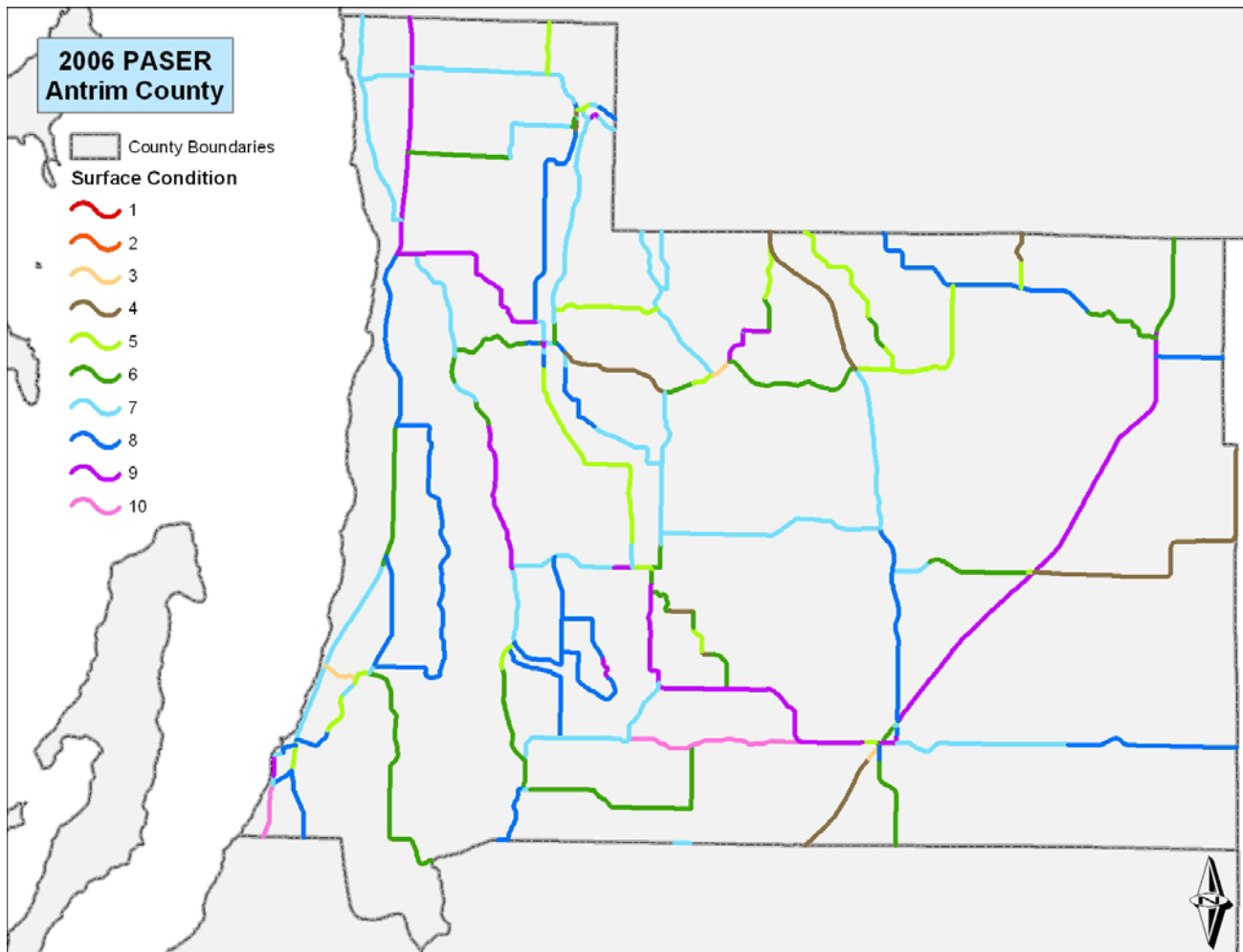


Figure 3. Antrim County Ratings Compared To Region (2006)

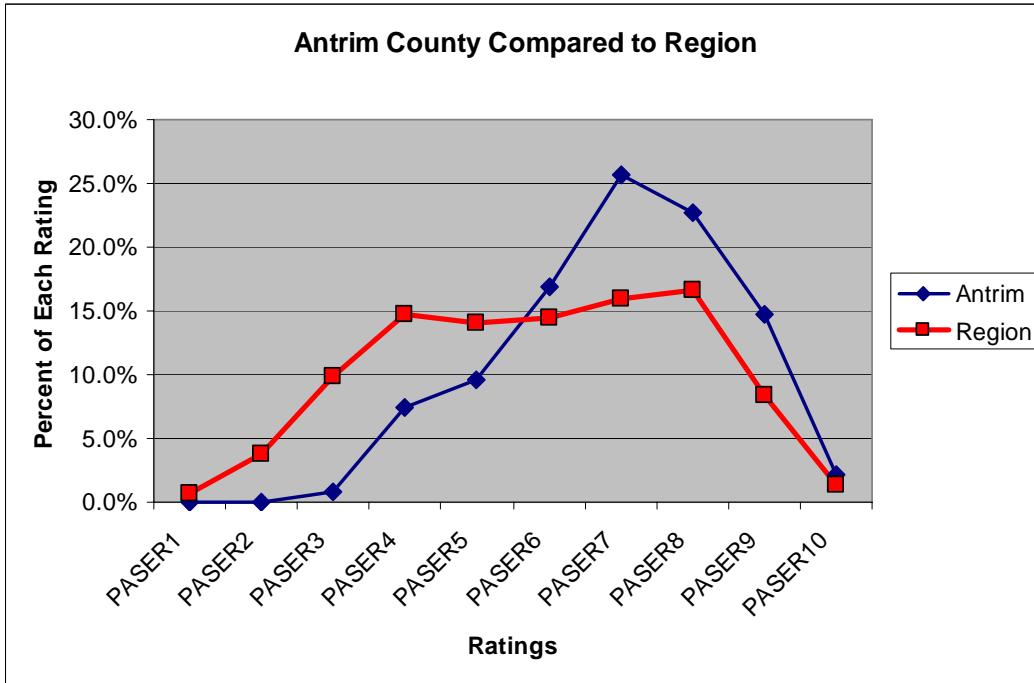
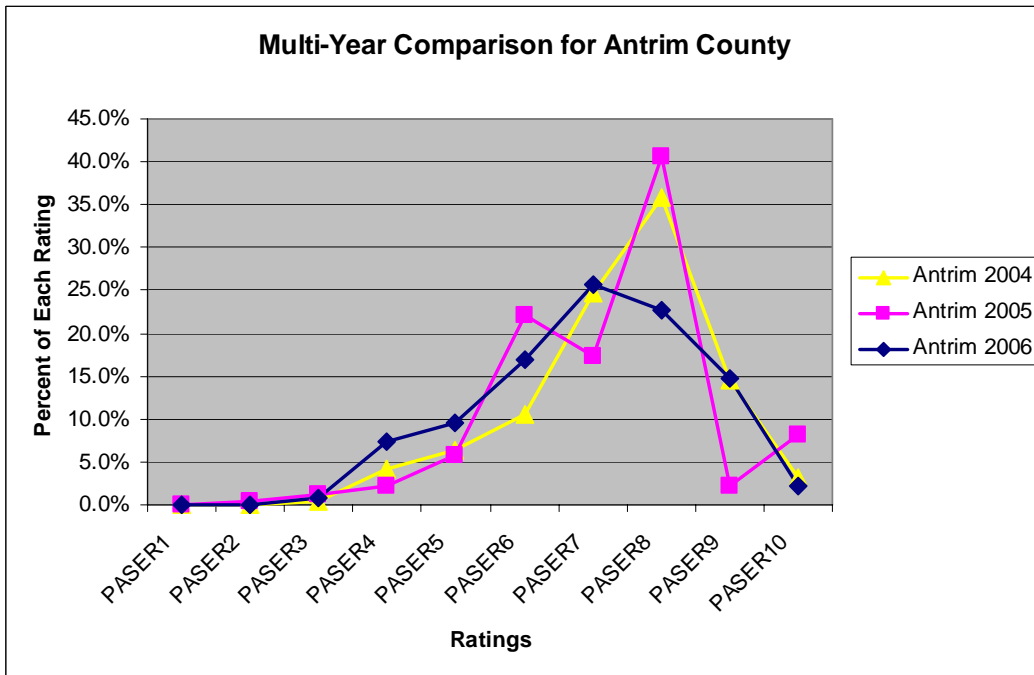


Figure 4. Antrim County Ratings Comparing Multiple Years of Data (2006)





## Benzie County

Data were collected in Benzie County from September 14-15, 2006. Staff present for the rating included Andrew Perkette, Engineering Technician, Benzie County Road Commission; Jeff Hunt, Traverse City Transportation Service Center, MDOT North Region; and Sarah Merz, GIS Analyst, Northwest Michigan Council of Governments.

Map 2 displays the surface ratings for Benzie County's roads. As Figure 5 graphically illustrates, the majority of Benzie County's roads, 50.6%, were in the 5-7 (Fair to Good) rating range. Only 11.0% of Benzie County's roads were rated 1-4 (Failing to Fair). Benzie County's 38.4% of roads rated 8-10 (Very Good to Excellent) exceeded the regional median of 26.3%. Figure 6 compares the percentage of ratings gathered in Benzie County from the previous three years of data collection.

Map 2. Benzie County PASER Values (2006)

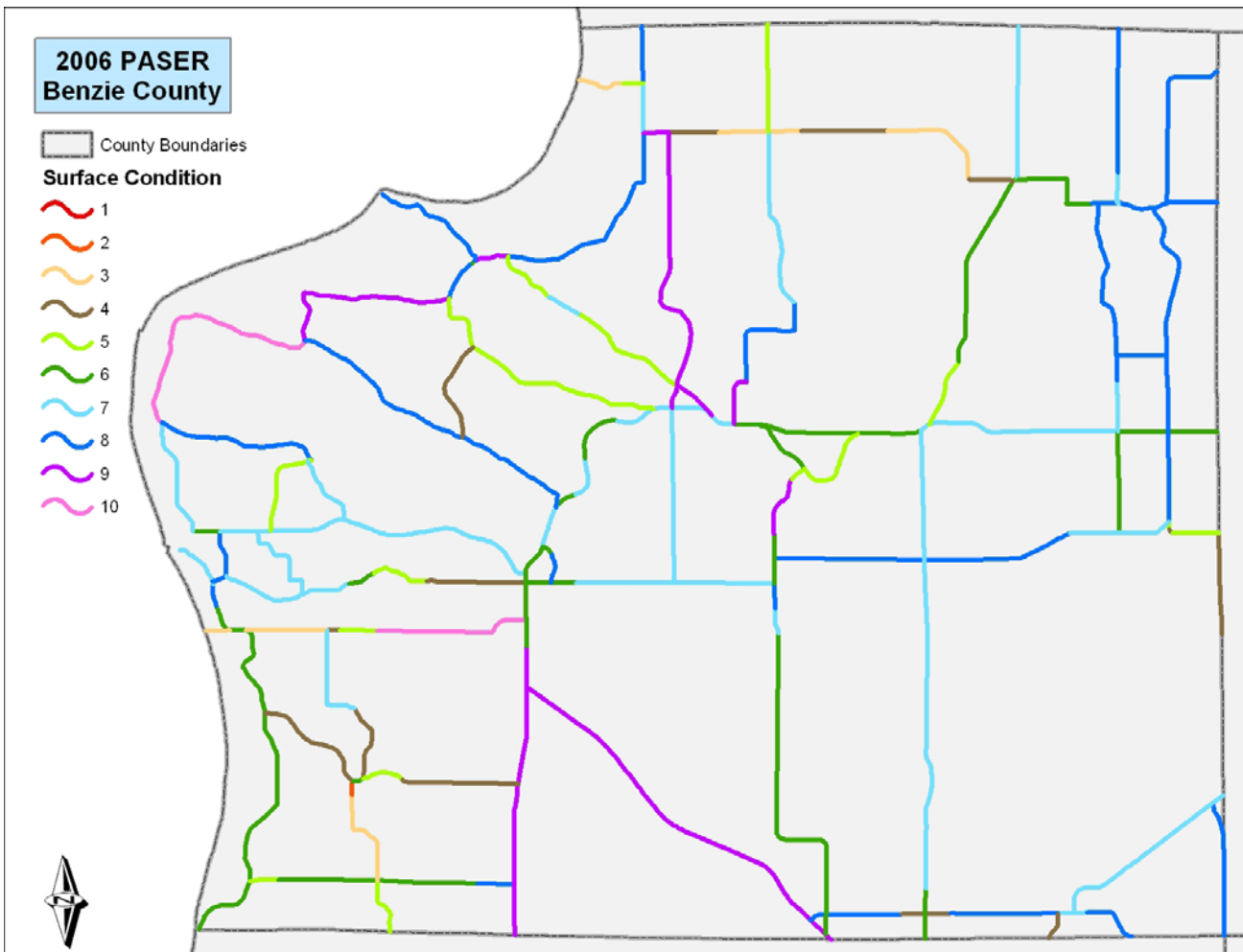


Figure 5. Benzie County Ratings Compared To Region (2006)

