

The State of Michigan Transportation



2003-2010 PASER Road Survey

For Van Buren County, Michigan



Prepared by the Southwest Michigan Planning Commission
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August 2010

PROJECT OVERVIEW

Since 2003, the Southwest Michigan Planning Commission (SWMPC) and representatives of each of the three counties (Berrien, Cass, and Van Buren) in the Southwest Region and the Michigan Department of Transportation (MDOT) have jointly conducted annual assessments of the condition of the Southwest Region's federal aid eligible roads. These assessments have utilized the Pavement Surface Evaluation and Rating (PASER) system in establishing road conditions. The effort has been funded and administered through the State of Michigan Transportation Asset Management Council and has satisfied the Governmental Accounting Standards Board Statement 34 (GASB 34), requiring tri-annual road assessments for governmental units receiving federal aid, doing so with minimal staff over short time periods.

METHODOLOGY: THE PASER ROAD RATING SYSTEM

PASER, or Pavement Surface Evaluation and Rating, is a visual test of the surface condition of the road that utilizes a ten-point scale, focusing on pavement conditions; structural or geometric defects are not considered in determining the ratings. Ratings are applied to road segments of varying length, with segment values ranging from 10 for a new road segment to 1 for a completely failed segment, and specific ratings determined by the number and type of surface defects. The ratings are compiled by teams of three to four individuals who drive the roads and conduct windshield surveys. PASER rating charts for asphalt, concrete, and gravel roads have been included in the appendix of this report.

PASER Rating	Pavement Quality
10	Excellent
9	
8	
7	
6	
5	
4	
3	
2	
1	Poor

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 encompasses day-to-day maintenance activities, 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 that retard future deterioration and maintain or improve 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. These treatments are targeted at pavement surface defects primarily caused by the environment and by pavement material deficiencies.

- **Roads with PASER ratings of 1-4 require Structural Improvements.** This category includes work identified as rehabilitation and reconstruction, addressing the structural integrity of a road.

Computer Equipment and Software

Teams collected data using a laptop computer with the RoadSoft GIS Laptop Data Collector software loaded. A Garmin GPS 35 PC TracPak Global Position System unit was connected to the laptop to track position and locate road segments. 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

For the purposes of this project, a team of three to four members was used for collecting PASER data. Each team member played a separate role within the vehicle during the data collection. One individual drove and collaborated in the road rating, a second navigated and also collaborated in the road ratings, and a third entered the rating information into the laptop computer; when the team rated roads within a city or village, a fourth member would be added from that city or village. The team was comprised of one SWMPC representative, one representative from a county road commission (depending upon which county the team was in at the time), and one MDOT representative from the Coloma Transportation Service Center (TSC). Several cities and villages also participated in the project.

Training

All participants in the survey were required to attend a daylong training session that took place at the Kalamazoo Area Transportation Study offices. 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 new participants how to use the RoadSoft program and guided them through the rating process.

RESULTS

County-Wide Results

As shown in Figure 1 and Table 1 below, the surface condition of federal aid eligible roads in Van Buren County has generally worsened from 2003 through 2010. The percentage of assessed road segments receiving a Good rating of 8-10 has decreased from a high of 32.9%

in 2004 to a low of 7.5% in 2008. Likewise, the percentage of road segments rated Poor (1-4) grew from a low of 1.3% in 2003 to highs of 45.8% in 2008. Roughly the same sets of roads were assessed in 2008 and 2010 (see below for more detail), however, so there may be some signs of recent improvement in county road conditions, as 2010 assessments resulted in better scores than those in 2008.

