Florida Department of
TRANSPORTATION

2015 Flexible Pavement Condition Survey Facts and Figures

FDOT Office
State Materials Office

Report Number
FL/DOT/SMO 15-573

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Date of Publication
September 2015

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This report is a result of the dedicated effort and contribution by the following individuals:

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This team's hard work in collecting and processing the data, and organizing this report is greatly appreciated.

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Executive Summary

The Pavement Condition Unit is one of three functional units of the Pavement Materials System Section, which represents one of four areas of expertise within the State Materials Office (SMO).

Since 1985, this unit has been collecting, processing, and analyzing the information on the condition and performance of the State Roadway System on an annual basis. The information provided by the Pavement Condition Survey (PCS) Program has been critical to the Department's effort to support informed highway planning, policy, and decision making at the State and local levels. This includes the apportionment and allocation of funding needs to the Districts, as well as the determination of appropriate cost-effective strategies to rehabilitate and preserve existing highway transportation infrastructure.

All roadway sections are rated in terms of varying severity levels and extent of specific distresses, namely, (1) cracking, (2) rutting, and (3) ride quality. The PCS evaluates the pavement lane that has deteriorated most in each roadway direction. The beginning and ending of pavement sections to be rated are determined by construction limits or uniformity of conditions.

Once the survey in a particular county is completed, the Verification Report is forwarded to the appropriate district for review. Any concerns are addressed and resolved prior to the data reporting being finalized. The Central Office's Pavement Management Section is responsible for the data processing and analysis, and for making the data available for use by the Department, consultants, and others. The Central Program Development Office is responsible for reporting the condition of the State Highway System for Pavement Management purposes.

The present report provides essential information on the current condition of the flexible pavement sections of the Florida State Highway System as part of the PCS program. It also includes a summary of the historical condition rating data.

To obtain an electronic copy of this and other reports, and to learn more about our program, please visit the Pavement Materials Division at SMO's website:

Intranet	http://materials.dot.state.fl.us/
Internet	http://www.dot.state.fl.us/statematerialsoffice/

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Section I

Introduction

The Pavement Condition Unit is responsible for the Department's Pavement Condition Survey. The survey is conducted on the entire State-maintained Highway System, on an annual basis.

The survey is conducted by a highly-trained and experienced staff, and requires five area staff specialists about 25 weeks of travel each year to complete. Since 1986, the PCS program has seen close to a 30 percent increase in surveyed lane miles.

The annual PCS is used to accomplish the following main objectives:

- Determine the present condition of the State Roadway System
- Compare the present to past conditions
- Predict deterioration rates
- Predict rehabilitation funding needs
- Provide justification for project rehabilitation
- Provide justification for annual rehabilitation budget
- Provide justification for distribution of the funds to Districts

The PCS is conducted to monitor the following distress criteria, (1) cracking, (2) rutting, and (3) ride quality. For each distress type, the pavement sections are rated on a 0 to 10 scale, where a rating of 10 indicates a section in excellent condition. Currently, any section with a rating of 6 or less is eligible for rehabilitation.

Cracking is a subjective rating conducted visually from a windshield survey, from the roadway shoulder, or from pavement images. Rut and ride are measured using an automated vehicle-mounted profiling system that measures the longitudinal profile of the roadway. The ride quality is quantified in terms of Ride Number (RN), which is the mathematical processing of longitudinal profile measurements to produce an estimate of a user's perception of ride quality in accordance with ASTM E1489 standard.

In order to ensure maximum accuracy and repeatability of the data collected, the testing equipment is well maintained and routinely calibrated. In addition, over 150 edit checks are used to test both the data accuracy and compliance with other known parameters. Comparisons of annual PCS data with earlier years to review trends and identify potential errors are also performed. When necessary, survey equipment and software is upgraded to improve the efficiency and effectiveness of data collection and processing. These types of improvements now allow in-depth analysis of any segment of the highway system and on-time completion of the PCS while maintaining a high level of accuracy.

For more detailed information about the Pavement Condition Surveys, please refer to the latest edition of the Rigid and Flexible Pavement Condition Survey Handbooks, which can be accessed online at:

http://materials.dot.state.fl.us/smo/pavement/performance/pcs/pavementconditionsurvey.htm

The facts and figures contained in this report are for flexible pavements only, which represent approximately 97% of the entire State Highway System.

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Observations

The review and analysis of PCS historical Distress Ratings for flexible pavements have resulted in the following statewide observations:

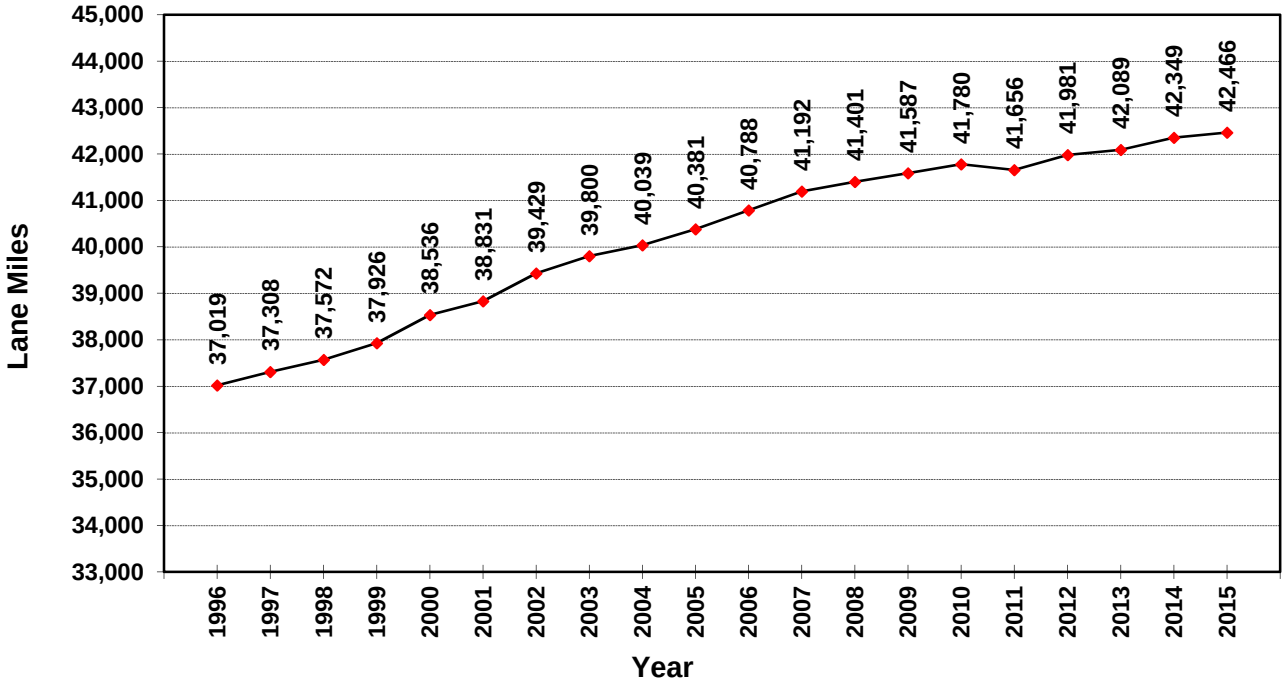
1. The average Crack Rating has remained stable from 1998 to 2008 with a mean rating of 8.1 and a range of 8.0 to 8.3. Since then the rating has increased significantly and is now 8.7 in 2015. This change is largely due to a increase of the number of miles resurfaced beginning in 2008.
2. The average Rut Rating has gradually improved from 8.8 in 1998 to 9.2 in 2015. The mean rating over this period is 9.0, or about 0.1 inches average rutting for the entire state maintained highway system.
3. The average Ride Rating remained stable from 1998 to 2003 having a mean rating of 8.2. Prior to the 2004 PCS, Ride data was collected at 12 inch sample intervals. Beginning with the 2004 PCS, Ride data was collected at 6 inch sample intervals. This explains the decrease in Ride Rating from 8.1 in 2003 to 7.6 in 2004. The Ride Rating has remained constant for the last 12 years with an average of 7.7.
4. 96% of the pavement sections rated in 2015 for cracking were within one point compared to the 2014 ratings.*
5. 100% of the pavement sections rated in 2015 for rutting were within one point compared to the 2014 ratings.*
6. 100% of the pavement sections rated in 2015 for ride were within one point compared to the 2014 ratings.*

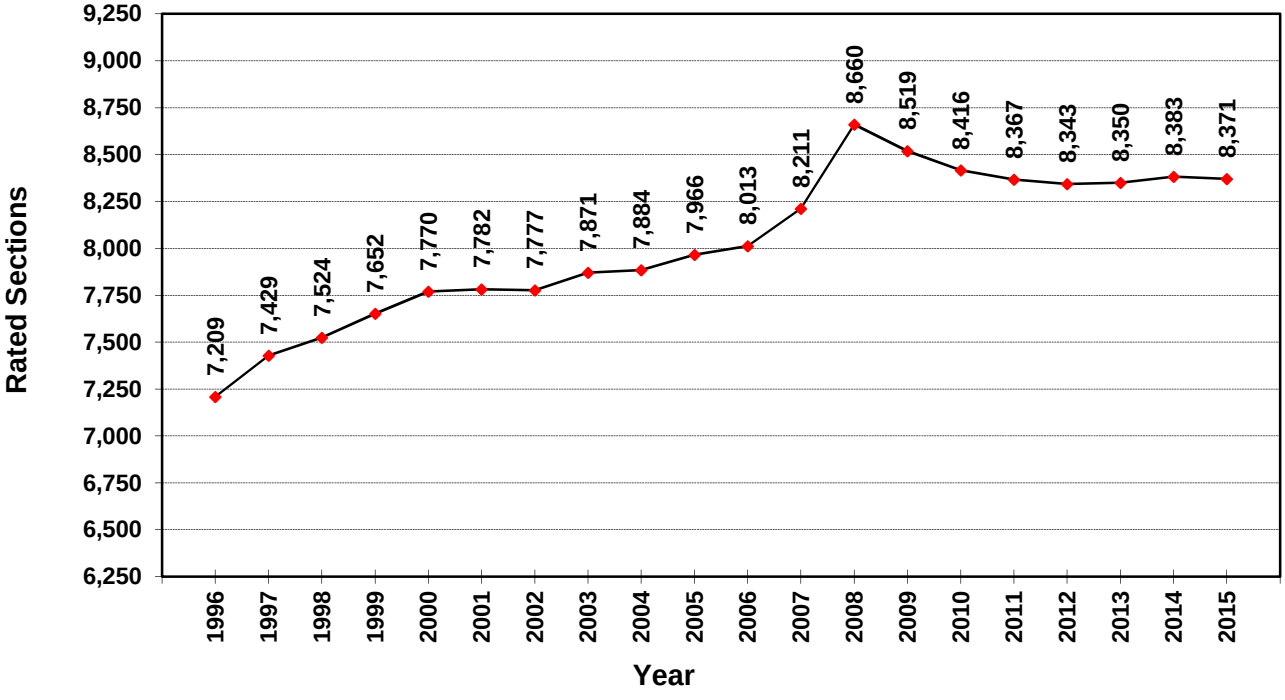
* Note: Sections that had undergone notable changes such as new construction, or total rehabilitation were excluded from the analysis.

General Notes

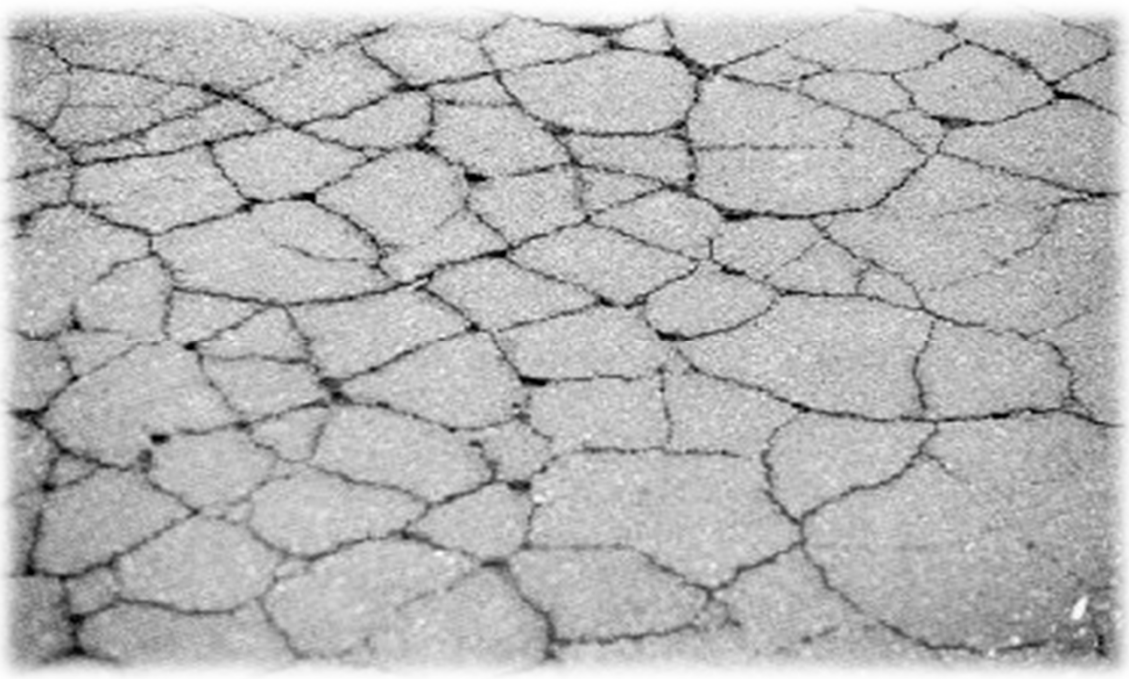
1. Multi-lane roadways: The worst lane in each direction is rated (normally the outermost traffic lane).
2. Two lane roadways: The worst lane is rated (normally the same lane tested the previous year).
3. Rated sections are determined by construction limits or significant changes in visual condition of the pavement.
4. Crack Rating is subjective and collected visually, as a windshield survey or from the roadway shoulder. It is also rated based on the severity and extent of the distress for area inside and outside the wheel paths.
5. Flexible Pavement Condition Survey Production History (p. 4) is based on total lane miles, including the structures and sections under construction. All other graphs and tables are based on lane miles where given rating index (crack, rut, or ride) was measured.
6. Historical Distress Ratings by District (Section V) and by System (Section VI) are based on Lane Miles for Crack Rating.

Flexible Pavement Condition Survey
Production History
Lane Miles / Rated Sections





Section II
Crack Rating
By
System and District



Section II

Crack Rating by System and District

Crack Rating Criteria

1. Cracking is estimated as the combined percentage of distressed areas within the wheel paths (CW) and percentage of distressed areas outside of the wheel paths (CO). These percentages are estimated separately for each of the two areas.

2. There are three classes of cracking, the ratings of which are based upon severity level: 1B, II and III.

3. Only predominate class of cracking is used to establish a Crack Rating. However, the combination of individual percentages of all types of cracking is used to calculate the overall percentage of cracked pavement.

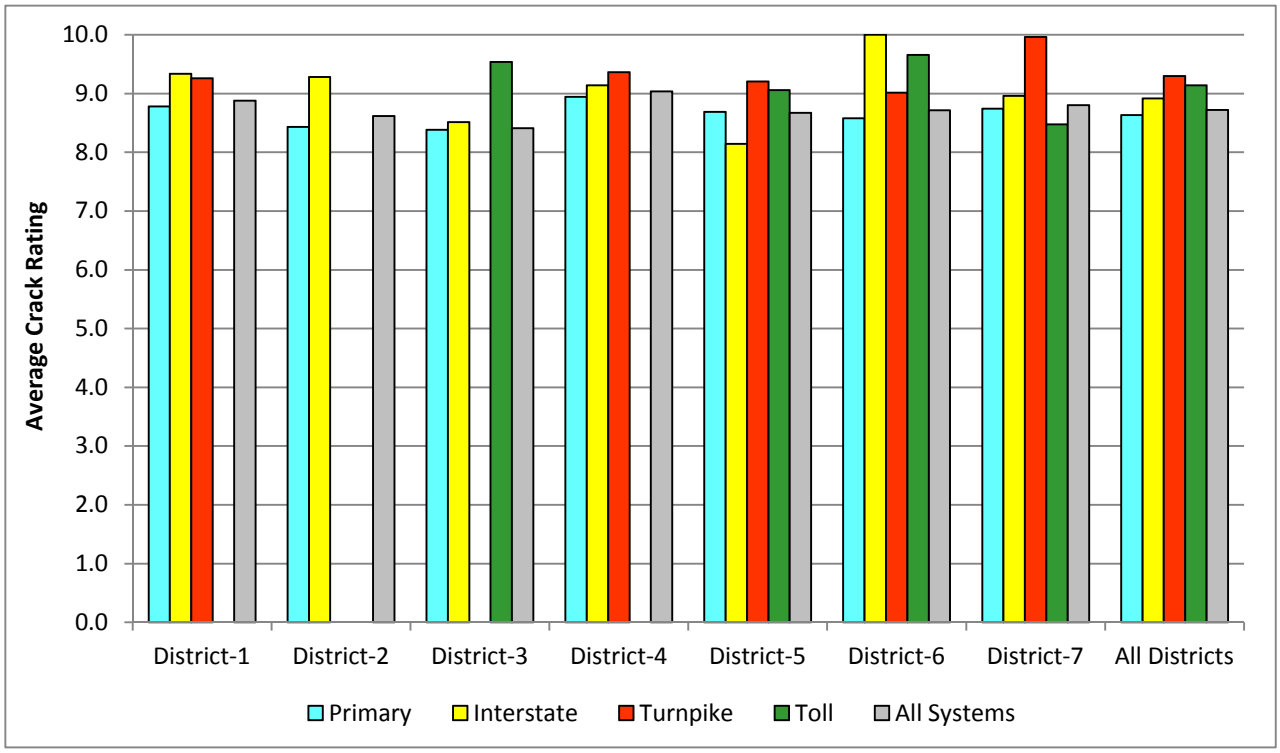
4. Crack Rating is rated on a 0 to 10 scale, where a rating of 10 represents a pavement in perfect condition. Currently, a rating of 6 or less makes pavement segments eligible for rehabilitation.

5. The Crack Rating is subtracted from a perfect score of 10.

$$\textbf{Crack Rating} = 10 - (CW + CO)$$

Where: CW and CO are numerical factors for cracking within the wheel paths (CW) and outside of the wheel paths (CO). These factors are based on the severity and extent of the type of cracking.