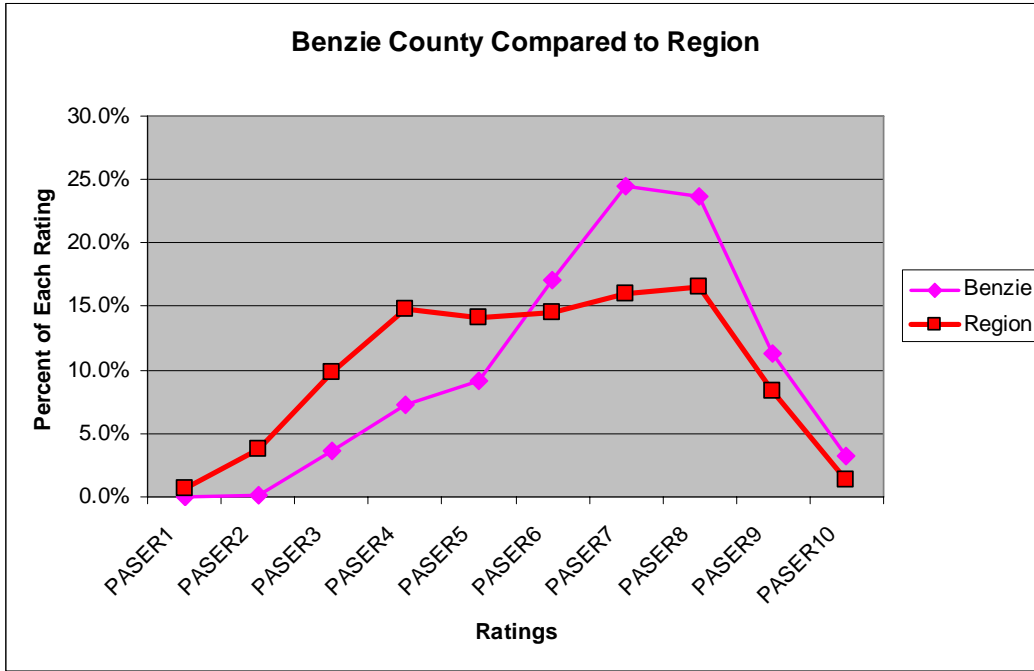
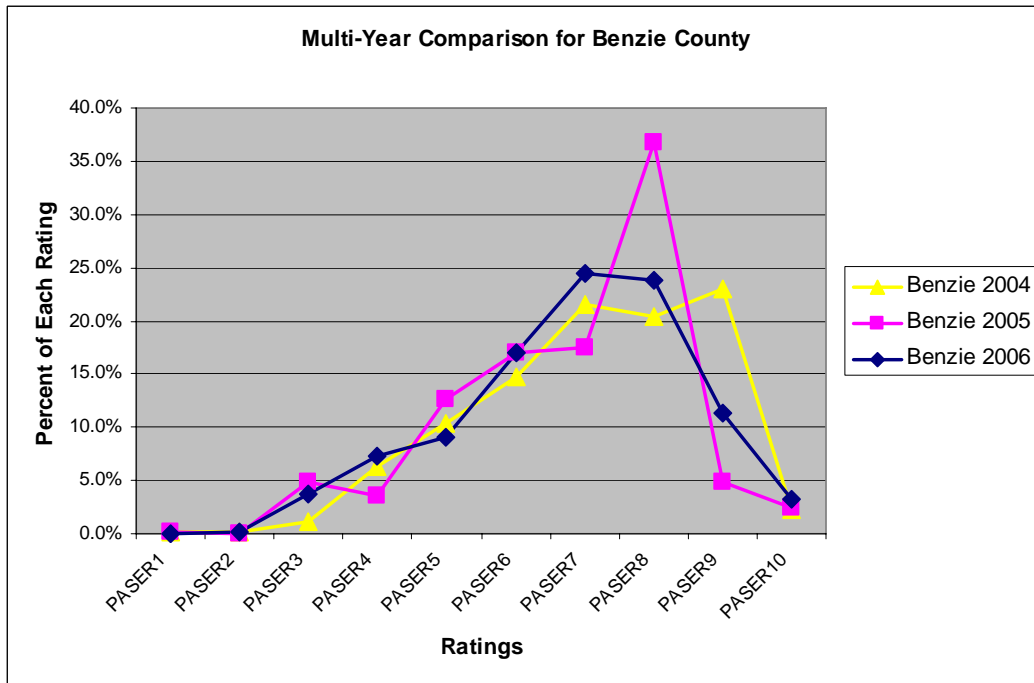


Figure 6. Benzie County Ratings Comparing Multiple Years of Data (2006)



## Charlevoix County

Data were collected in Charlevoix County from September 28-29, 2005. Staff present for the rating included Patrick Harmon, Manager, Charlevoix County Road Commission; Jeff Hunt, Traverse City Transportation Service Center, MDOT North Region; and Sarah Merz, GIS Analyst, Northwest Michigan Council of Governments.

Map 3 displays the surface ratings for Charlevoix County's roads. As Figure 7 graphically illustrates, 39.7% of Charlevoix's roads, were rated 5-7 (Fair to Good) compared to the regional value of 44.6 %. PASER values of 1-4 (Failing to Fair) were given to 40.0% of Charlevoix's rated roads. PASER values of 8-10 (Very Good to Excellent) were given to 20.3% of the county's rated roads. Figure 8 shows a comparison of the last three years of data collected.

Map 3. Charlevoix County PASER Values (2006)

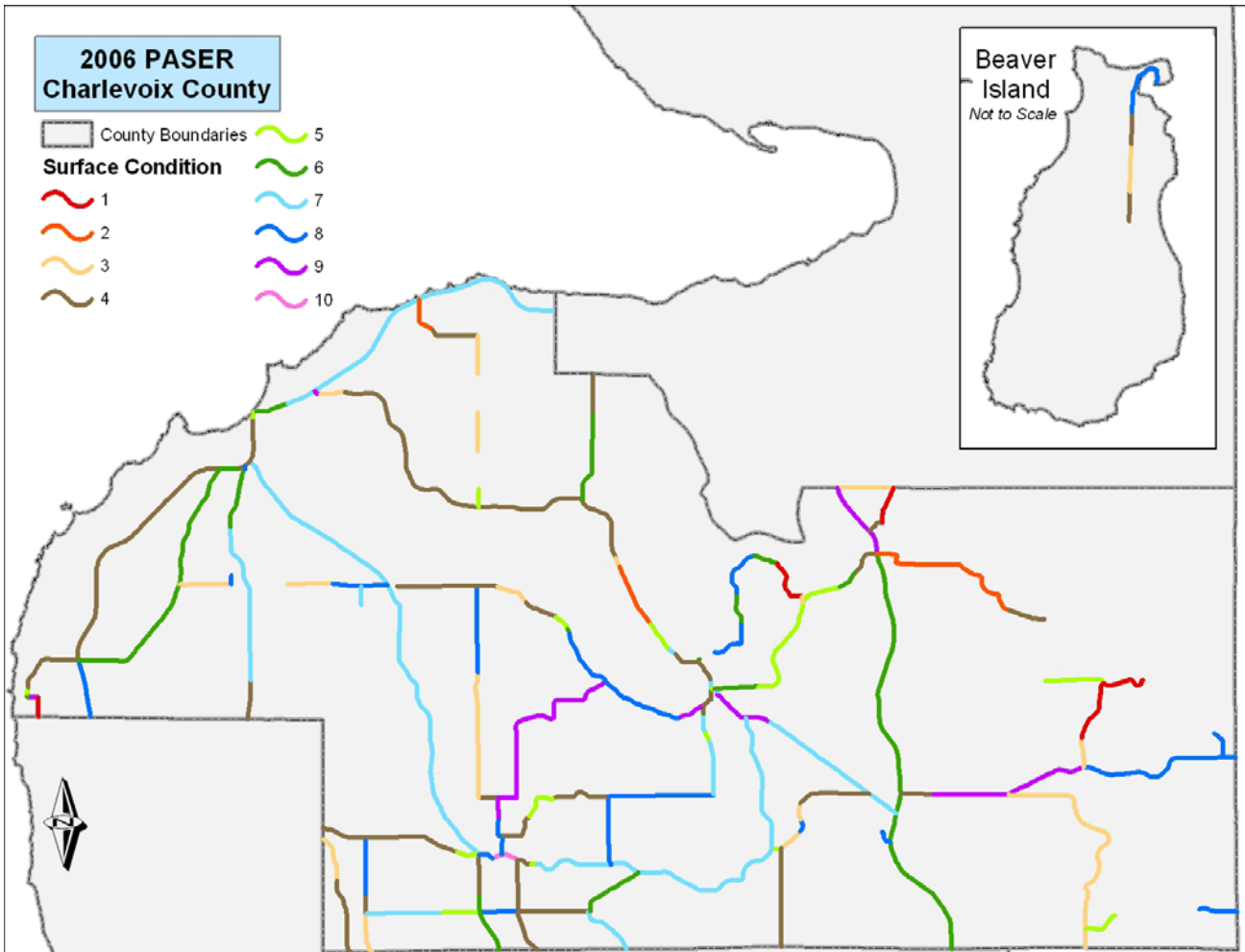


Figure 7. Charlevoix County Ratings Compared To Region (2006)

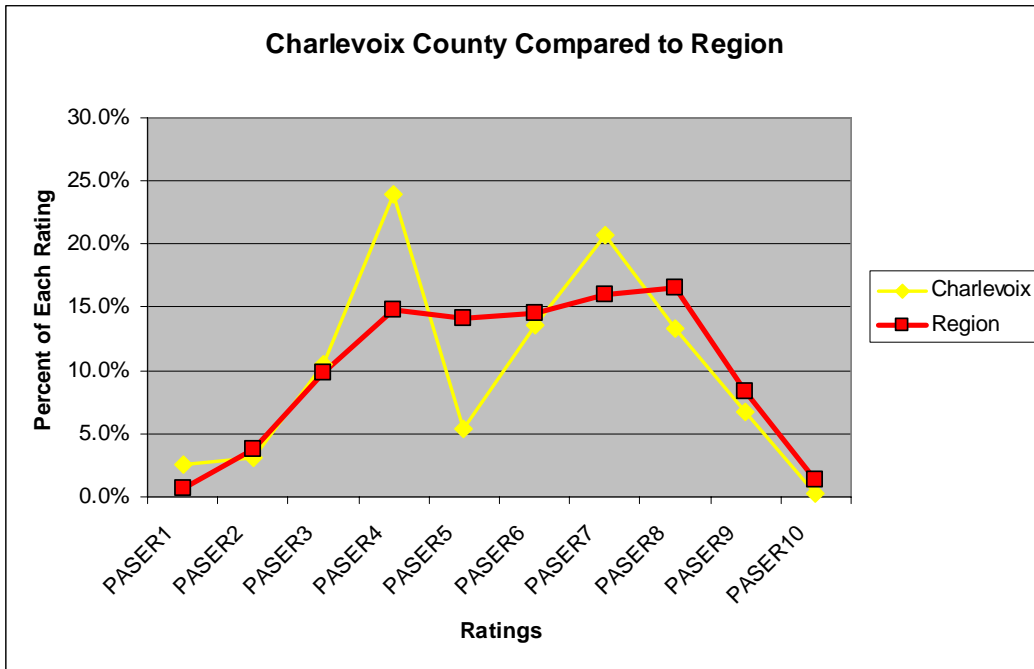
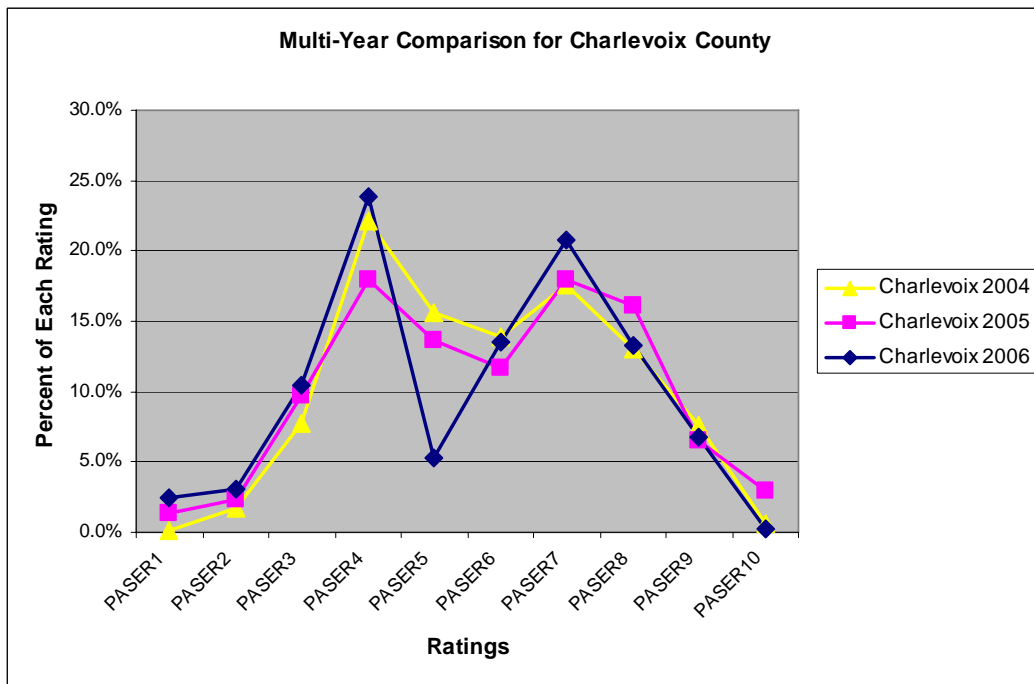


Figure 8. Charlevoix County Ratings Comparing Multiple Years of Data (2006)



## Emmet County

Data were collected in Emmet County from August 9-10, 2006 and September 5, 2006. Staff present for the rating included Brent Shank, Operations Engineer, Emmet County Road Commission (for county roads only); Bill LaCross, Public Works Supervisor, City of Petoskey (for City roads only); Justin Wing, Grayling Transportation Service Center, MDOT North Region; and Sarah Merz, GIS Analyst, Northwest Michigan Council of Governments.