Figure 1: Percentage of road segments falling under surface condition classifications, by year

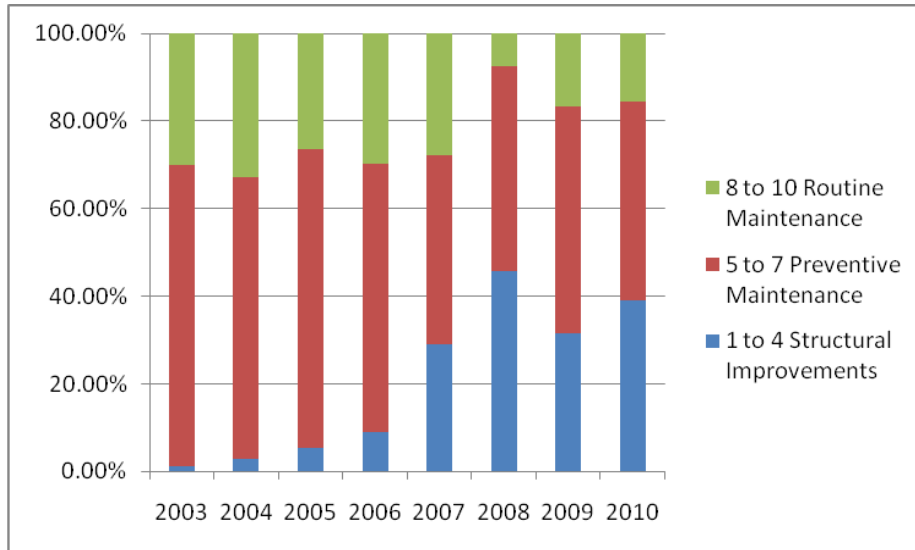


Table 1: Road segment classifications and total road-miles rated, by year

Year	1 to 4 Structural Improvements	5 to 7 Capital Preventive Maintenance	8 to 10 Routine Maintenance	Total	Total Miles Rated
2003	1.3%	68.7%	30.0%	100%	511.0
2004	2.8%	64.3%	32.9%	100%	481.2
2005	5.5%	68.1%	26.5%	100%	546.5
2006	8.9%	61.3%	29.7%	100%	563.8
2007	29.1%	43.2%	27.7%	100%	569.3
2008	45.8%	46.7%	7.5%	100%	469.5
2009	31.6%	51.6%	16.8%	100%	274.3
2010	39.0%	45.4%	15.6%	100%	306.7
2003-2004 Totals	2.0%	66.6%	31.4%	100%	992.2
2009-2010 Totals	35.5%	48.3%	16.2%	100%	581
Change from 03-04 to 09-10	33.5%	-18.2%	-15.2%	--	-411.2

While surface conditions show a clear downward trend, it's important to exercise care in making specific comparisons between years. Between 2003 and 2007, efforts were made to rate the entire network of federal aid eligible roads in Van Buren County. Beginning in 2008, however, the road network was split approximately in half, with alternating halves being assessed on consecutive years. Thus, ratings changes from year to year primarily represent differences in surface condition between disparate road segments, as opposed to changes in condition of the same segments. To account for this, Table 1 contains a row demonstrating the change in average conditions over 2003-2004 to the average conditions over 2009-2010. Again, though, the results display a clear trend toward decreasing surface ratings.

Road Ratings by Jurisdiction

In addition to the aggregate county-wide conditions displayed above, Table 2 (starting on page 7, also available in Excel format at http://swmpc.org/asset_mgmt_b.asp) displays yearly rating data by local jurisdiction. The portion of the table displayed on page 11 of this document provides a detailed list of how road conditions have changed at the jurisdictional level over the past 6-7 years. Of the 29 cities, villages, and townships in Van Buren County with federal aid eligible roads, only 1 has seen a reduction over this time in the percentage of its federal aid eligible roads in poor condition, while only 8 have seen increases in the percentage of roads in good condition. While these jurisdictional changes are not based identical sets of road sections, the trend toward deteriorating road conditions remains clear.