2015 Crack Rating by System and District



Lane Miles

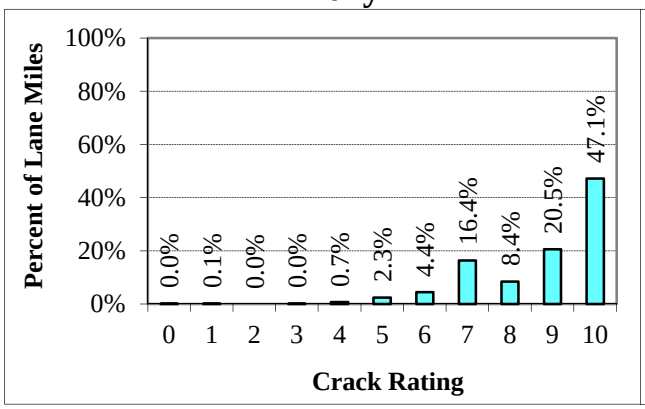
System	District-1	District-2	District-3	District-4	District-5	District-6	District-7	Statewide
Primary	4,901	5,938	5,272	4,113	5,150	2,150	2,867	30,392
Interstate	949	1,628	975	1,123	1,211	61	380	6,326
Turnpike	119	0	0	763	708	199	114	1,904
Toll	0	0	33	0	490	155	85	763
Total	5,969	7,566	6,281	5,999	7,559	2,566	3,445	39,384

Crack Rating

System	District-1	District-2	District-3	District-4	District-5	District-6	District-7	Statewide
Primary	8.8	8.4	8.4	9.0	8.7	8.6	8.7	8.6
Interstate	9.3	9.3	8.5	9.1	8.1	10.0	9.0	8.9
Turnpike	9.3			9.4	9.2	9.0	10.0	9.3
Toll			9.5		9.1	9.7	8.5	9.1
Average	8.9	8.6	8.4	9.0	8.7	8.7	8.8	8.7

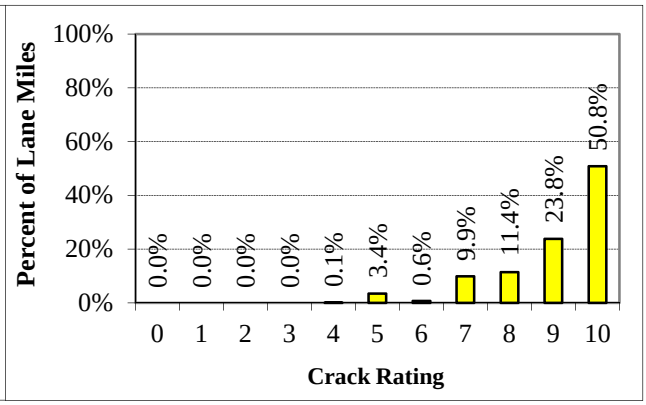
2015 Crack Distribution by System - Statewide

Primary



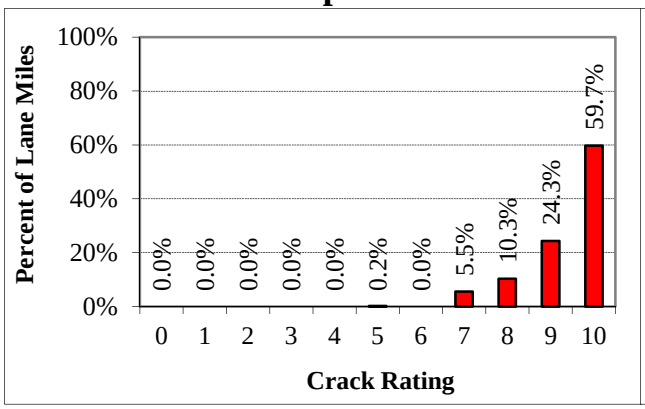
30392 Lane Miles, Mean = 8.6

Interstate



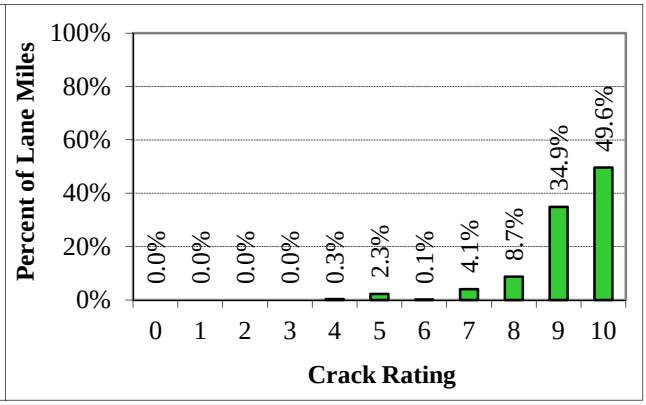
6326 Lane Miles, Mean = 8.9

Turnpike



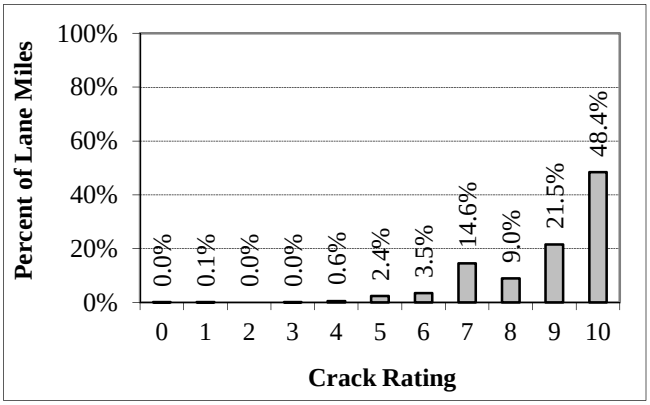
1904 Lane Miles, Mean = 9.3

Toll



763 Lane Miles, Mean = 9.1

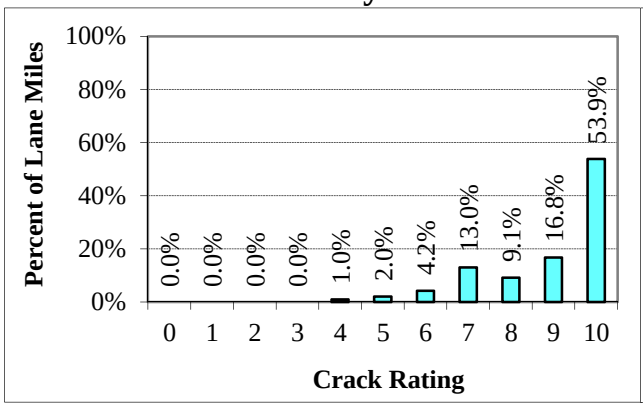
Statewide



39384 Lane Miles, Mean = 8.7

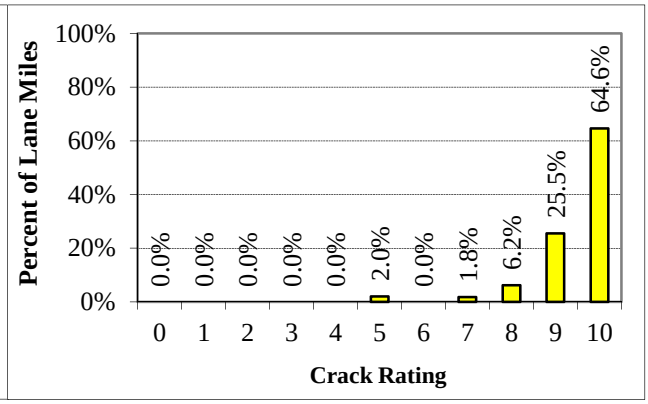
2015 Crack Distribution by System - District 1

Primary



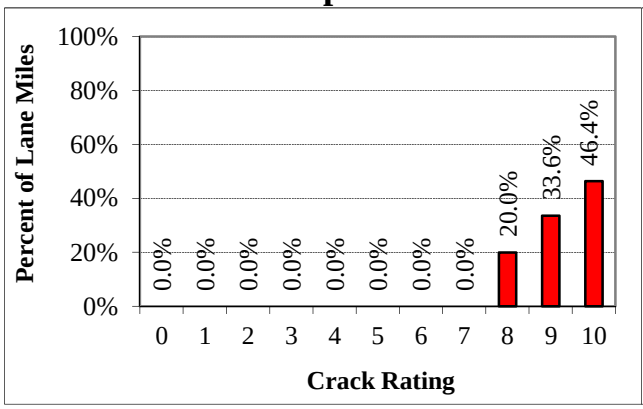
4901 Lane Miles, Mean = 8.8

Interstate



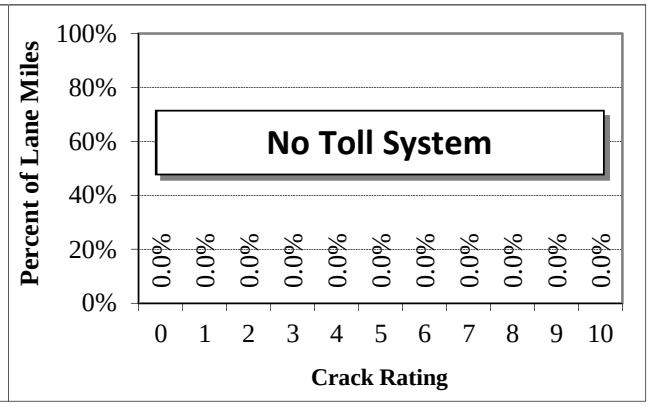
949 Lane Miles, Mean = 9.3

Turnpike



119 Lane Miles, Mean = 9.3

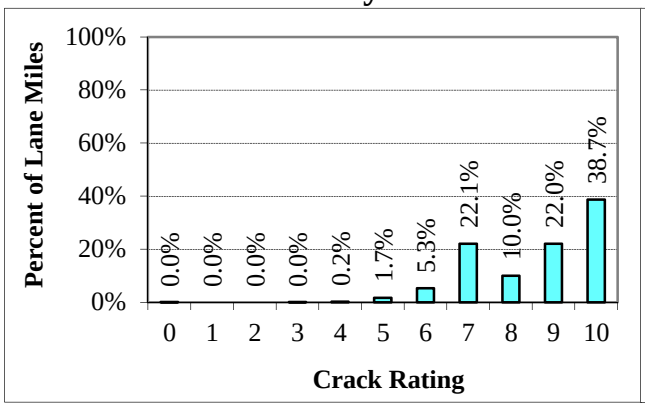
Toll



0 Lane Miles, Mean = N/A

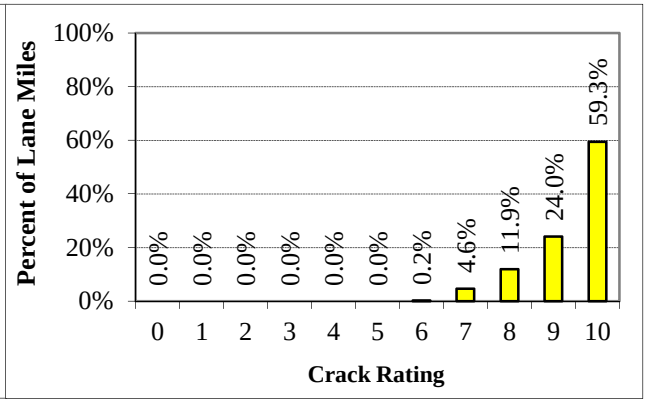
2015 Crack Distribution by System - District 2

Primary



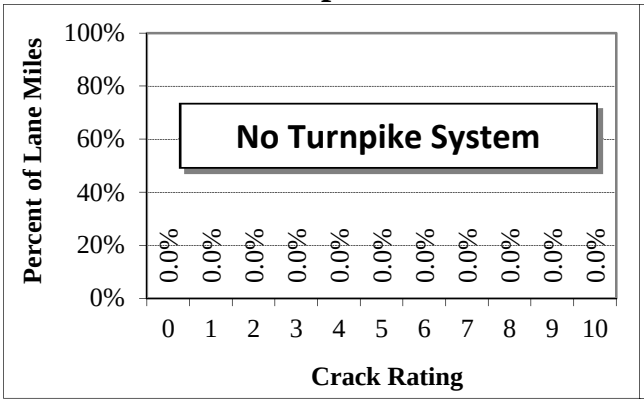
5938 Lane Miles, Mean = 8.4

Interstate



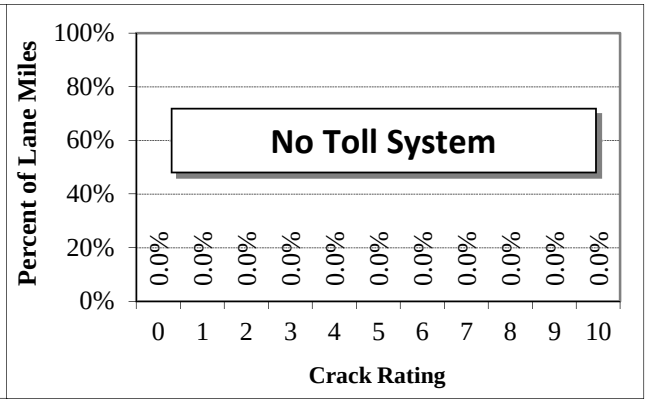
1628 Lane Miles, Mean = 9.3

Turnpike



0 Lane Miles, Mean = N/A

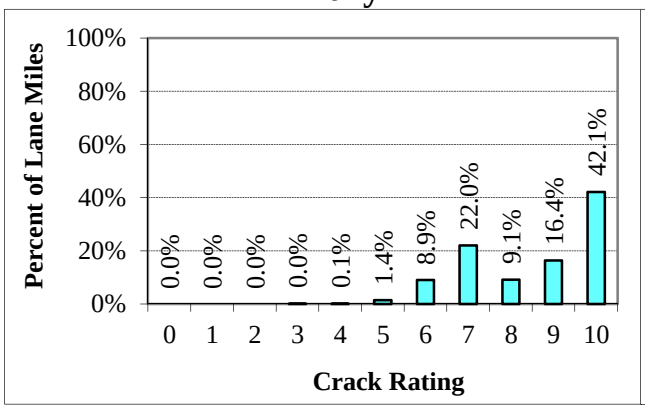
Toll



0 Lane Miles, Mean = N/A

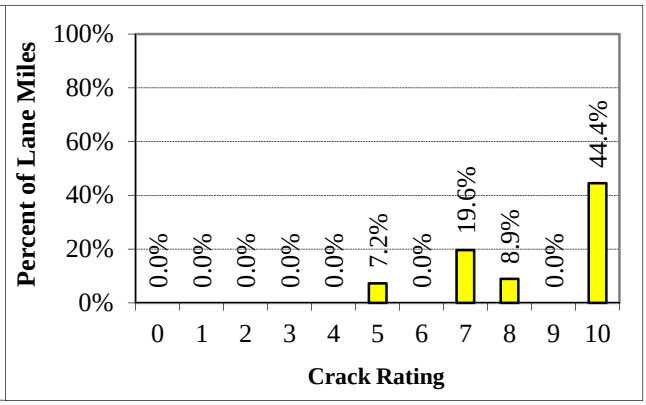
2015 Crack Distribution by System - District 3

Primary



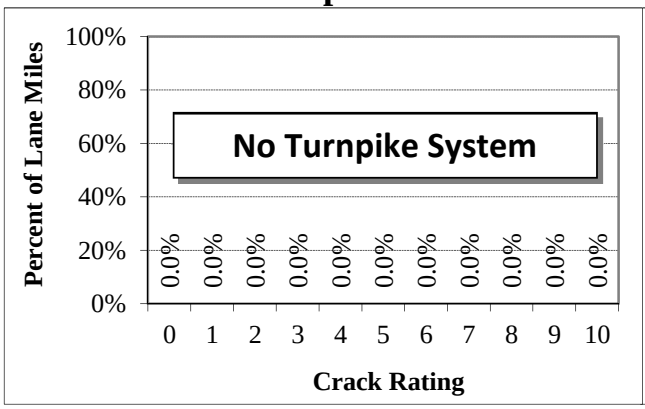
5272 Lane Miles, Mean = 8.4

Interstate



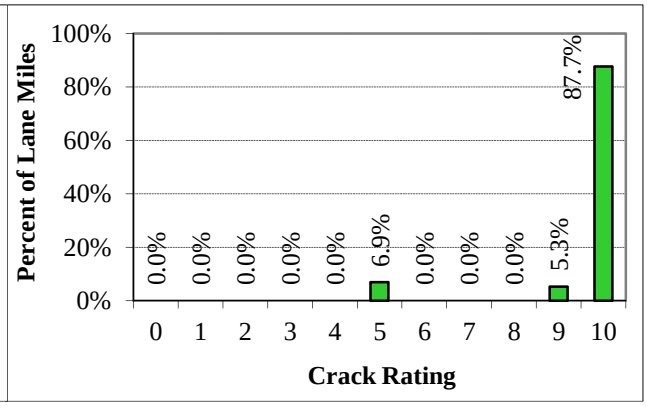
975 Lane Miles, Mean = 8.5

Turnpike



0 Lane Miles, Mean = N/A

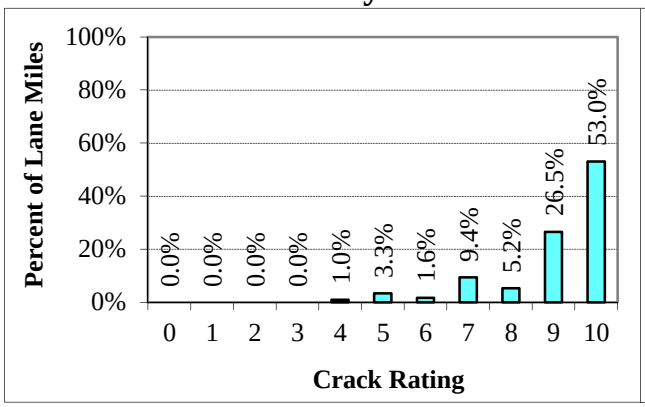
Toll



33 Lane Miles, Mean = 9.5

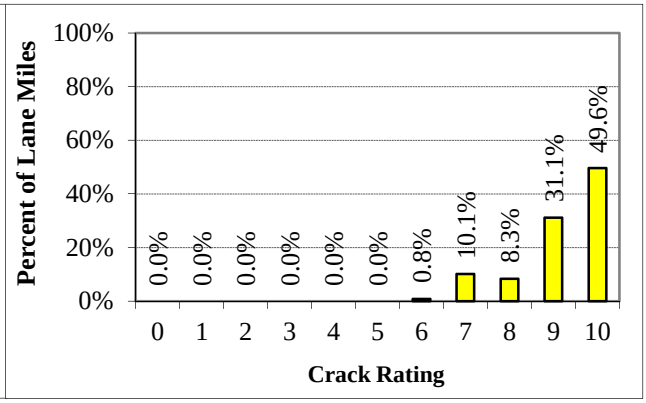
2015 Crack Distribution by System - District 4

Primary



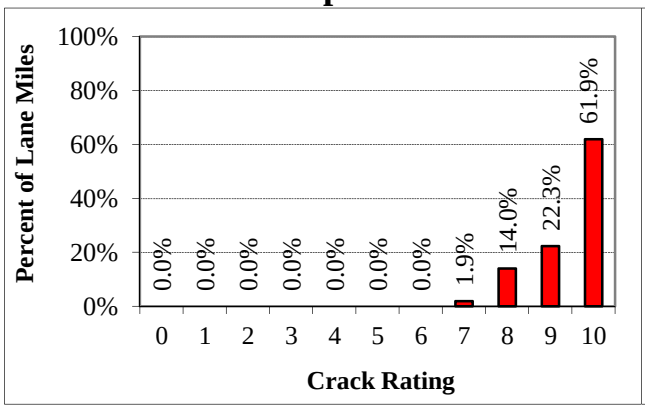
4113 Lane Miles, Mean = 8.9

Interstate



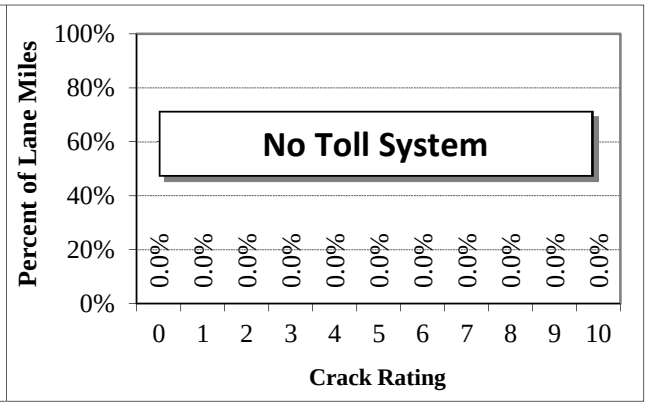
1123 Lane Miles, Mean = 9.1

Turnpike



763 Lane Miles, Mean = 9.4

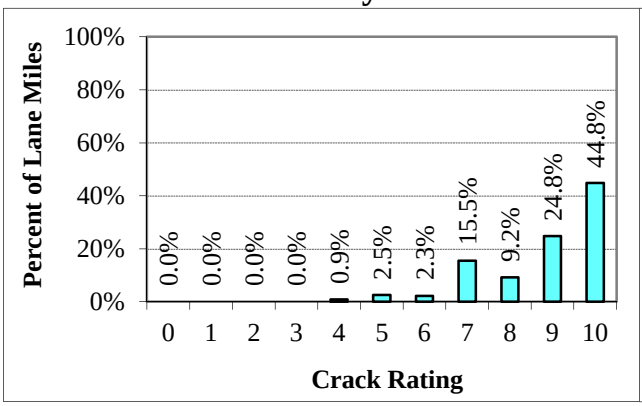
Toll



0 Lane Miles, Mean = N/A

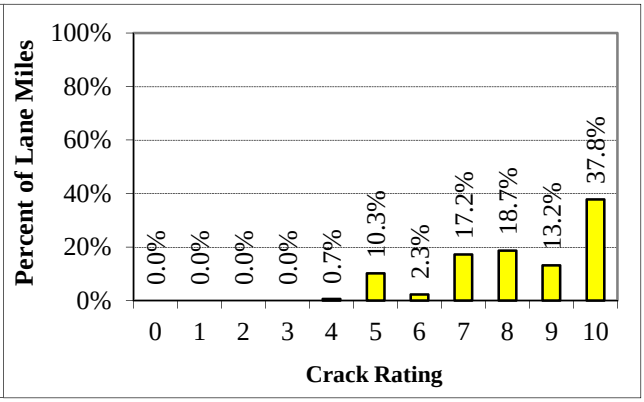
2015 Crack Distribution by System - District 5