Map 4 displays the surface ratings for Emmet County's roads. As Figure 9 graphically illustrates, 54.2% of Emmet County's roads were rated 5-7 (Fair to Good), higher than the regional median at 44.6% of roads rated 5-7 (Fair to Good). PASER values of 8-10 (Very Good to Excellent) were given to 27.1% of Emmet's roads. 18.7% of Emmet County's roads were rated 1-4 (Failing to Fair). Figure 10 compares the percentages of PASER values collected in the last three years.

Map 4. Emmet County PASER Values (2006)

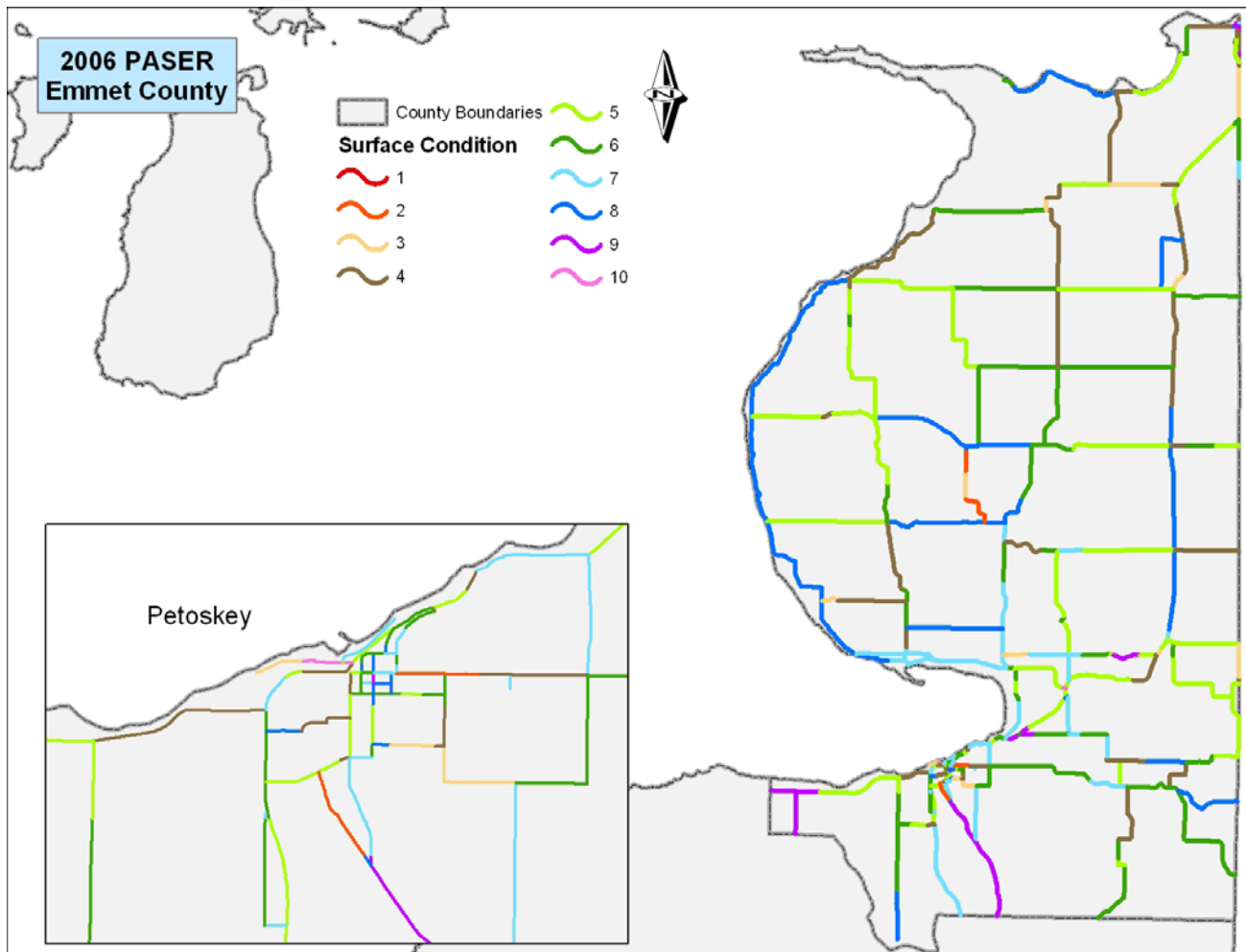


Figure 9. Emmet County Ratings Compared to Region (2006)

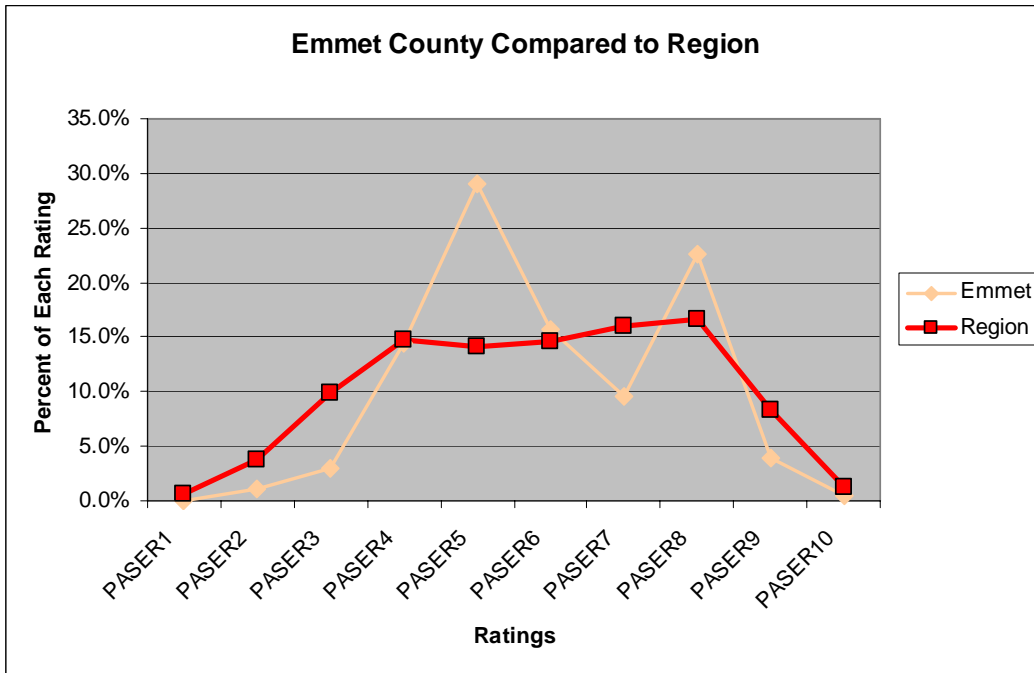
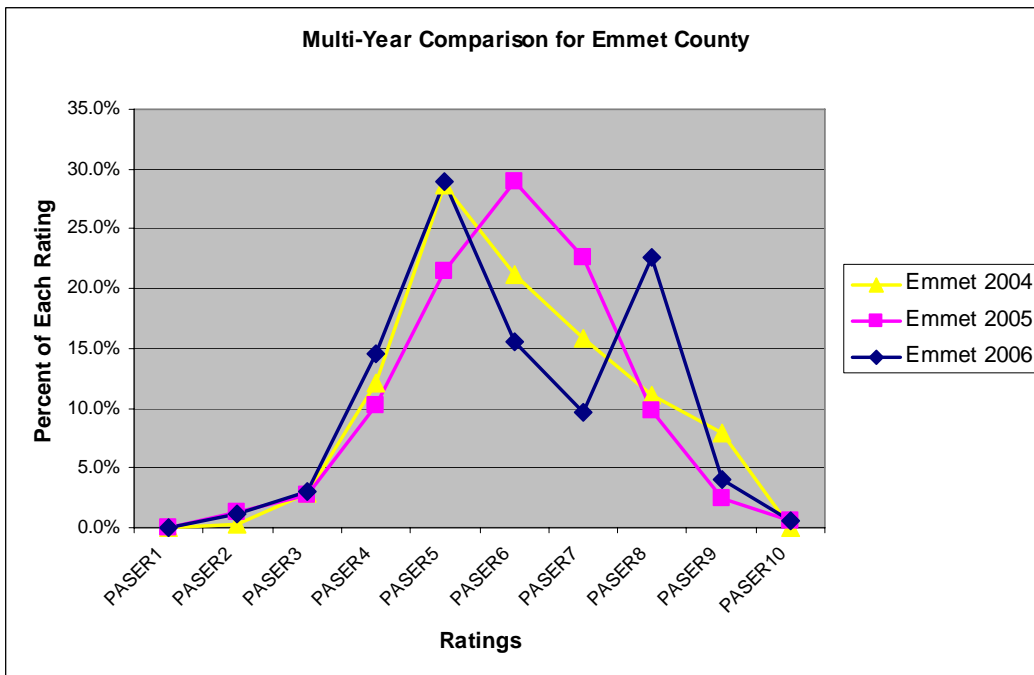


Figure 10. Emmet County Ratings Comparing Multiple Years of Data (2006)



## Grand Traverse County

Data were collected in Grand Traverse County from July 24-26, 2006. Staff present for the rating included John Linnerson, Grand Traverse County Road Commission (for county roads only); Mary Brown-McCrystal, Department of Public Works, City of Traverse City (for City roads only); Jeff Hunt, Traverse City Transportation Service Center, MDOT North Region; and Sarah Merz, GIS Analyst, Northwest Michigan Council of Governments.

Map 5 displays the surface ratings for Grand Traverse County's roads. As Figure 11 graphically illustrates, 59.7% of Grand Traverse County's roads were rated 5-7 (Fair to Good). This percentage was considerably higher than the regional median of 44.6% of roads in this rating range. Additionally, among the ten counties in the region this was the highest percentage of roads rated 5-7. The County's percentage of roads rated 1-4 (Failing to Fair), 23.1%, was slightly lower than the regional median percentage of 29.1%. 17.2% of the County's roads were rated 8-10 (Very Good to Excellent). Figure 12 shows a comparison of the percentages of ratings from the last three years of data collection.

Map 5. Grand Traverse County PASER Values (2006)

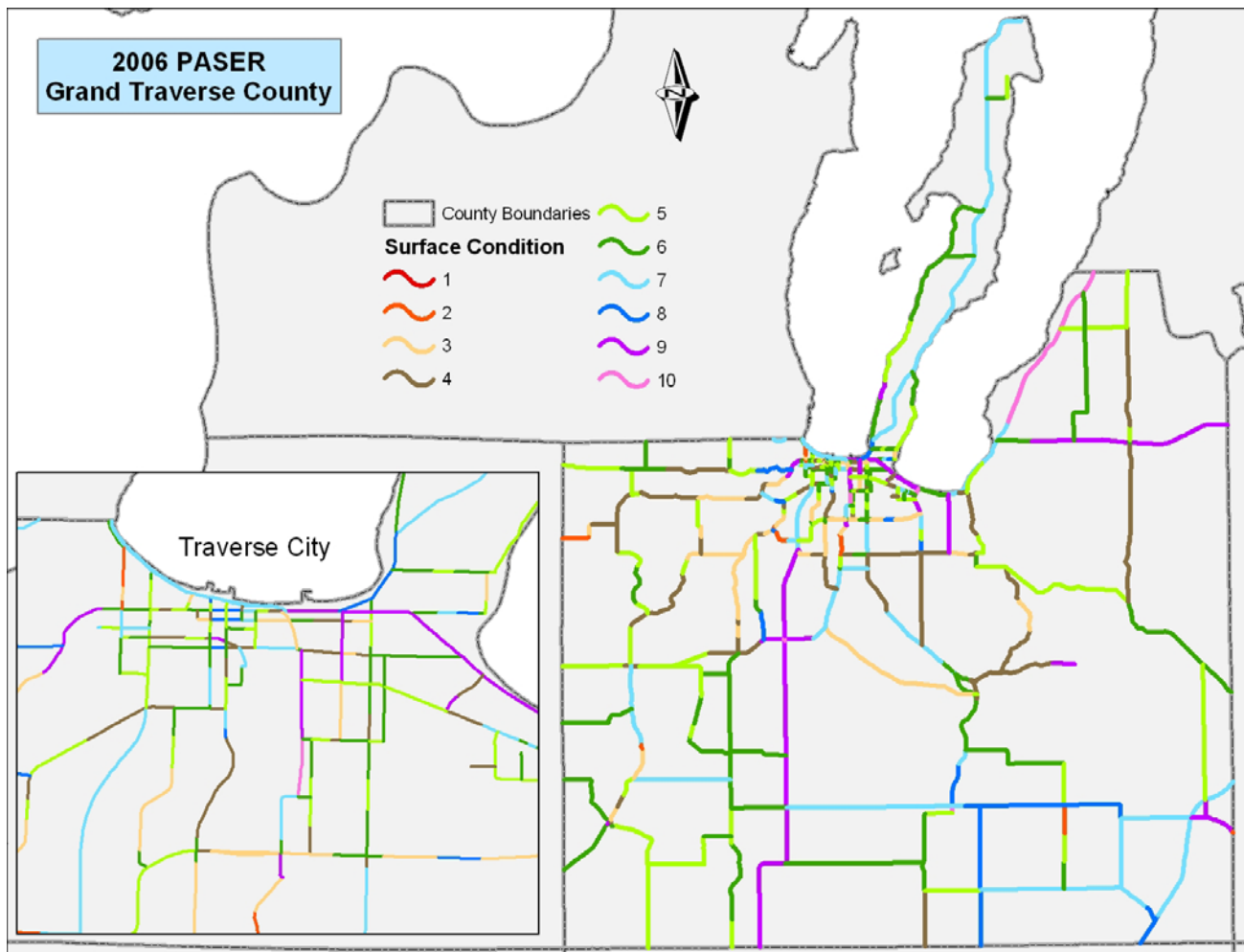


Figure 11. Grand Traverse County Ratings Compared To Region (2006)

