Asset Management

2010 Pavement Ratings

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Mark Jones – City of Traverse City
Jamie Woodhams – Kalkaska County Road Commission
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Karl Hanson – Wexford County Road Commission
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Jeff Hunt – Traverse City Transportation Service Center, MDOT

Sarah Merz – Northwest Michigan Council of Governments

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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

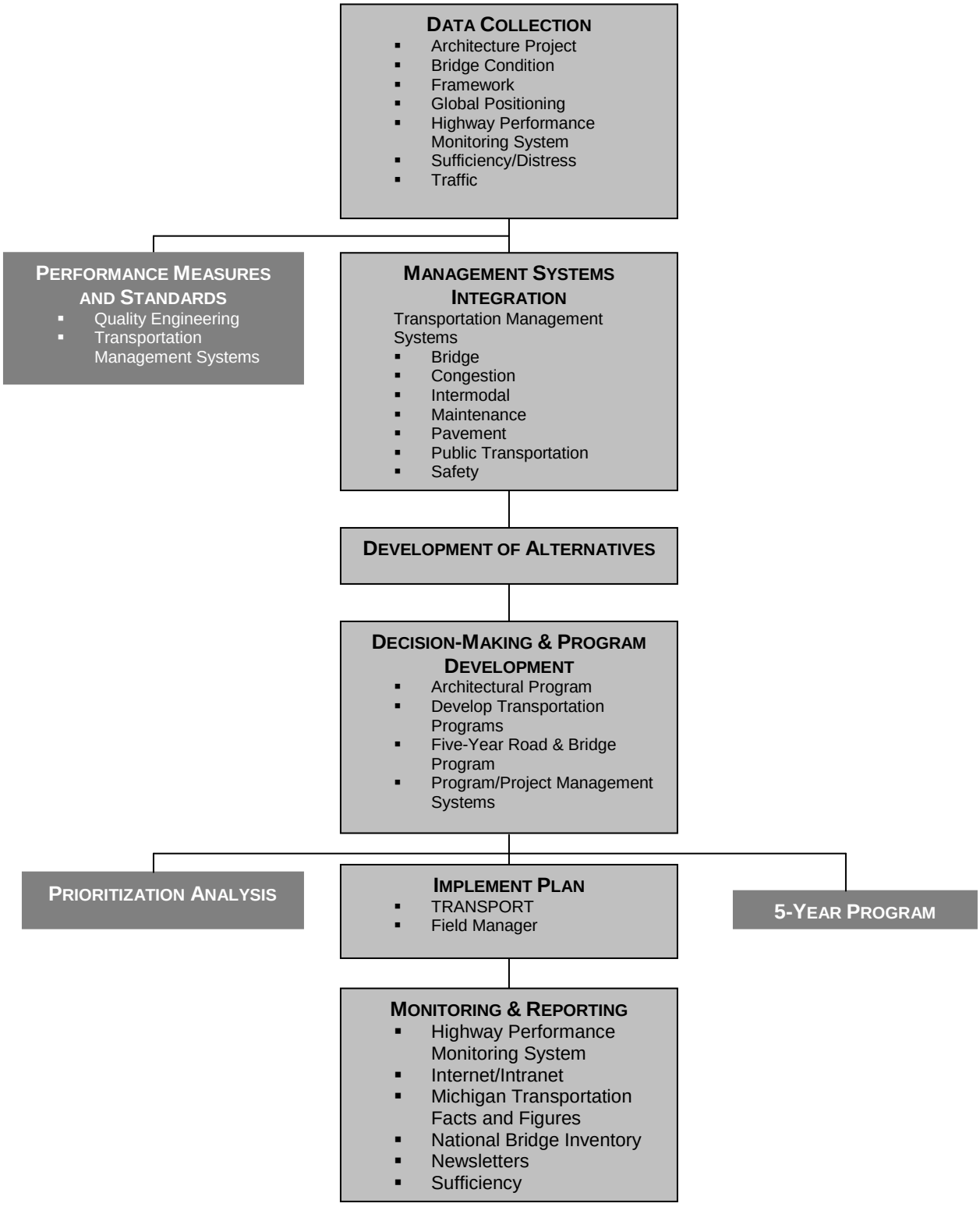
The activities associated with these five elements are described in Figure 1 below. MDOT uses an integrated, automated decision support tool called the Transportation Management System (TMS). TMS has the capability to identify condition, analyze use patterns, and determine deficiencies of the transportation 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[1]

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 less than ¼").	Recent sealcoat or new cold mix. Little or no maintenance required.

[1] *Asphalt-PASER Manual – Pavement Surface Evaluation and Rating*. 2002. Wisconsin Transportation Information Center. Madison, WI.

7 **Good**	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.	First signs of aging. Maintain with routine crack filling.
6 **Good**	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.	Show signs of aging. Sound structural condition. Could extend life with sealcoat.
5 **Fair**	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.	Surface aging. Sound structural condition. Needs sealcoat or non-structural overlay (less than 2").
4 **Fair**	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).	Significant aging and first signs of need for strengthening. Would benefit from structural overlay (2" or more).
3 **Poor**	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.	Needs patching and repair prior to major overlay. Milling and removal of deterioration extends the life of overlay.
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. Pulverization of old pavement is effective.
1 **Failed**	Severe distress with extensive loss of surface integrity.	Failed. Needs total reconstruction.

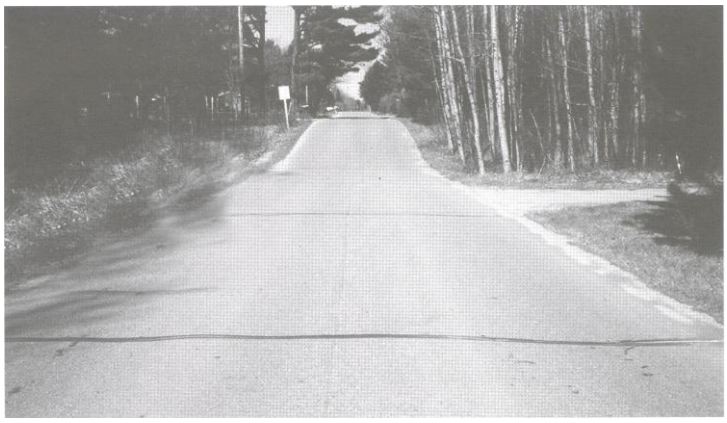
To summarize, ratings of 8-10 require little or no maintenance, aside from routine, day-to-day activities such as street sweeping, drainage clearing, gravel shoulder grading, and sealing cracks to prevent water seepage. The photographs below are examples of roads in the routine maintenance category.

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

The picture in the upper left shows a newly constructed road which would be given a rating of 10. The upper right picture shows a recent overlay making this road a rating of 9. The picture to the left would be rated an 8 because a recent slurry seal was applied. Similarly the picture in the bottom right corner had a chip seal put down giving the road surface a rating of 8. The picture in the bottom left corner would also be rated an 8 for its surface which needs almost no maintenance. Notice the widely spaced sealed cracks.

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.

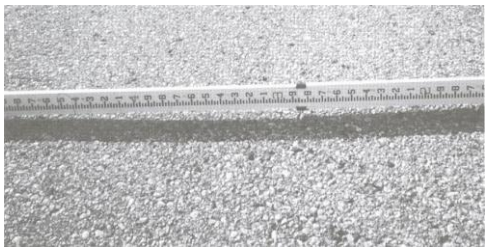
Capital or Preventative Maintenance – Ratings 5-7. Source: Asphalt PASER Manual. Transportation Information Center, University of Wisconsin-Madison.

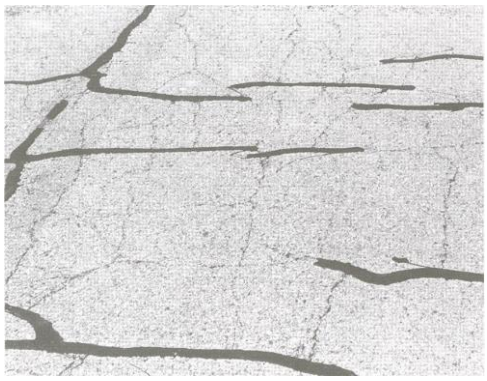


The upper left picture is an example of a surface rated 7. This road has tight longitudinal cracks and sealed transverse cracks that are 10'to 40' apart. The picture in the upper right shows a rating 6 due to it's slight surface raveling and tight cracks that are less than 10' apart. Other surface defects that start to show up in a rating of 6 are moderate flushing (shown middle left) and early signs of block cracking (shown middle right). Examples of surface defect from rating 5 are block cracking with open cracks (shown bottom left) and extensive wedges and patched that are in good condition (shown bottom right).

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

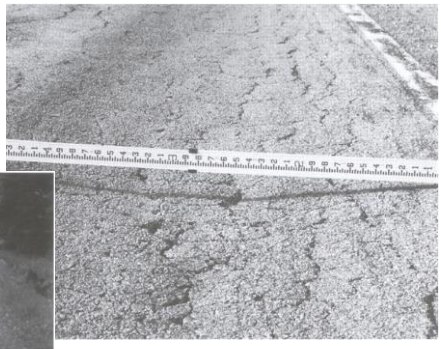
Structural Improvements – Ratings 1-4. Source: Asphalt PASER Manual. Transportation Information Center, University of Wisconsin-Madison.





The four pictures to the left are all examples of surface defects that could appear in a rating of 4. They include: rutting up to 1", extensive block cracking, patches in good condition, and severe raveling with extreme loss of aggregate. The picture below is an example of rating 3 showing patches in poor condition. Other defects for rating 3 include alligator cracking, rutting 1" to 2", and crack erosion

The pictures below show road surfaces with ratings of 2 and 1. Examples of defects from rating 2 include rutting greater than 2", patches in very poor condition, and extensive alligator cracking. Surface defects for a rating of 1 include: extensive loss of surface, numerous potholes, and severe alligator cracking.



IV. REGIONAL DATA COLLECTION PROCESS

NWMCOG staff participated in rating 3,015 miles of federal-aid-eligible roads in northwest Michigan in 2010. 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 the 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 Transportation Asset Management Council in Lansing.

V. Exploring the Data Collection Results

Antrim County

Data were collected on 315 miles of federal-aid roads in Antrim County from May 24-25, 2010. 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. 22.0% of the roads rated in Antrim County received a PASER value of 8-10 (Good). Only 12.2% of Antrim County's roads were rated 1-4 (Poor). This percentage is significantly lower than the regional median of 36.4%. Additionally, 65.9% of the roads rated were given a rating of 5-7 (Fair), among the ten counties in the region this was the highest percentage of roads rated 5-7. Figure 4 shows a comparison of the last seven years of data collected.

Map 1 – Antrim County PASER Values (2010)

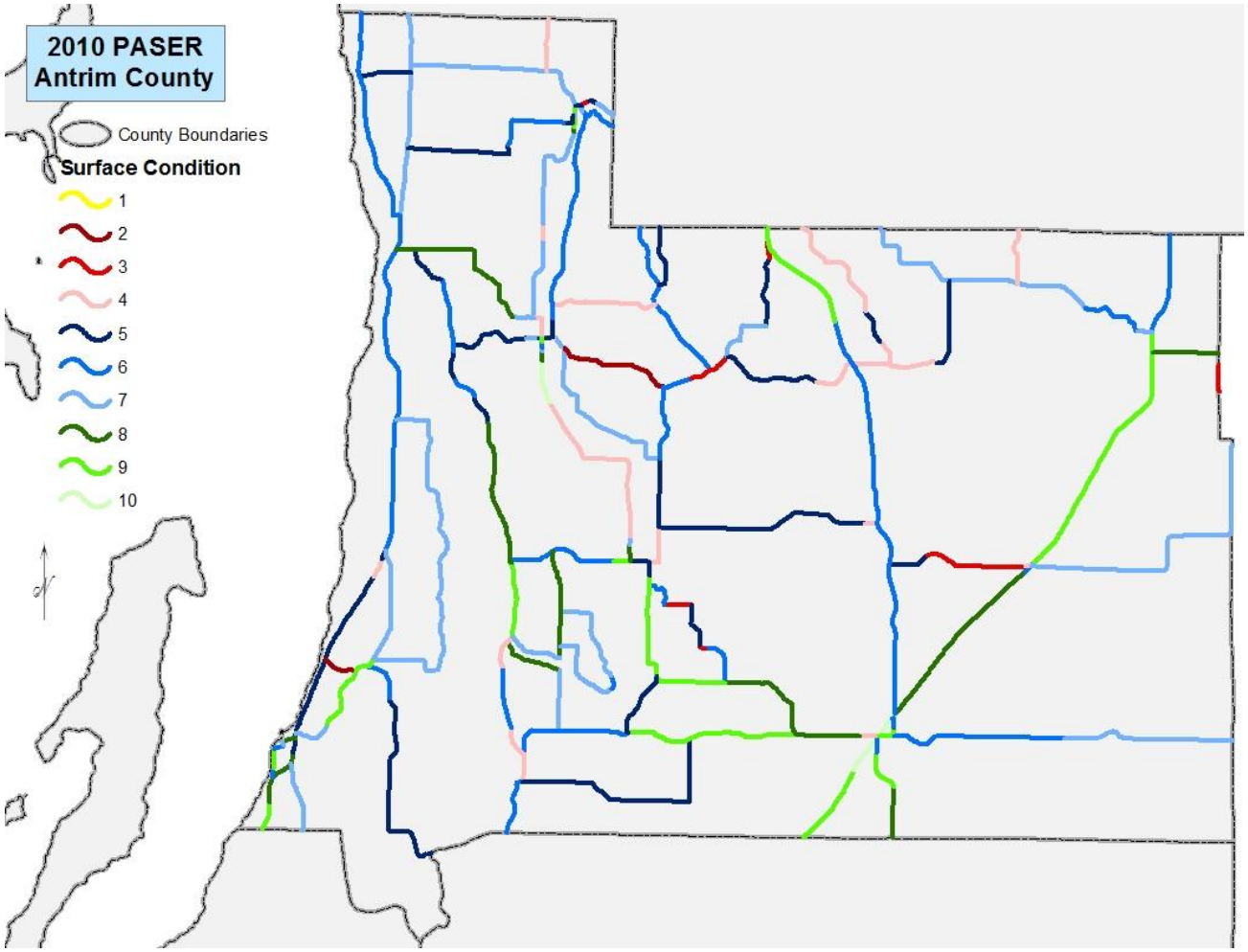


Figure 3 – Antrim County Ratings Compared To Region (2010)