Table 2: Percentage of Federal Aid Eligible Roads in Each PASER Category by Jurisdiction

Van Buren County Jurisdictions	2 0 0 3				2 0 0 4			
	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated
Almena Twp	0.0%	54.2%	45.8%	24.6	0.0%	12.9%	87.1%	21.3
Antwerp Twp	0.0%	71.9%	28.1%	32.5	0.0%	65.6%	34.4%	34.5
Arlington Twp	0.0%	39.1%	60.9%	21.4	0.0%	41.5%	58.5%	23.5
Bangor	3.6%	78.0%	18.4%	3.5	0.0%	72.3%	27.7%	1.8
Bangor Twp	5.3%	94.7%	0.0%	18.7	10.9%	71.1%	17.9%	18.1
Bloomingtondale	0.0%	66.8%	33.2%	2.3	0.0%	100.0%	0.0%	0.6
Bloomingtondale Twp	0.0%	82.5%	17.5%	19.1	0.0%	70.9%	29.1%	10.0
Breedsville	6.2%	93.8%	0.0%	1.8	N/A	N/A	N/A	0.0
Columbia Twp	0.0%	69.4%	30.6%	22.0	0.0%	20.3%	79.7%	10.7
Covert Twp	0.0%	97.4%	2.6%	38.7	2.6%	89.7%	7.7%	38.7
Decatur	0.0%	81.2%	18.8%	1.6	0.0%	73.8%	26.2%	1.6
Decatur Twp	0.0%	81.5%	18.5%	13.2	16.9%	73.4%	9.7%	19.4
Geneva Twp	0.0%	57.5%	42.5%	24.8	0.0%	73.9%	26.1%	11.1
Gobles	11.1%	72.5%	16.4%	2.2	0.0%	24.2%	75.8%	2.2
Hamilton Twp	0.0%	77.4%	22.6%	26.5	0.0%	75.6%	24.4%	26.5
Hartford	0.0%	91.2%	8.8%	2.5	0.0%	100.0%	0.0%	2.5
Hartford Twp	0.1%	46.3%	53.6%	28.8	0.0%	55.0%	45.0%	28.8
Keeler Twp	0.0%	73.2%	26.8%	24.5	0.0%	70.1%	29.9%	24.5
Lawrence	47.3%	51.9%	0.8%	3.3	25.0%	46.9%	28.1%	3.3
Lawrence Twp	0.0%	46.6%	53.4%	36.6	0.0%	58.5%	41.5%	37.4
Lawton	7.1%	92.9%	0.0%	2.7	21.8%	64.1%	14.0%	2.7
Mattawan	0.0%	43.8%	56.2%	3.8	14.7%	65.4%	19.9%	3.8
Paw Paw	10.4%	76.7%	13.0%	2.8	0.0%	73.8%	26.2%	2.8
Paw Paw Twp	1.3%	53.0%	45.8%	40.0	1.3%	63.6%	35.0%	40.1
Pine Grove Twp	0.0%	61.7%	38.3%	21.0	0.0%	37.6%	62.4%	21.0
Porter Twp	0.0%	88.6%	11.4%	25.7	5.6%	90.6%	3.8%	26.7
South Haven	5.3%	91.2%	3.5%	19.7	14.7%	79.7%	5.7%	20.2
South Haven Twp	4.7%	84.2%	11.2%	34.1	0.2%	87.2%	12.5%	34.6
Waverly Twp	0.0%	22.6%	77.4%	12.7	0.0%	17.7%	82.3%	12.9