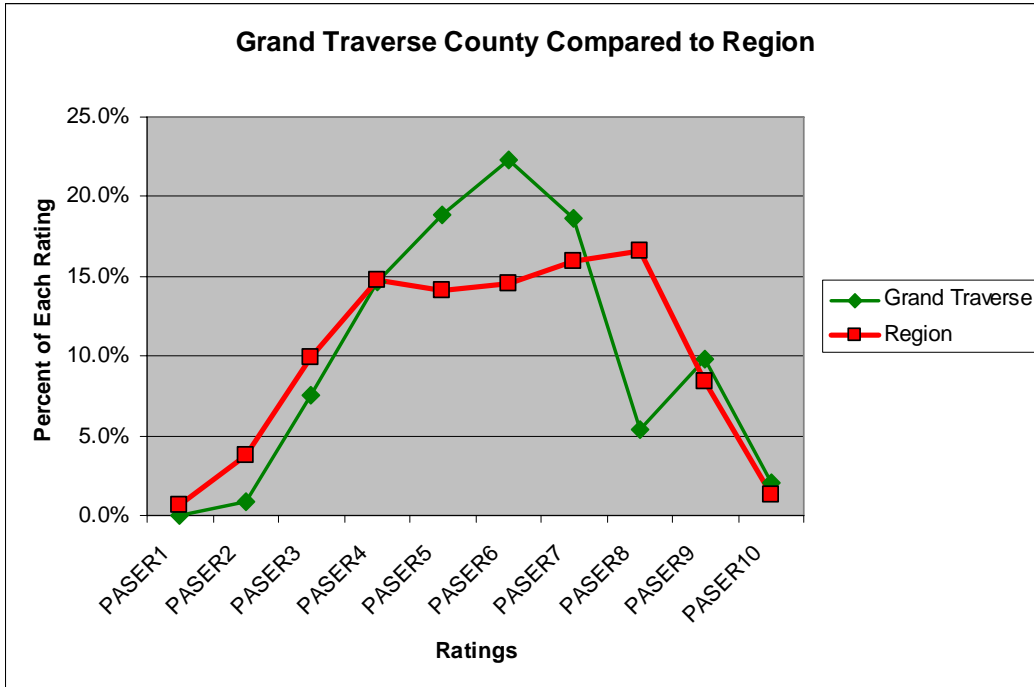
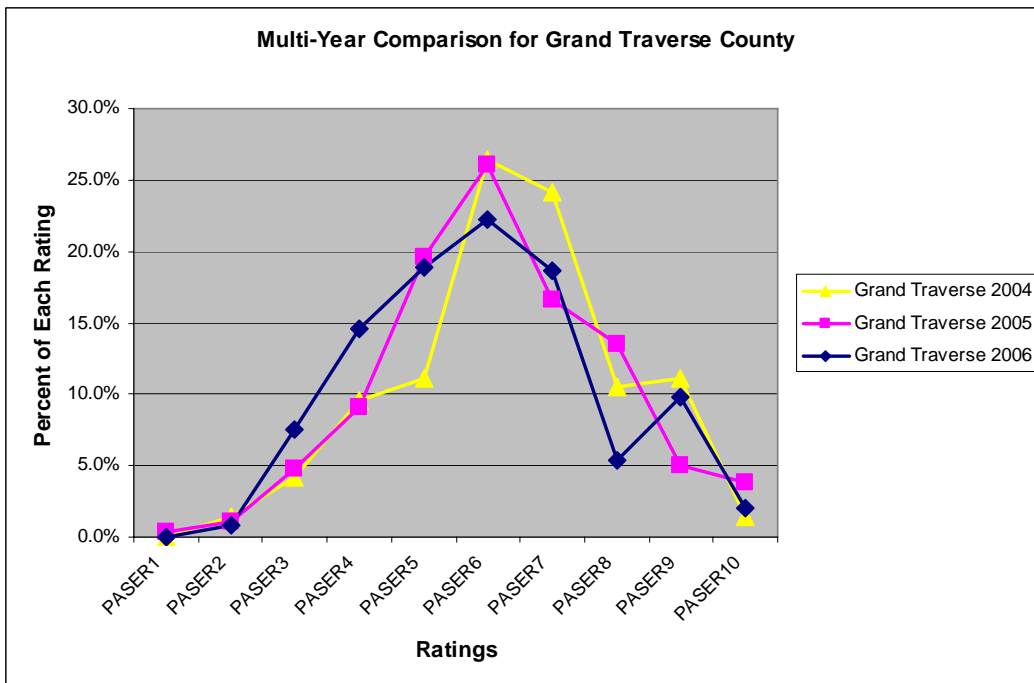


Figure 12. Grand Traverse County Ratings Comparing Multiple Years of Data (2006)





## Kalkaska County

Data were collected in Kalkaska County on August 16-17, 2006. Staff present for the rating included Jamie Woodhams, Kalkaska County Road Commission; Jeff Hunt, MDOT Traverse City Transportation Service Center; and Sarah Merz, GIS Analyst, Northwest Michigan Council of Governments.

Map 6 displays the surface ratings for Kalkaska County's roads. As Figure 13 graphically illustrates, the majority of Kalkaska's roads, 39.8%, were rated 5-7 (Fair to Good). This percentage was considerably lower than the regional median of 44.6%. Kalkaska County's, 37.8% roads rated 1-4 (Failing to Poor) was considerably higher than the regional median of 29.1%. 22.3% of Kalkaska's roads were rated 8-10 (Very Good to Excellent). Figure 14 compares the ratings gathered from the last three years of data collection.

Map 6. Kalkaska County PASER Values (2006)

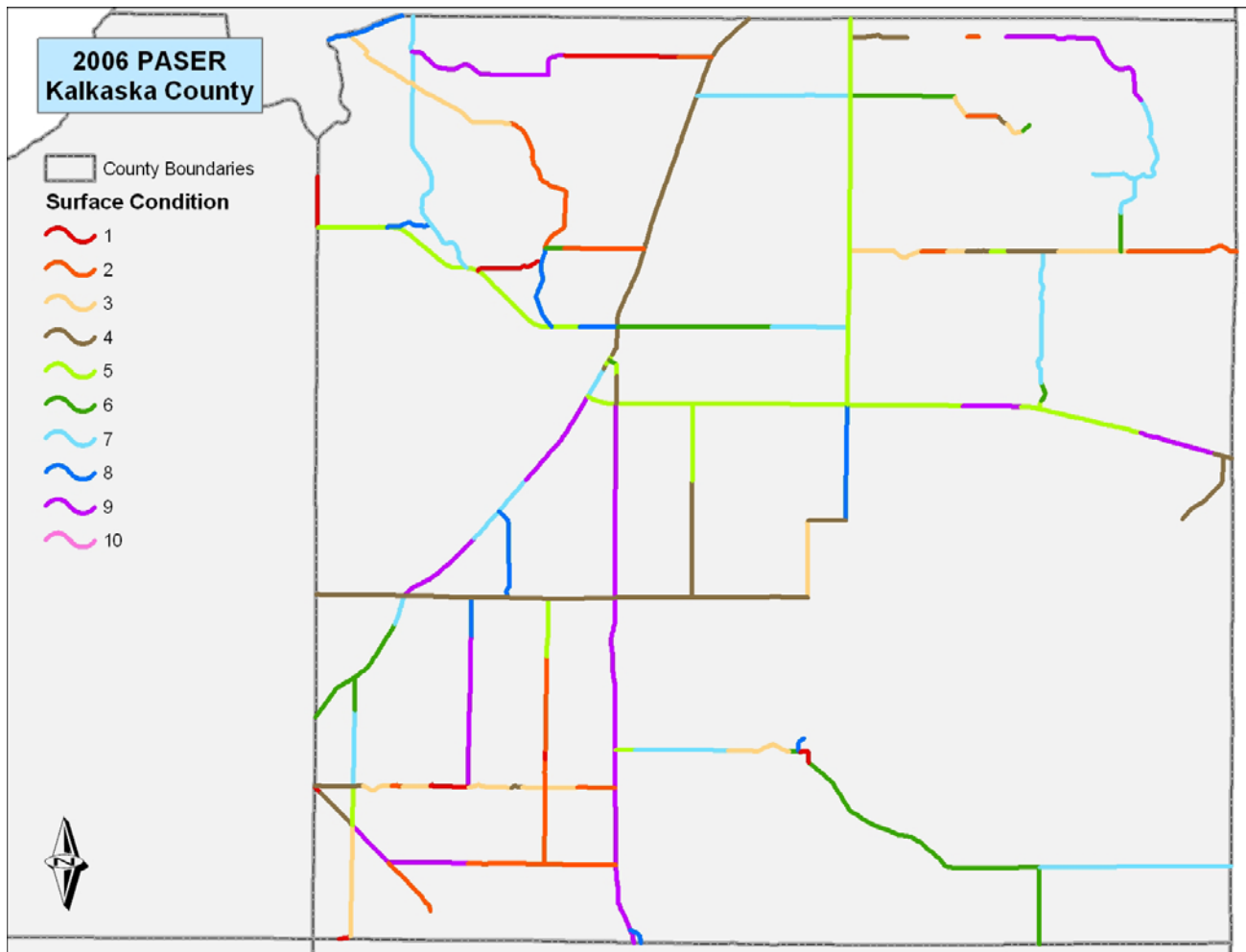


Figure 13. Kalkaska County Ratings Compared To Region (2006)

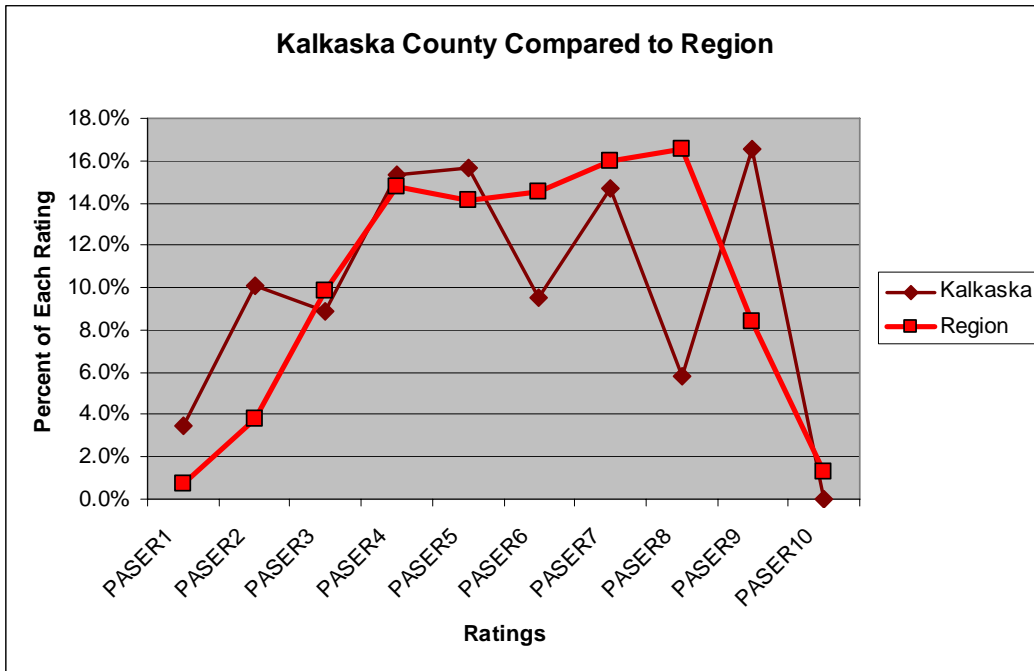
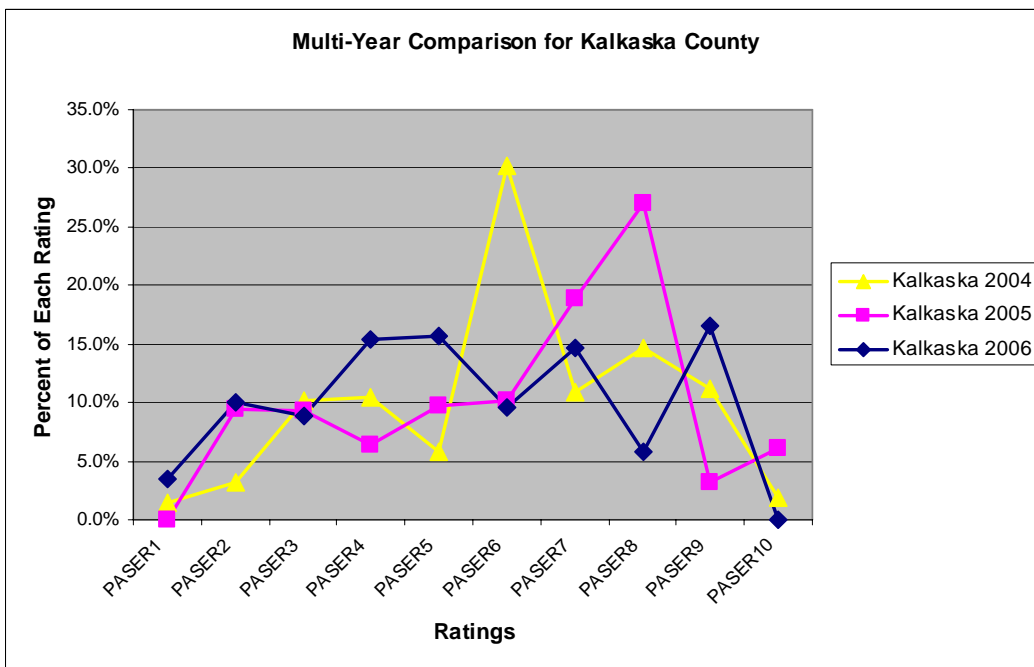