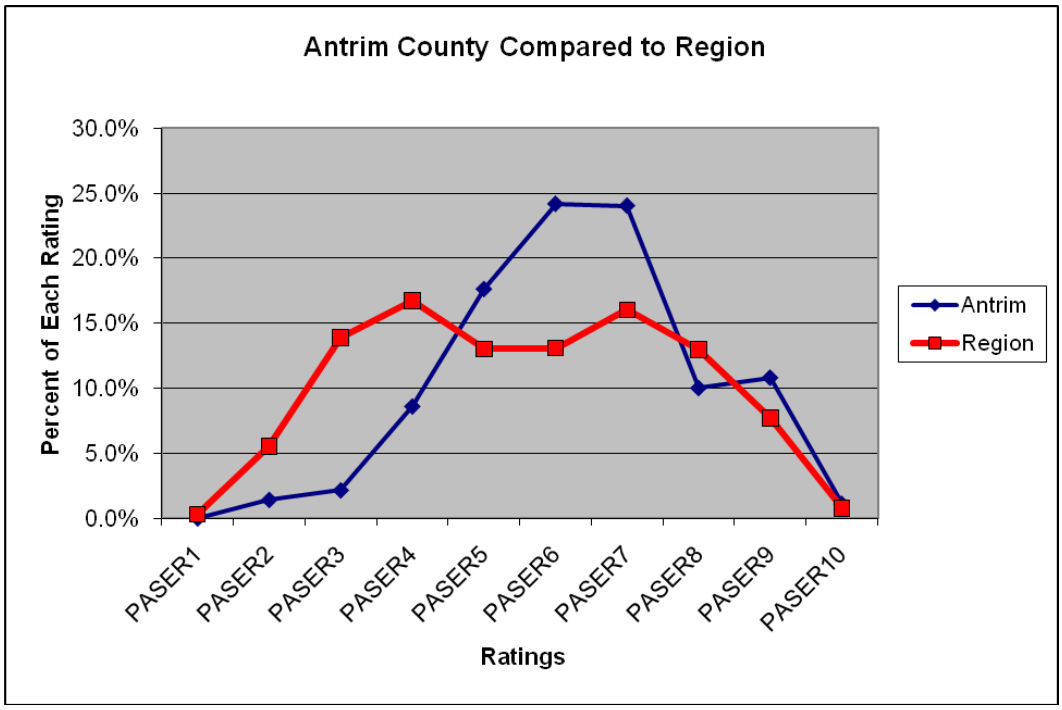
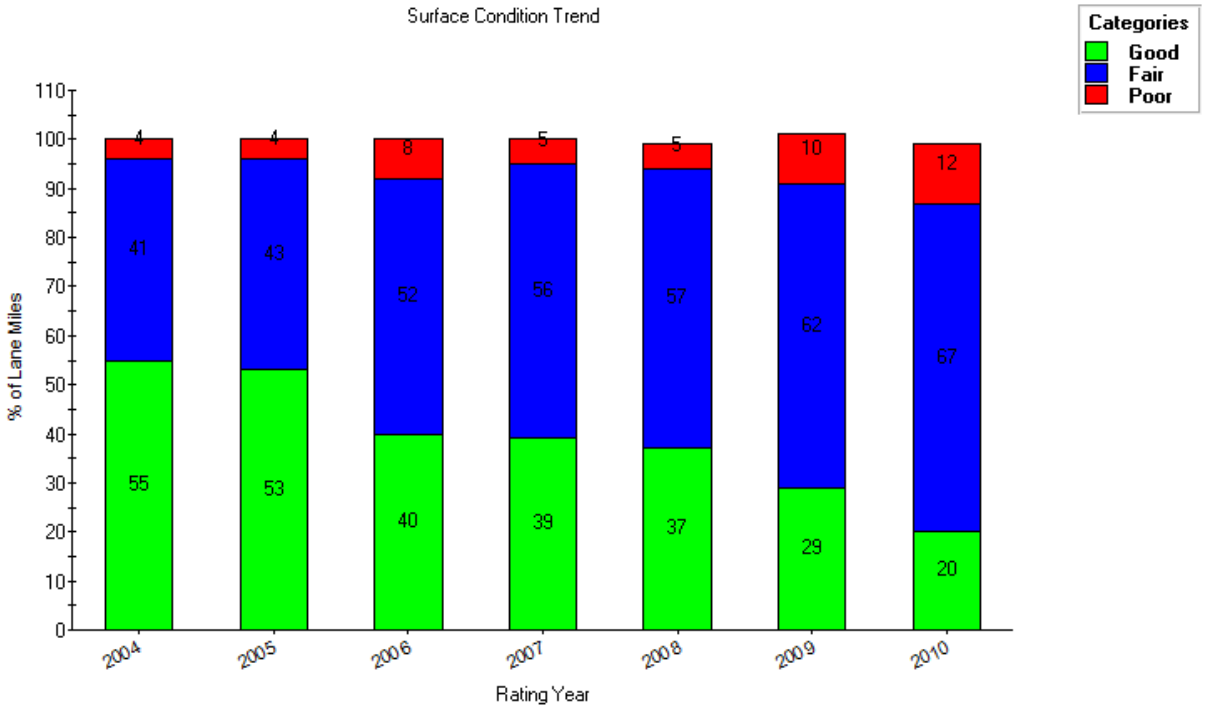


Figure 4 – Antrim County Ratings Comparing Multiple Years of Data (2010)



Benzie County

Data were collected on 255 miles of federal-aid roads in Benzie County from May 19-20, 2010. 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, 49.3%, were in the 5-7 (Fair) rating range. 24.1% of Benzie County's roads were rated 1-4 (Poor), a significant increase from the previous year's 18.5%. Benzie County's 26.6% of roads rated 8-10 (Good) exceeded the regional median of 21.4%. Figure 6 compares the percentage of ratings gathered in Benzie County from the previous seven years of data collection.

Map 2 – Benzie County PASER Values (2010)

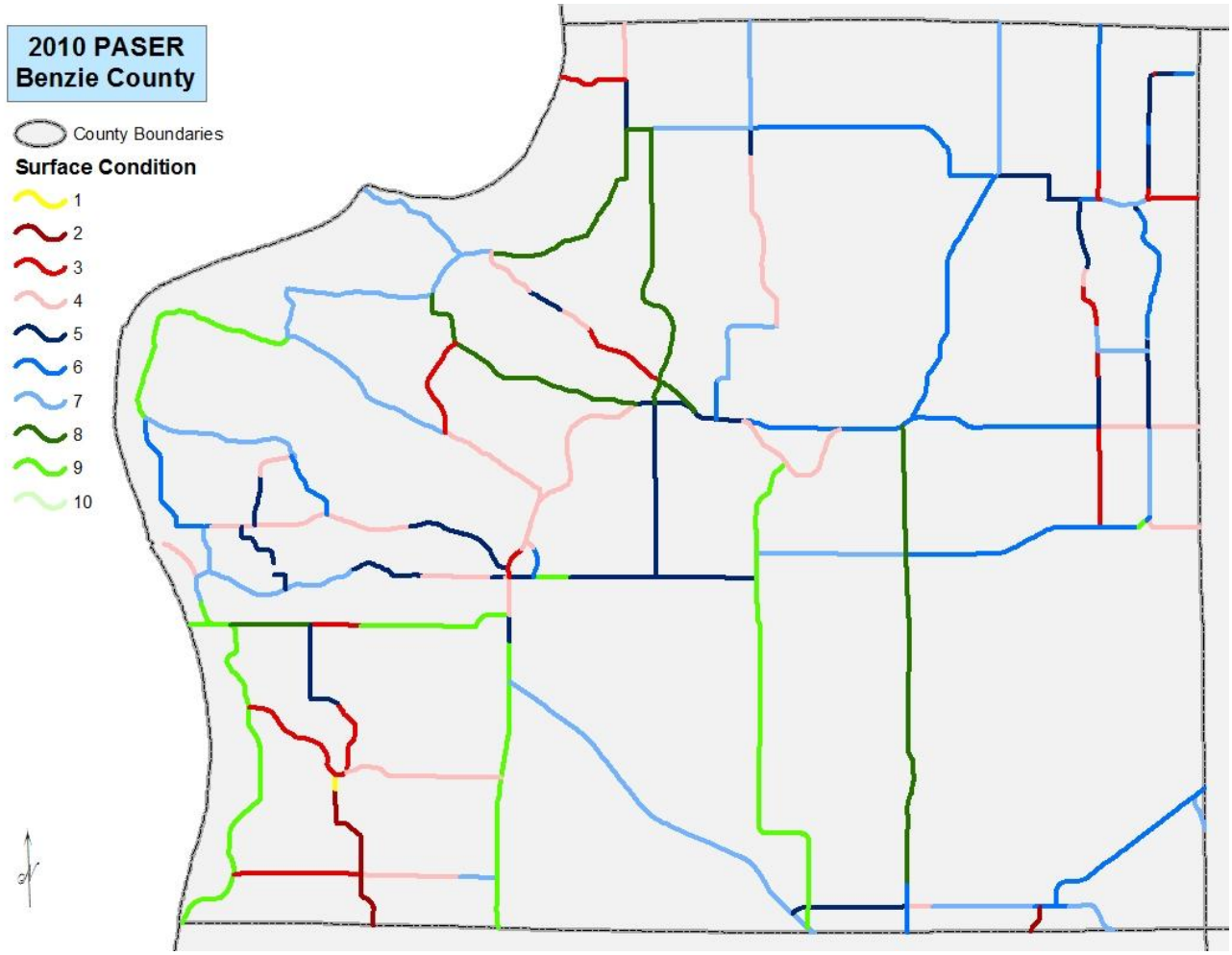


Figure 5 – Benzie County Ratings Compared To Region (2010)

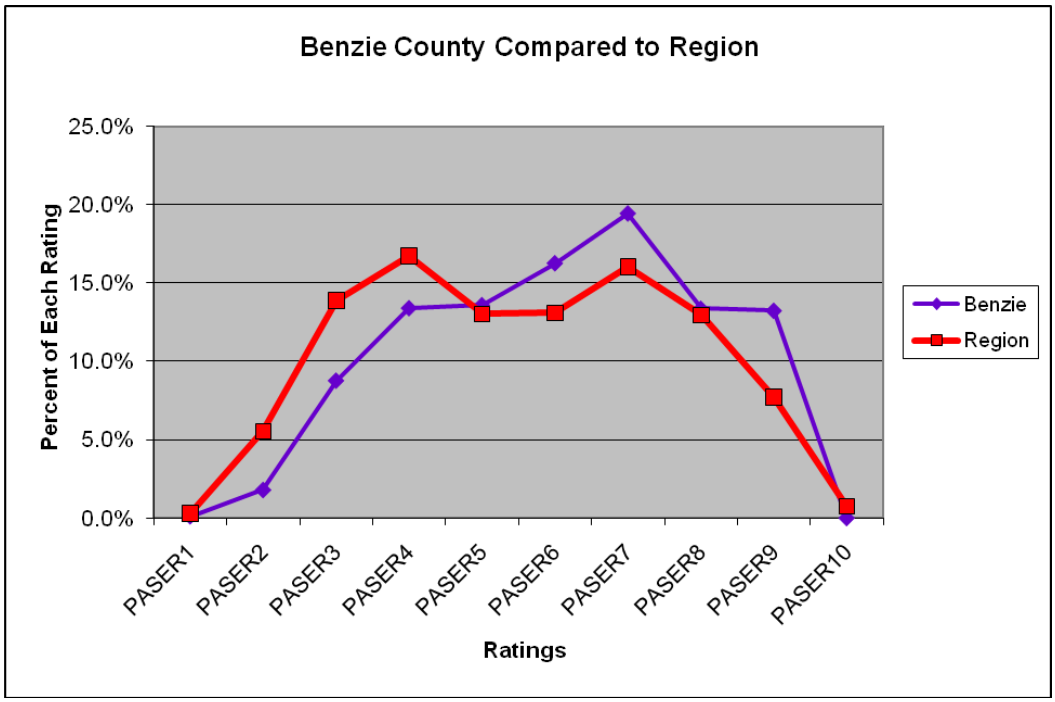
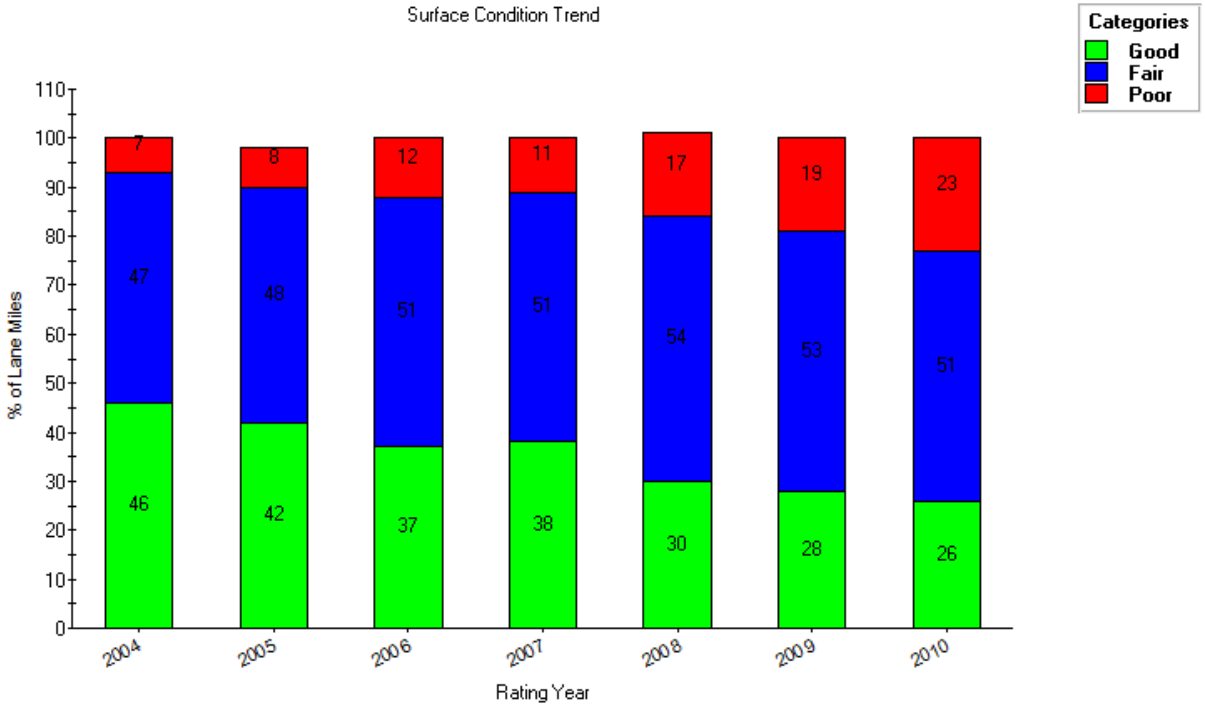


Figure 6 – Benzie County Ratings Comparing Multiple Years of Data (2010)



Charlevoix County

Data were collected on 227 miles of federal-aid roads in Charlevoix County from August 16-17, 2010. 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, 44.7% of Charlevoix's roads, were rated 5-7 (Fair) compared to the regional value of 42.1%. PASER values of 1-4 (Poor) were given to 35.4% of Charlevoix's rated roads. PASER values of 8-10 (Good) were given to 19.9% of the county's rated. Figure 8 shows a comparison of the last seven years of data collected.