Van Buren County Jurisdictions	2 0 0 5				2 0 0 6			
	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated
Almena Twp	0.0%	38.2%	61.8%	23.8	0.6%	69.8%	29.6%	27.7
Antwerp Twp	1.4%	69.8%	28.8%	38.4	0.0%	72.0%	28.0%	38.7
Arlington Twp	4.2%	92.4%	3.5%	23.5	10.1%	78.8%	11.1%	23.5
Bangor	7.6%	67.0%	25.4%	3.7	0.0%	65.3%	34.7%	3.7
Bangor Twp	17.7%	58.2%	24.1%	19.7	9.3%	82.6%	8.0%	21.1
Bloomington	0.0%	100.0%	0.0%	2.3	0.0%	94.4%	5.6%	2.3
Bloomington Twp	0.0%	88.9%	11.1%	23.6	0.0%	71.3%	28.7%	23.6
Breedsville	N/A	N/A	N/A	1.8	N/A	N/A	N/A	1.8
Columbia Twp	10.4%	70.2%	19.5%	28.0	0.0%	75.2%	24.8%	28.3
Covert Twp	9.5%	64.5%	26.1%	40.1	19.9%	30.1%	50.0%	40.1
Decatur	0.0%	64.0%	36.0%	1.6	8.3%	59.2%	32.5%	1.6
Decatur Twp	5.2%	53.2%	41.7%	19.4	29.3%	59.9%	10.8%	19.4
Geneva Twp	0.0%	71.0%	29.0%	30.0	3.6%	52.2%	44.2%	30.0
Gobles	0.0%	100.0%	0.0%	2.2	0.0%	91.2%	8.8%	2.2
Hamilton Twp	0.0%	70.1%	29.9%	26.5	3.4%	57.2%	39.4%	26.5
Hartford	0.0%	100.0%	0.0%	2.5	0.0%	79.9%	20.1%	2.5
Hartford Twp	0.0%	45.1%	54.9%	28.8	0.0%	43.1%	56.9%	28.7
Keeler Twp	0.0%	62.5%	37.5%	24.5	0.0%	67.3%	32.7%	24.6
Lawrence	25.0%	46.9%	28.1%	3.3	33.9%	55.1%	11.0%	3.3
Lawrence Twp	0.0%	54.0%	46.0%	37.3	10.2%	53.9%	35.9%	37.3
Lawton	0.0%	78.2%	21.8%	2.7	0.0%	74.6%	25.4%	3.4
Mattawan	15.9%	59.5%	24.6%	3.8	8.2%	88.8%	3.0%	6.7
Paw Paw	0.0%	79.6%	20.4%	2.8	0.0%	74.9%	25.1%	3.6
Paw Paw Twp	6.9%	63.9%	29.2%	40.1	6.3%	49.1%	44.6%	42.6
Pine Grove Twp	1.8%	91.0%	7.2%	21.0	4.0%	96.0%	0.0%	21.0
Porter Twp	10.5%	75.1%	14.4%	26.7	18.2%	31.2%	50.5%	26.7
South Haven	26.8%	61.8%	11.4%	20.4	34.4%	49.6%	16.0%	20.6
South Haven Twp	10.2%	84.3%	5.5%	35.1	24.2%	59.3%	16.5%	37.3
Waverly Twp	0.0%	84.2%	15.8%	12.9	0.0%	100.0%	0.0%	15.0