Primary



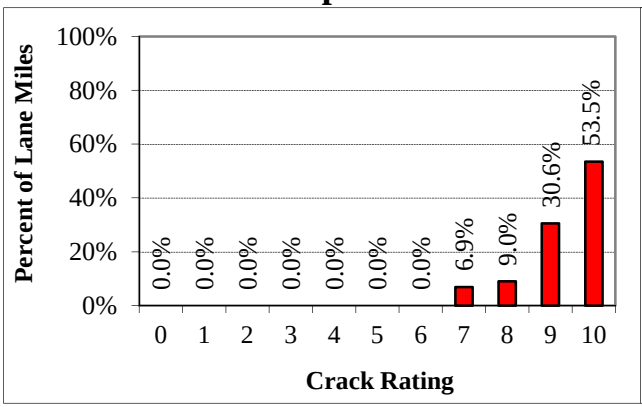
5150 Lane Miles, Mean = 8.7

Interstate



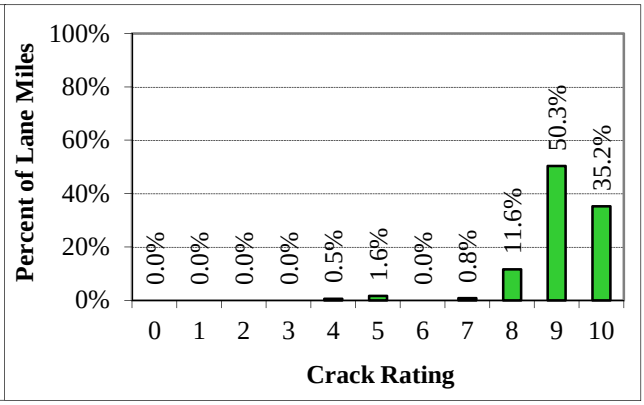
1211 Lane Miles, Mean = 8.1

Turnpike



708 Lane Miles, Mean = 9.2

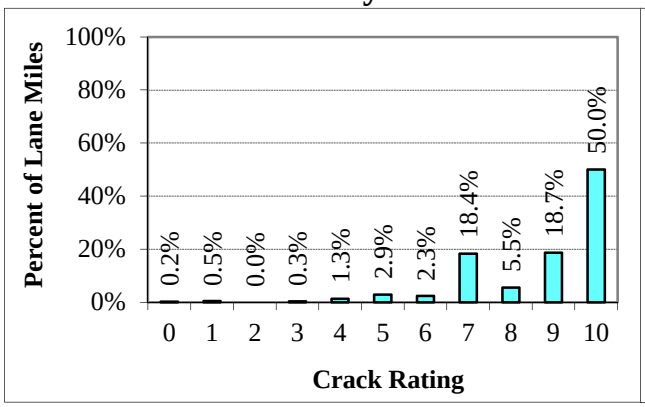
Toll



490 Lane Miles, Mean = 9.1

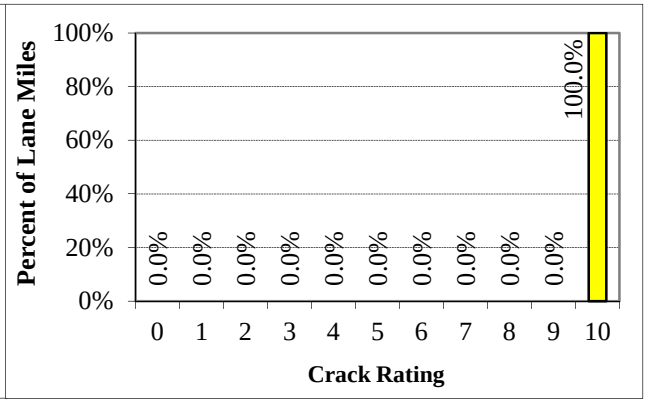
2015 Crack Distribution by System - District 6

Primary



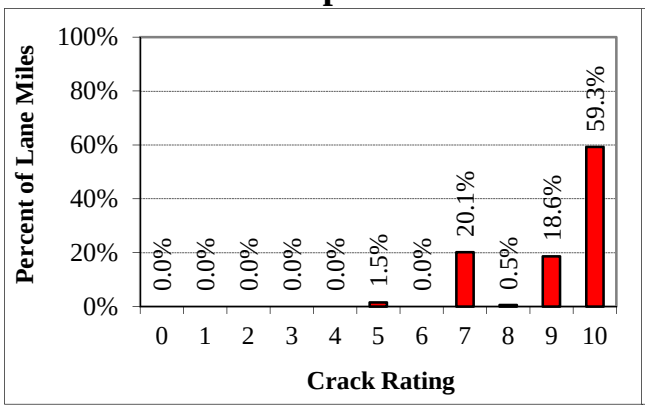
2150 Lane Miles, Mean = 8.6

Interstate



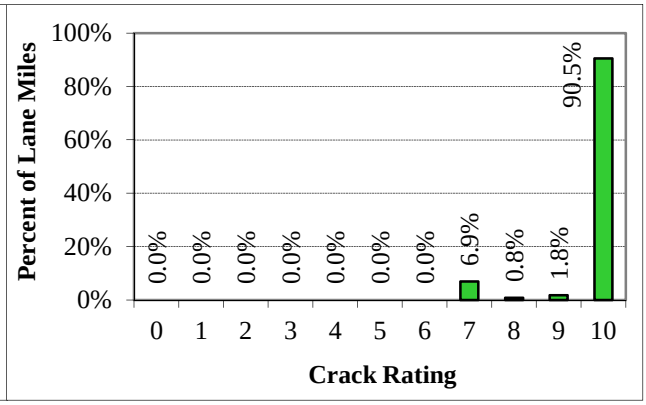
61 Lane Miles, Mean = 10.0

Turnpike



199 Lane Miles, Mean = 9.0

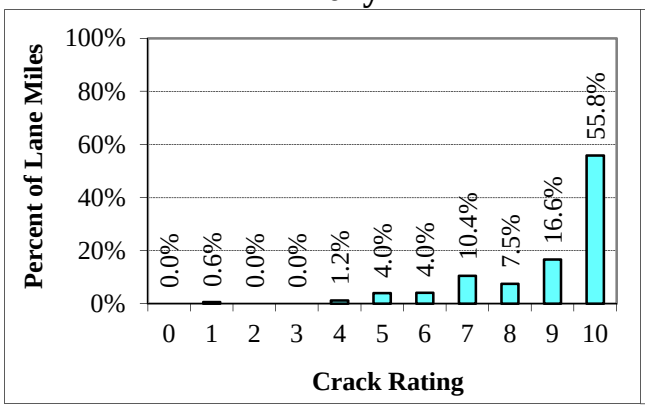
Toll



155 Lane Miles, Mean = 9.7

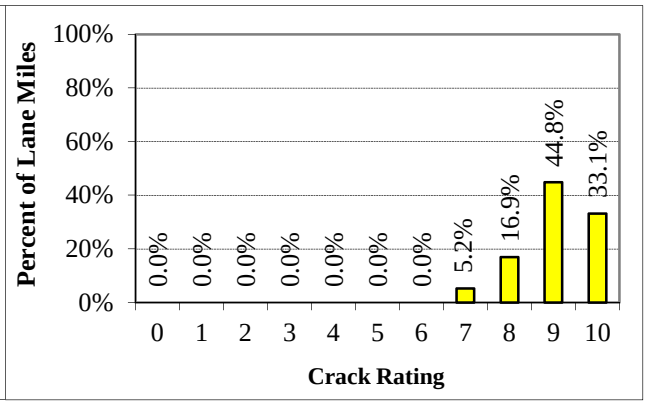
2015 Crack Distribution by System - District 7

Primary



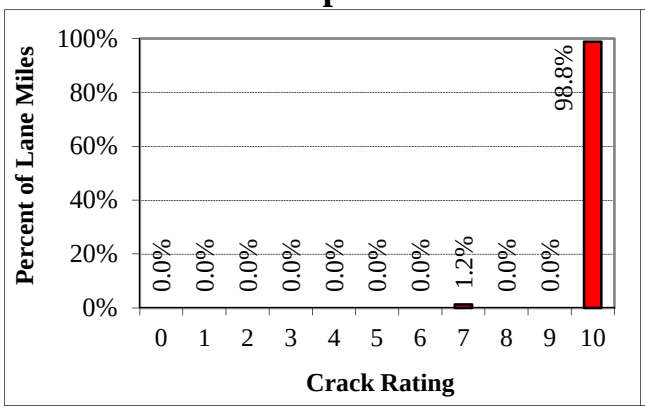
2867 Lane Miles, Mean = 8.7

Interstate



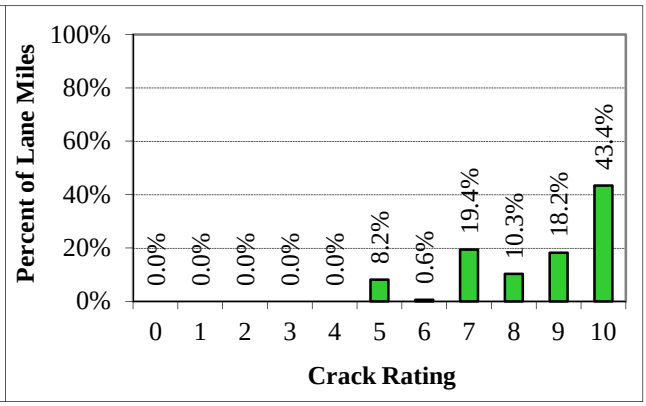
380 Lane Miles, Mean = 9.0

Turnpike



114 Lane Miles, Mean = 10.0

Toll



85 Lane Miles, Mean = 8.5

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Section III
Rut Rating
By
System and District

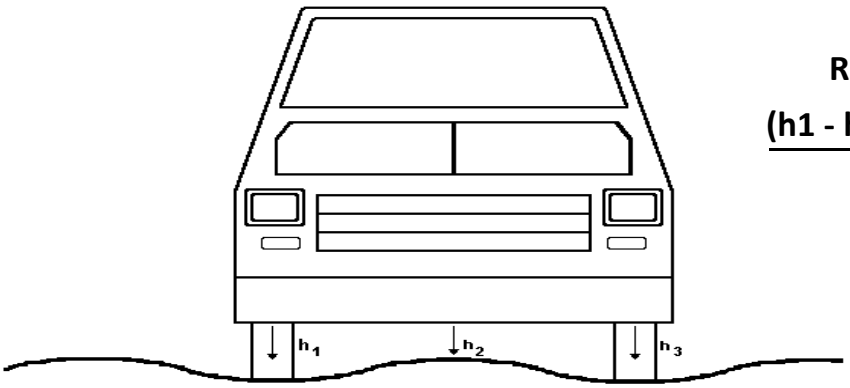
Section III

Rut Rating by System and District

Rut Rating Criteria

1. A rut is a continuous longitudinal depression deviating from a surface plane defined by transverse cross slope and longitudinal profile. This depression normally occurs in the wheel paths.
2. A rut depth is defined as the difference in elevation between the center of the wheel path and the center of the travel lane.
3. Rut depth is measured simultaneously with the ride values using an inertial profiler.
4. FDOT inertial profilers measure rut depth at a frequency of 30 readings per in. when traveling at 60 mph. The measurements are then stored in 6 in. intervals for the survey.
5. The average rut depth for both wheel paths is recorded and then converted to a rating with a one point deduction for every eighth (1/8) in. rut depth.
6. Rut depth is rated on a 0 to 10 scale, where a 10 represents a pavement with no rutting, while a rating of 6 indicates 1/2 in. of rutting. Currently, pavement sections with rut ratings of 6 or less are eligible for rehabilitation.

   Rut depth for each measurement is calculated using the following equation:



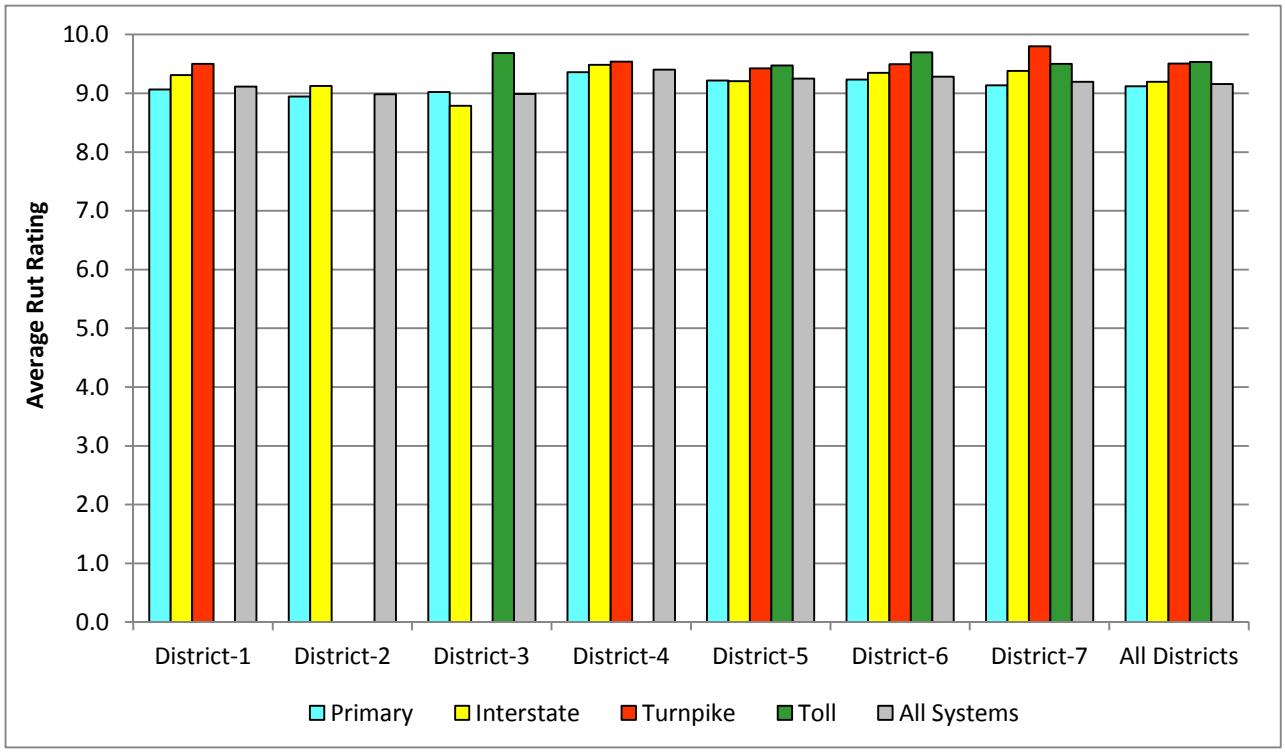
FRONT VIEW

$$\text{Rut Depth} = \frac{(h1 - h2) + (h3 - h2)}{2}$$

Where: h1, h2, and h3, are the respective distances between the sensor locations and the roadway surface directly below each sensor (see diagram below).

FDOT inertial profilers have three laser sensors (to measure ride and rut), combined with two accelerometers and a data acquisition computer system that measures and stores a pavement's longitudinal and transverse profiles while in motion.

2015 Rut Rating by System and District



Lane Miles

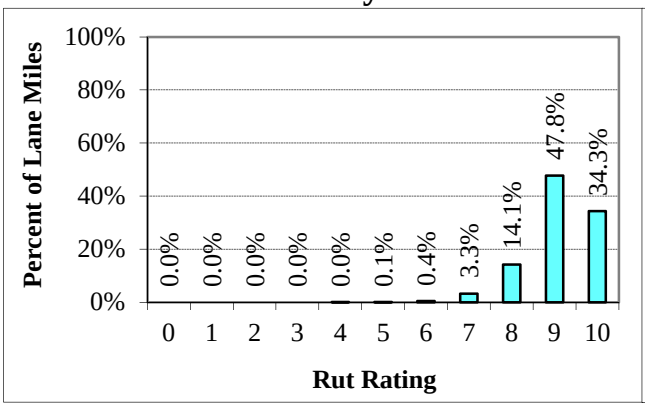
System	District-1	District-2	District-3	District-4	District-5	District-6	District-7	Statewide
Primary	4,901	5,938	5,272	4,113	5,150	2,150	2,867	30,392
Interstate	949	1,628	975	1,123	1,211	61	380	6,326
Turnpike	119	0	0	763	708	199	114	1,904
Toll	0	0	33	0	490	155	85	763
Total	5,969	7,566	6,281	5,999	7,559	2,566	3,445	39,384

Rut Rating

System	District-1	District-2	District-3	District-4	District-5	District-6	District-7	Statewide
Primary	9.1	9.0	9.0	9.4	9.2	9.2	9.1	9.1
Interstate	9.3	9.1	8.8	9.5	9.2	9.4	9.4	9.2
Turnpike	9.5			9.5	9.4	9.5	9.8	9.5
Toll			9.7		9.5	9.7	9.5	9.5
Average	9.1	9.0	9.0	9.4	9.3	9.3	9.2	9.2

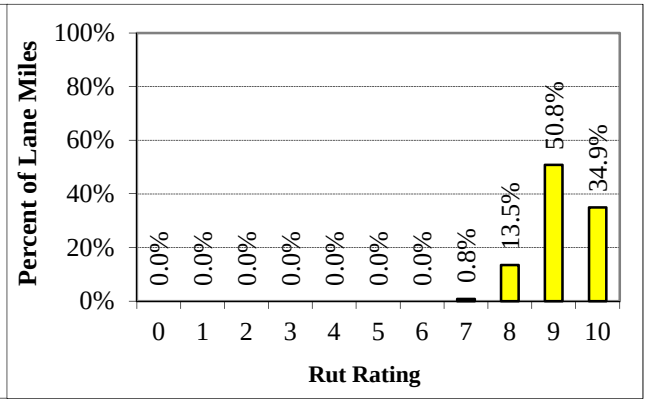
2015 Rut Distribution by System - Statewide