Map 3 – Charlevoix County PASER Values (2010)

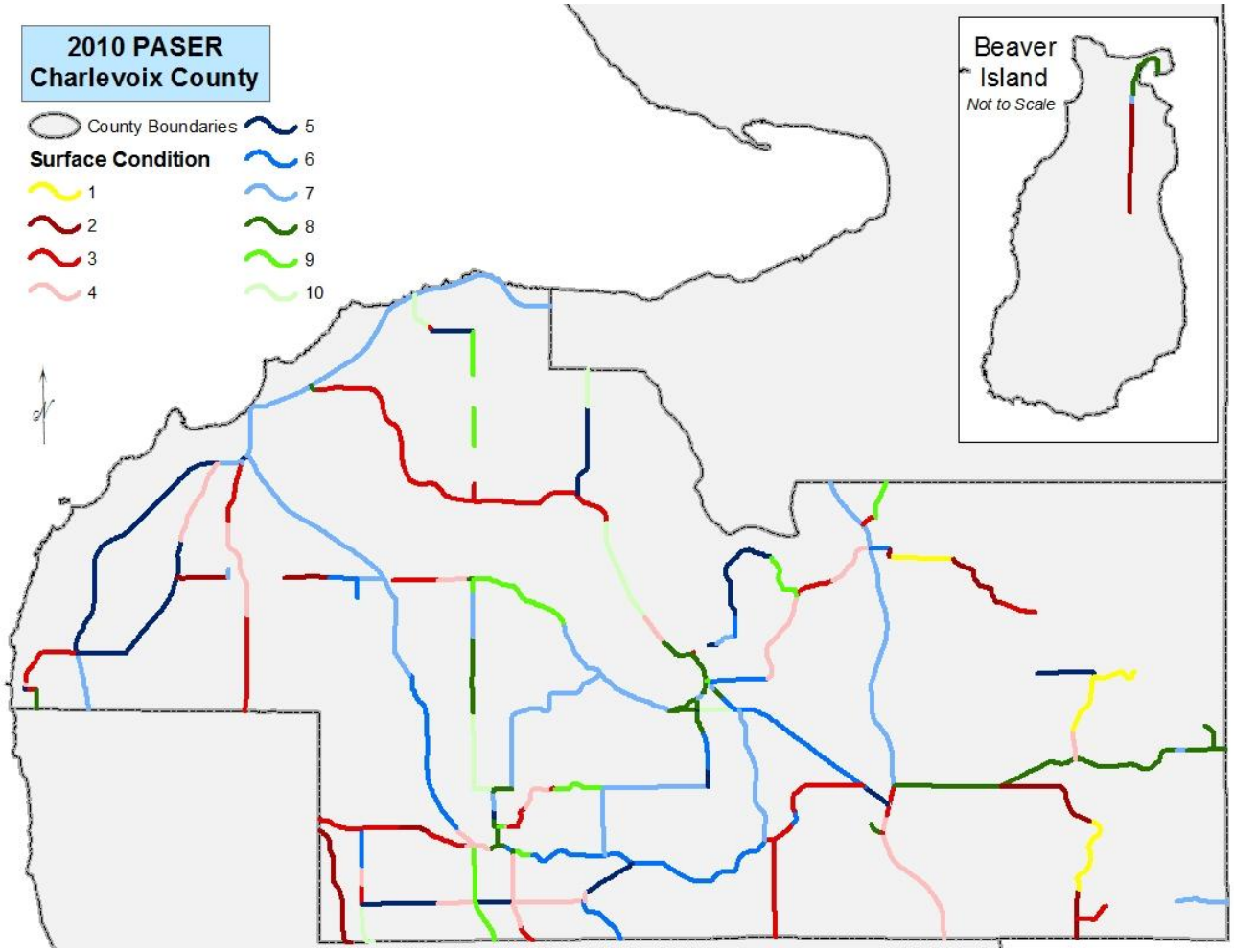


Figure 7 – Charlevoix County Ratings Compared To Region (2010)

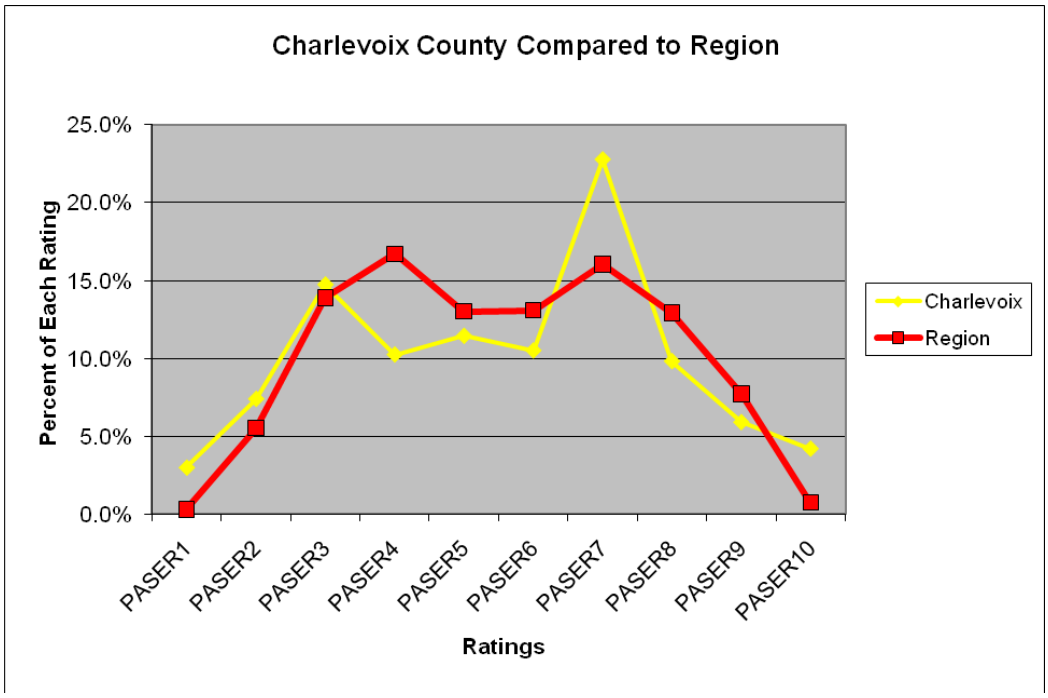
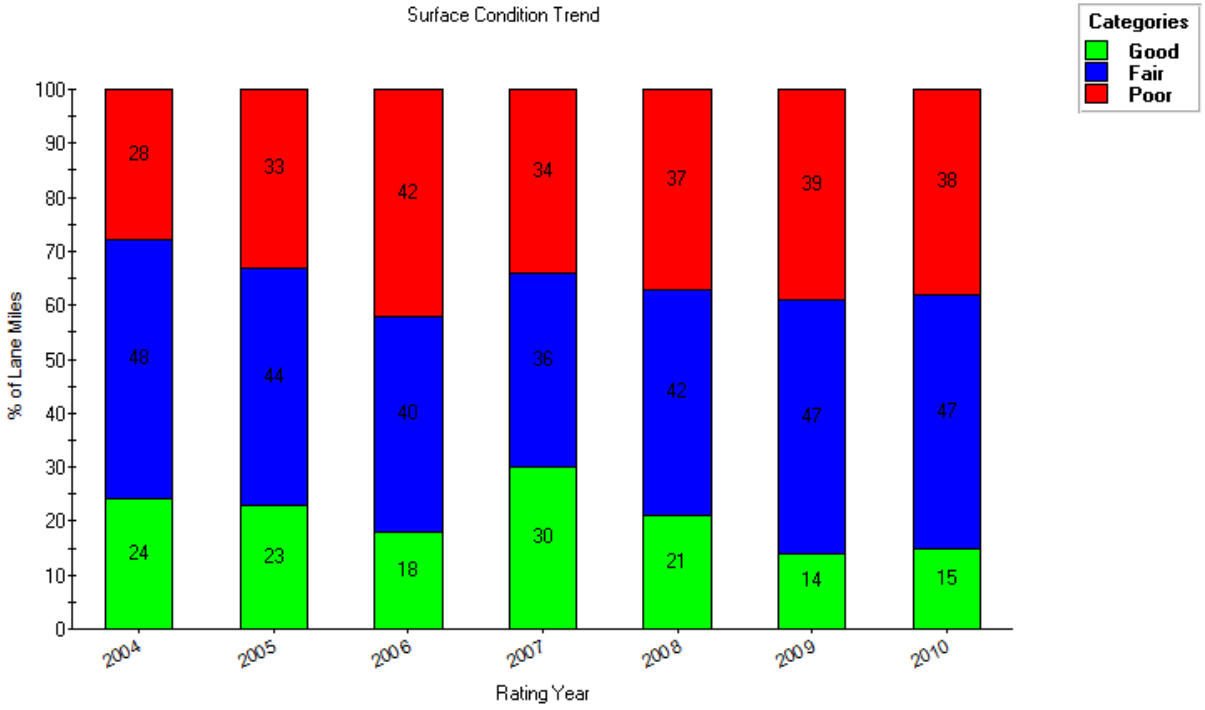


Figure 8 – Charlevoix County Ratings Comparing Multiple Years of Data (2010)



Emmet County

Data were collected on 328 miles of federal-aid roads in Emmet County from August 30-September 1, 2010. Staff present for the rating included Brent Shank, Operations Engineer, Emmet County Road Commission; Bill LaCross, Public Works Supervisor, City of Petoskey (for City roads only); Kim Mikula, 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, 39.4% of Emmet County's roads were rated 5-7 (Fair), a slight drop from the previous year's 44.0%. PASER values of 8-10 (Good) were given to 11.5% of Emmet's roads showing an increase from the previous year's 9.8%. This is reflected in the 49.1% of Emmet County's roads that were rated 1-4 (Poor), an increase over the previous year's 46.2%. Figure 10 compares the percentages of PASER values collected in the last seven years.

Map 4 – Emmet County PASER Values (2010)

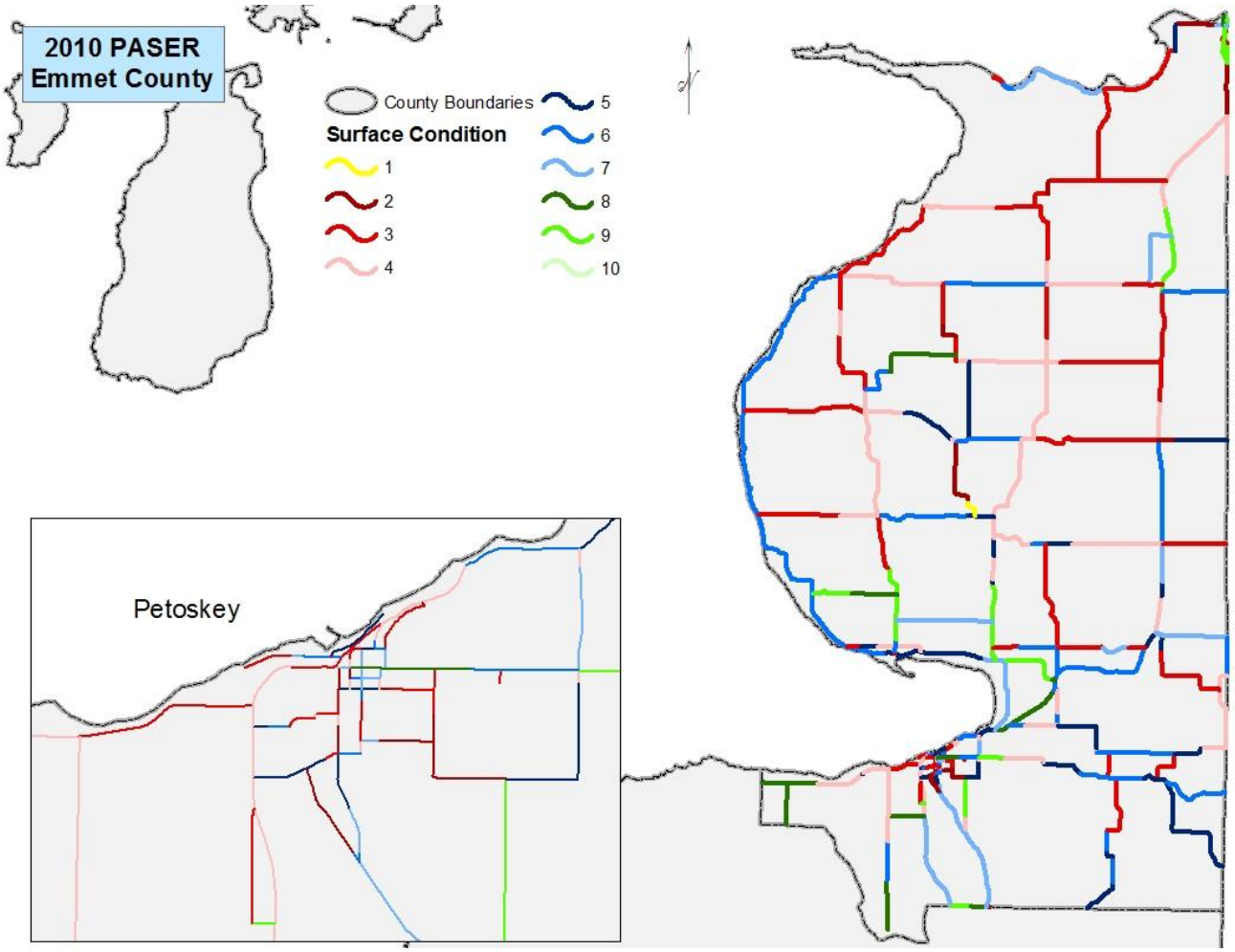


Figure 9 – Emmet County Ratings Compared to Region (2010)

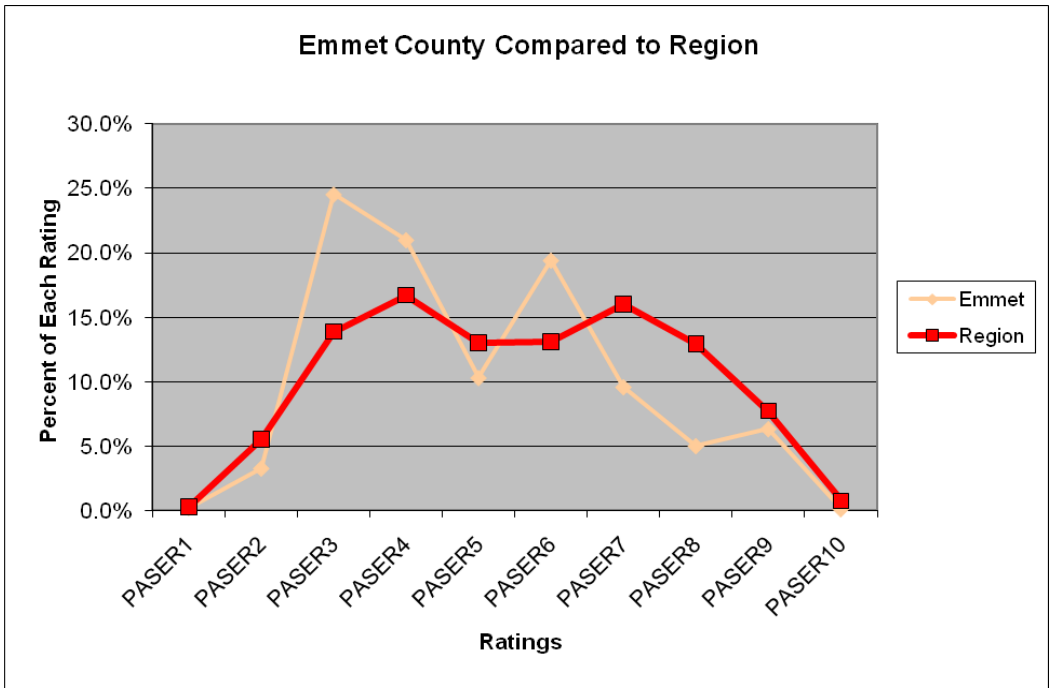
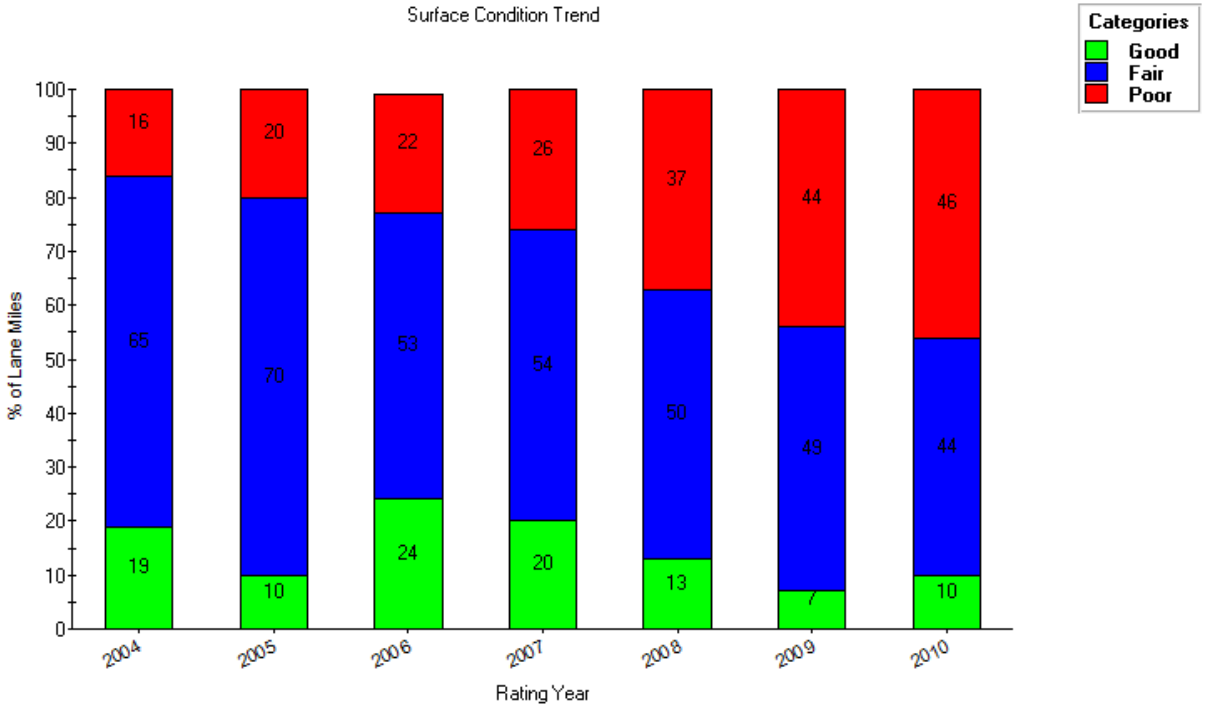