Van Buren County Jurisdictions	2 0 0 7				2 0 0 8			
	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated
Almena Twp	35.3%	43.8%	20.9%	29.4	53.9%	46.1%	0.0%	29.4
Antwerp Twp	20.8%	45.0%	34.2%	40.2	59.9%	31.6%	8.5%	20.8
Arlington Twp	26.5%	44.9%	28.5%	23.4	61.5%	38.5%	0.0%	23.6
Bangor	18.1%	31.5%	50.3%	3.7	32.1%	67.9%	0.0%	3.7
Bangor Twp	33.1%	33.8%	33.1%	20.9	34.4%	58.6%	7.1%	21.1
Bloomingtondale	0.0%	55.4%	44.6%	2.3	0.0%	100.0%	0.0%	2.3
Bloomingtondale Twp	26.8%	55.8%	17.4%	23.6	50.7%	48.8%	0.5%	23.6
Breedsville	N/A	N/A	N/A	1.8	N/A	N/A	N/A	1.8
Columbia Twp	50.7%	25.6%	23.8%	28.2	68.4%	31.6%	0.0%	28.3
Covert Twp	29.7%	40.0%	30.4%	40.1	22.5%	59.5%	18.0%	40.1
Decatur	4.7%	70.8%	24.5%	1.6	N/A	N/A	N/A	0.0
Decatur Twp	58.5%	32.5%	9.0%	19.4	95.5%	4.5%	0.0%	14.6
Geneva Twp	28.5%	43.5%	28.1%	29.0	30.1%	65.5%	4.5%	30.0
Gobles	9.6%	90.4%	0.0%	2.2	27.6%	33.0%	39.5%	2.2
Hamilton Twp	33.7%	62.7%	3.6%	27.0	35.7%	60.0%	4.3%	19.6
Hartford	47.7%	34.0%	18.3%	2.5	44.2%	55.8%	0.0%	2.3
Hartford Twp	23.7%	36.1%	40.2%	31.3	37.8%	56.8%	5.4%	18.4
Keeler Twp	30.7%	45.8%	23.5%	24.6	36.0%	48.9%	15.2%	21.7
Lawrence	62.7%	26.3%	11.0%	3.3	66.7%	28.3%	5.0%	3.3
Lawrence Twp	25.8%	37.2%	37.0%	39.3	62.8%	36.3%	0.9%	26.3
Lawton	37.5%	33.5%	28.9%	3.4	100.0%	0.0%	0.0%	0.9
Mattawan	18.1%	78.5%	3.4%	5.9	59.6%	40.4%	0.0%	2.4
Paw Paw	26.2%	33.0%	40.9%	3.6	N/A	N/A	N/A	0.0
Paw Paw Twp	9.9%	49.4%	40.7%	42.6	37.0%	51.1%	11.9%	19.2
Pine Grove Twp	24.6%	59.0%	16.4%	21.0	65.0%	34.4%	0.6%	21.0
Porter Twp	17.2%	43.9%	39.0%	26.7	63.3%	36.7%	0.0%	20.1
South Haven	45.2%	33.0%	21.8%	20.6	37.2%	45.4%	17.3%	20.6
South Haven Twp	25.2%	40.3%	34.4%	37.0	19.5%	50.8%	29.7%	37.3
Waverly Twp	38.5%	46.1%	15.4%	15.0	39.2%	60.8%	0.0%	15.0

Van Buren County Jurisdictions	2 0 0 9				2 0 1 0			
	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	Total Miles Rated
Almena Twp	N/A	N/A	N/A	0.0	44.2%	55.8%	0.0%	29.3
Antwerp Twp	30.7%	45.0%	24.2%	41.1	N/A	N/A	N/A	0.0
Arlington Twp	N/A	N/A	N/A	0.0	46.6%	24.2%	29.2%	23.6
Bangor	N/A	N/A	N/A	0.0	28.6%	71.4%	0.0%	3.7
Bangor Twp	N/A	N/A	N/A	0.0	40.0%	42.3%	17.7%	21.1
Bloomingtondale	N/A	N/A	N/A	0.0	0.0%	100.0%	0.0%	2.3
Bloomingtondale Twp	N/A	N/A	N/A	0.0	49.5%	32.1%	18.4%	23.6
Breedsville	N/A	N/A	N/A	0.0	100.0%	0.0%	0.0%	1.8
Columbia Twp	N/A	N/A	N/A	0.0	57.4%	39.9%	2.6%	28.2
Covert Twp	N/A	N/A	N/A	0.0	19.2%	62.8%	18.0%	40.1
Decatur	52.1%	35.7%	12.2%	1.6	N/A	N/A	N/A	0.0
Decatur Twp	58.5%	41.5%	0.0%	20.8	N/A	N/A	N/A	0.0
Geneva Twp	N/A	N/A	N/A	0.0	40.7%	59.3%	0.0%	29.9
Gobles	N/A	N/A	N/A	0.0	41.0%	19.5%	39.5%	2.2
Hamilton Twp	46.0%	54.0%	0.0%	27.0	N/A	N/A	N/A	0.0
Hartford	68.2%	29.3%	2.5%	2.5	N/A	N/A	N/A	0.0
Hartford Twp	14.9%	57.2%	27.9%	31.3	100.0%	0.0%	0.0%	2.7
Keeler Twp	19.3%	80.7%	0.0%	24.6	100.0%	0.0%	0.0%	3.3
Lawrence	38.2%	45.9%	15.9%	3.3	N/A	N/A	N/A	0.0
Lawrence Twp	27.7%	41.7%	30.6%	39.3	N/A	N/A	N/A	0.0
Lawton	62.3%	19.0%	18.7%	3.1	0.0%	0.0%	100.0%	0.3
Mattawan	16.5%	83.5%	0.0%	6.8	N/A	N/A	N/A	0.0
Paw Paw	66.0%	29.1%	5.0%	3.6	N/A	N/A	N/A	0.0
Paw Paw Twp	19.7%	47.9%	32.4%	42.7	N/A	N/A	N/A	0.0
Pine Grove Twp	N/A	N/A	N/A	0.0	82.2%	17.2%	0.6%	21.0
Porter Twp	43.1%	56.9%	0.0%	26.7	100.0%	0.0%	0.0%	0.3
South Haven	N/A	N/A	N/A	0.0	24.8%	54.6%	20.6%	20.6
South Haven Twp	N/A	N/A	N/A	0.0	13.2%	56.3%	30.5%	37.8
Waverly Twp	N/A	N/A	N/A	0.0	14.1%	32.7%	53.2%	15.0