Primary



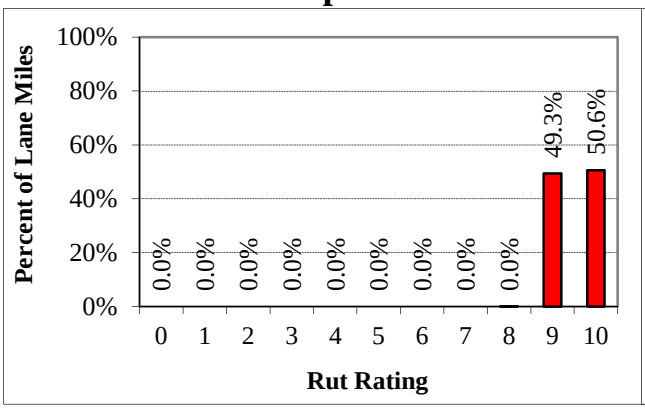
30392 Lane Miles, Mean = 9.1

Interstate



6326 Lane Miles, Mean = 9.2

Turnpike

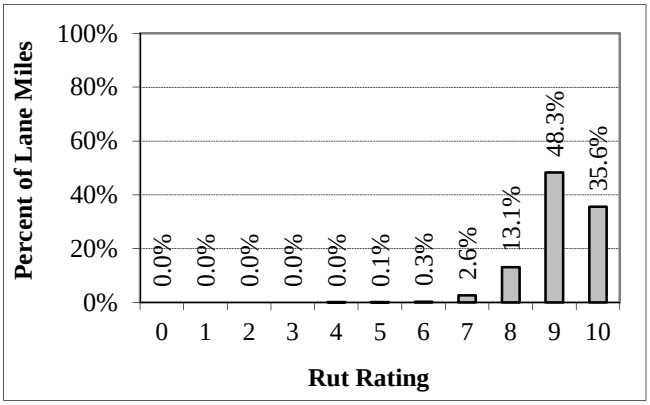


1904 Lane Miles, Mean = 9.5

Toll

763 Lane Miles, Mean = 9.5

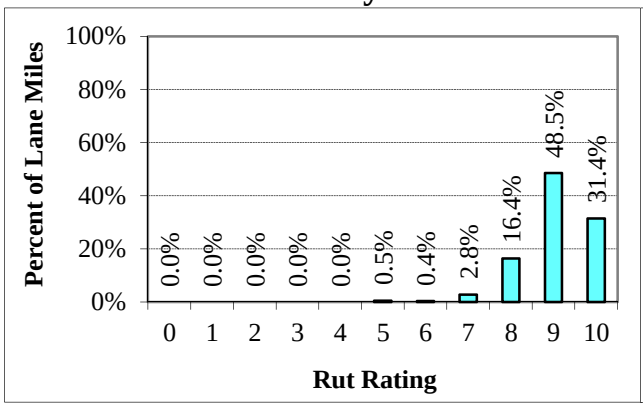
Statewide



39384 Lane Miles, Mean = 9.2

2015 Rut Distribution by System - District 1

Primary

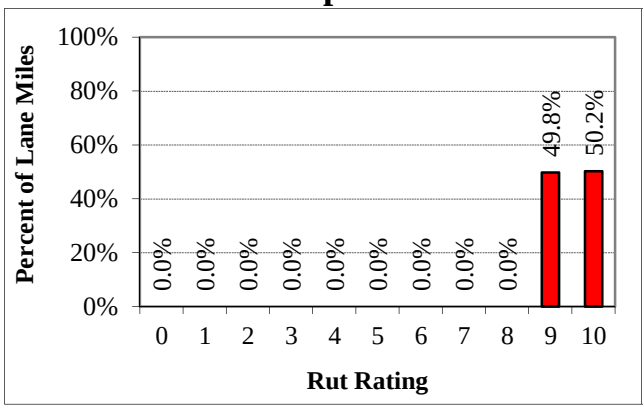


4901 Lane Miles, Mean = 9.1

Interstate

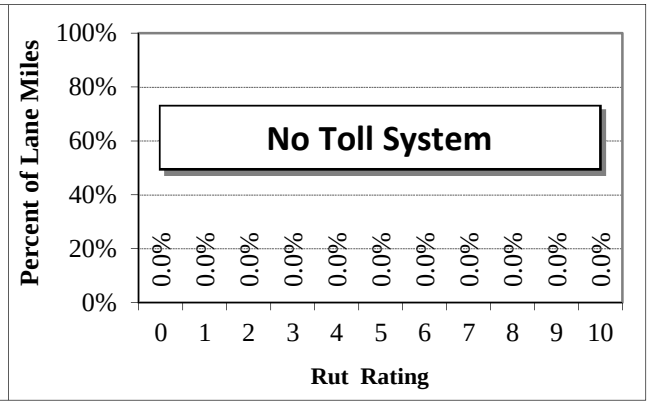
949 Lane Miles, Mean = 9.3

Turnpike



119 Lane Miles, Mean = 9.5

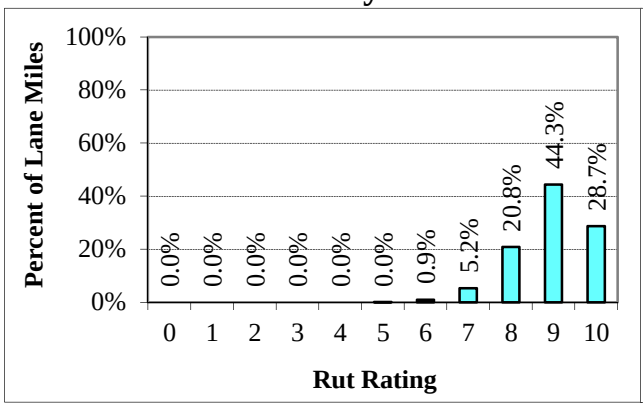
Toll



0 Lane Miles, Mean = N/A

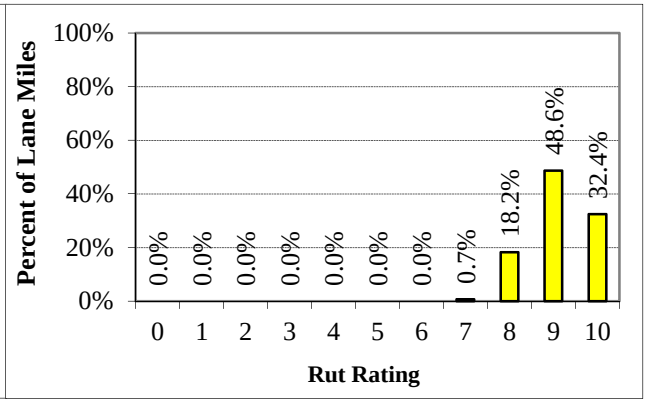
2015 Rut Distribution by System - District 2

Primary



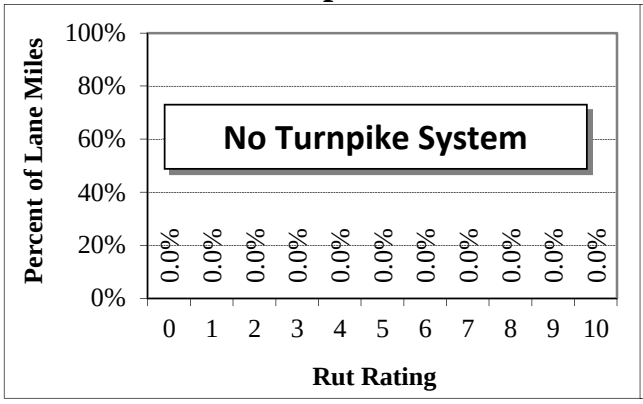
5938 Lane Miles, Mean = 8.9

Interstate



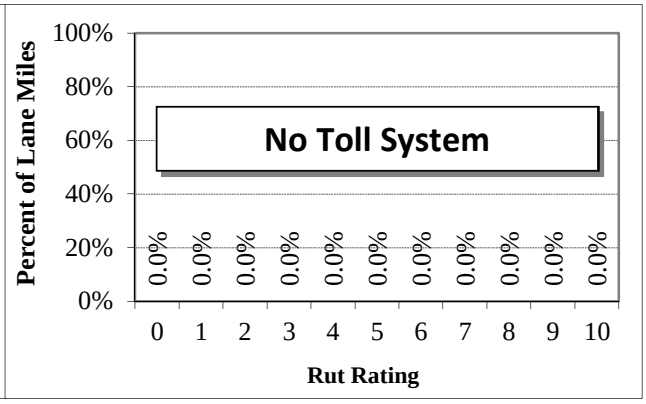
1628 Lane Miles, Mean = 9.1

Turnpike



0 Lane Miles, Mean = N/A

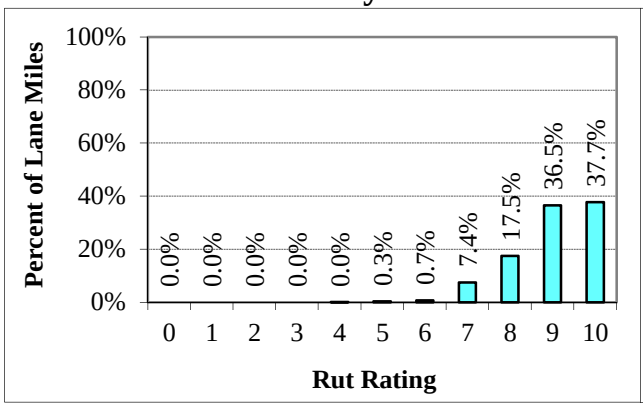
Toll



0 Lane Miles, Mean = N/A

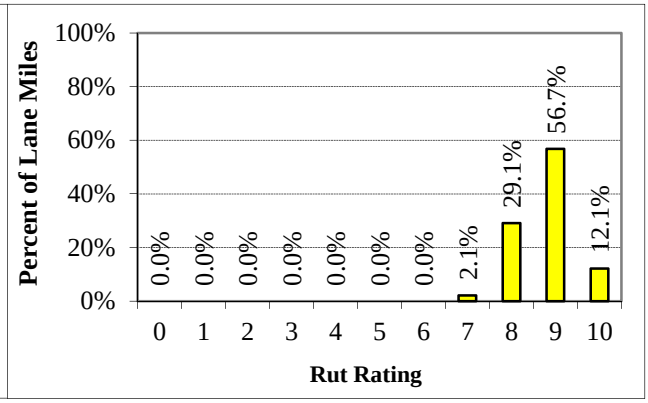
2015 Rut Distribution by System - District 3

Primary



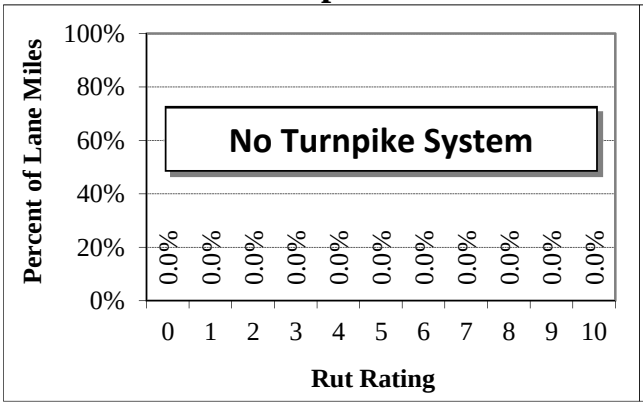
5272 Lane Miles, Mean = 9.0

Interstate



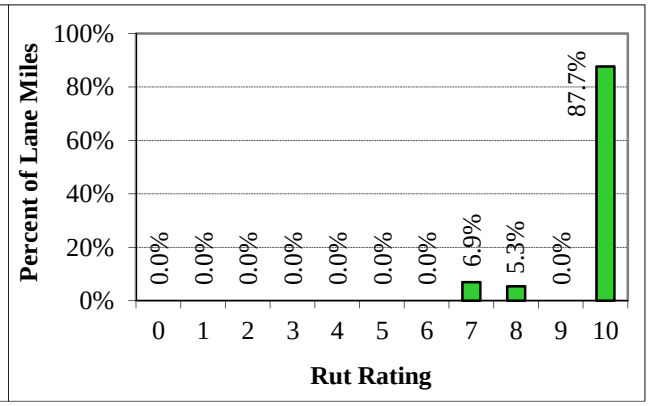
975 Lane Miles, Mean = 8.8

Turnpike



0 Lane Miles, Mean = N/A

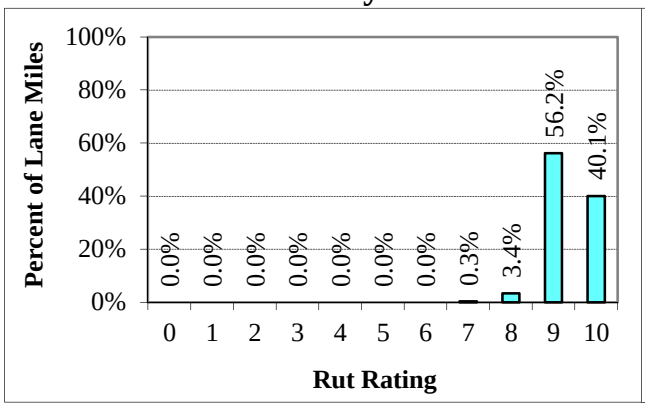
Toll



33 Lane Miles, Mean = 9.7

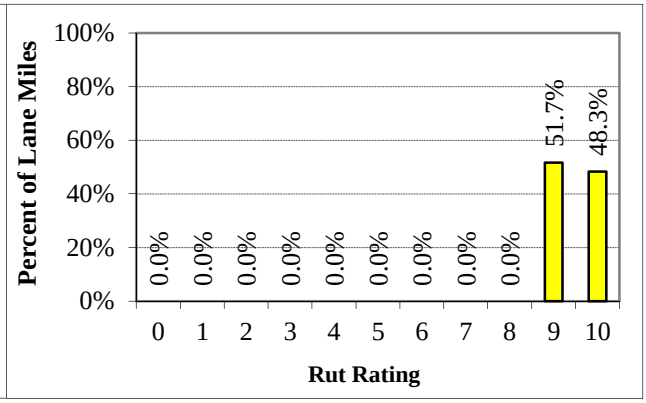
2015 Rut Distribution by System - District 4

Primary



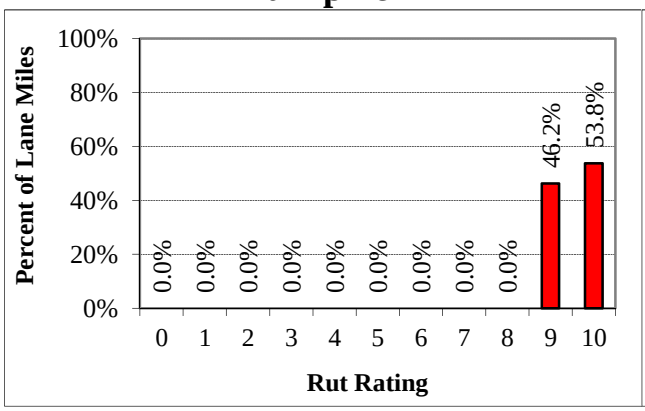
4113 Lane Miles, Mean = 9.4

Interstate



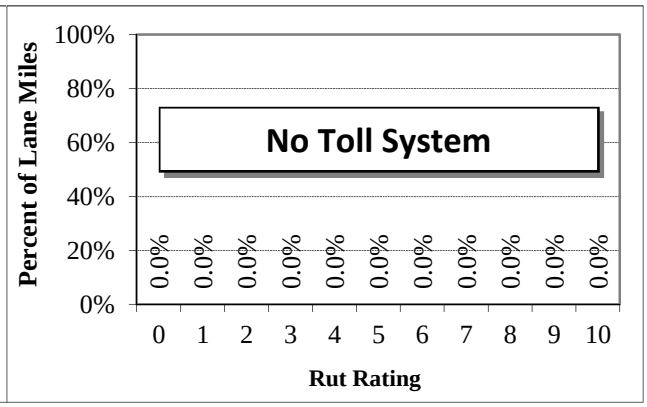
1123 Lane Miles, Mean = 9.5

Turnpike



763 Lane Miles, Mean = 9.5

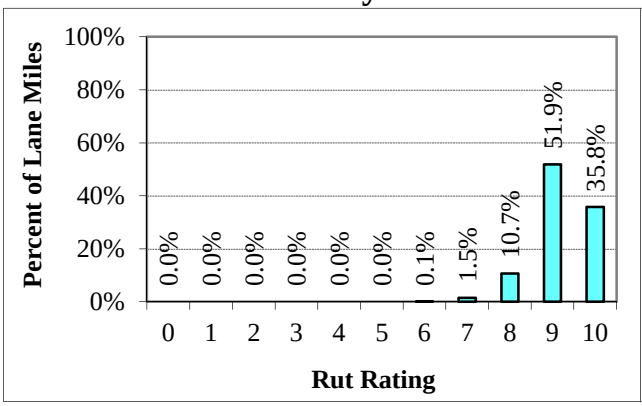
Toll



0 Lane Miles, Mean = N/A

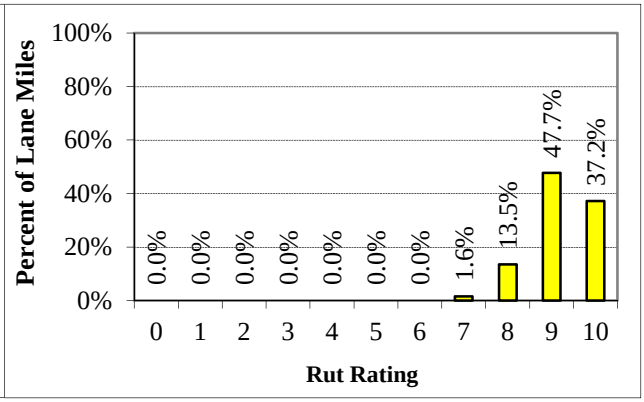
2015 Rut Distribution by System - District 5

Primary



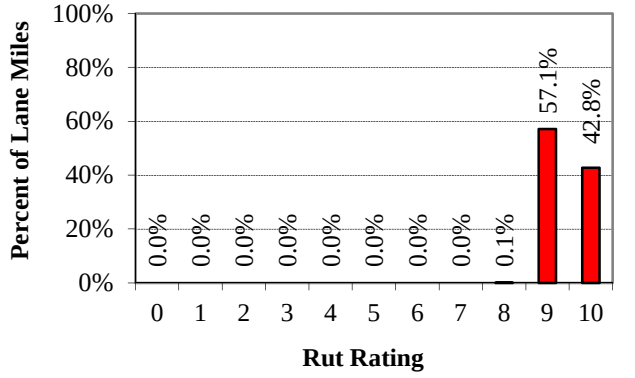
5150 Lane Miles, Mean = 9.2

Interstate



1211 Lane Miles, Mean = 9.2

Turnpike



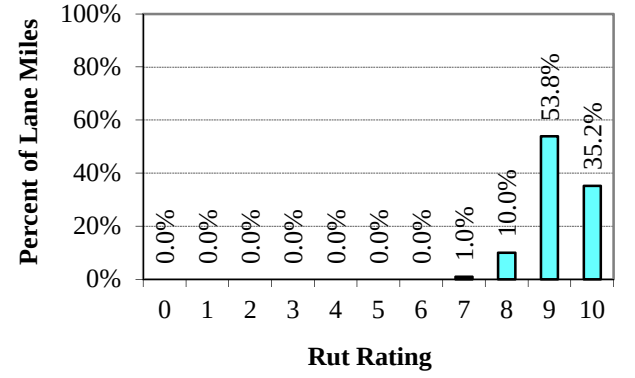
708 Lane Miles, Mean = 9.4

Toll

490 Lane Miles, Mean = 9.5

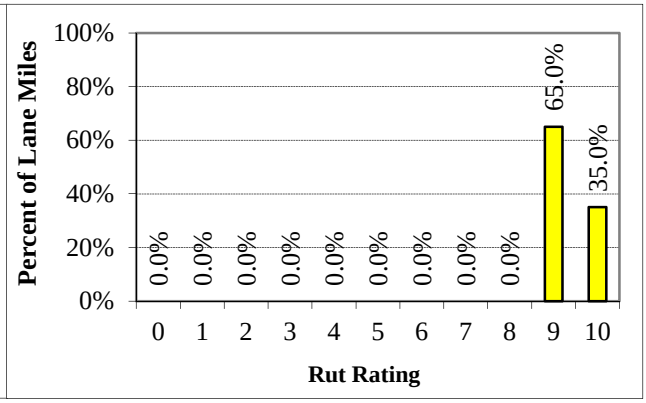
2015 Rut Distribution by System - District 6