Figure 10 – Emmet County Ratings Comparing Multiple Years of Data (2010)



Grand Traverse County

Data were collected on 395 miles of federal-aid roads in Grand Traverse County from June 8-10, 2010. Staff present for the rating included John Rogers, Grand Traverse County Road Commission (for county roads only); John Travis, 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, 42.9% of Grand Traverse County's roads were rated 5-7 (Fair), a slight drop from the previous year's 44.4%. This percentage is in line with the regional median of 42.1% of roads in this rating range. The County's percentage of roads rated 1-4 (Poor), 35.0%, was slightly lower than the regional median percentage of 36.4%. 22.1% of the County's roads were rated 8-10 (Good). Figure 12 shows a comparison of the percentages of ratings from the last seven years of data collection.

Map 5 – Grand Traverse County PASER Values (2010)

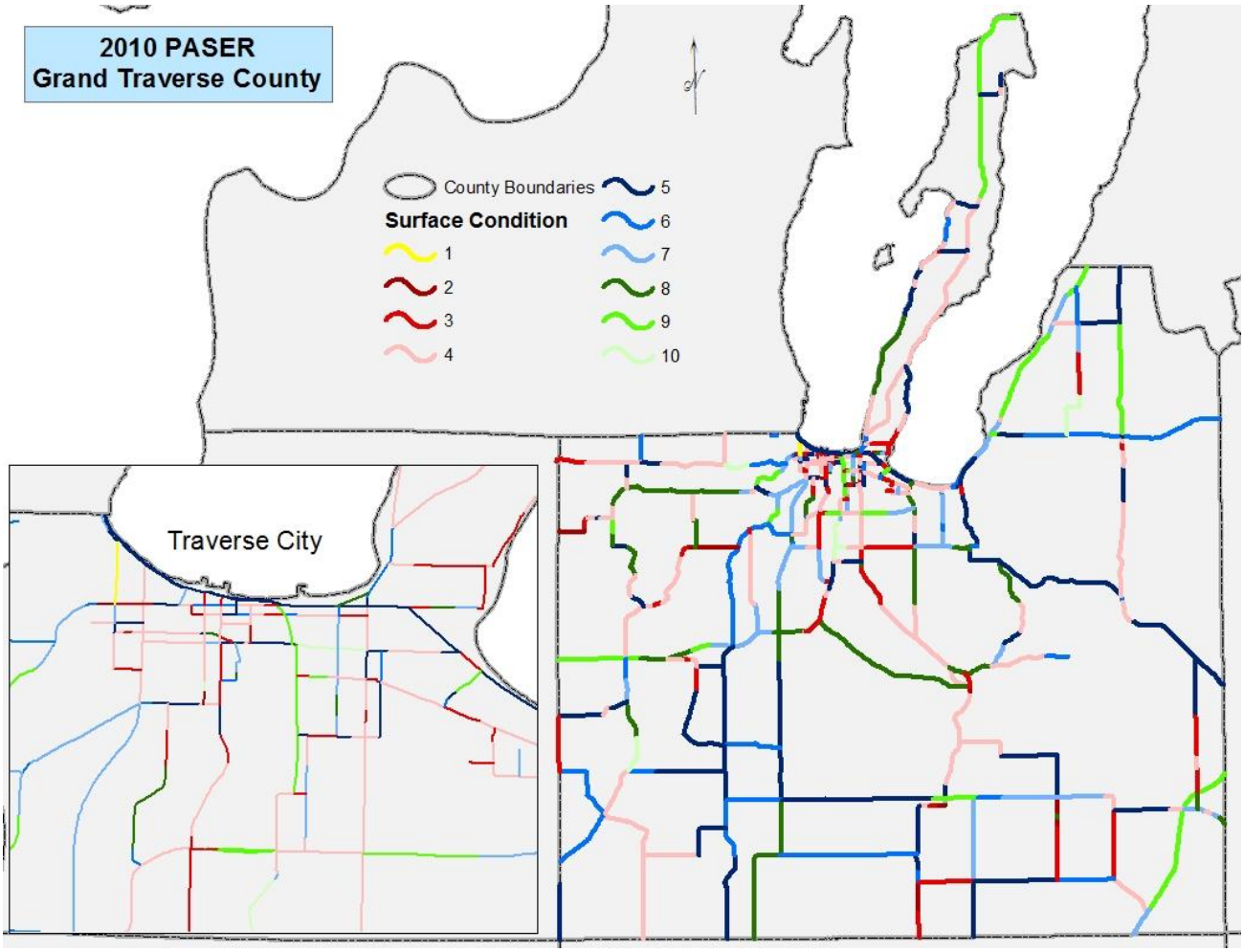


Figure 11 – Grand Traverse County Ratings Compared To Region (2010)

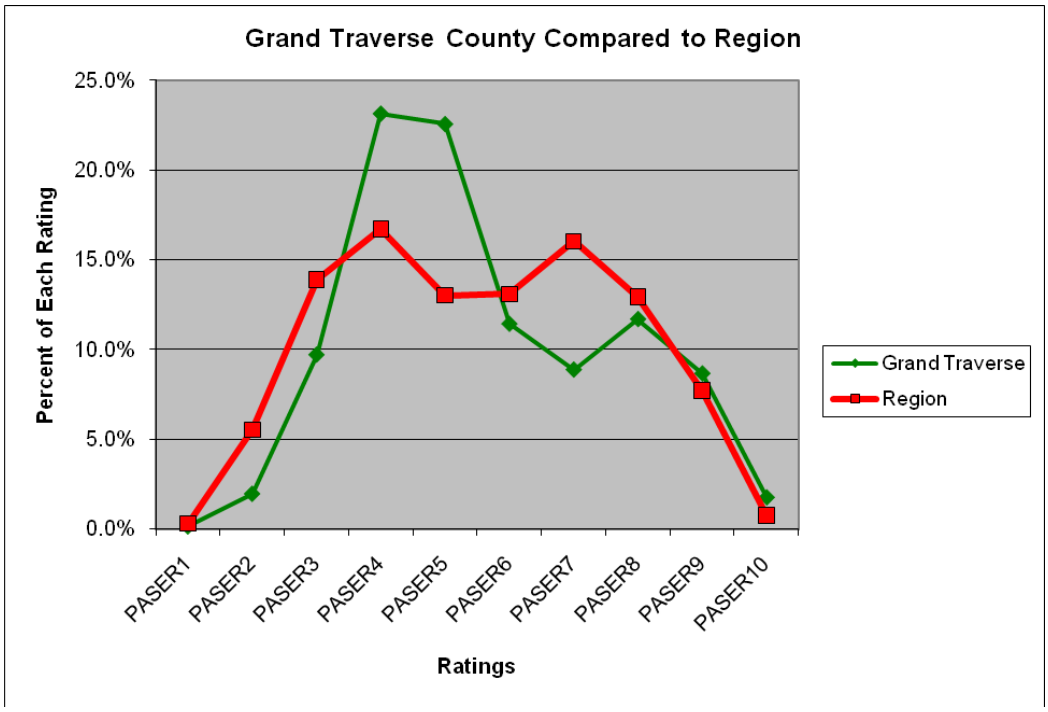
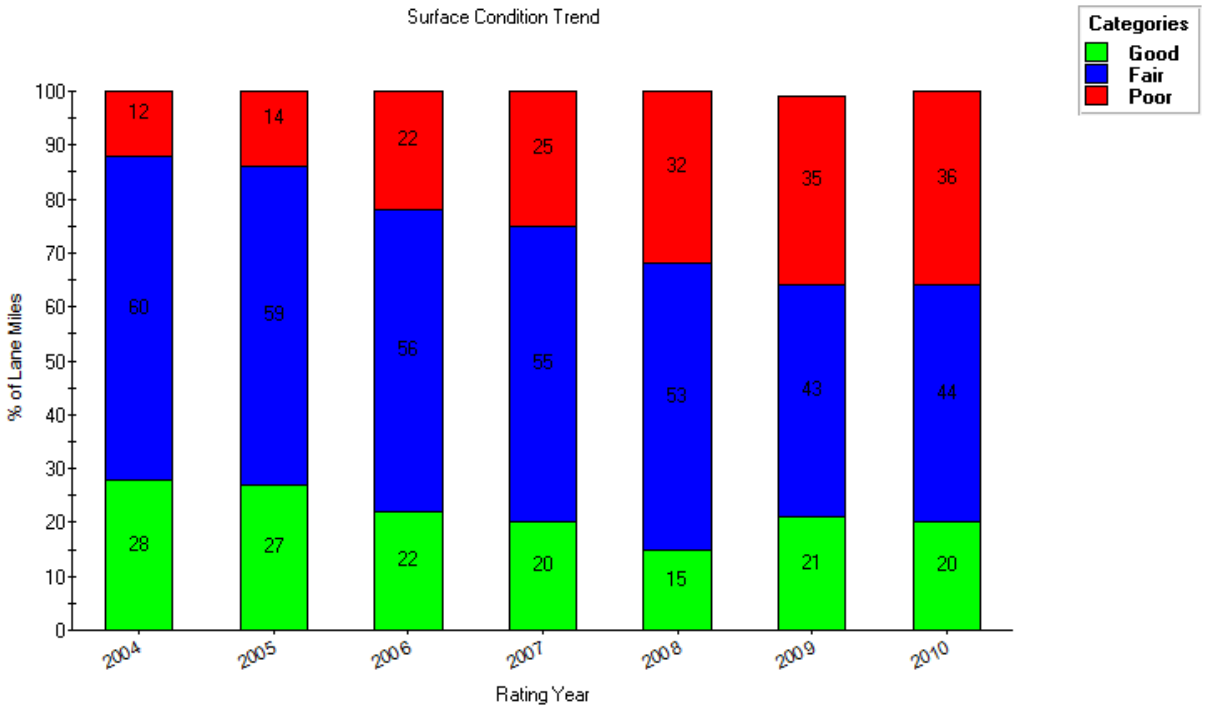


Figure 12 – Grand Traverse County Ratings Comparing Multiple Years of Data (2010)



Kalkaska County

Data were collected on 240 miles of federal-aid roads in Kalkaska County on June 22-23, 2010. Staff present for the rating included Jamie Woodhams, Kalkaska County Road Commission; Jeff Root, 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, 43.0% of Kalkaska's roads were rated 5-7 (Fair), a decrease over the previous year's 47.3%. This percentage was slightly lower than the regional median of 42.1%. An additional 17.7% of Kalkaska's roads were rated 8-10 (Good), which is a significant increase from the previous year's 24.4%. The remaining 39.3% of Kalkaska County's roads were rated 1-4 (Poor). Figure 14 compares the ratings gathered from the last seven years of data collection.

Map 6 – Kalkaska County PASER Values (2010)

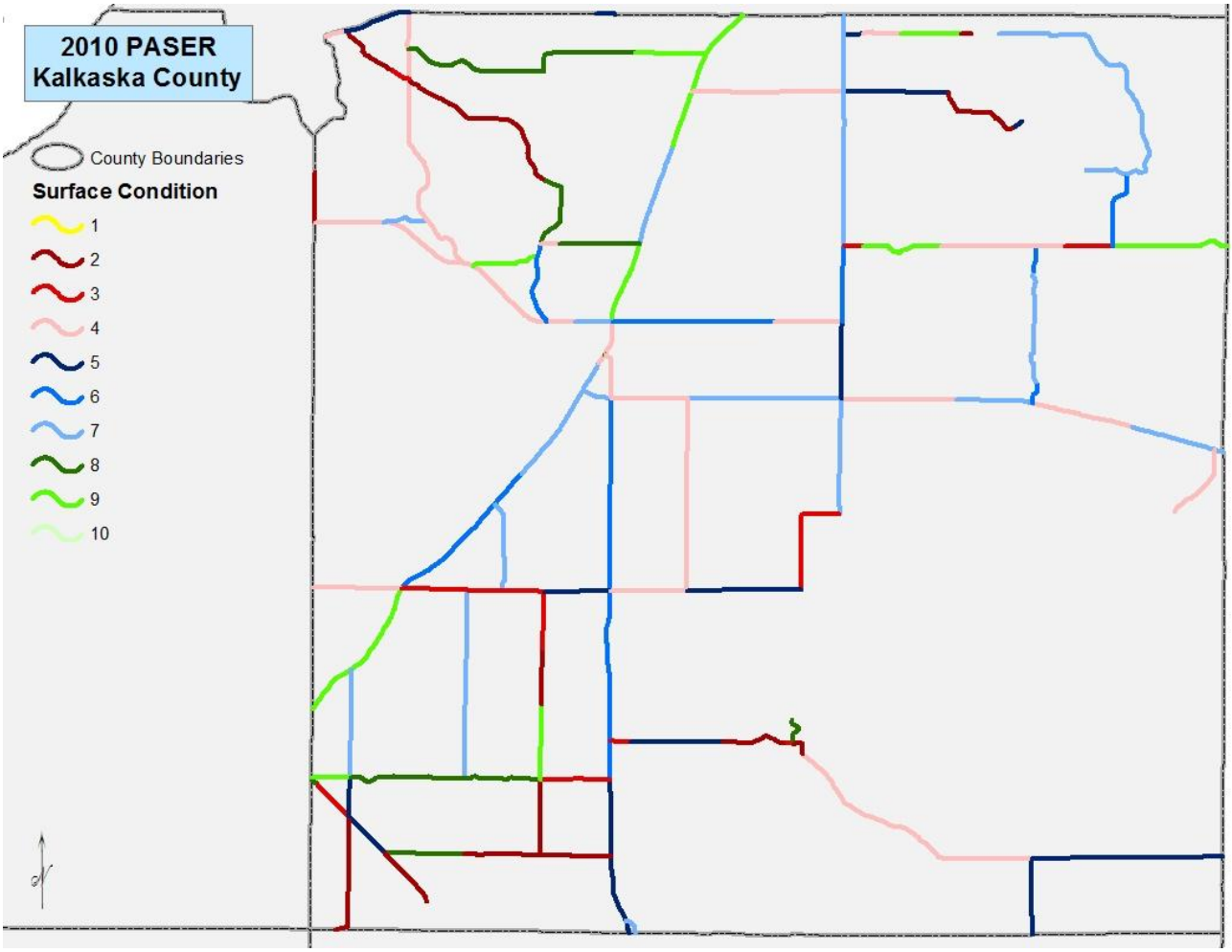


Figure 13 – Kalkaska County Ratings Compared To Region (2010)