Figure 14. Kalkaska County Ratings Comparing Multiple Years of Data (2006)



## Leelanau County

Data were collected in Leelanau County from August 30-31, 2006. Staff present for the rating included Jim Johnson, Engineer, Leelanau County Road Commission; Jeff Hunt, MDOT Traverse City Transportation Service Center; and Sarah Merz, GIS Analyst, Northwest Michigan Council of Governments.

Map 7 displays the surface ratings for Leelanau County's roads. As Figure 15 graphically illustrates, the percentage of the County's roads that were rated 8-10 (Very Good to Excellent) was 46.4%. This percentage was considerably higher than the regional median of 26.3% and was the highest percentage in the 8-10 range for the ten counties. Additionally, 28.7% of the County's roads were rated 5-7 (Fair to Good). This percentage was below the regional median of 44.6%. PASER values of 1-4 (Failing to Fair) were given to 24.9% of the County's roads; compared to a regional median of 29.1% for this rating range. Figure 16 shows a comparison of the percentage of ratings from the last three years of data collection.

Map 7. Leelanau County PASER Values (2006)

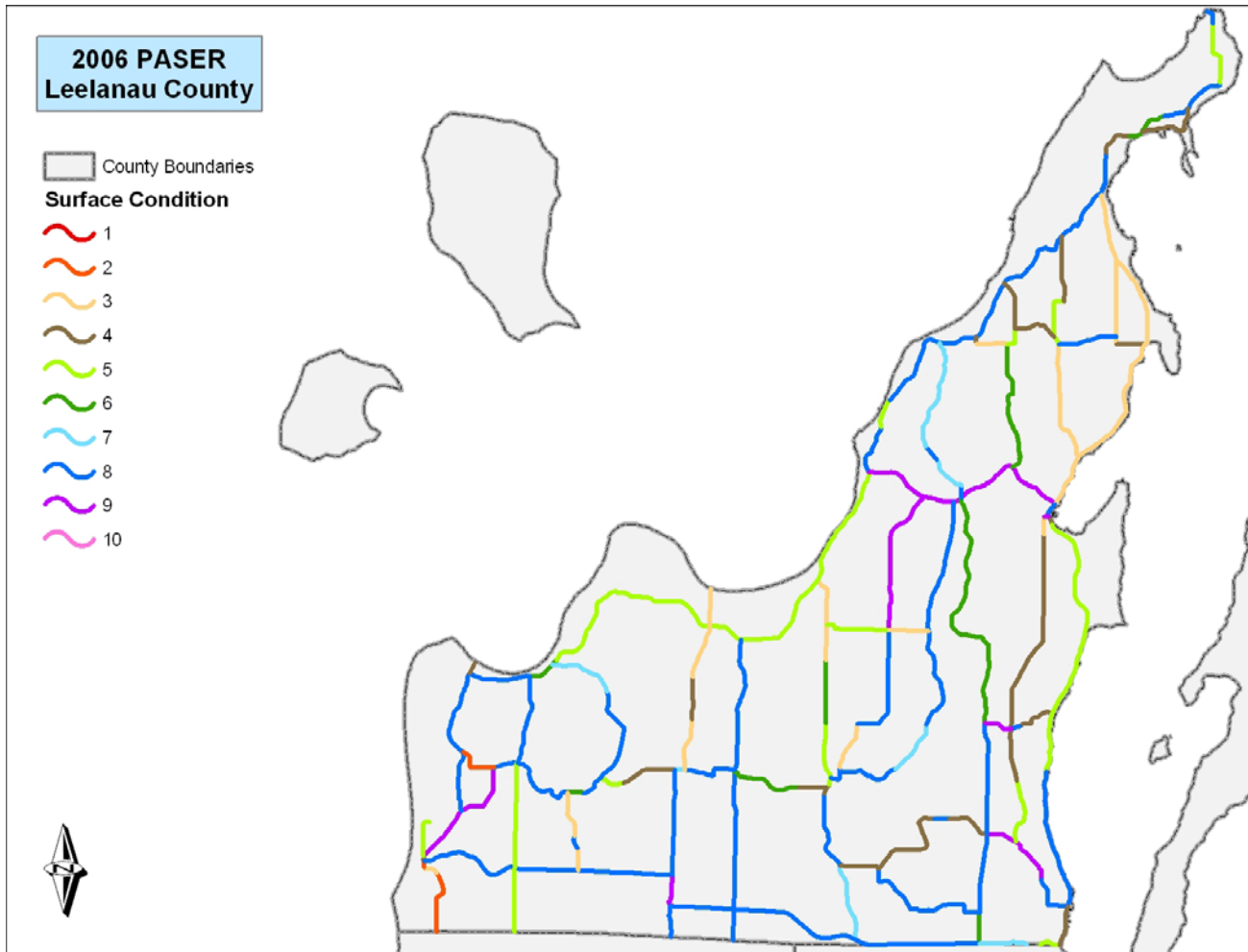


Figure 15. Leelanau County Ratings Compared To Region (2006)

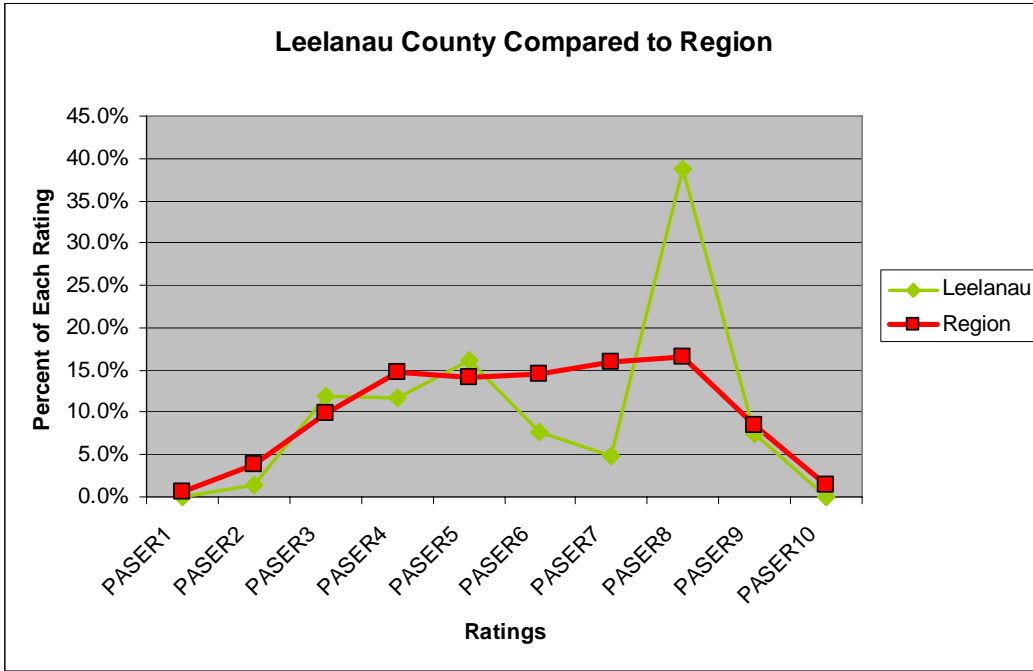
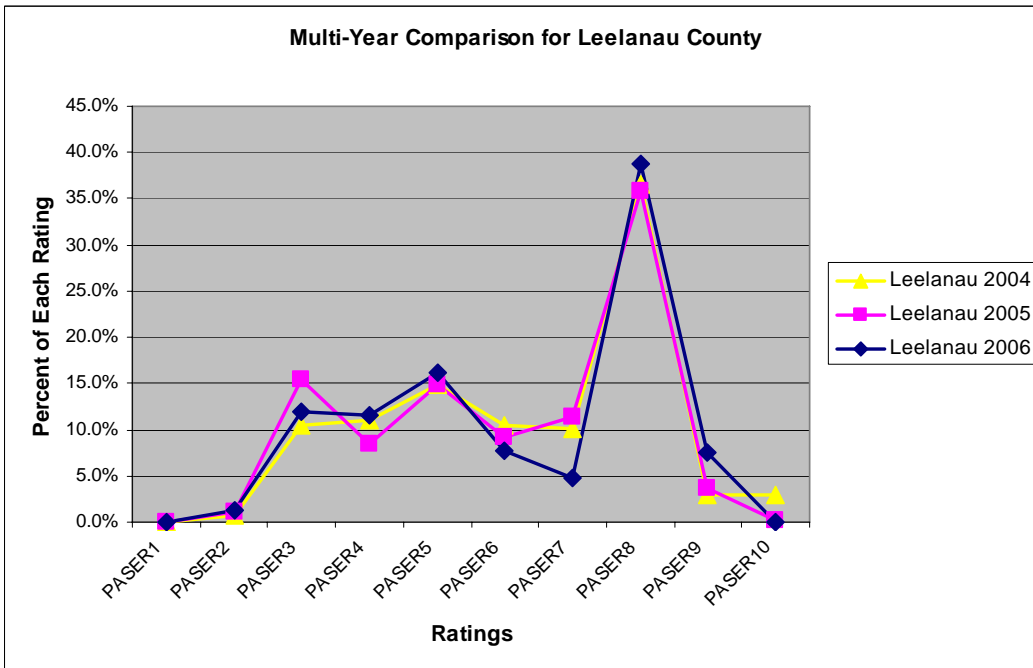


Figure 16. Leelanau County Ratings Comparing Multiple Years of Data (2006)



## Manistee County

Data were collected in Manistee County from September 21-22, 2006. Staff present for the rating included; Sharon Johnson, Manistee County Road Commission; Jack Garber, Public Works Supervisor, City of Manistee (for City roads only); Dave Widrig, Cadillac Transportation Service Center, MDOT North Region; and Sarah Merz, GIS Analyst, Northwest Michigan Council of Governments.

Map 8 displays the surface ratings for Manistee County's roads. As Figure 17 graphically illustrates, Manistee County had 35.9% of roads rated 5-7 (Fair to Good). Additionally, 51.2% of roads were rated 1-4 (Failing to Fair); considerably higher than the regional median of 29.1%. PASER values of 8-10 (Very Good to Excellent) were given to 12.8% of roads in the County, significantly lower than the regional median of 26.3%. Figure 18 compares the PASER values collected in the last three years.