Primary



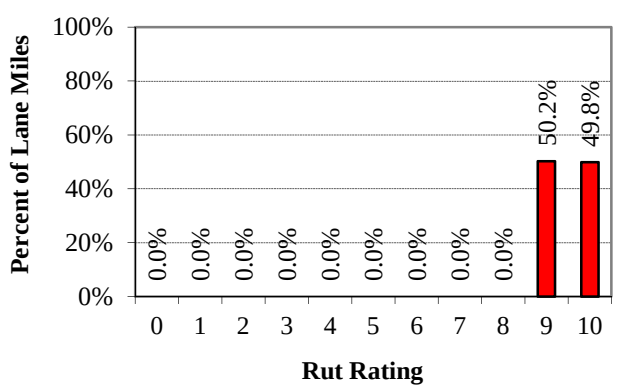
2150 Lane Miles, Mean = 9.2

Interstate



61 Lane Miles, Mean = 9.4

Turnpike



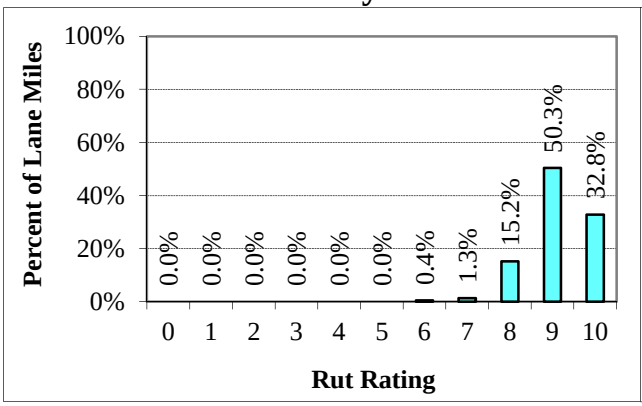
199 Lane Miles, Mean = 9.5

Toll

155 Lane Miles, Mean = 9.7

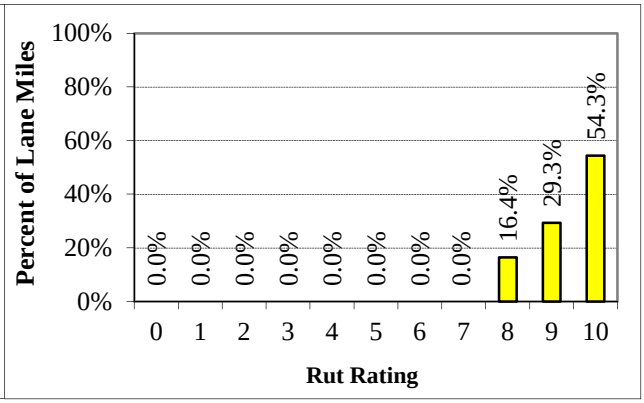
2015 Rut Distribution by System - District 7

Primary



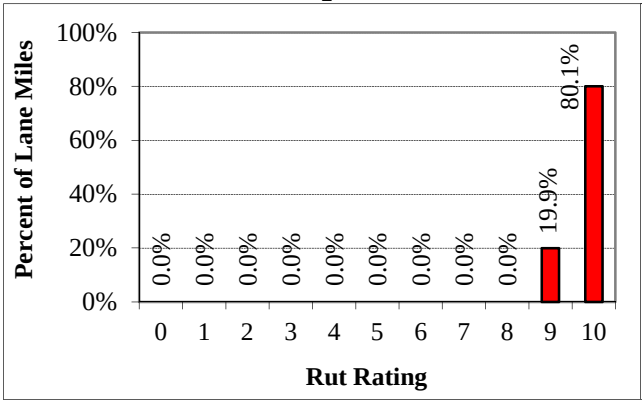
2867 Lane Miles, Mean = 9.1

Interstate



380 Lane Miles, Mean = 9.4

Turnpike



114 Lane Miles, Mean = 9.8

Toll

85 Lane Miles, Mean = 9.5

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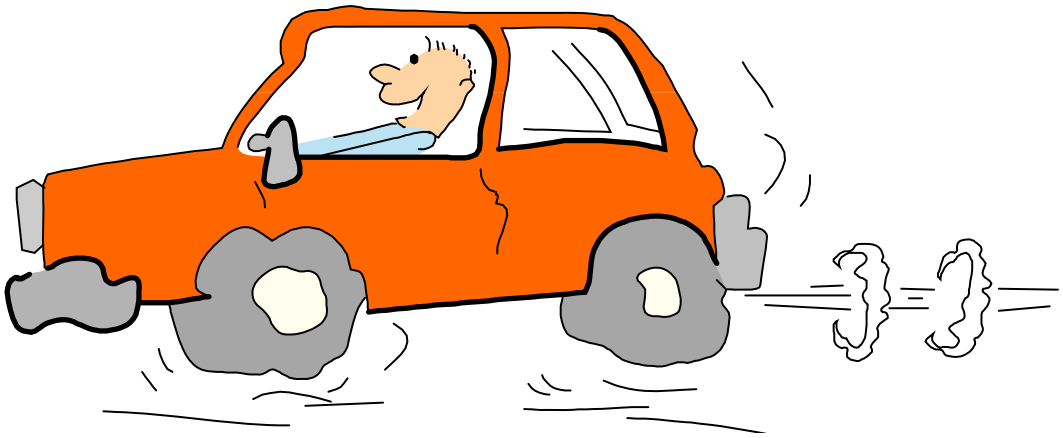
Section IV
Ride Rating
By
System and District



Section IV

Ride Rating by System and District

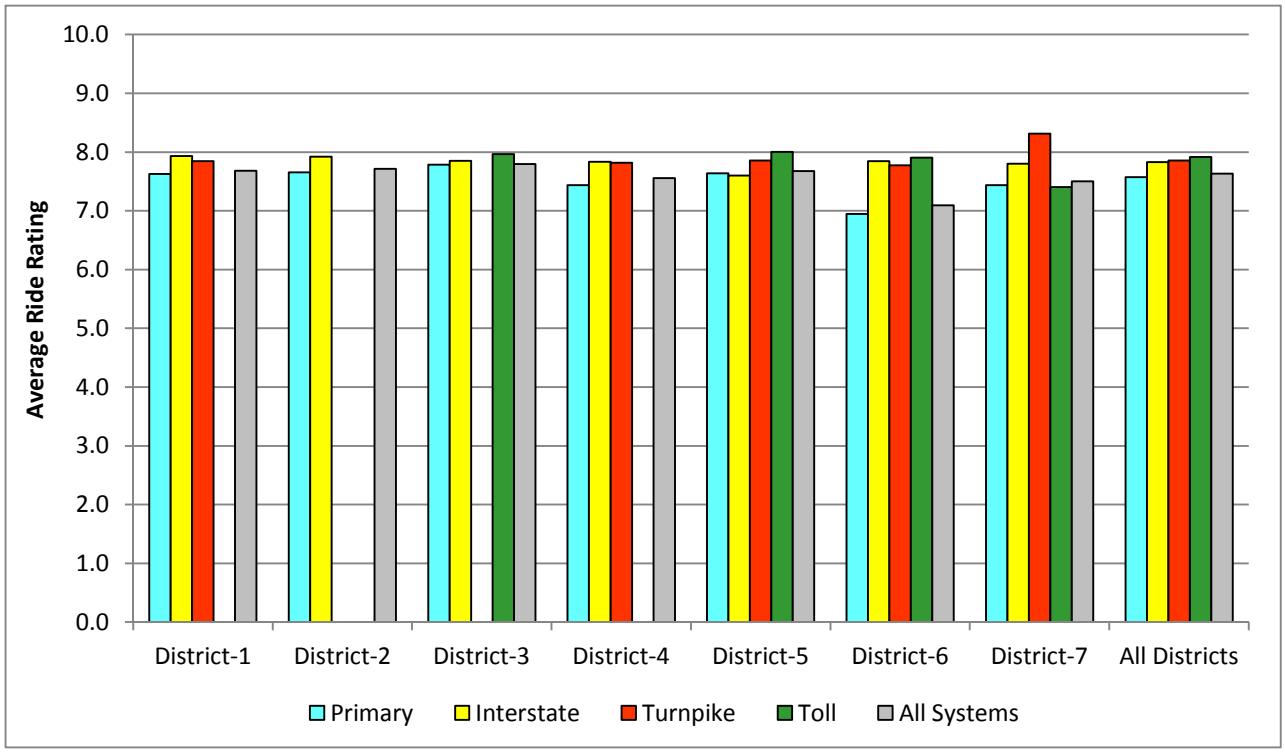
Ride Rating Criteria

1. A Ride Rating represents the ride quality of a pavement section. It is an indication of the degree of smoothness or roughness of the wearing surface.
2. A Ride Rating is calculated from Ride Number (RN). **Ride Rating = RN * 2**

   RN is a mathematical processing of longitudinal profile measurements to produce an estimate of a driver's subjective perception of the ride quality of a roadway. The RN is based on an algorithm published in National Cooperative Highway Research Project (NCHRP) 1-23. RN is defined in ASTM Standard E-1489.
3. The ride quality of a roadway is greatly affected by, but not limited to, factors that include the following:

   - Original pavement profile
   - Profiles of intersecting roads
   - Utility patches and manhole covers
   - Surface and structural deterioration and deformation
4. Ride Rating is rated on a 0 to 10 scale, where 10 represents a pavement that is perfectly smooth, while a rating of 6 or less represents a relatively rough pavement.
5. Note that with the start of the 2004 PCS, the profile data was collected using a sampling rate of 6 in. compared to a 12 in. sample interval used in previous years.

2015 Ride Rating by System and District



Lane Miles

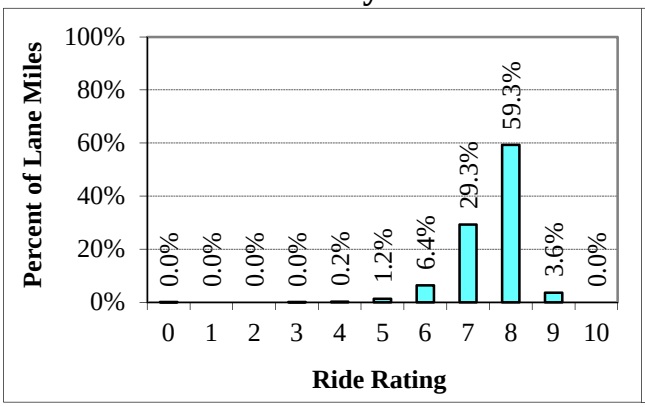
System	District-1	District-2	District-3	District-4	District-5	District-6	District-7	Statewide
Primary	4,891	5,923	5,256	4,097	5,133	2,134	2,843	30,279
Interstate	949	1,628	975	1,123	1,211	61	380	6,326
Turnpike	119	0	0	763	708	199	114	1,904
Toll	0	0	33	0	490	154	85	762
Total	5,959	7,552	6,264	5,983	7,542	2,548	3,422	39,270

Ride Rating

System	District-1	District-2	District-3	District-4	District-5	District-6	District-7	Statewide
Primary	7.6	7.7	7.8	7.4	7.6	7.0	7.4	7.6
Interstate	7.9	7.9	7.9	7.8	7.6	7.9	7.8	7.8
Turnpike	7.8			7.8	7.9	7.8	8.3	7.9
Toll			8.0		8.0	7.9	7.4	7.9
Average	7.7	7.7	7.8	7.6	7.7	7.1	7.5	7.6

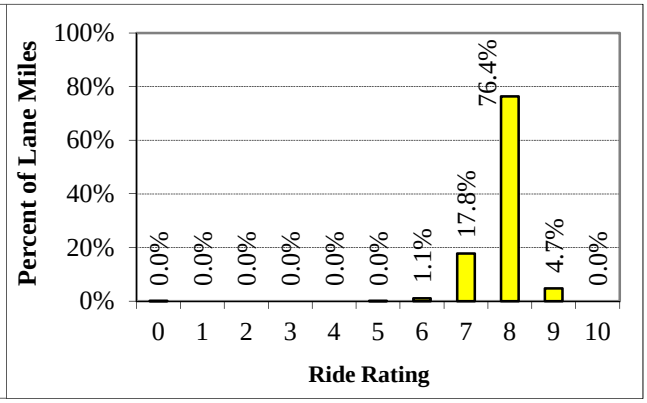
2015 Ride Distribution by System - Statewide

Primary



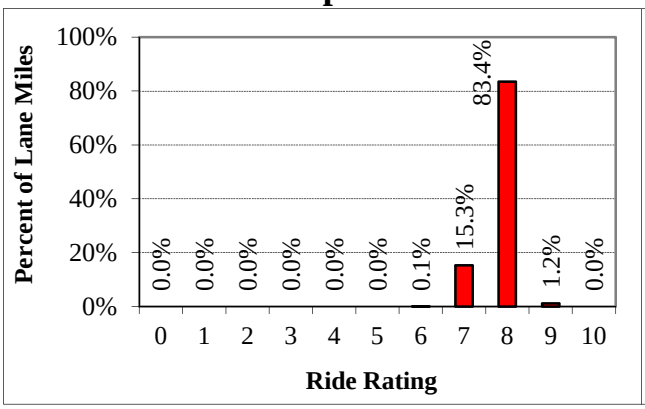
30279 Lane Miles, Mean = 7.6

Interstate



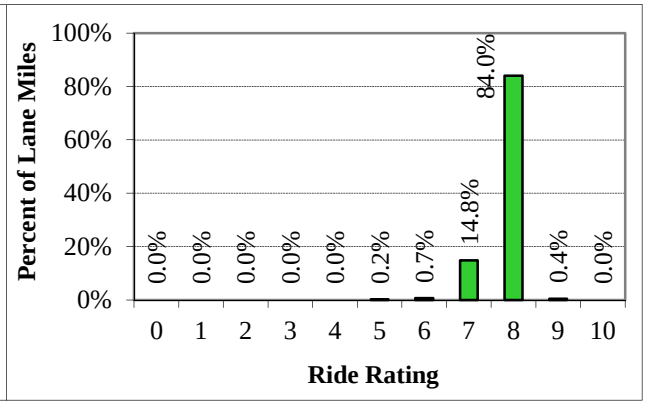
6326 Lane Miles, Mean = 7.8

Turnpike



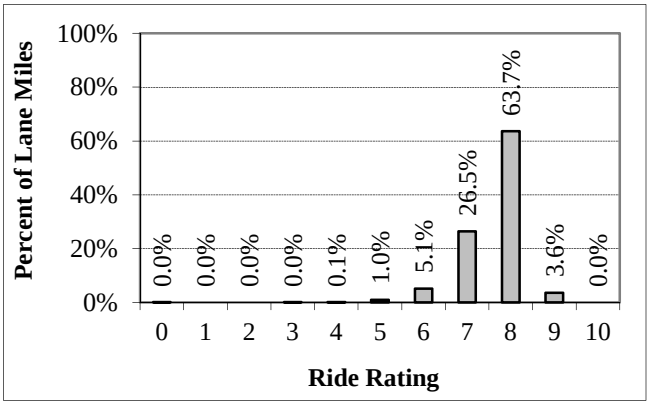
1904 Lane Miles, Mean = 7.9

Toll



762 Lane Miles, Mean = 7.9

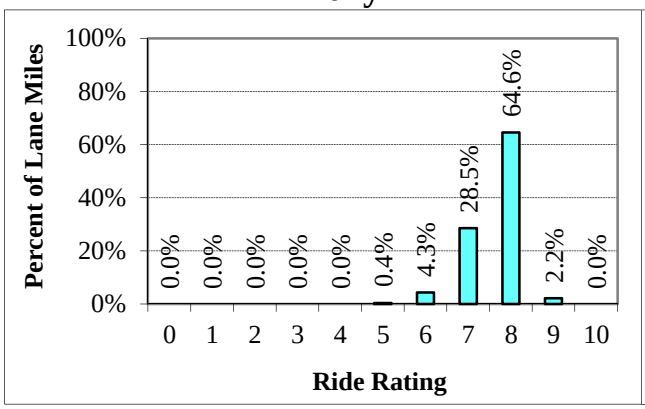
Statewide



39270 Lane Miles, Mean = 7.6

2015 Ride Distribution by System - District 1

Primary

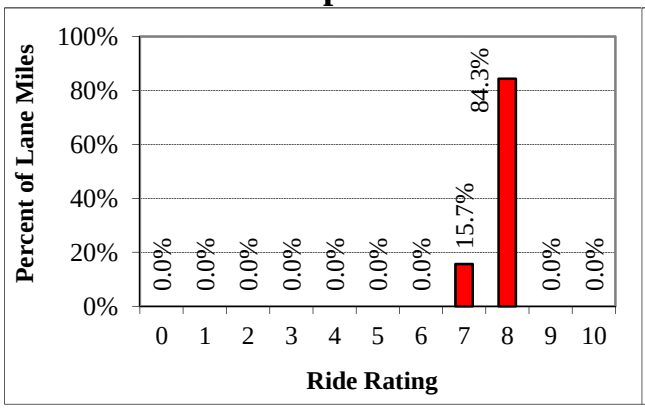


4891 Lane Miles, Mean = 7.6

Interstate

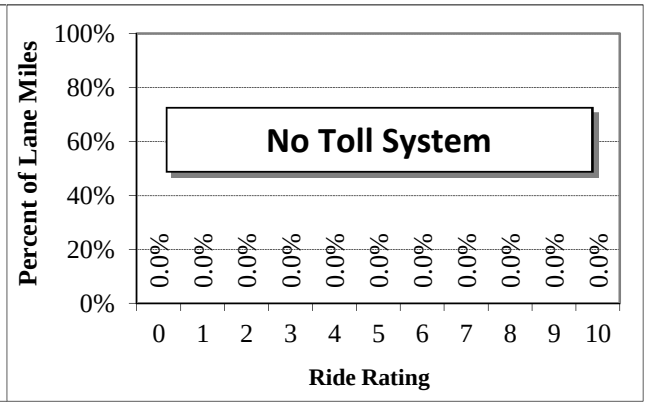
949 Lane Miles, Mean = 7.9

Turnpike



119 Lane Miles, Mean = 7.8

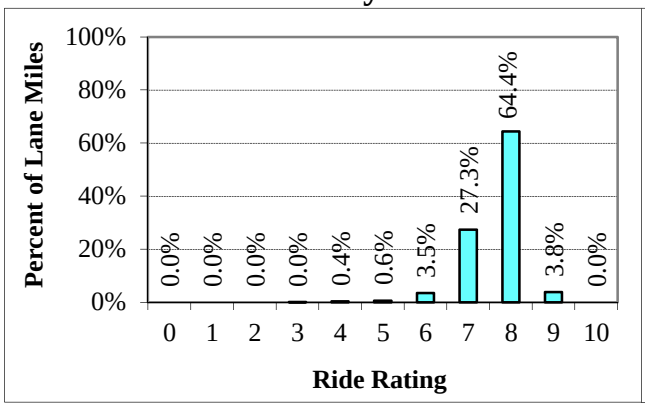
Toll



0 Lane Miles, Mean = N/A

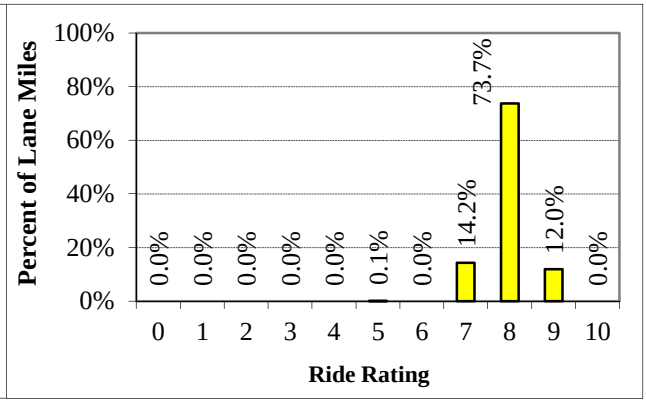
2015 Ride Distribution by System - District 2