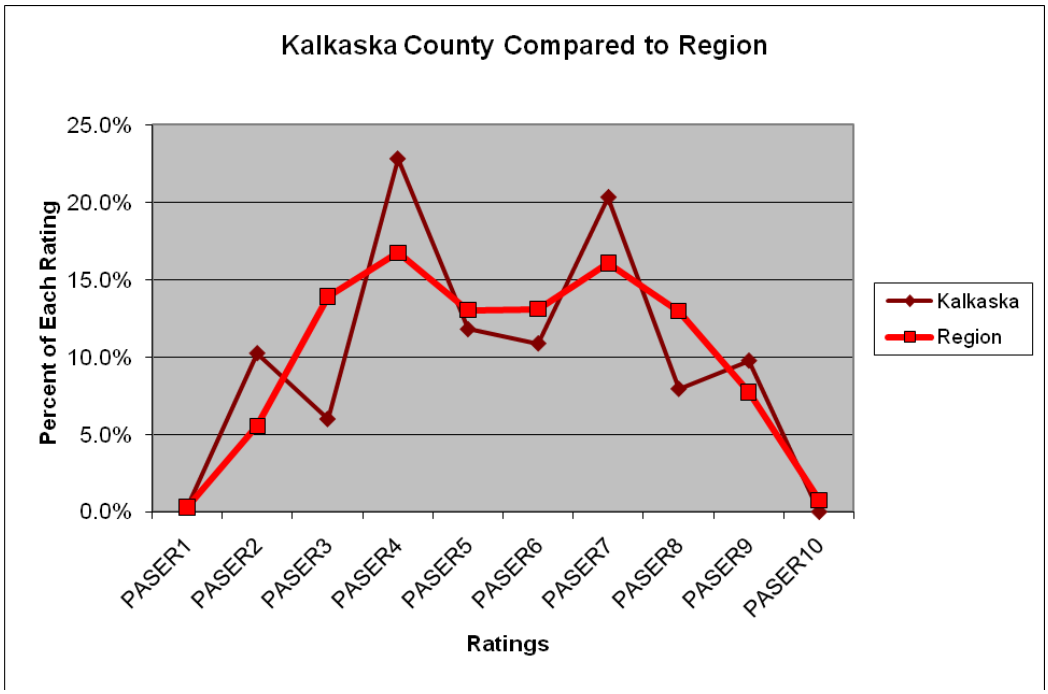
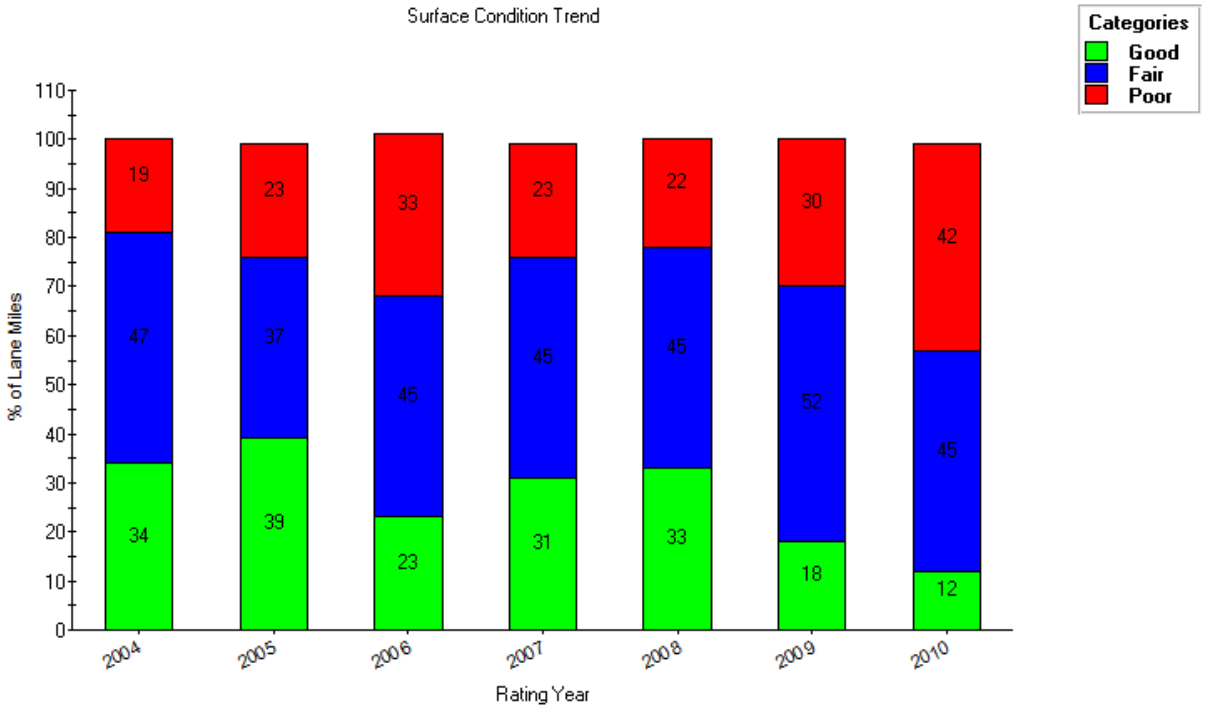


Figure 14 – Kalkaska County Ratings Comparing Multiple Years of Data (2010)



Leelanau County

Data were collected on 268 miles of federal-aid roads in Leelanau County from July 21-22, 2010. 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 (Good) was 28.3%, this was an increase from the previous year's 27.7%. This percentage was higher than the regional median of 21.4%. Additionally, 38.7% of the County's roads were rated 5-7 (Fair). This percentage was below the regional median of 42.1%. PASER values of 1-4 (Poor) were given to 33.0% of the County's roads; compared to a regional median of 36.4% for this rating range. Figure 16 shows a comparison of the percentage of ratings from the last seven years of data collection.

Map 7 – Leelanau County PASER Values (2010)

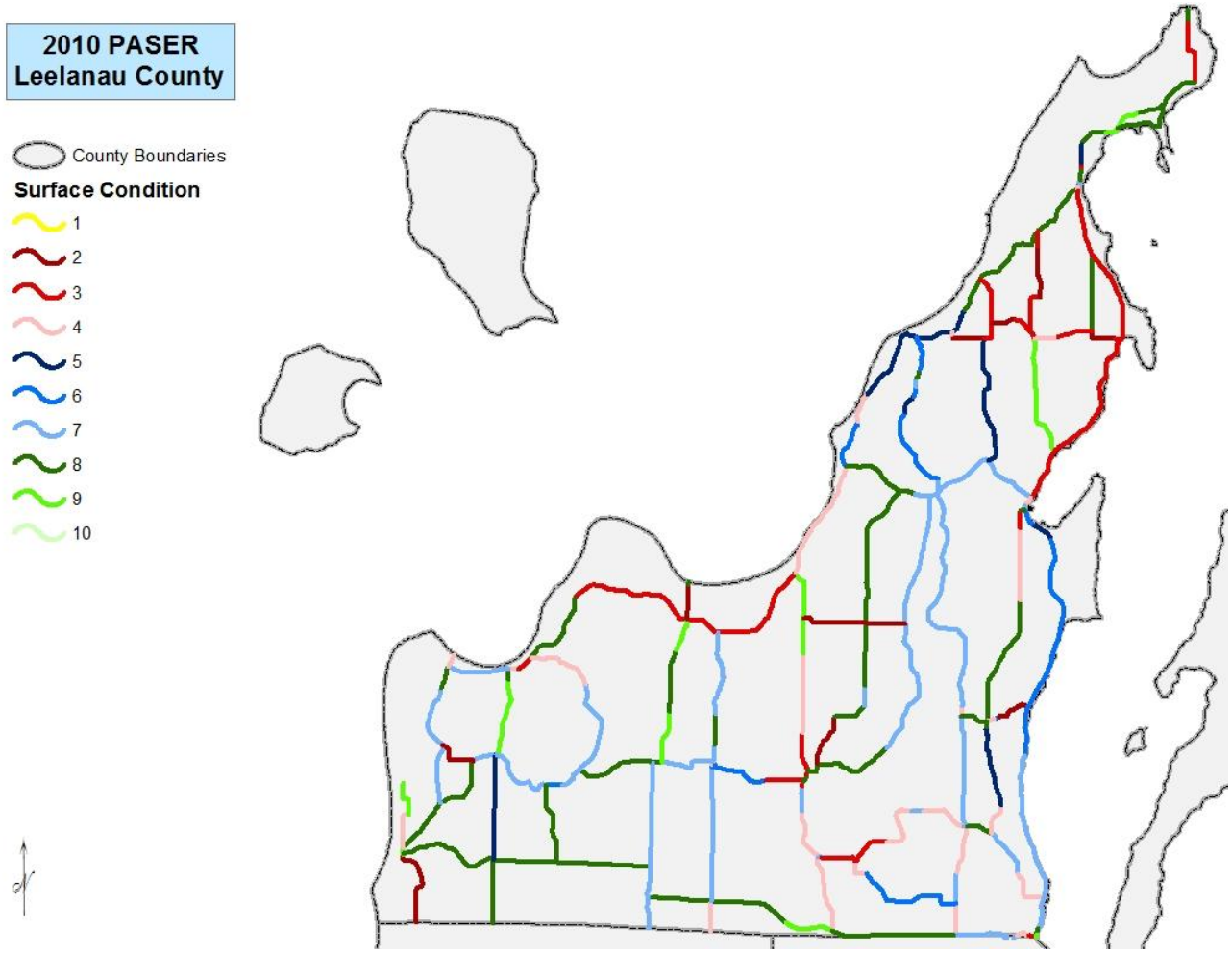


Figure 15 – Leelanau County Ratings Compared To Region (2010)

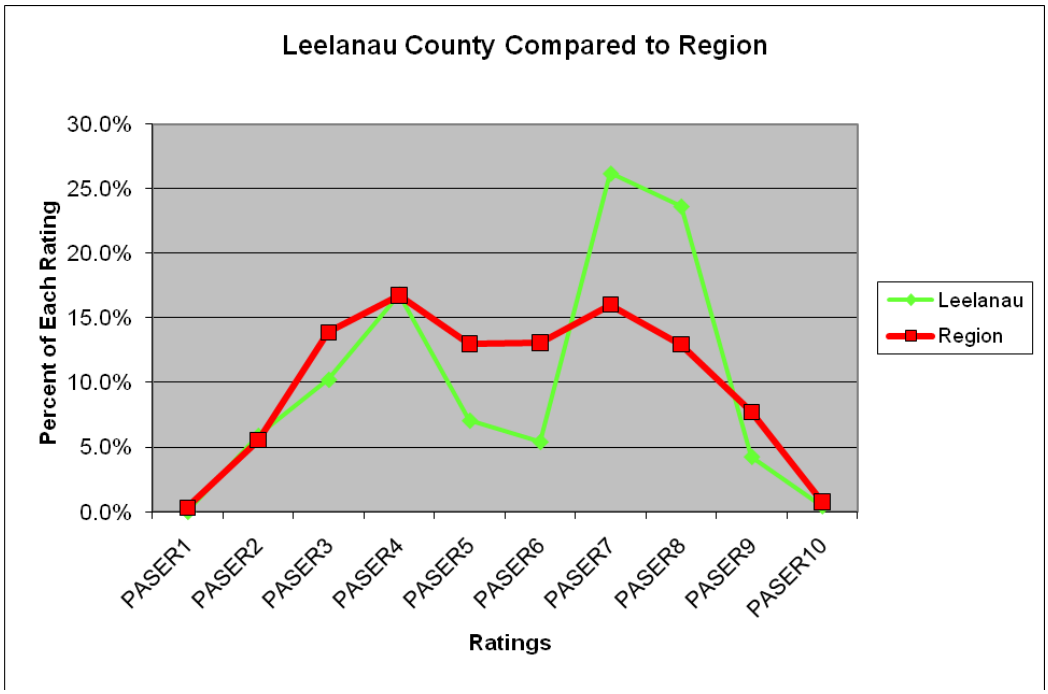
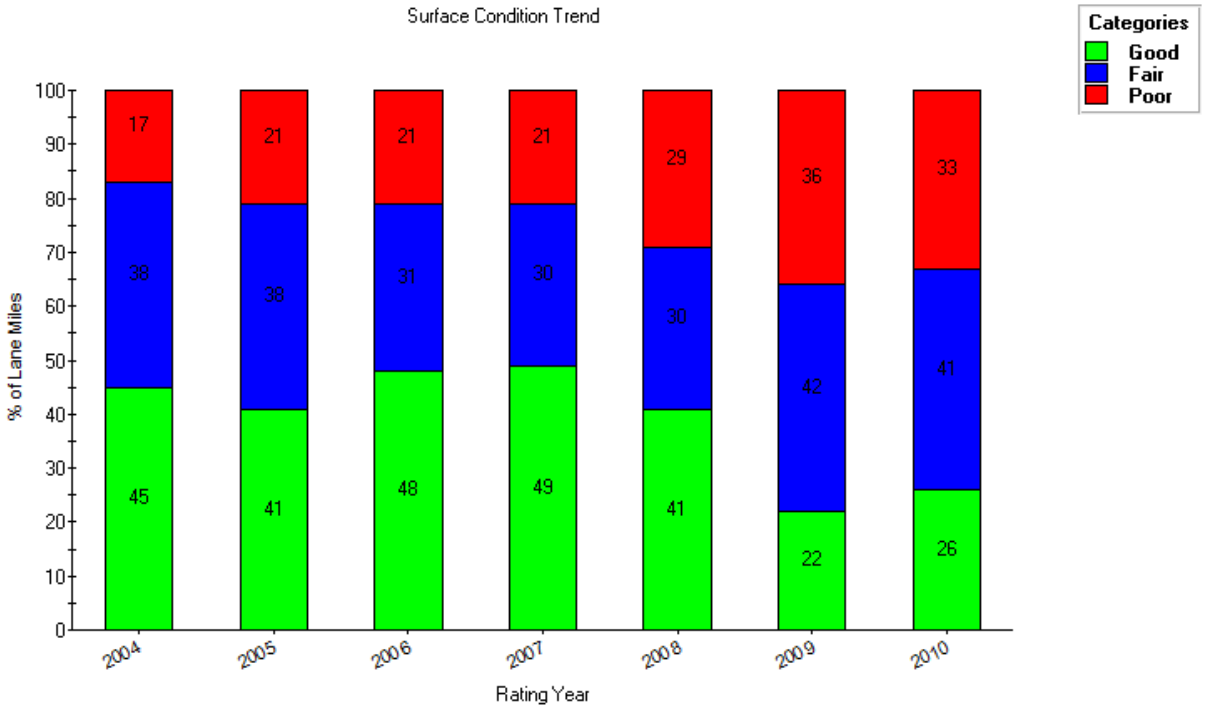


Figure 16 – Leelanau County Ratings Comparing Multiple Years of Data (2010)



Manistee County

Data were collected on 376 miles of federal-aid roads in Manistee County from August 9-11, 2010. Staff present for the rating included Sharon Johnson, Manistee County Road Commission; Kathie Boyle, Department of Public Works, 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 32.2% of roads rated 5-7 (Fair). Additionally, 49.7% of roads were rated 1-4 (Poor); considerably higher than the regional median of 36.4%. PASER values of 8-10 (Good) were given to 18.1% of roads in the County. Figure 18 compares the PASER values collected in the last seven years.