Map 8. Manistee County PASER Values (2006)

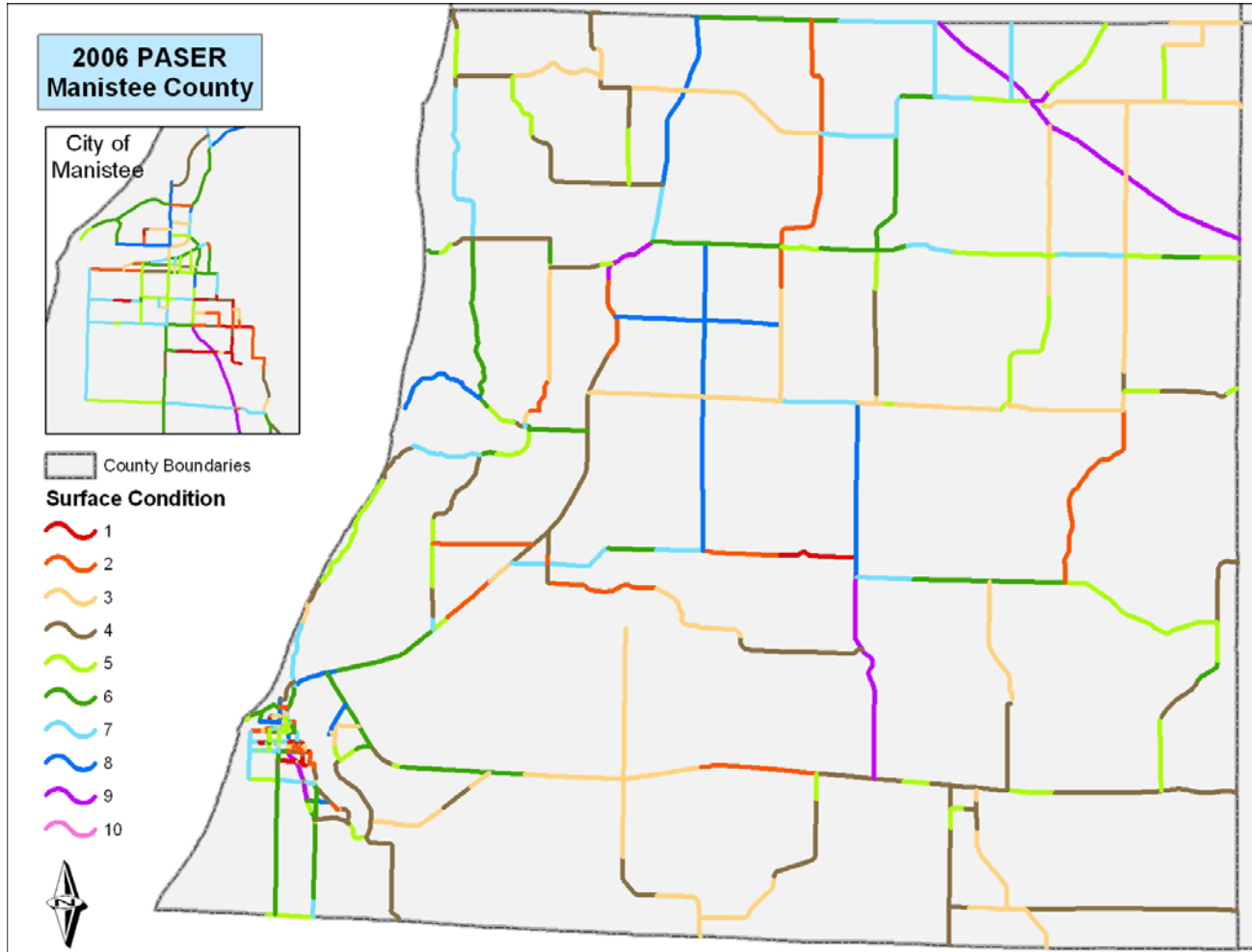


Figure 17. Manistee County Ratings Compared To Region (2006)

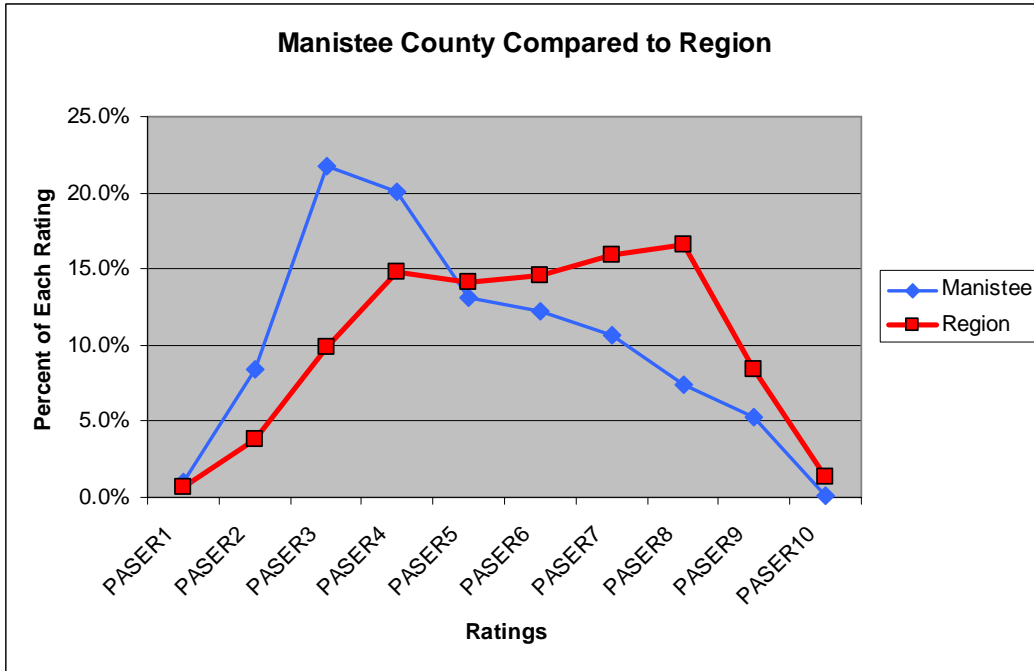
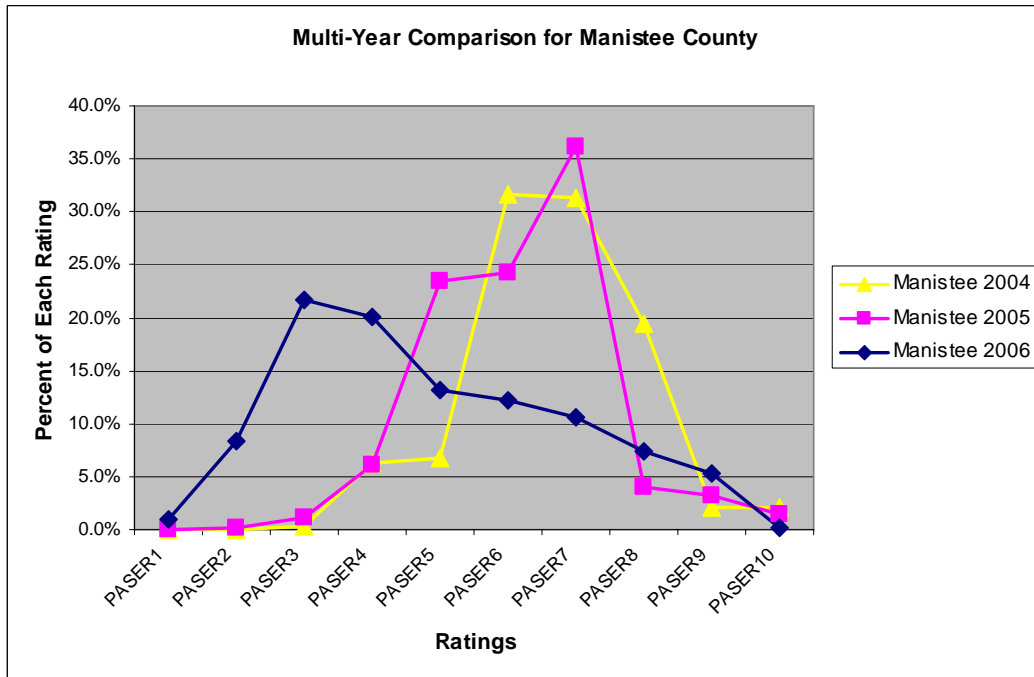


Figure 18. Manistee County Ratings Comparing Multiple Years of Data (2005)



## Missaukee County

Data were collected in Missaukee County from August 17-18, 2005. Staff present for the rating included Dennis Nebo, Missaukee County Road Commission; Dave Widrig, Cadillac Transportation Service Center, MDOT North Region; and Sarah Merz, GIS Analyst, Northwest Michigan Council of Governments.

Map 9 displays the surface ratings for Missaukee County's roads. As Figure 19 graphically illustrates, 29.6% of roads were given PASER values of 5-7 (Fair to Good). This was slightly lower than the regional median of 44.6% of roads rated in this range. PASER values of 8-10 (Very Good to Excellent) were given to 13.4% of roads in the County. This was below the regional median of 26.3% of roads rated in this range. 57.0% of Missaukee's roads were rated in the 1-4 (Failing to Fair) rating range, significantly higher than the regional median of 29.1% and the highest percentage in this rating range among the ten counties in the range. Figure 20 shows a comparison of the last three years of data collected.

Map 9. Missaukee County PASER Values (2006)

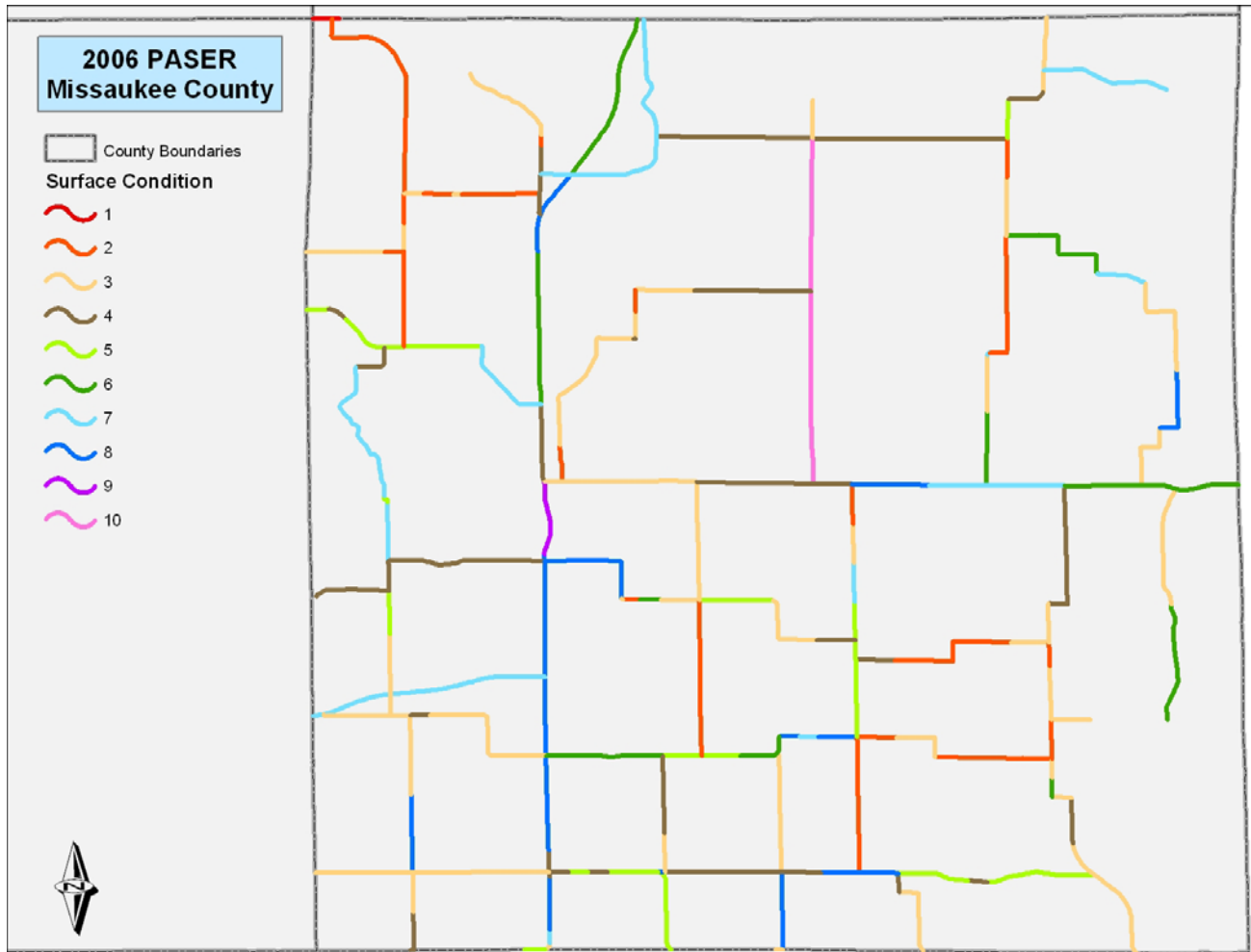


Figure 19. Missaukee County Ratings Compared To Region (2006)