Primary



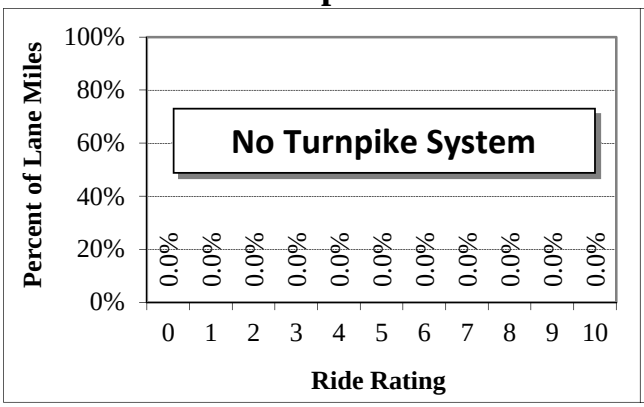
5923 Lane Miles, Mean = 7.7

Interstate



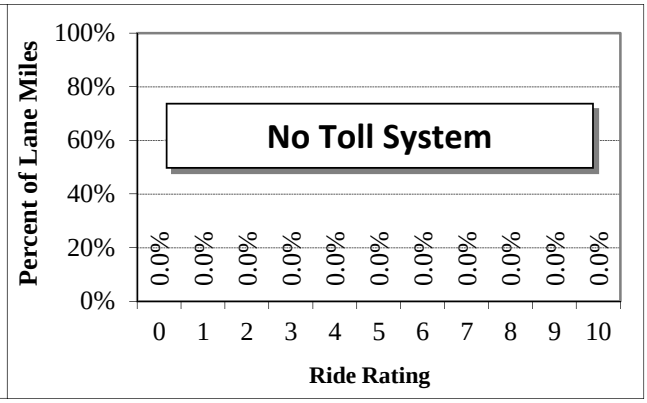
1628 Lane Miles, Mean = 7.9

Turnpike



0 Lane Miles, Mean = N/A

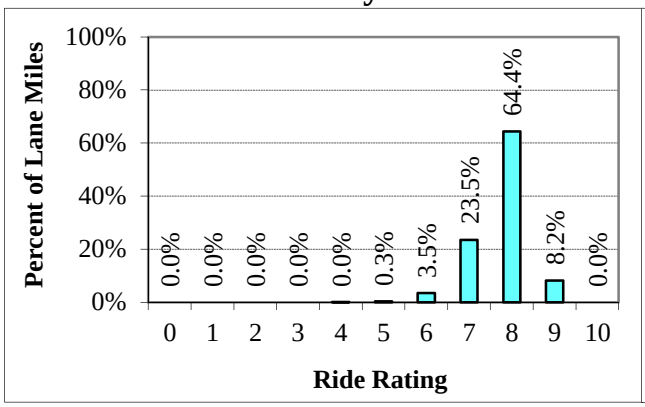
Toll



0 Lane Miles, Mean = N/A

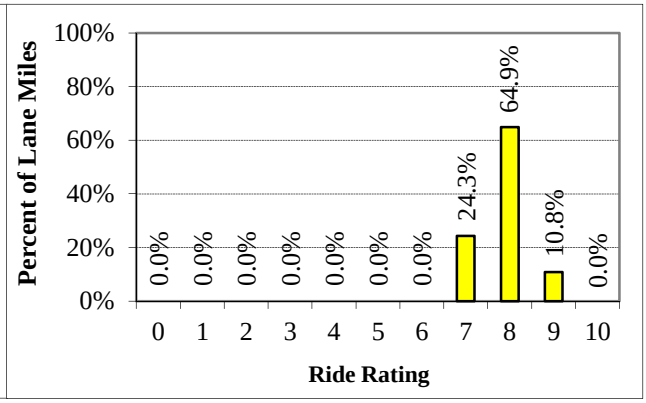
2015 Ride Distribution by System - District 3

Primary



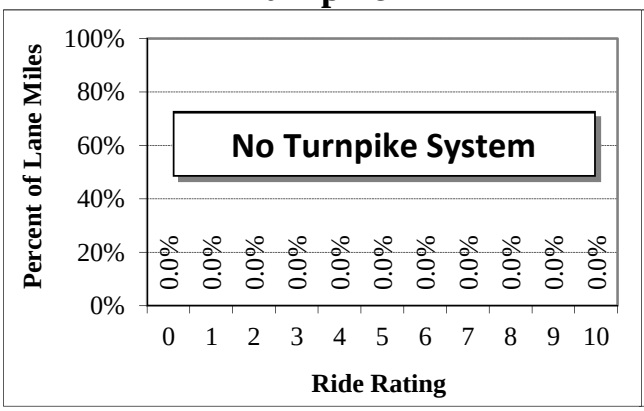
5256 Lane Miles, Mean = 7.8

Interstate



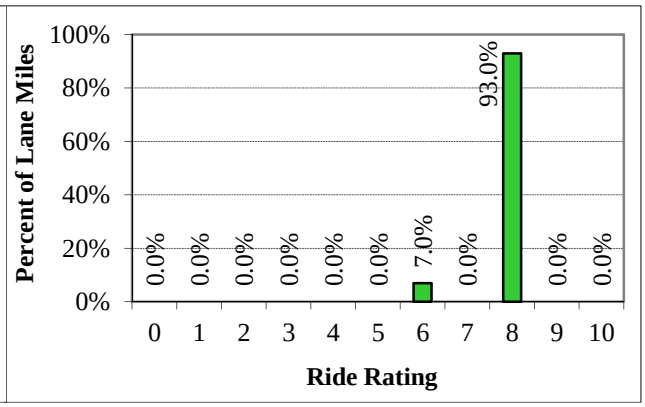
975 Lane Miles, Mean = 7.9

Turnpike



0 Lane Miles, Mean = N/A

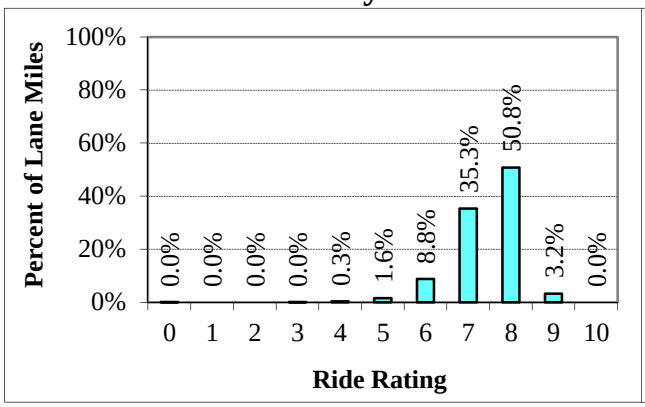
Toll



33 Lane Miles, Mean = 8.0

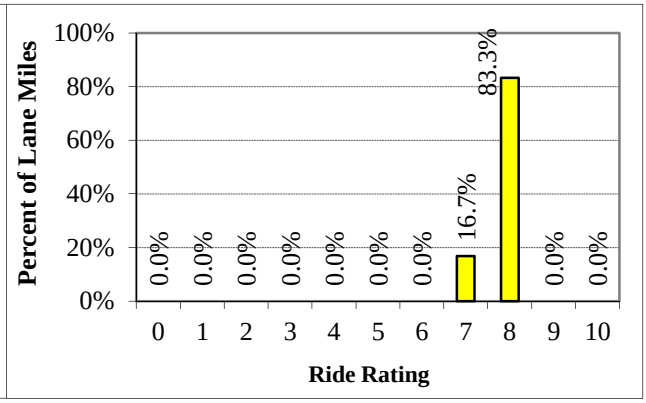
2015 Ride Distribution by System - District 4

Primary



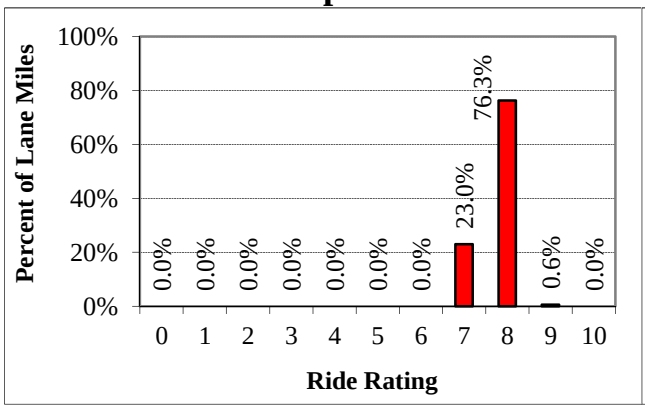
4097 Lane Miles, Mean = 7.4

Interstate



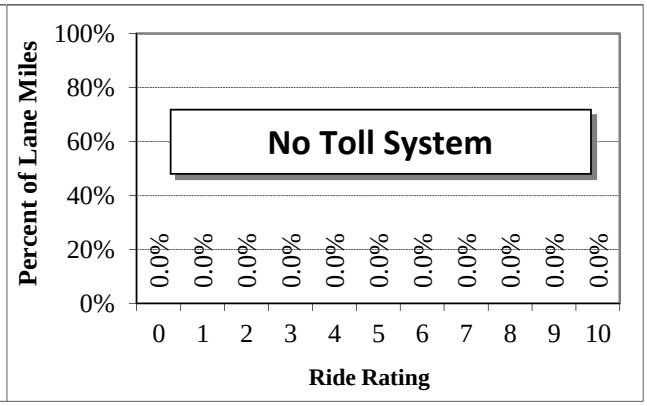
1123 Lane Miles, Mean = 7.8

Turnpike



763 Lane Miles, Mean = 7.8

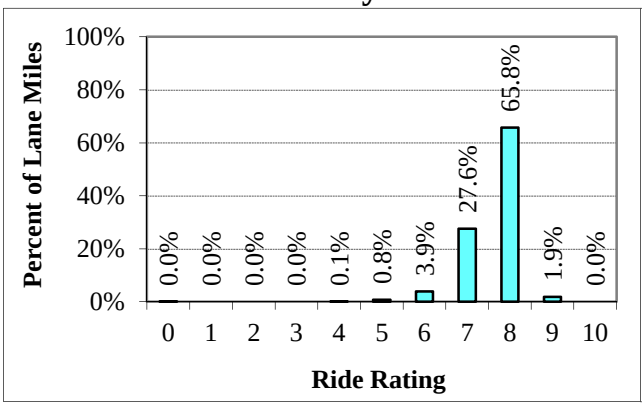
Toll



0 Lane Miles, Mean = N/A

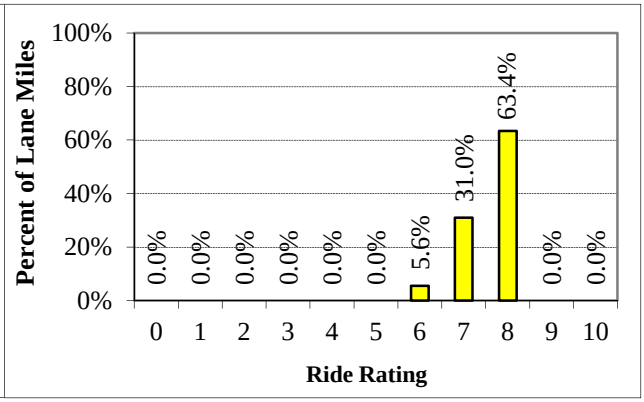
2015 Ride Distribution by System - District 5

Primary



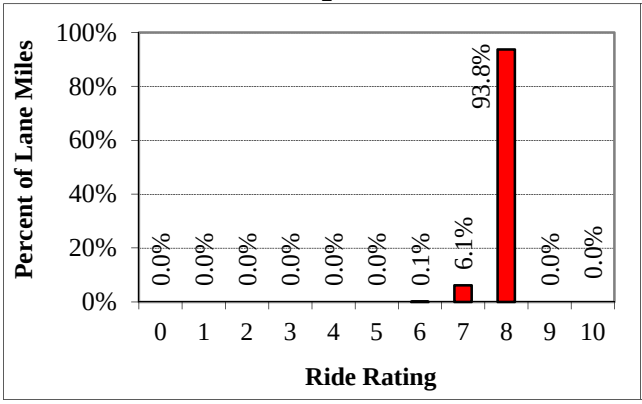
5133 Lane Miles, Mean = 7.6

Interstate



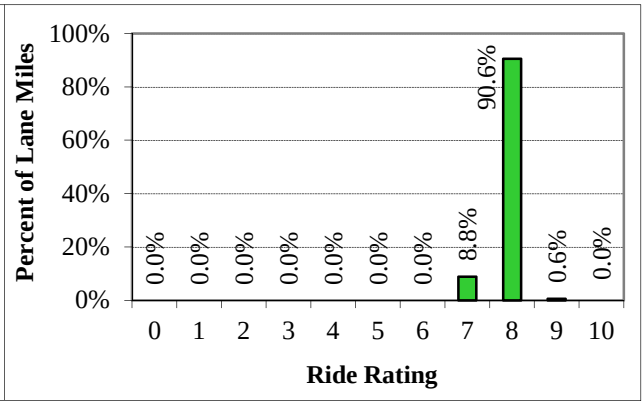
1211 Lane Miles, Mean = 7.6

Turnpike



708 Lane Miles, Mean = 7.9

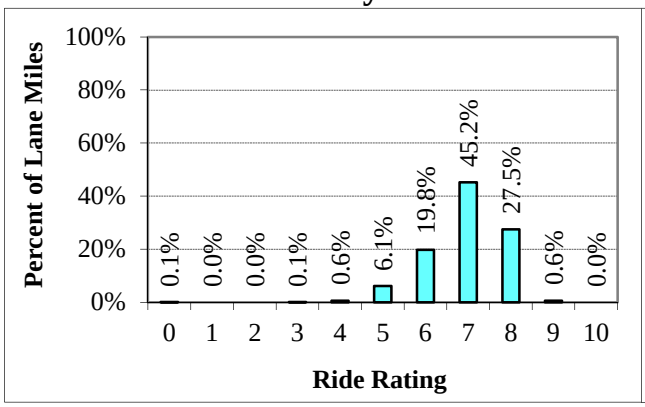
Toll



490 Lane Miles, Mean = 8.0

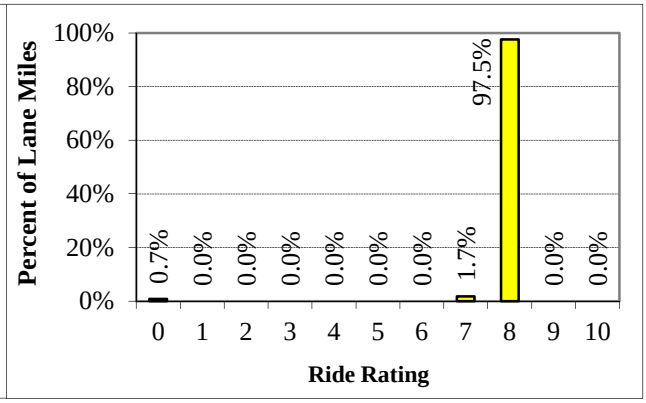
2015 Ride Distribution by System - District 6

Primary



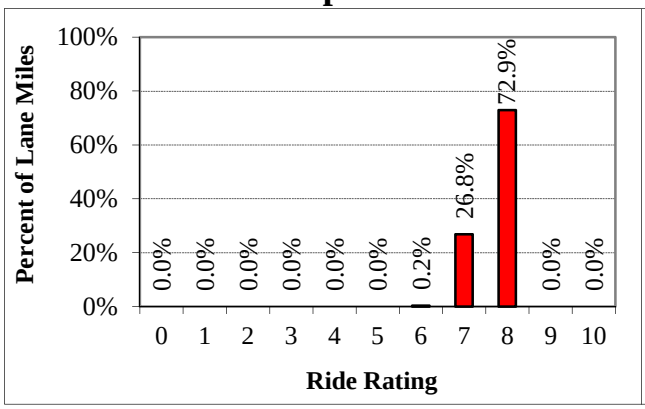
2134 Lane Miles, Mean = 6.9

Interstate



61 Lane Miles, Mean = 7.8

Turnpike



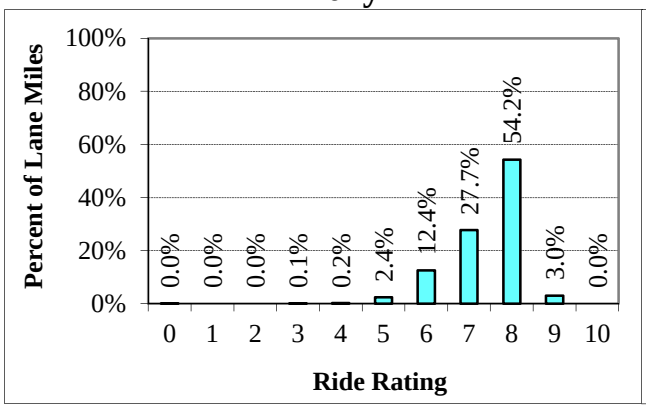
199 Lane Miles, Mean = 7.8

Toll

154 Lane Miles, Mean = 7.9

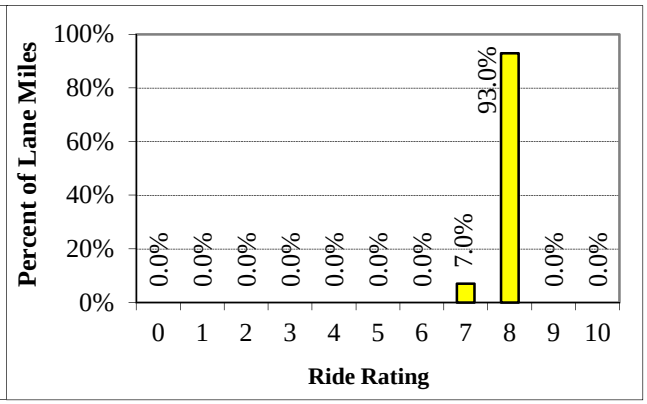
2015 Ride Distribution by System - District 7