Map 8 – Manistee County PASER Values (2010)

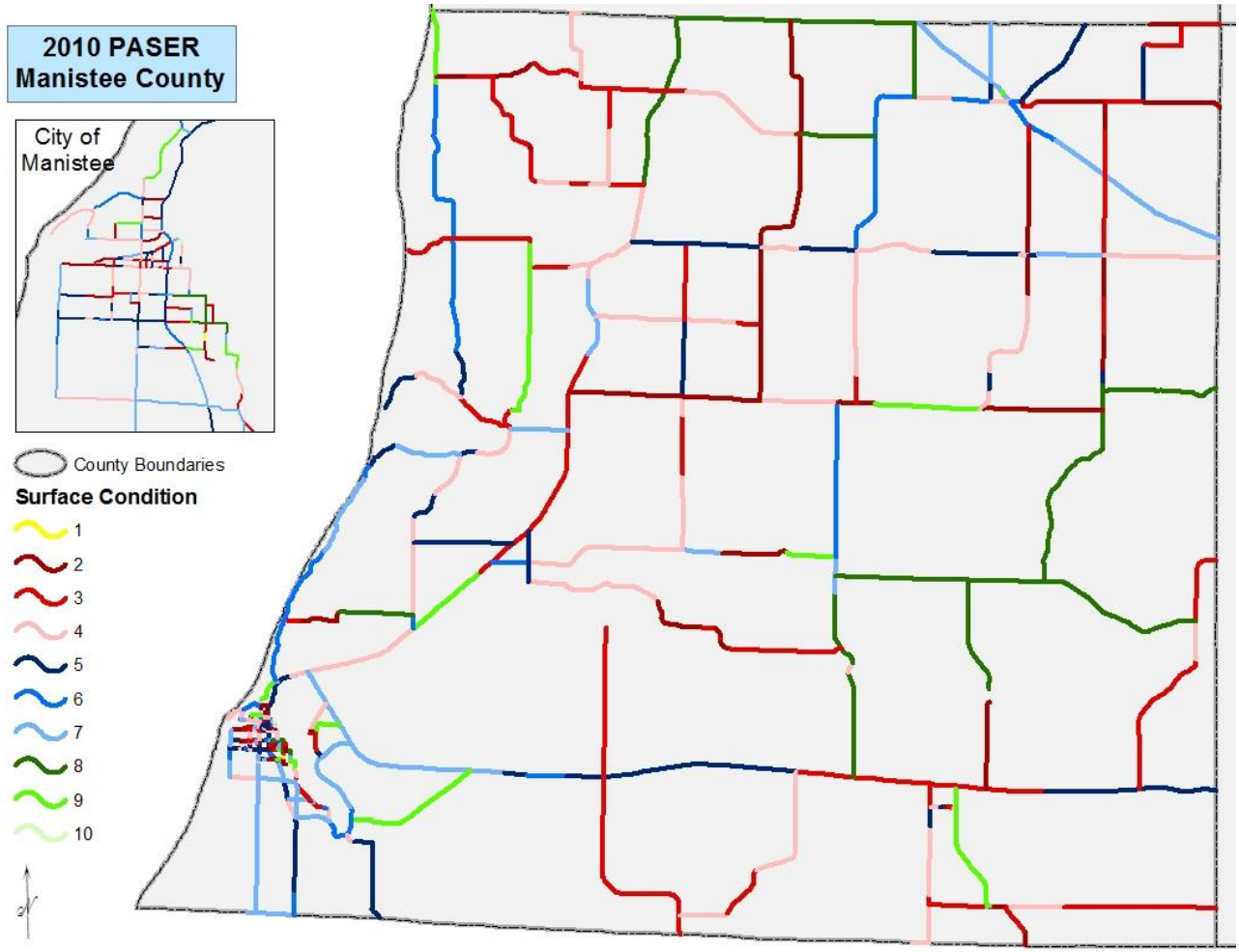


Figure 17 – Manistee County Ratings Compared To Region (2010)

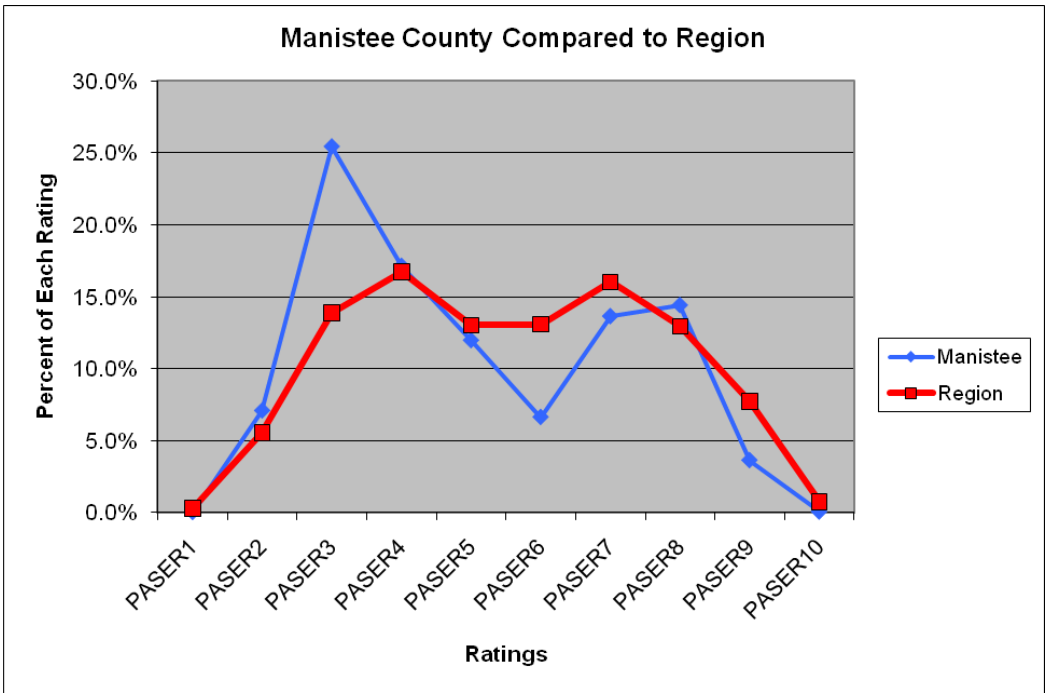
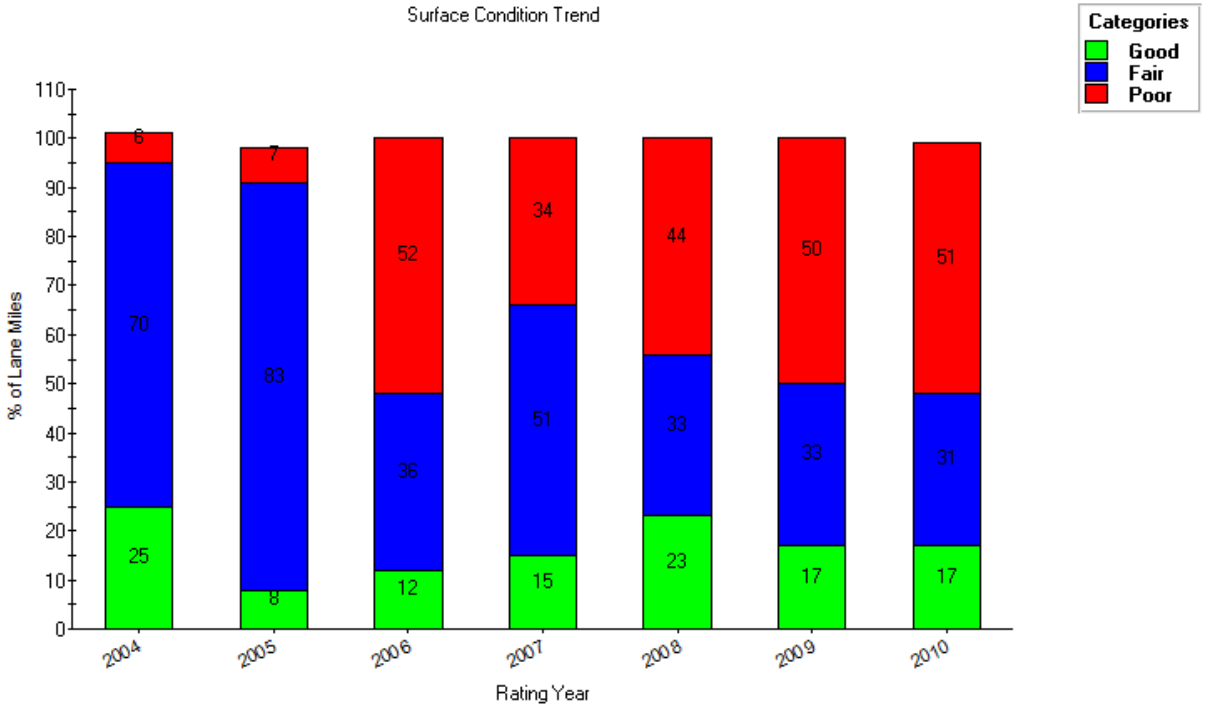


Figure 18 – Manistee County Ratings Comparing Multiple Years of Data (2005)



Missaukee County

Data were collected on 275 miles of federal-aid roads in Missaukee County from October 12-13, 2010. 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, 31.0% of roads were given PASER values of 5-7 (Fair). This was much lower than the regional median of 42.1% of roads rated in this range. PASER values of 8-10 (Good) were given to 8.9% of roads in the County. This was also below the regional median of 21.4% of roads rated in this range. 60.1% of Missaukee's roads were rated in the 1-4 (Poor) rating range, significantly higher than the regional median of 36.4% and the highest percentage in this rating range among the ten counties. Figure 20 shows a comparison of the last seven years of data collected.

Map 9 – Missaukee County PASER Values (2010)

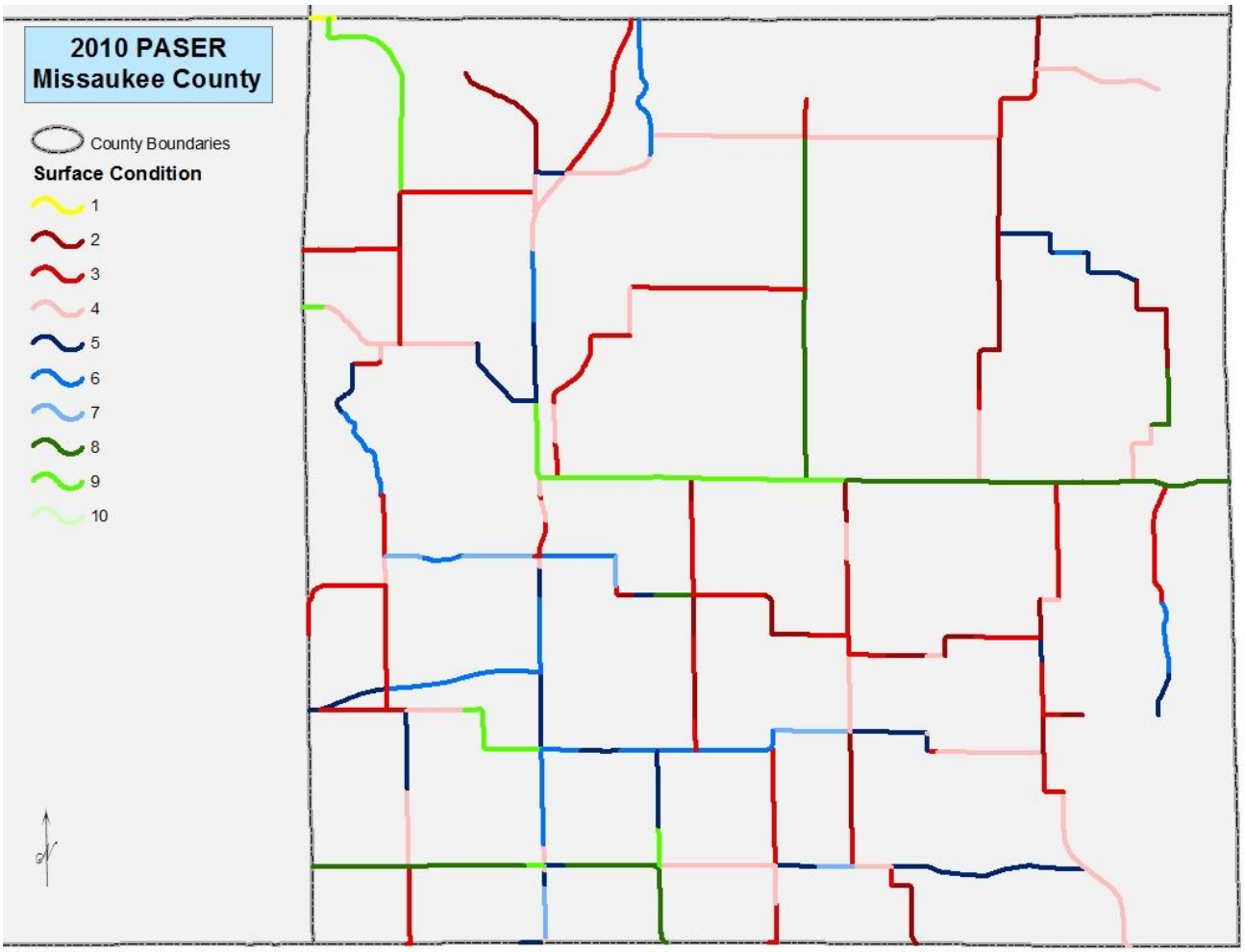


Figure 19 – Missaukee County Ratings Compared To Region (2010)