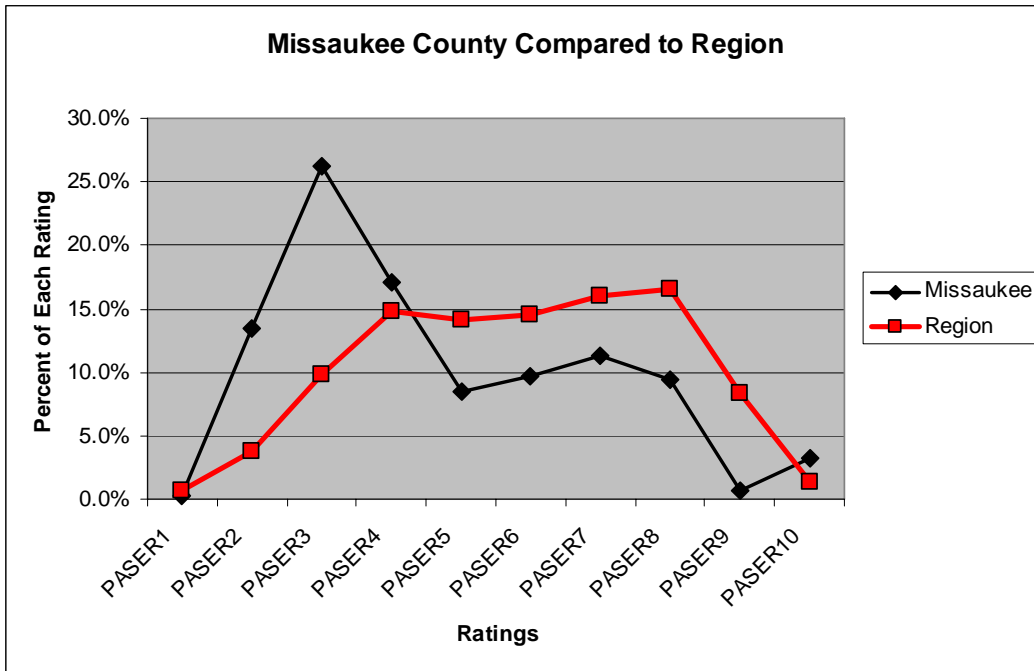
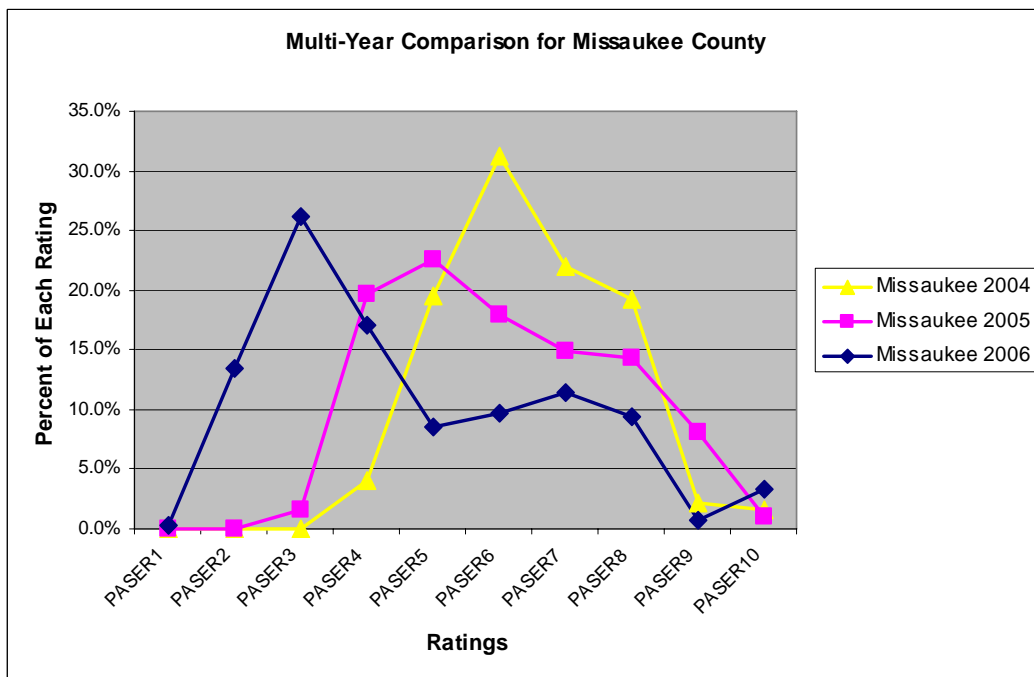


Figure 20. Missaukee County Rating Comparing Multiple Years of Data (2006)





## Wexford County

Data were collected in Wexford County from September 25-26, 2006. Staff present for the rating included Karl Hanson, Engineer, Wexford County Road Commission; Bruce DeWitt, Engineer, City of Cadillac (for City roads only); Dave Widrig, Cadillac Transportation Service Center, MDOT North Region; and Sarah Merz, GIS Analyst, Northwest Michigan Council of Governments.

Map 10 displays the surface ratings for Wexford County's roads. As Figure 21 graphically illustrates, 29.3% of roads were rated 8-10 (Very Good to Excellent) in Wexford County. This was higher than the regional median of 26.3% of roads rated in this range. PASER values of 5-7 (Fair to Good) were given to 47.9% of the County's roads. Only 22.8% of the County's roads were given ratings of 1-4 (Failing to Fair). Figure 22 compares the ratings gathered from the last three years of data collection.

Map 10. Wexford County PASER Values (2006)

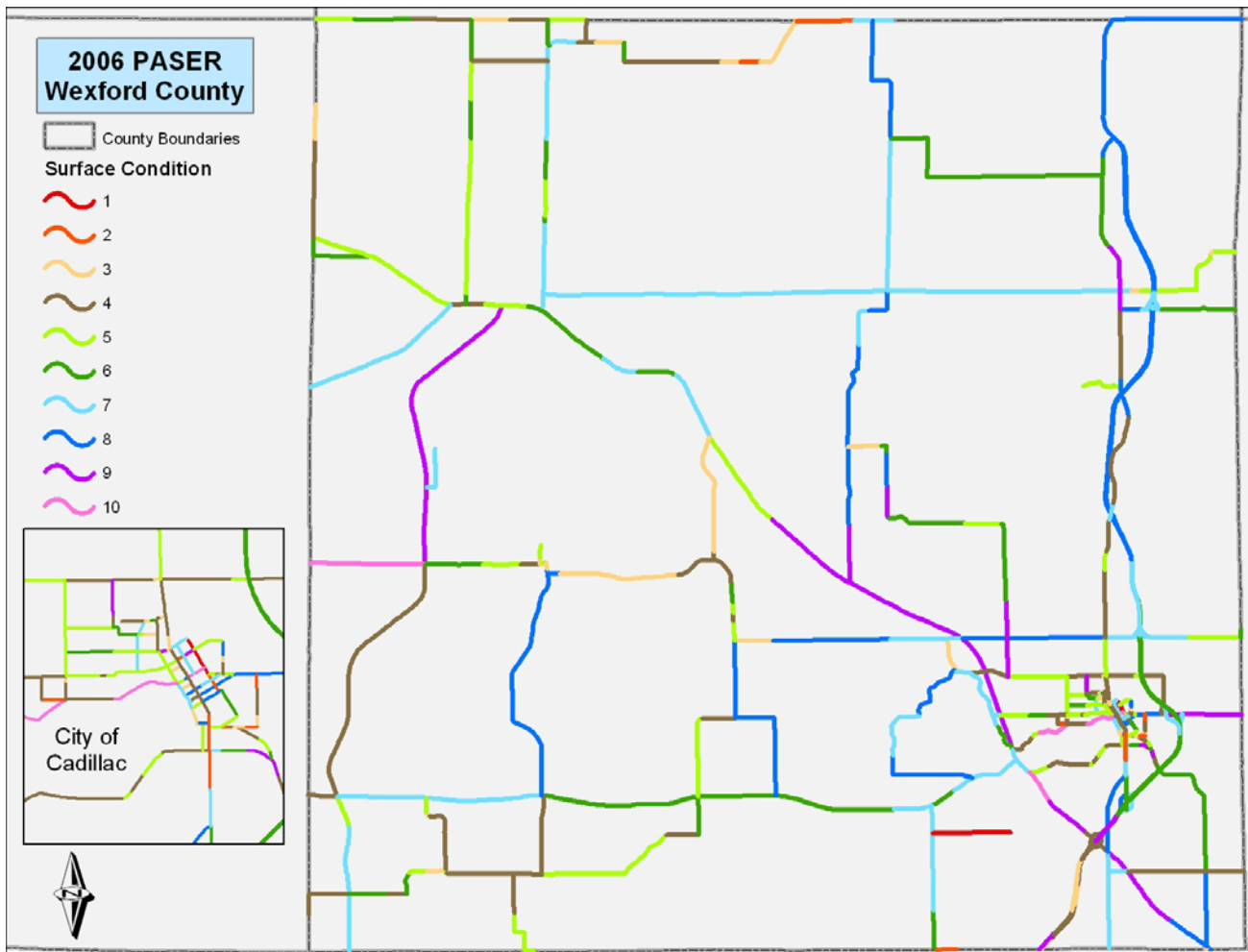


Figure 21. Wexford County Ratings Compared To Region (2006)

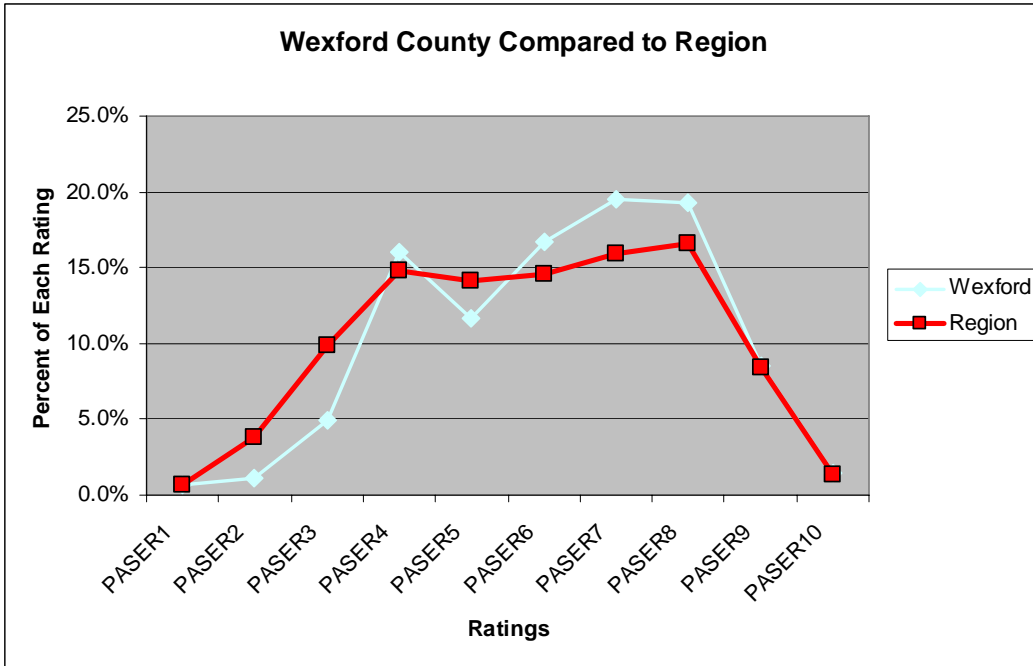
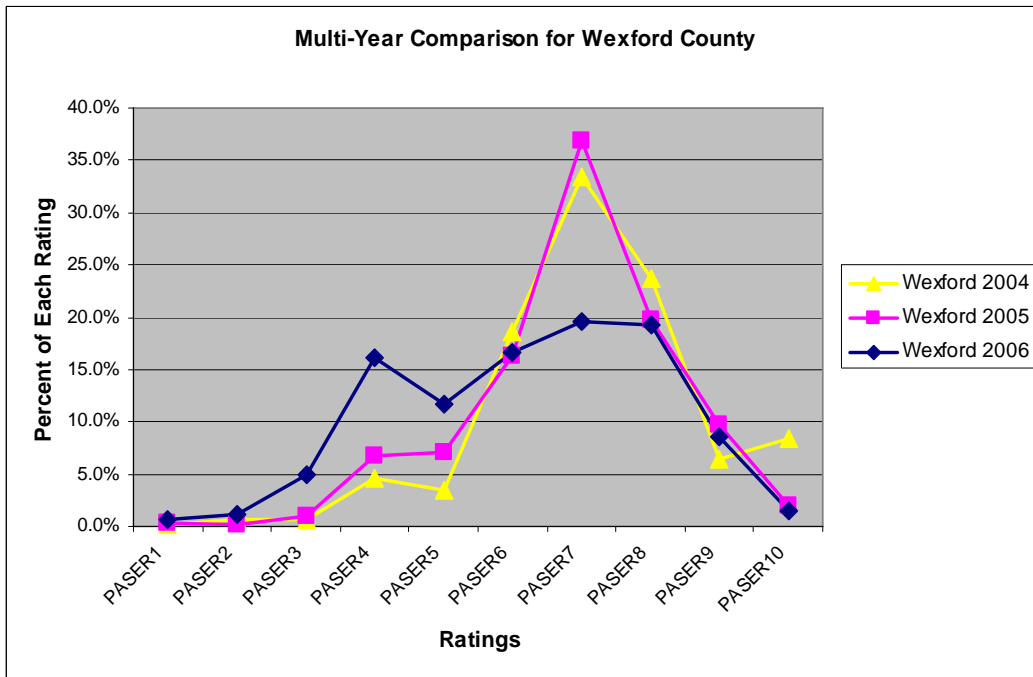


Figure 22. Wexford County Ratings Comparing Multiple Years of Data (2006)



## Regional Summary

Figure 23 below shows the ratings for each county in comparison with the region. Regionally, 70.9% of roads were rated 5-10, or good to excellent. Regionally, 29.1% of roads were given ratings of 1-4, fair (but with visible surface aging) to failed. Counties with the highest percentage of PASER values in the 5-10 rating range include Antrim County (91.9%), Benzie County (89.0%), and Emmet County (81.3%). Counties with the highest percentage of PASER values in the 1-4 rating range include Missaukee County (57.0%), Manistee County (51.2%), and Charlevoix County (40.0%). Figure 24 shows a comparison of ratings from the last three years of data collected in the region. Map 11 displays the surface ratings for the entire region broken in the three rating range categories (1-4; 5-7; and 8-10).