Primary



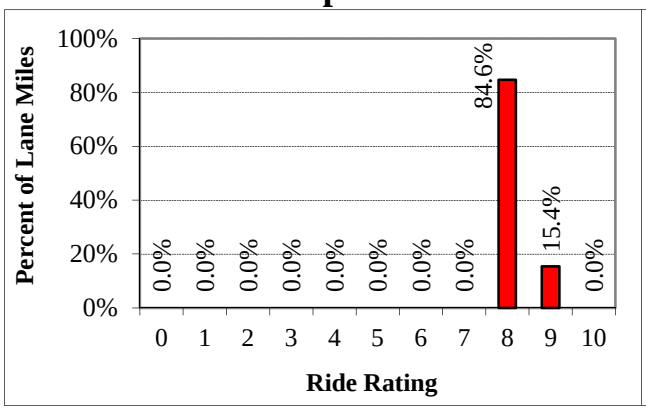
2843 Lane Miles, Mean = 7.4

Interstate



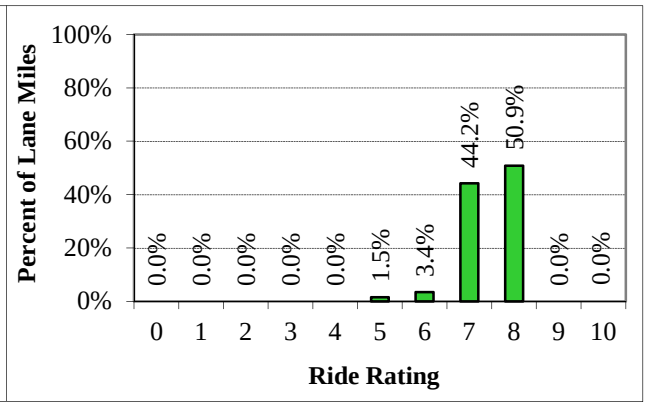
380 Lane Miles, Mean = 7.8

Turnpike



114 Lane Miles, Mean = 8.3

Toll



85 Lane Miles, Mean = 7.4

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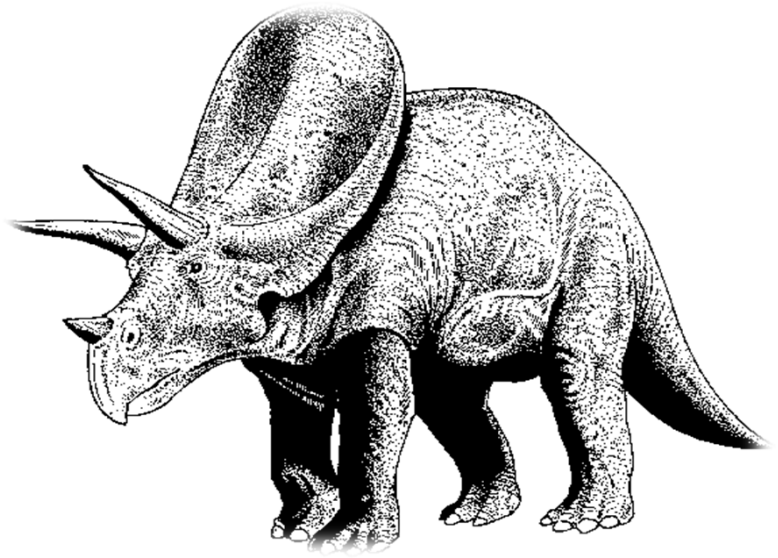
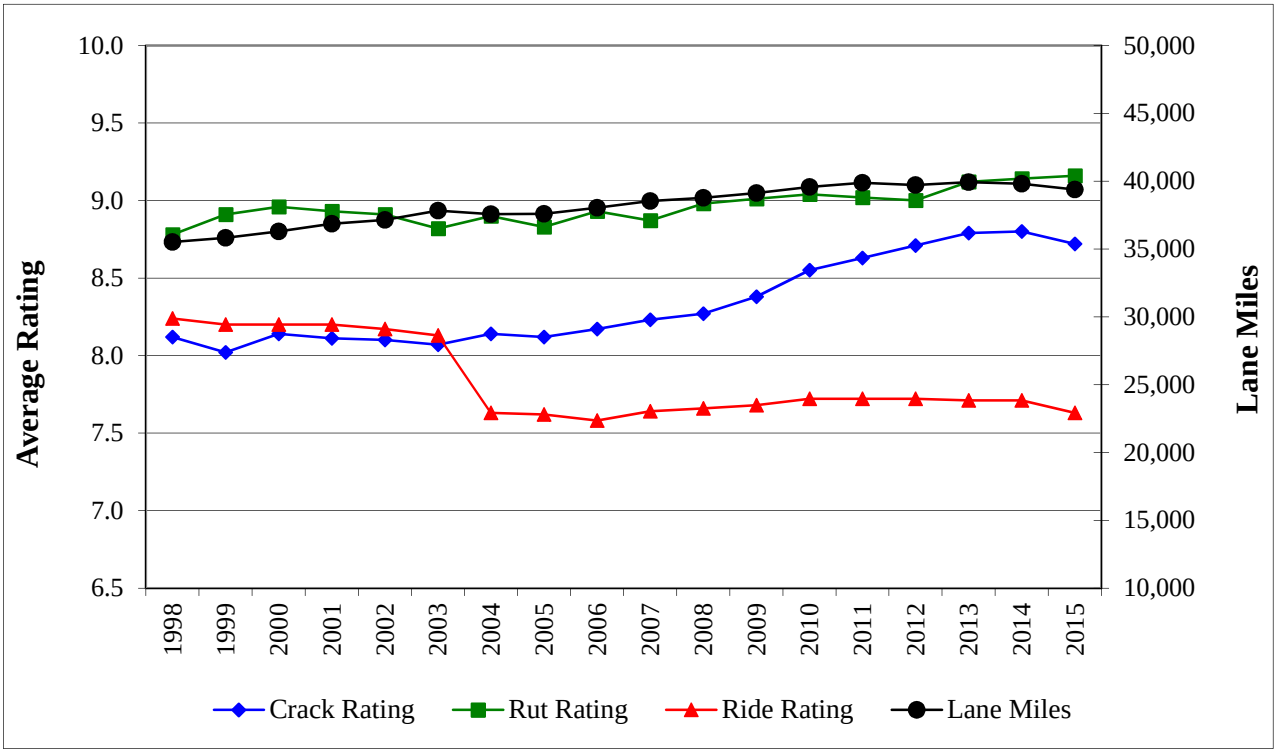
Section V
Historical Distress Ratings
By District
1998 - 2015



Historical Distress Ratings - Statewide

All Systems - All Districts



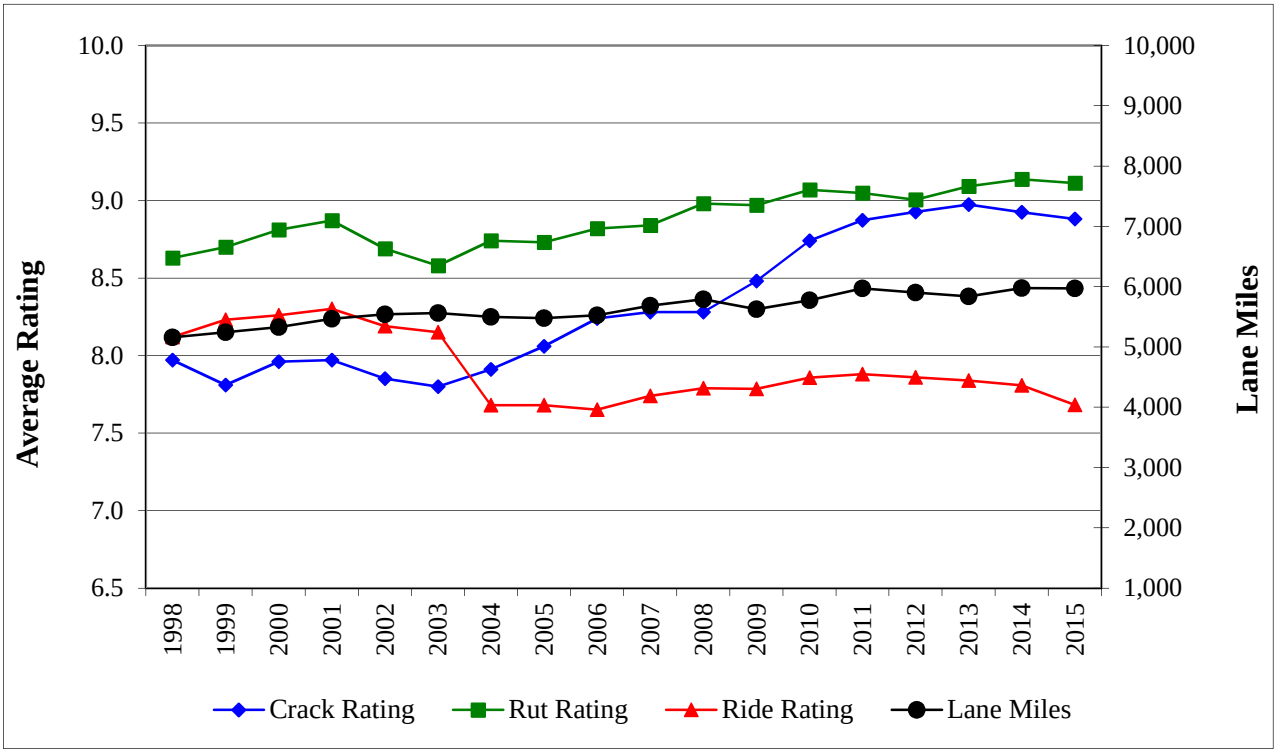
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Crack Rating	8.1	8.0	8.1	8.1	8.1	8.1	8.1	8.1	8.2
Rut Rating	8.8	8.9	9.0	8.9	8.9	8.8	8.9	8.8	8.9
Ride Rating	8.2	8.2	8.2	8.2	8.2	8.1	7.6	7.6	7.6
Lane Miles	35506	35830	36298	36850	37132	37833	37563	37588	38038

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Crack Rating	8.2	8.3	8.4	8.6	8.6	8.7	8.8	8.8	8.7
Rut Rating	8.9	9.0	9.0	9.0	9.0	9.0	9.1	9.1	9.2
Ride Rating	7.6	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.6
Lane Miles	38524	38779	39121	39577	39887	39710	39913	39806	39384

Note that with the start of the 2004 PCS, the profile data was collected using a sampling rate of 6 in. compared to a 12 in. sample interval used in previous years.

Historical Distress Ratings - District 1

All Systems



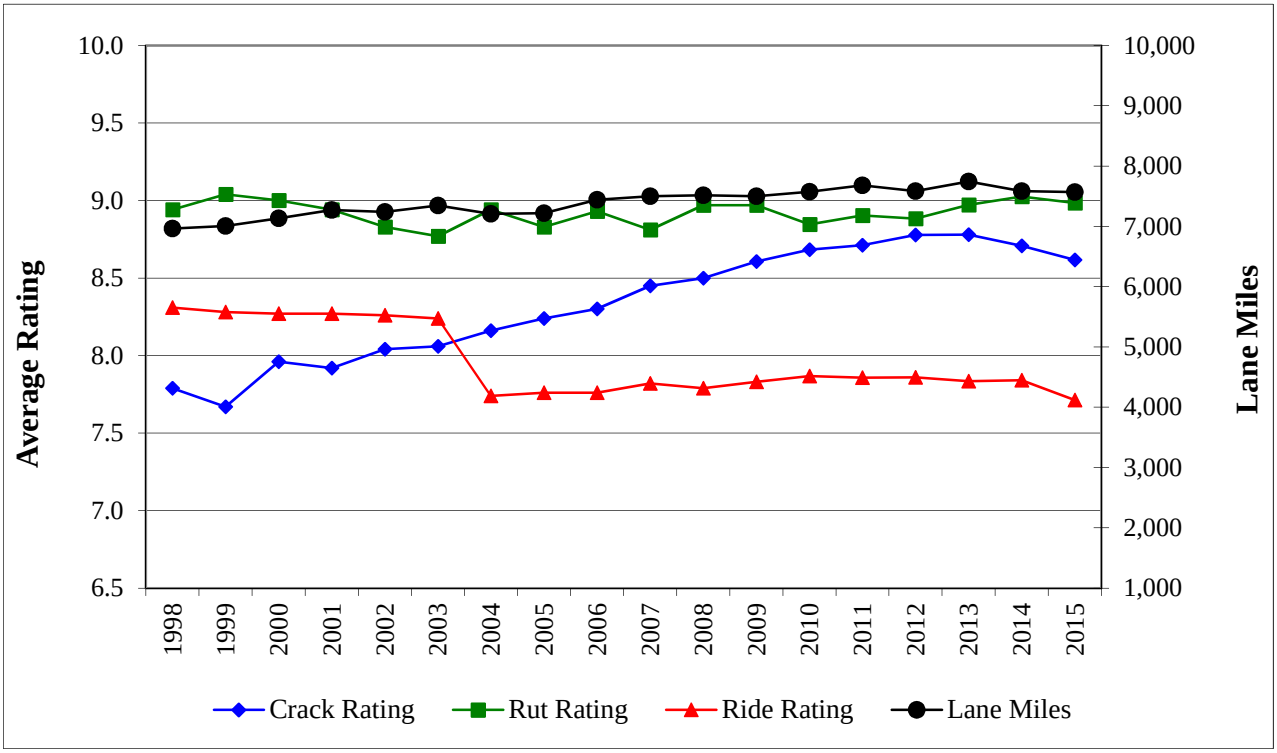
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Crack Rating	8.0	7.8	8.0	8.0	7.9	7.8	7.9	8.1	8.2
Rut Rating	8.6	8.7	8.8	8.9	8.7	8.6	8.7	8.7	8.8
Ride Rating	8.1	8.2	8.3	8.3	8.2	8.2	7.7	7.7	7.7
Lane Miles	5160	5246	5330	5466	5539	5560	5497	5477	5525

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Crack Rating	8.3	8.3	8.5	8.7	8.9	8.9	9.0	8.9	8.9
Rut Rating	8.8	9.0	9.0	9.1	9.0	9.0	9.1	9.1	9.1
Ride Rating	7.7	7.8	7.8	7.9	7.9	7.9	7.8	7.8	7.7
Lane Miles	5686	5792	5628	5772	5971	5904	5839	5977	5969

Note that with the start of the 2004 PCS, the profile data was collected using a sampling rate of 6 in. compared to a 12 in. sample interval used in previous years.

Historical Distress Ratings - District 2

All Systems



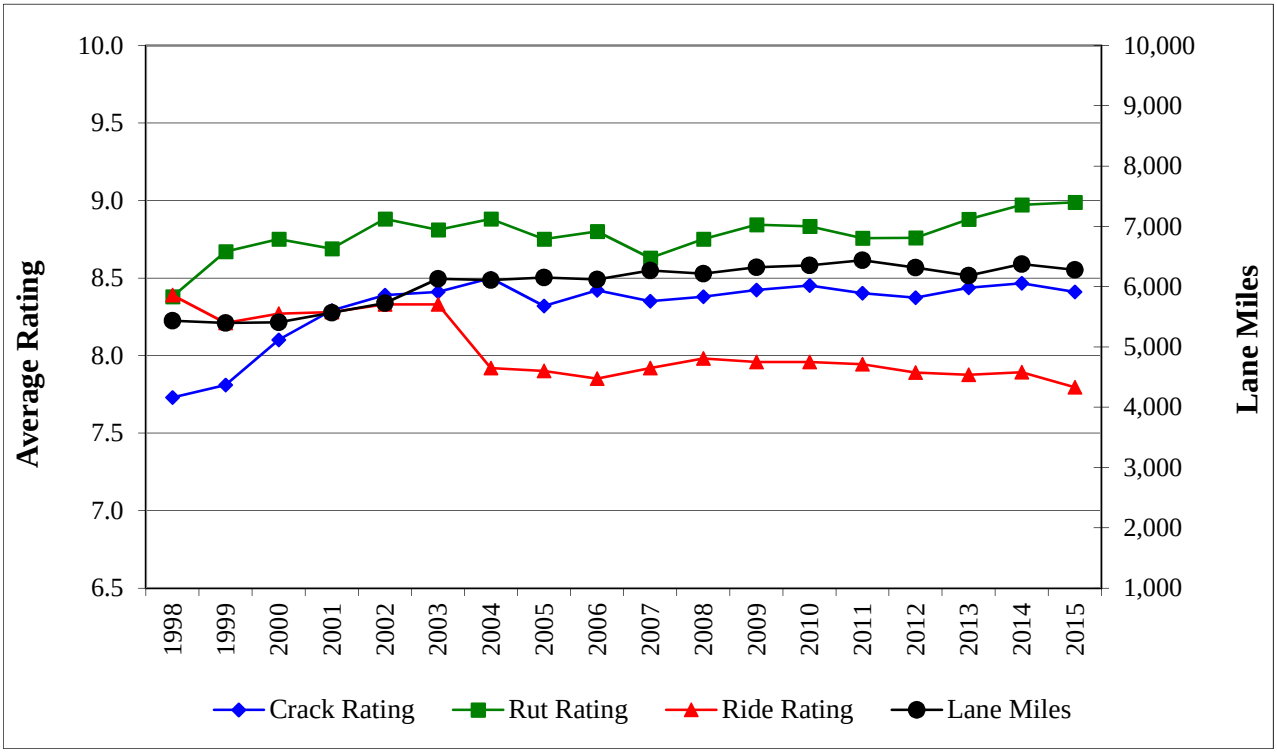
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Crack Rating	7.8	7.7	8.0	7.9	8.0	8.1	8.2	8.2	8.3
Rut Rating	8.9	9.0	9.0	8.9	8.8	8.8	8.9	8.8	8.9
Ride Rating	8.3	8.3	8.3	8.3	8.3	8.2	7.7	7.8	7.8
Lane Miles	6962	7005	7133	7270	7241	7347	7208	7217	7439

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Crack Rating	8.5	8.5	8.6	8.7	8.7	8.8	8.8	8.7	8.6
Rut Rating	8.8	9.0	9.0	8.8	8.9	8.9	9.0	9.0	9.0
Ride Rating	7.8	7.8	7.8	7.9	7.9	7.9	7.8	7.8	7.7
Lane Miles	7500	7517	7499	7574	7680	7586	7741	7584	7566

Note that with the start of the 2004 PCS, the profile data was collected using a sampling rate of 6 in. compared to a 12 in. sample interval used in previous years.

Historical Distress Ratings - District 3

All Systems



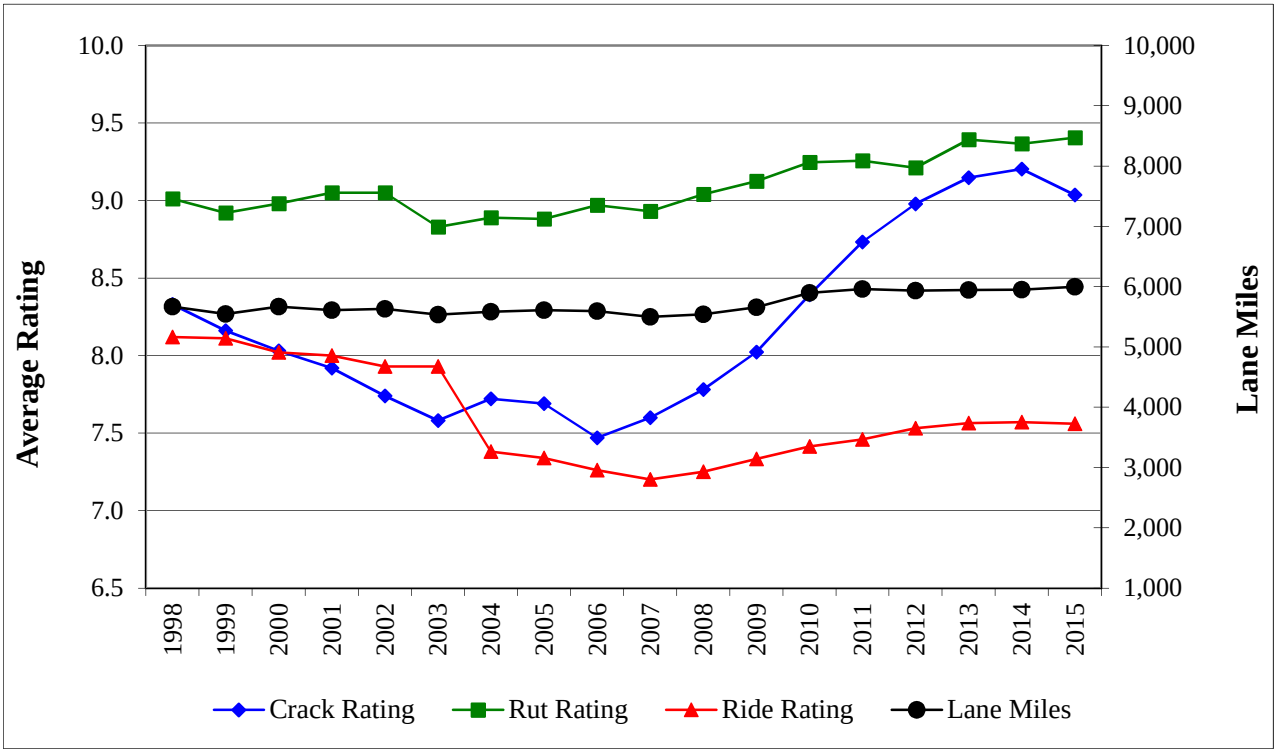
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Crack Rating	7.7	7.8	8.1	8.3	8.4	8.4	8.5	8.3	8.4
Rut Rating	8.4	8.7	8.8	8.7	8.9	8.8	8.9	8.8	8.8
Ride Rating	8.4	8.2	8.3	8.3	8.3	8.3	7.9	7.9	7.9
Lane Miles	5434	5400	5406	5567	5729	6130	6107	6151	6118

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Crack Rating	8.4	8.4	8.4	8.5	8.4	8.4	8.4	8.5	8.4
Rut Rating	8.6	8.8	8.8	8.8	8.8	8.8	8.9	9.0	9.0
Ride Rating	7.9	8.0	8.0	8.0	7.9	7.9	7.9	7.9	7.8
Lane Miles	6269	6216	6322	6355	6440	6315	6185	6375	6281

Note that with the start of the 2004 PCS, the profile data was collected using a sampling rate of 6 in. compared to a 12 in. sample interval used in previous years.