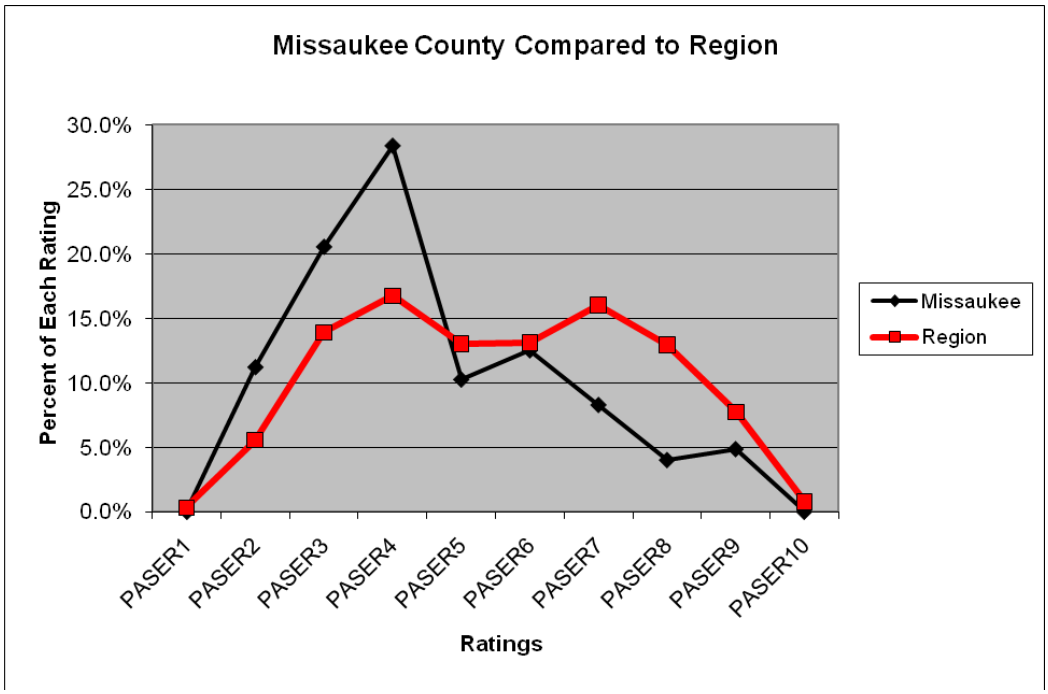
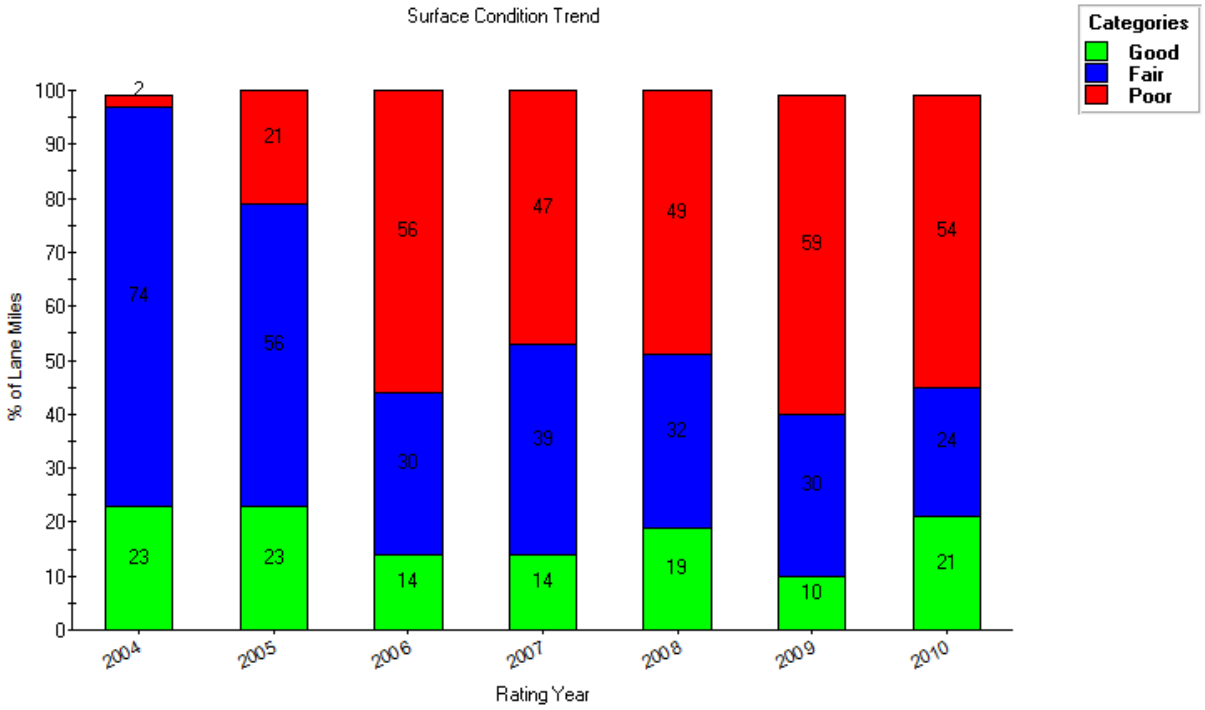


Figure 20 – Missaukee County Rating Comparing Multiple Years of Data (2010)



Wexford County

Data were collected on 374 miles of federal-aid roads in Wexford County on August 27-29, 2010. 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, 16.4% of roads were rated 8-10 (Good) in Wexford County. This was lower than the regional median of 21.4% of roads rated in this range. PASER values of 5-7 (Fair) were given to 51.0% of the County's roads. The remaining 32.7% of the County's roads were given ratings of 1-4 (Poor). Figure 22 compares the ratings gathered from the last seven years of data collection.

Map 10 – Wexford County PASER Values (2010)

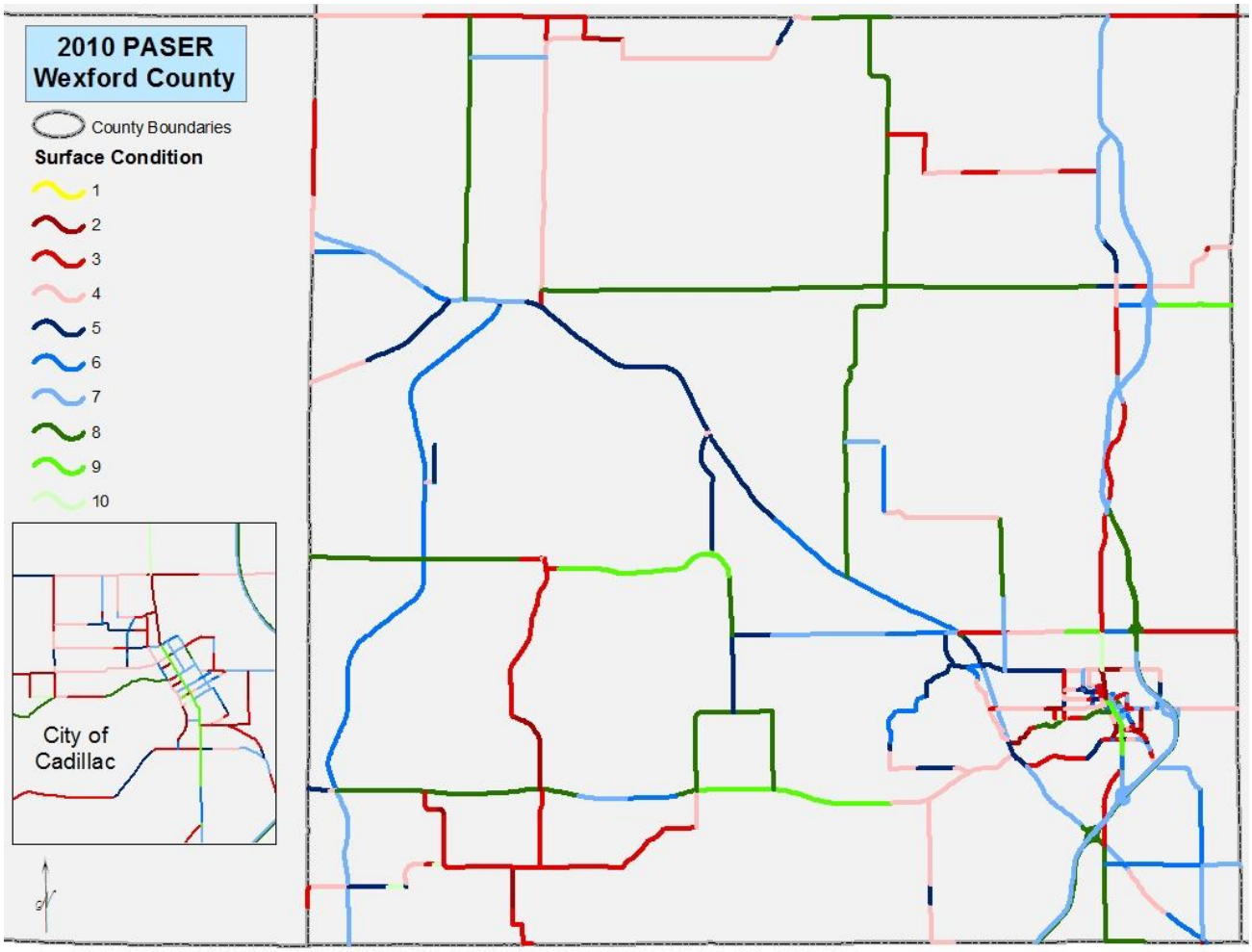


Figure 21 – Wexford County Ratings Compared To Region (2010)

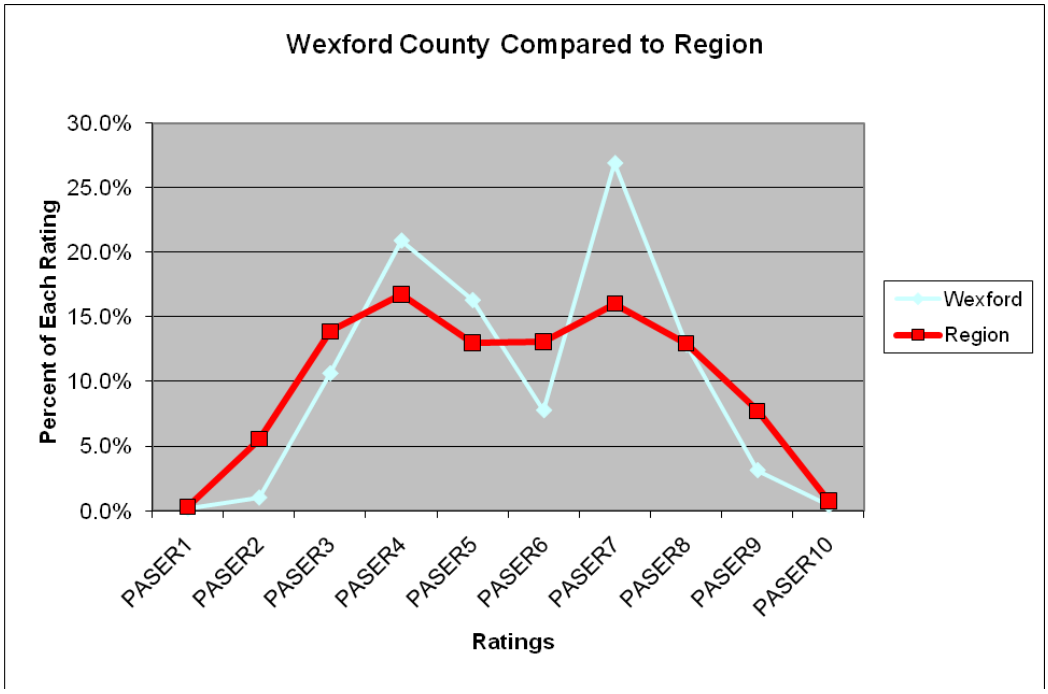
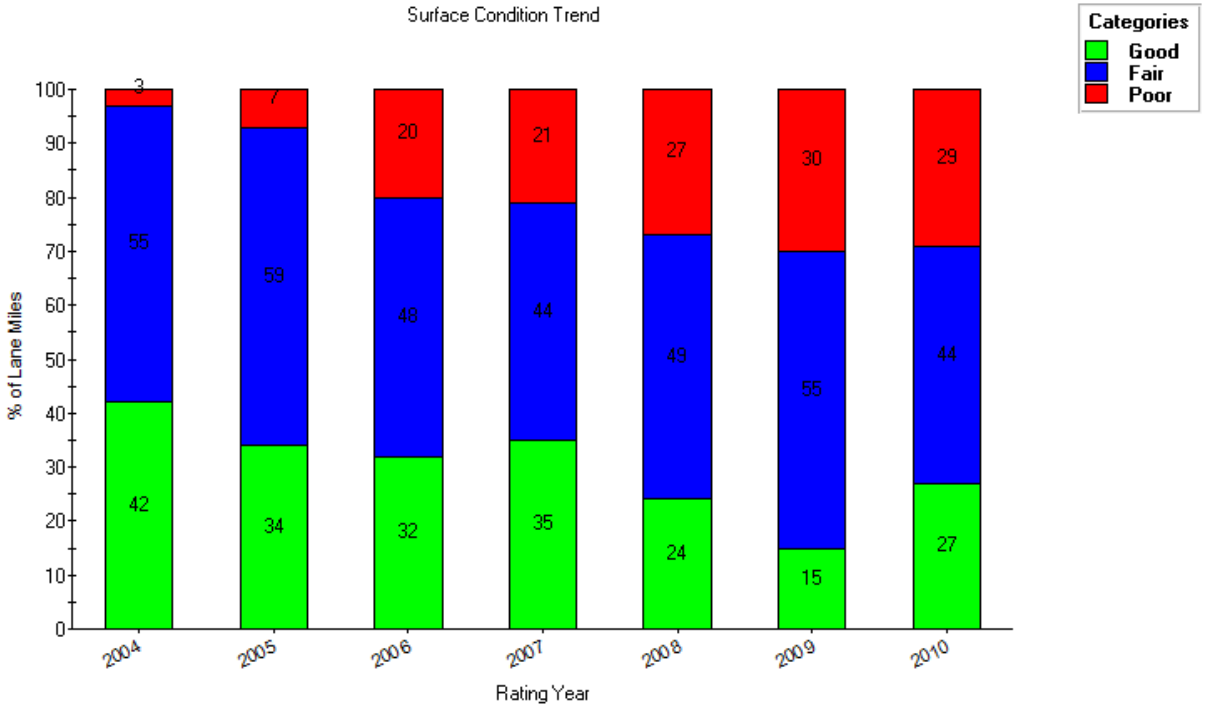


Figure 22 – Wexford County Ratings Comparing Multiple Years of Data (2010)



Regional Summary

Figure 23 below shows the percentage of ratings throughout the region for each year of the program. In 2010, regionally, 63.6% of roads were rated 5-10 (Good or Fair). Regionally, 36.4% of roads were given ratings of 1-4, (Poor). Counties with the highest percentage of PASER values in the 5-10 rating range include Antrim County (87.8%), Benzie County (75.9%), and Wexford County (67.3%). Counties with the highest percentage of PASER values in the 1-4 rating range include Missaukee County (60.1%), Manistee County (49.7%), and Emmet County (49.1%). Figure 24 and 25 show the flow of how the surface conditions in the entire region have changed over the last seven years (Figure 24) and over the last year (Figure 25).

Map 11 displays the surface ratings for the entire region broken into the three rating range categories: 1-4 (Poor); 5-7 (Fair); and 8-10 (Good). Within the region 21.3% of State-owned roads are rated 1-4 (Poor), needing structural improvement while 42.4% of County-owned Federal-aid eligible roads and 48.7% of City/Village-owned Federal-aid eligible roads are rated Poor, needing structural improvement. Map 12 shows how the surface conditions have changed since 2009. It is normal for a road that has not had any improvements made to it to deteriorate over time. So a road that did not receive any treatment may have dropped down one PASER value between 2009 and 2010. However, if a road received some type of treatment then its PASER value would have increased between 2009 and 2010. An example would be a road segment that had an overlay placed on it. This would take a road that might have been a 5 or 6 and make it an 8 or 9 depending on the type of overlay. This was the seventh year that PASER values were collected region-wide in northwest Lower Michigan. For 2004 to 2009 data, please contact the Northwest Michigan Council of Governments.