Van Buren County Jurisdictions	Change from 2003 to 2009 or 2010*			Change in Total Miles Rated
	Struc. Impr. (1 to 4)	Cap. Prev. (5 to 7)	Rout. Maint. (8 to 10)	
Almena Twp	44.20%	1.60%	-45.80%	4.7
Antwerp Twp	30.70%	-26.90%	-3.90%	8.6
Arlington Twp	46.60%	-14.90%	-31.70%	2.2
Bangor	25.00%	-6.60%	-18.40%	0.2
Bangor Twp	34.70%	-52.40%	17.70%	2.4
Bloomingtondale	0.00%	33.20%	-33.20%	0.0
Bloomingtondale Twp	49.50%	-50.40%	0.90%	4.5
Breedsville	93.80%	-93.80%	0.00%	0.0
Columbia Twp	57.40%	-29.50%	-28.00%	6.2
Covert Twp	19.20%	-34.60%	15.40%	1.4
Decatur	52.10%	-45.50%	-6.60%	0.0
Decatur Twp	58.50%	-40.00%	-18.50%	7.6
Geneva Twp	40.70%	1.80%	-42.50%	5.1
Gobles	29.90%	-53.00%	23.10%	0.0
Hamilton Twp	46.00%	-23.40%	-22.60%	0.5
Hartford	68.20%	-61.90%	-6.30%	0.0
Hartford Twp	14.80%	10.90%	-25.70%	2.5
Keeler Twp	19.30%	7.50%	-26.80%	0.1
Lawrence	-9.10%	-6.00%	15.10%	0.0
Lawrence Twp	27.70%	-4.90%	-22.80%	2.7
Lawton	55.20%	-73.90%	18.70%	0.4
Mattawan	16.50%	39.70%	-56.20%	3.0
Paw Paw	55.60%	-47.60%	-8.00%	0.8
Paw Paw Twp	18.40%	-5.10%	-13.40%	2.7
Pine Grove Twp	82.20%	-44.50%	-37.70%	0.0
Porter Twp	43.10%	-31.70%	-11.40%	1.0
South Haven	19.50%	-36.60%	17.10%	0.9
South Haven Twp	8.50%	-27.90%	19.30%	3.7
Waverly Twp	14.10%	10.10%	-24.20%	2.3

*When no roads were assessed in 2010 or when the number of miles of road assessed in 2010 was very small (i.e. < 1 mile), 2009 totals were used instead.

Red shading indicates an increase in the percentage of poor-condition roads and a decrease in the percentage of good-condition roads, respectively. Green indicates respective decreases in poor-condition roads and increases in good-condition roads.