This was the fourth year that PASER values were collected region-wide in northwest Lower Michigan. For 2003 to 2005 data, please contact the Northwest Michigan Council of Governments.

Figure 23. Counties To Region Ratings Comparison (2006)

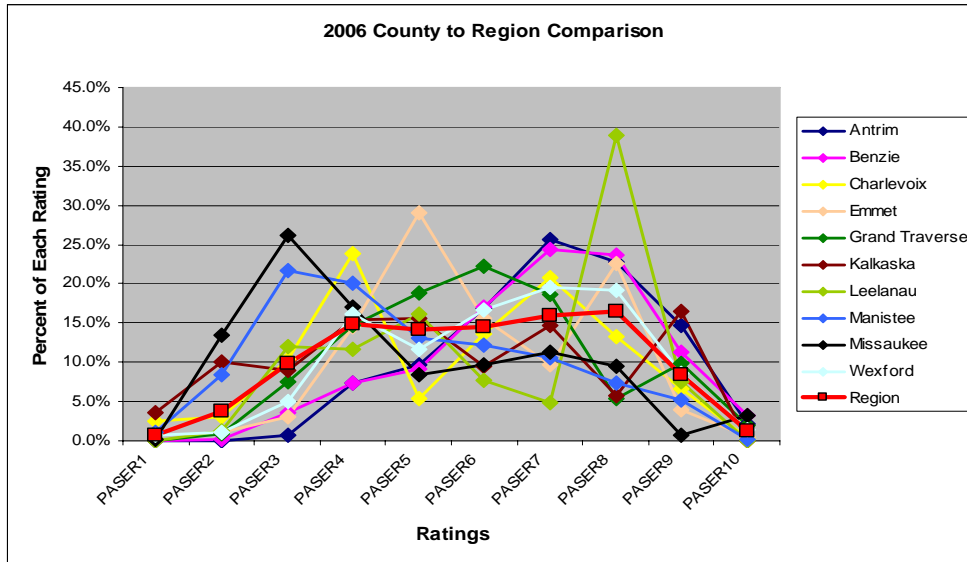
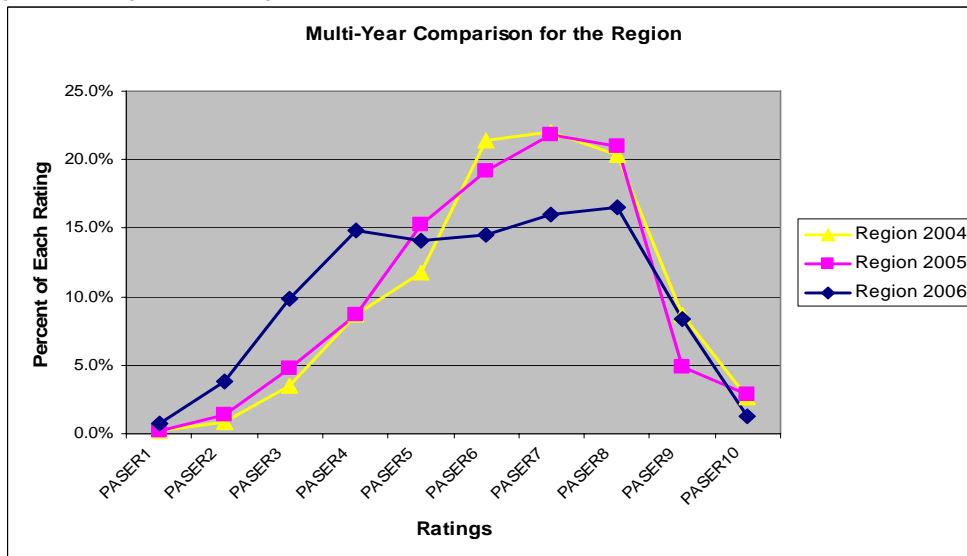


Figure 24. Regional Ratings Comparing Multiple Years of Data (2006)



Map 11. NWMCOG Regional PASER Values (2006)

## 2006 PASER

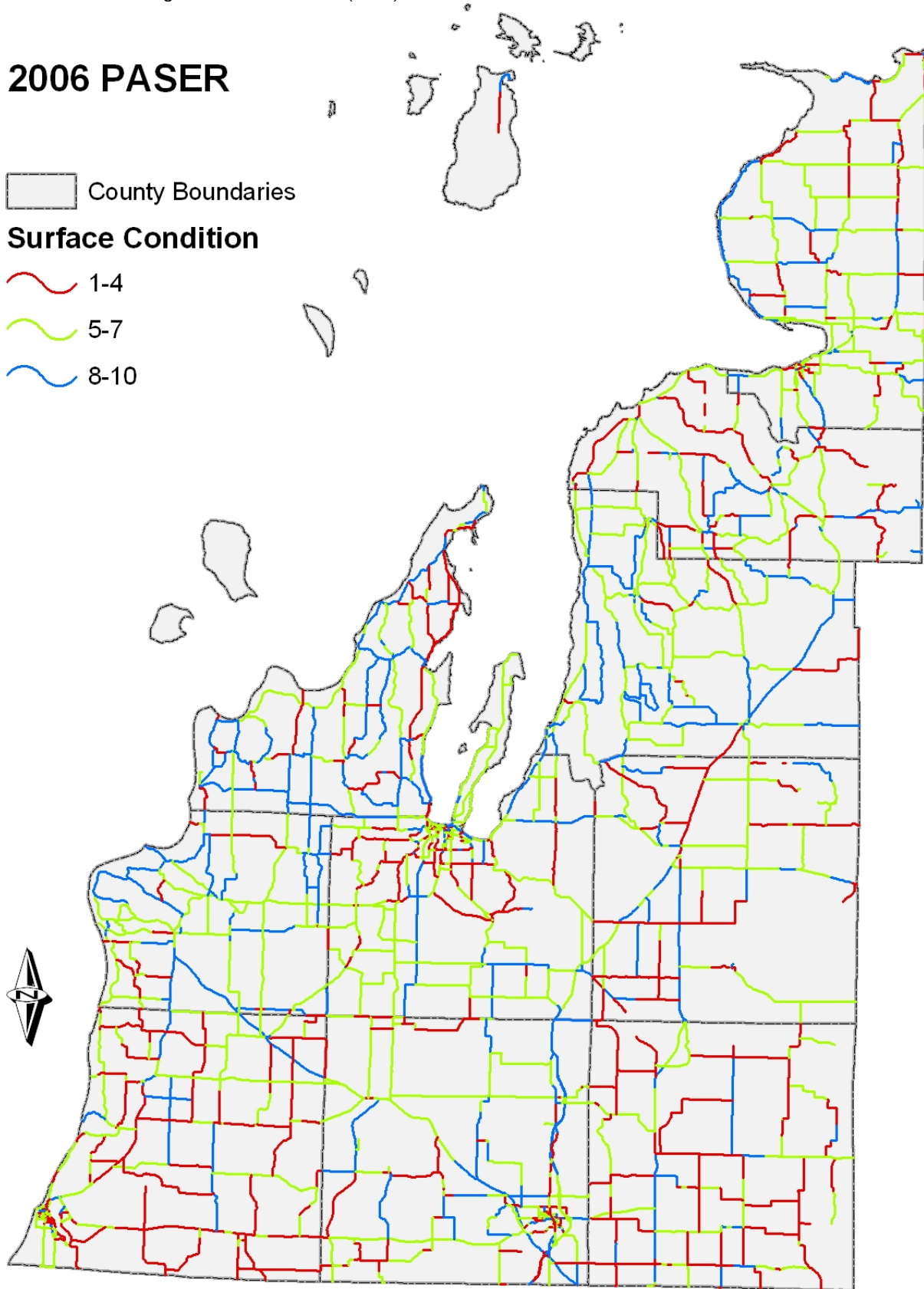
 County Boundaries

### Surface Condition

 1-4

 5-7

 8-10



## **VI. DATA USE & APPLICATION**

MDOT will use the pavement assessment data above for their transportation asset management program. Local units of government are encouraged to use this data to develop their own strategic and departmental plans or asset management strategy as well. Combining the data provided in this report with local sewer and water information, or data about other utilities, can provide a comprehensive perspective of public infrastructure and can lead to more effective and coordinated management.

The City of Ionia has an excellent asset management plan that incorporates transportation asset management. Their plan can be accessed on the web at:

[http://city.ionia.mi.us/asset\\_management.htm](http://city.ionia.mi.us/asset_management.htm).

To access digital files related to the data presented in this report, contact the Northwest Michigan Council of Governments or your local Road Commission office.

## **VII. MORE INFORMATION ABOUT TRANSPORTATION ASSET MANAGEMENT**

### **Additional Resources**

*Michigan Transportation Facts and Figures*. MDOT, December 1999

*Reaching Public Goals: Managing Government for Results*. National Performance Review, October 1996.

*Governing Performance and Results Act of 1993*. US Congress, 1993.

*Executive Order 12893: principles for Federal Infrastructure Investments*. President William J. Clinton, White House, January 26, 1994.

*Concepts Statement No. 2, Service Efforts and Accomplishments Reporting*. Governmental Accounting Standards Board, April 1994.

MCL 247.651g

*Statement No. 34, "Overview."* Governmental Accounting Standards Board, no date given in document.

*Asset Management Primer*. US Department of Transportation, December 1999.

*New Rules for Reporting Infrastructure Information To Be Enacted For State & Local Governments*. Governmental Accounting Standards Board Newsletter, April 19, 1999.

*Michigan Department of Transportation 1997 Business Plan*. MDOT, 1997; Revised 1999.

*Measuring and Improving Infrastructure Performance*. National Research Council, 1995.

*Serving The American Public: Best Practices In Performance Measurement*. National Performance Review, June 1997.

*21<sup>st</sup> Century Asset Management: Executive Summary*. Center for Infrastructure and Transportation Studies, Rensselaer Polytechnic Institute, October 1997.

*Pay Now Or Pay Later: Controlling Cost Of Ownership Through The Service Life Of Public Buildings*. National Research Council, 1991.

## Contact Information

For further information on the Michigan Department of Transportation's Asset Management Program, please contact the appropriate person listed below or contact MDOT by phone at (517) 373-2240 or send an email to [assetmgt@mdot.state.mi.us](mailto:assetmgt@mdot.state.mi.us)

For information about data or the data collection process for northwest Lower Michigan, please contact the Northwest Michigan Council of Governments by phone at (231) 929-5000 or email Sarah Merz at [smerz@nwm.cog.mi.us](mailto:smerz@nwm.cog.mi.us). This report is also available on NWMCOG's website free of charge at [www.nwm.org](http://www.nwm.org)

### MDOT Web Site

[www.michigan.gov/mdot](http://www.michigan.gov/mdot)

Then click on "Projects and Programs"

Then click on "Asset Management"

### Asset Management Process

#### *General Information*

William Tansil (517) 335-2639 [tansil@michigan.gov](mailto:tansil@michigan.gov)

#### *Asset Management Council*

Rick Lilly (517) 335-2606 [lillyr@michigan.gov](mailto:lillyr@michigan.gov)

### Development of Strategic Plans

#### *State Long Range Plan*

Polly Kent (517) 373-9193 [kentp@michigan.gov](mailto:kentp@michigan.gov)

#### *Transportation Policy Plan*

Polly Kent (517) 373-9193 [kentp@michigan.gov](mailto:kentp@michigan.gov)

### Data Collection

#### *Michigan Geographic Framework*

Joyce Newell (517) 335-2237 [newellj@michigan.gov](mailto:newellj@michigan.gov)

#### *Global Positioning/Geographic Information Systems*

Gil Chesbro (517) 335-2963 [chesbrog@michigan.gov](mailto:chesbrog@michigan.gov)

#### *Traffic Data*

Dave Schade (517) 335-2914 [schaded@michigan.gov](mailto:schaded@michigan.gov)

Use of Management Systems

*Transportation Management System*

Ron Vibbert

(517) 373-9561

[vibbertr@michigan.gov](mailto:vibbertr@michigan.gov)

*Bridge Management System*

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[kelleyr@michigan.gov](mailto:kelleyr@michigan.gov)

*Pavement Management System*

Pat Schafer

(517) 322-1766

[schaferpa@michigan.gov](mailto:schaferpa@michigan.gov)

*Public Transportation Management System*

Kathy Urda

(517) 335-2575

[urdak@michigan.gov](mailto:urdak@michigan.gov)

*Safety Management System*

Bob Rios

(517) 335-1187

[riosb@michigan.gov](mailto:riosb@michigan.gov)

*Congestion Management System*

*Intermodal Management System*

Gary Endres

(517) 335-4583

[endresg@michigan.gov](mailto:endresg@michigan.gov)

Alternative Analysis Procedures

*Road Quality Forecasting System*

*Prioritization Process*

Craig Newell

(517) 373-9074

[newellc@michigan.gov](mailto:newellc@michigan.gov)