Figure 23 – Regional Ratings Comparing Multiple Years of Data (2010)

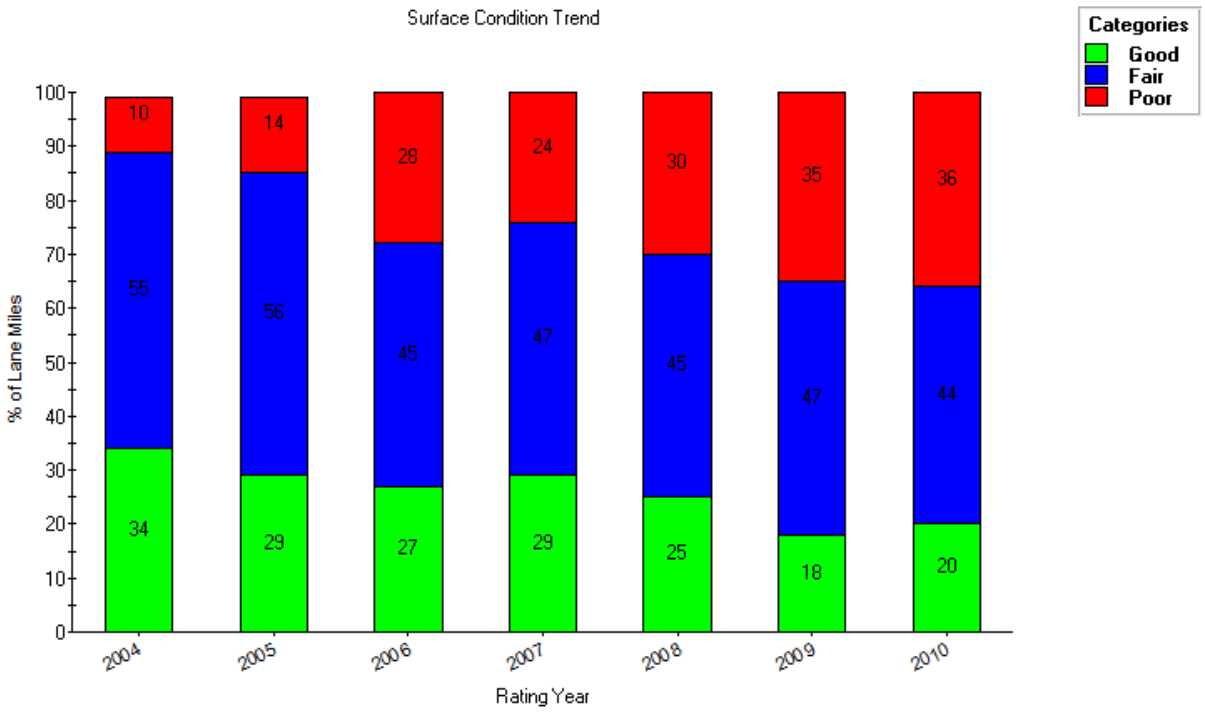


Figure 24 – Surface Condition Flow by percentage of Lane Miles from 2004 to 2010 (2010)

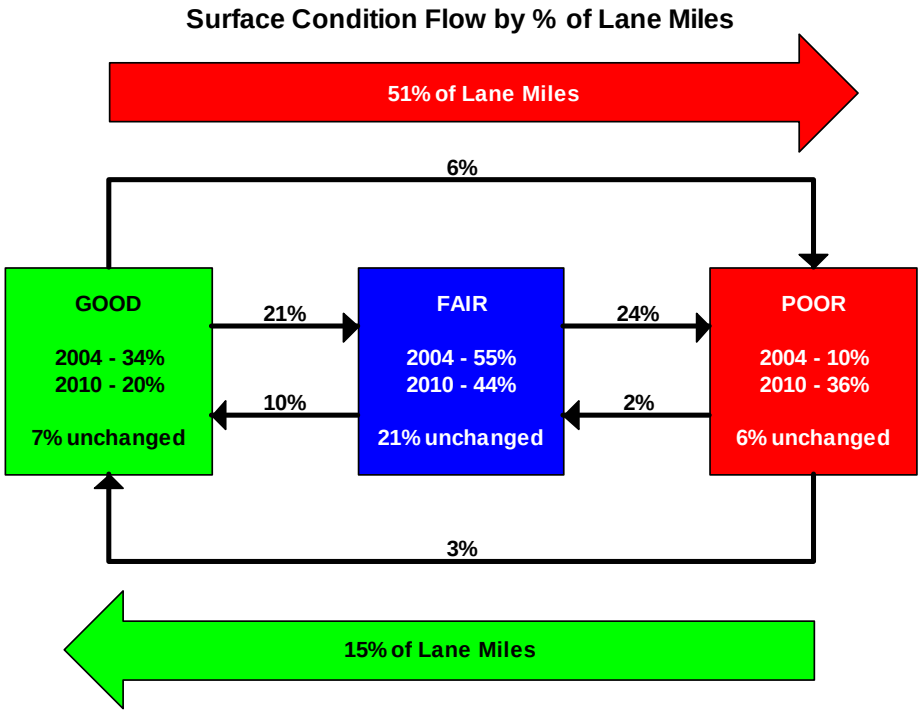
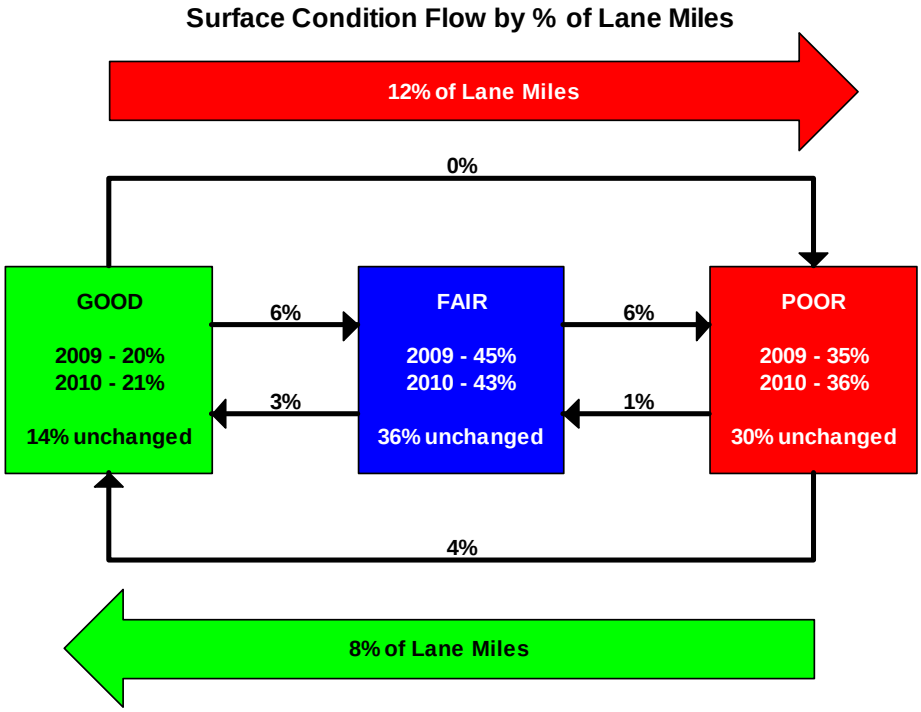
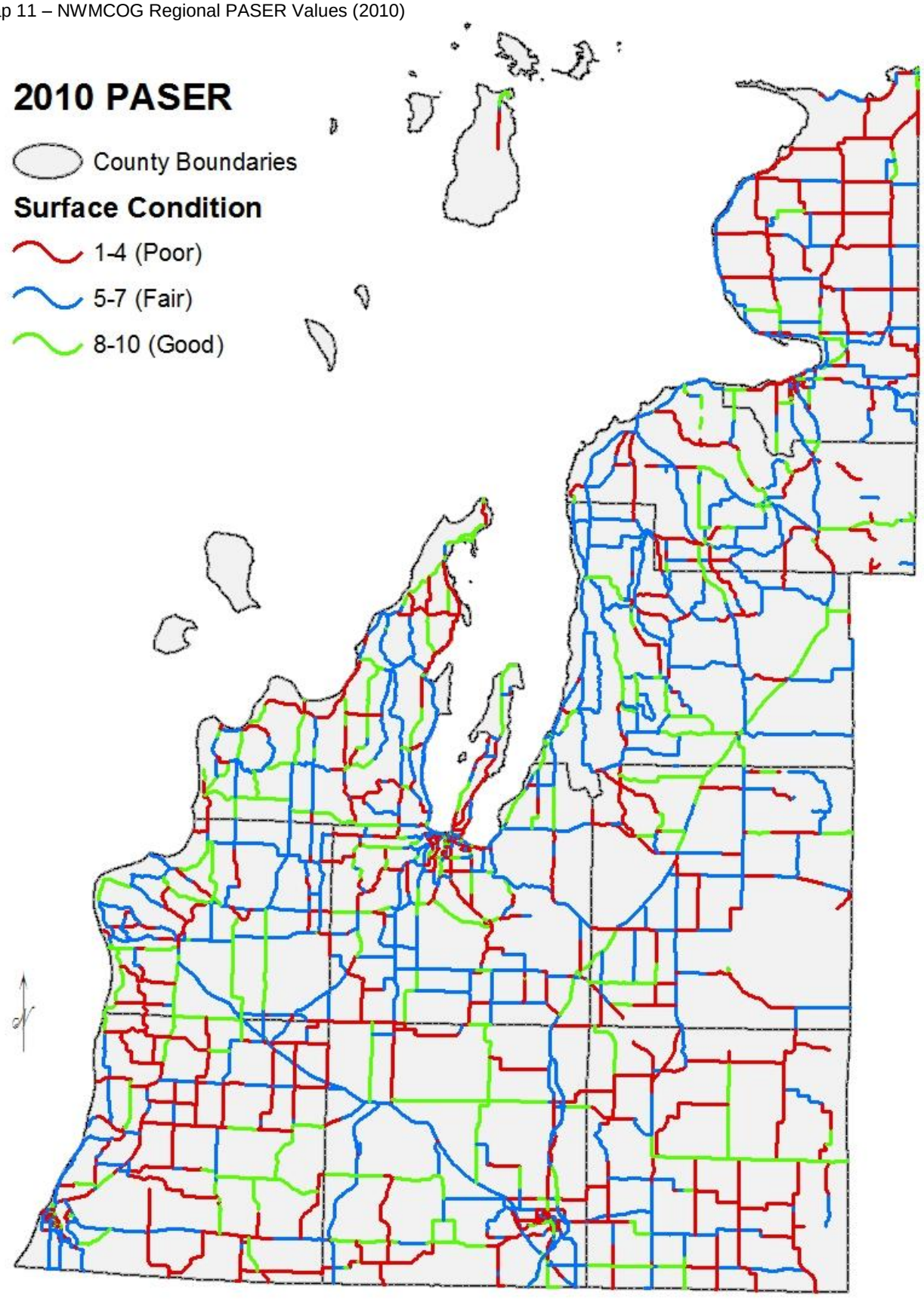


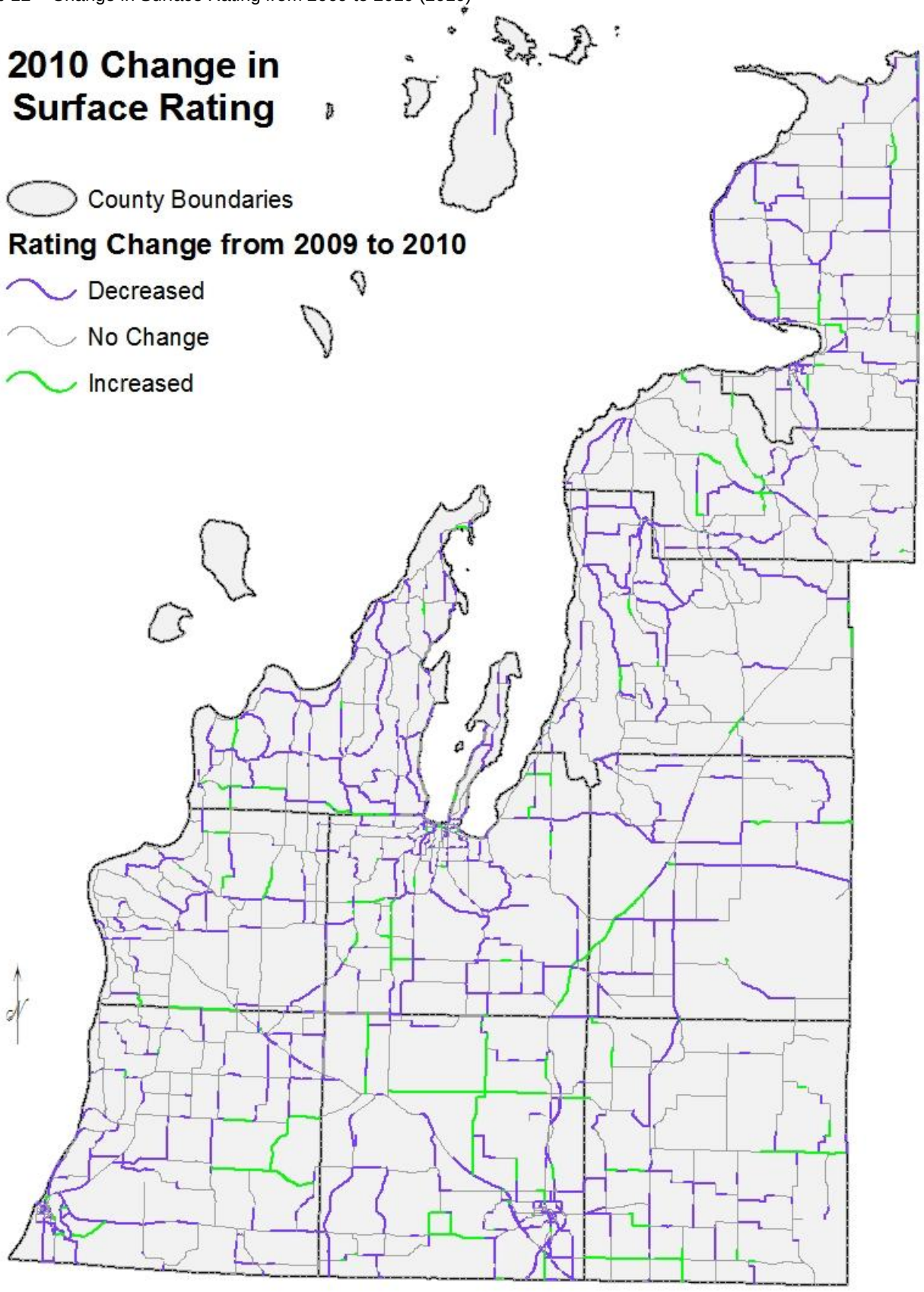
Figure 25 – Surface Condition Flow by percentage of Lane Miles from 2008 to 2010 (2010)



Map 11 – NWMCOG Regional PASER Values (2010)



Map 12 – Change in Surface Rating from 2009 to 2010 (2010)



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.

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 Perfomance Review, June 1997.

21st 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.

Life Cycle Cost Analysis in Pavement Design. US Department of Transportation/ Federal Highway Administration, September 1998.

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

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. This report is also available on NWMCOG's website free of charge at www.nwm.org

MDOT Web Site
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

Asset Management Council
Brian Sanada (517) 373-2220 SanadaB@michigan.gov

Development of Strategic Plans

State Long Range Plan
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Transportation Policy Plan
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Data Collection

Michigan Geographic Framework
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Global Positioning/Geographic Information Systems
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Traffic Data
Dave Schade (517) 335-2914 schaded@michigan.gov

Use of Management Systems

Transportation Management System
Ron Vibbert (517) 373-9561 vibbertr@michigan.gov

Bridge Management System
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Pavement Management System
Pat Schafer (517) 322-1766 schaferpa@michigan.gov

Public Transportation Management System
Kathy Urda (517) 335-2575 urdak@mcihigan.gov

Safety Management System
Bob Rios (517) 335-1187 riosb@michigan.gov

Congestion Management System
Intermodal Management System
Gary Endres (517) 335-4583 endresg@michigan.gov

Alternative Analysis Procedures

Road Quality Forecasting System
Prioritization Process
Craig Newell (517) 373-9074 newellc@michigan.gov