Historical Distress Ratings - District 4

All Systems



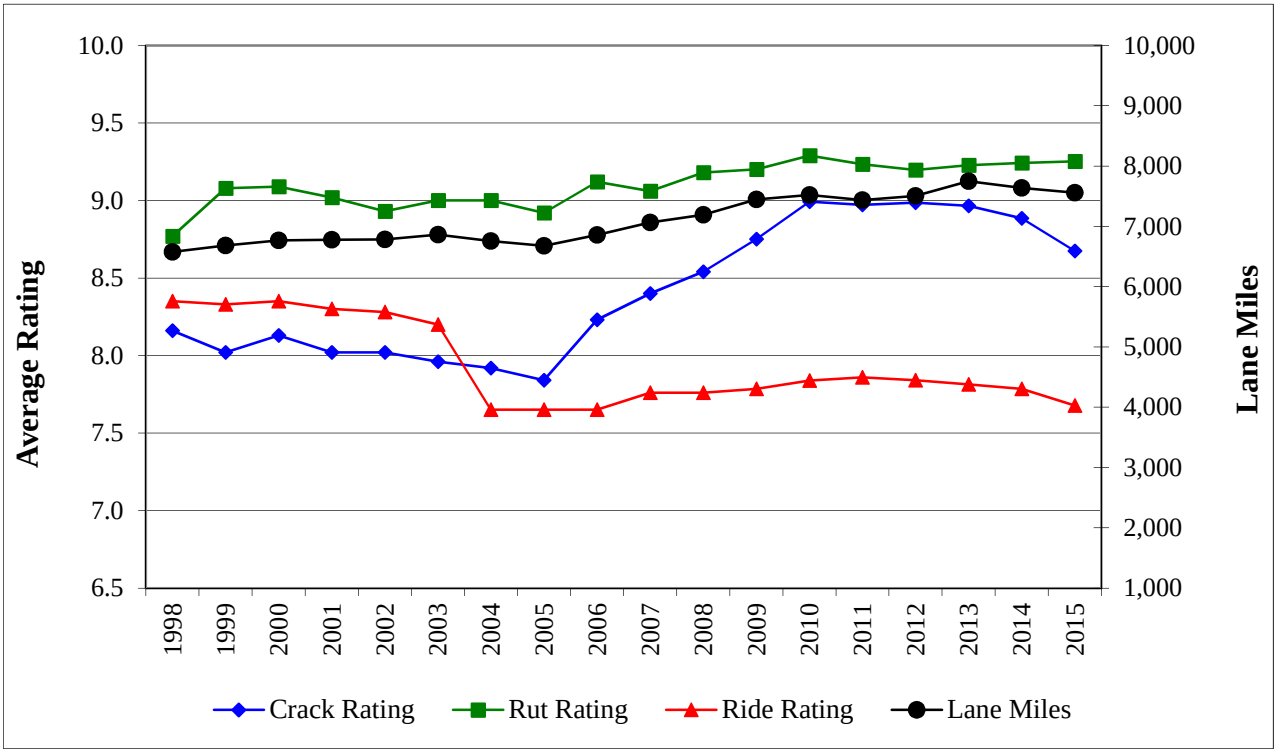
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Crack Rating	8.3	8.2	8.0	7.9	7.7	7.6	7.7	7.7	7.5
Rut Rating	9.0	8.9	9.0	9.1	9.1	8.8	8.9	8.9	9.0
Ride Rating	8.1	8.1	8.0	8.0	7.9	7.9	7.4	7.3	7.3
Lane Miles	5667	5547	5667	5612	5632	5537	5583	5608	5593

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Crack Rating	7.6	7.8	8.0	8.4	8.7	9.0	9.1	9.2	9.0
Rut Rating	8.9	9.0	9.1	9.2	9.3	9.2	9.4	9.4	9.4
Ride Rating	7.2	7.3	7.3	7.4	7.5	7.5	7.6	7.6	7.6
Lane Miles	5496	5542	5659	5894	5959	5934	5945	5948	5999

Note that with the start of the 2004 PCS, the profile data was collected using a sampling rate of 6 in. compared to a 12 in. sample interval used in previous years.

Historical Distress Ratings - District 5

All Systems



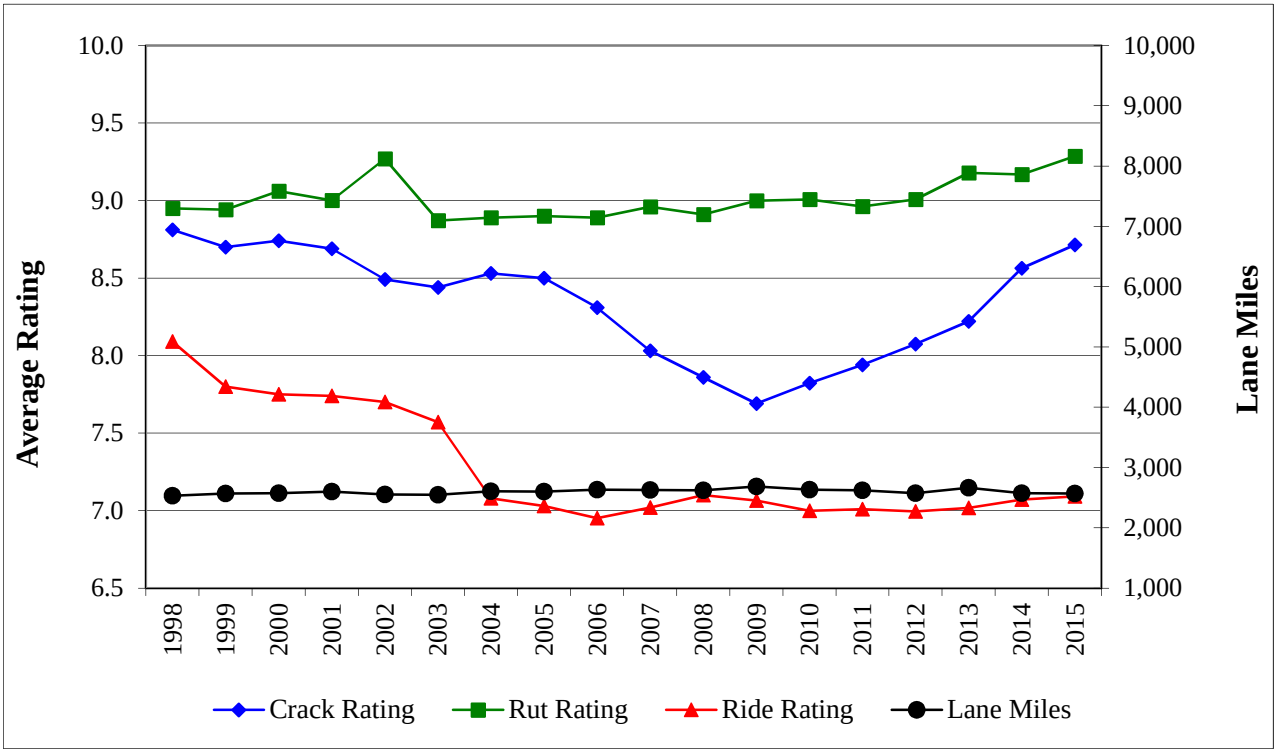
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Crack Rating	8.2	8.0	8.1	8.0	8.0	8.0	7.9	7.8	8.2
Rut Rating	8.8	9.1	9.1	9.0	8.9	9.0	9.0	8.9	9.1
Ride Rating	8.4	8.3	8.4	8.3	8.3	8.2	7.7	7.7	7.7
Lane Miles	6577	6682	6769	6776	6784	6860	6755	6676	6857

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Crack Rating	8.4	8.5	8.7	9.0	9.0	9.0	9.0	8.9	8.7
Rut Rating	9.1	9.2	9.2	9.3	9.2	9.2	9.2	9.2	9.3
Ride Rating	7.8	7.8	7.8	7.8	7.9	7.8	7.8	7.8	7.7
Lane Miles	7062	7194	7448	7519	7433	7503	7748	7639	7559

Note that with the start of the 2004 PCS, the profile data was collected using a sampling rate of 6 in. compared to a 12 in. sample interval used in previous years.

Historical Distress Ratings - District 6

All Systems



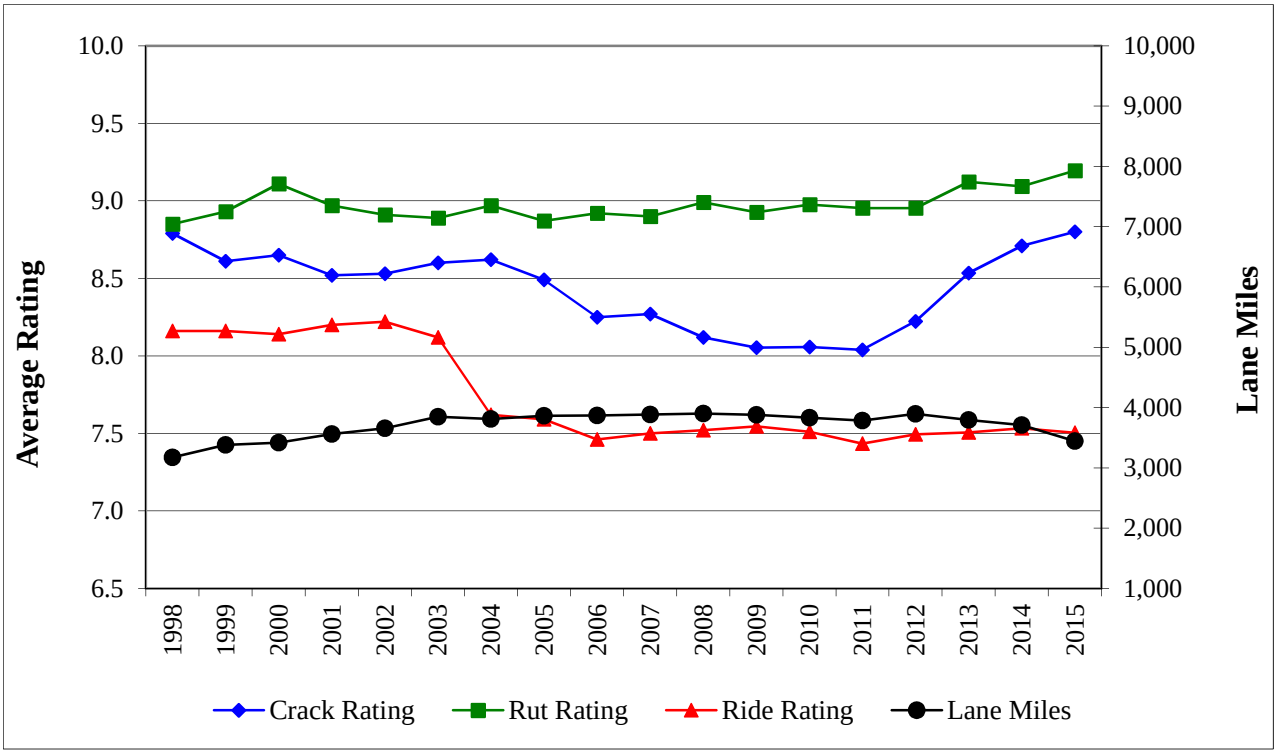
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Crack Rating	8.8	8.7	8.7	8.7	8.5	8.4	8.5	8.5	8.3
Rut Rating	9.0	8.9	9.1	9.0	9.3	8.9	8.9	8.9	8.9
Ride Rating	8.1	7.8	7.8	7.7	7.7	7.6	7.1	7.0	7.0
Lane Miles	2531	2569	2576	2598	2551	2548	2603	2598	2634

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Crack Rating	8.0	7.9	7.7	7.8	7.9	8.1	8.2	8.6	8.7
Rut Rating	9.0	8.9	9.0	9.0	9.0	9.0	9.2	9.2	9.3
Ride Rating	7.0	7.1	7.1	7.0	7.0	7.0	7.0	7.1	7.1
Lane Miles	2627	2619	2685	2630	2619	2574	2663	2576	2566

Note that with the start of the 2004 PCS, the profile data was collected using a sampling rate of 6 in. compared to a 12 in. sample interval used in previous years.

Historical Distress Ratings - District 7

All Systems



Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Crack Rating	8.8	8.6	8.7	8.5	8.5	8.6	8.6	8.5	8.3
Rut Rating	8.9	8.9	9.1	9.0	8.9	8.9	9.0	8.9	8.9
Ride Rating	8.2	8.2	8.1	8.2	8.2	8.1	7.6	7.6	7.5
Lane Miles	3175	3380	3417	3561	3656	3850	3810	3861	3870

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Crack Rating	8.3	8.1	8.1	8.1	8.0	8.2	8.5	8.7	8.8
Rut Rating	8.9	9.0	8.9	9.0	9.0	9.0	9.1	9.1	9.2
Ride Rating	7.5	7.5	7.5	7.5	7.4	7.5	7.5	7.5	7.5
Lane Miles	3883	3900	3880	3832	3786	3893	3792	3708	3445

Note that with the start of the 2004 PCS, the profile data was collected using a sampling rate of 6 in. compared to a 12 in. sample interval used in previous years.

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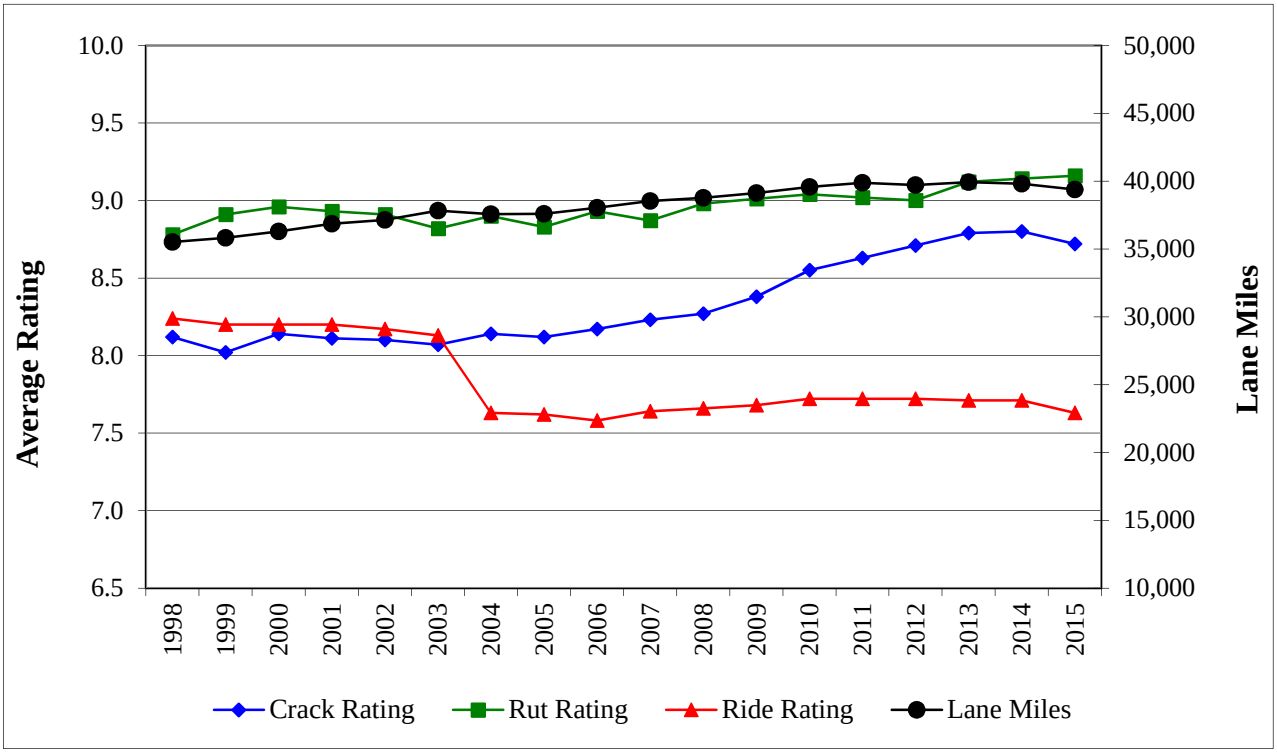
Section VI
Historical Distress Ratings
By System
1998 - 2015

Historical Distress Ratings - Statewide

All Systems - All Districts



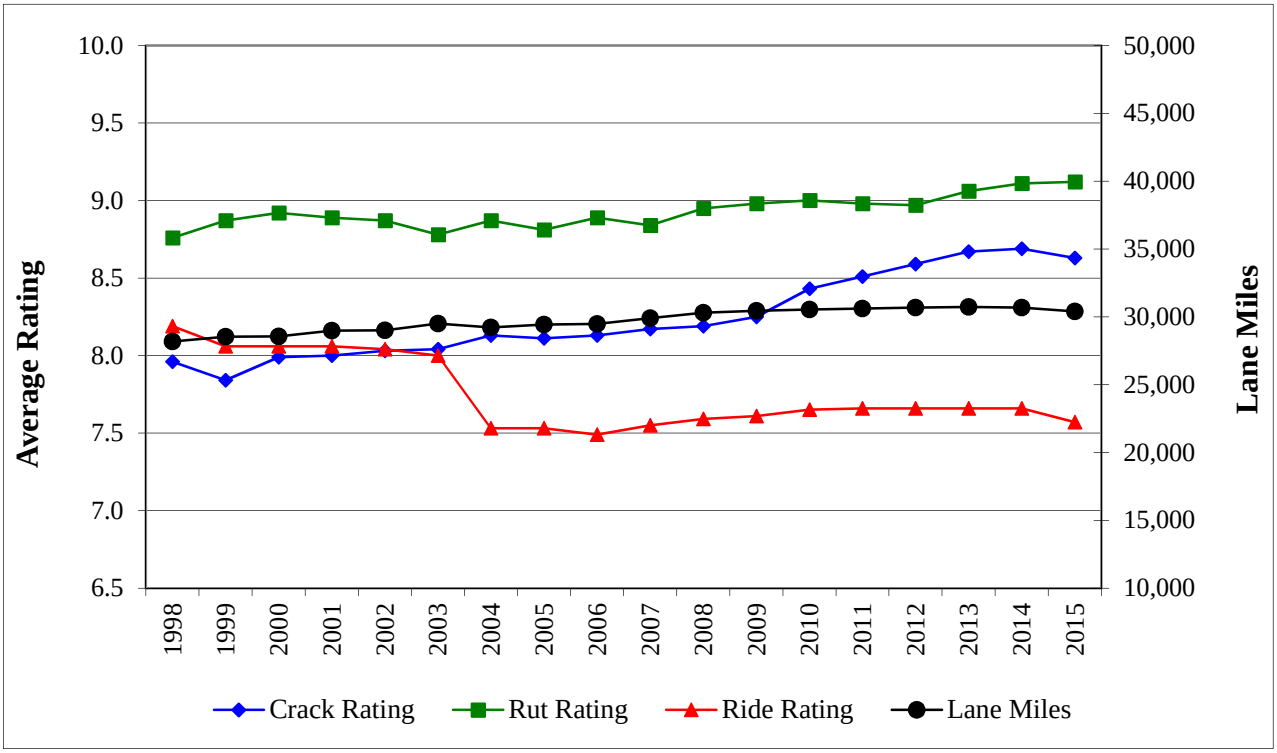
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Crack Rating	8.1	8.0	8.1	8.1	8.1	8.1	8.1	8.1	8.2
Rut Rating	8.8	8.9	9.0	8.9	8.9	8.8	8.9	8.8	8.9
Ride Rating	8.2	8.2	8.2	8.2	8.2	8.1	7.6	7.6	7.6
Lane Miles	35506	35830	36298	36850	37132	37833	37563	37588	38038

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Crack Rating	8.2	8.3	8.4	8.6	8.6	8.7	8.8	8.8	8.7
Rut Rating	8.9	9.0	9.0	9.0	9.0	9.0	9.1	9.1	9.2
Ride Rating	7.6	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.6
Lane Miles	38524	38779	39121	39577	39887	39710	39913	39806	39384

Note that with the start of the 2004 PCS, the profile data was collected using a sampling rate of 6 in. compared to a 12 in. sample interval used in previous years.

Historical Distress Ratings - Primary System

All Districts



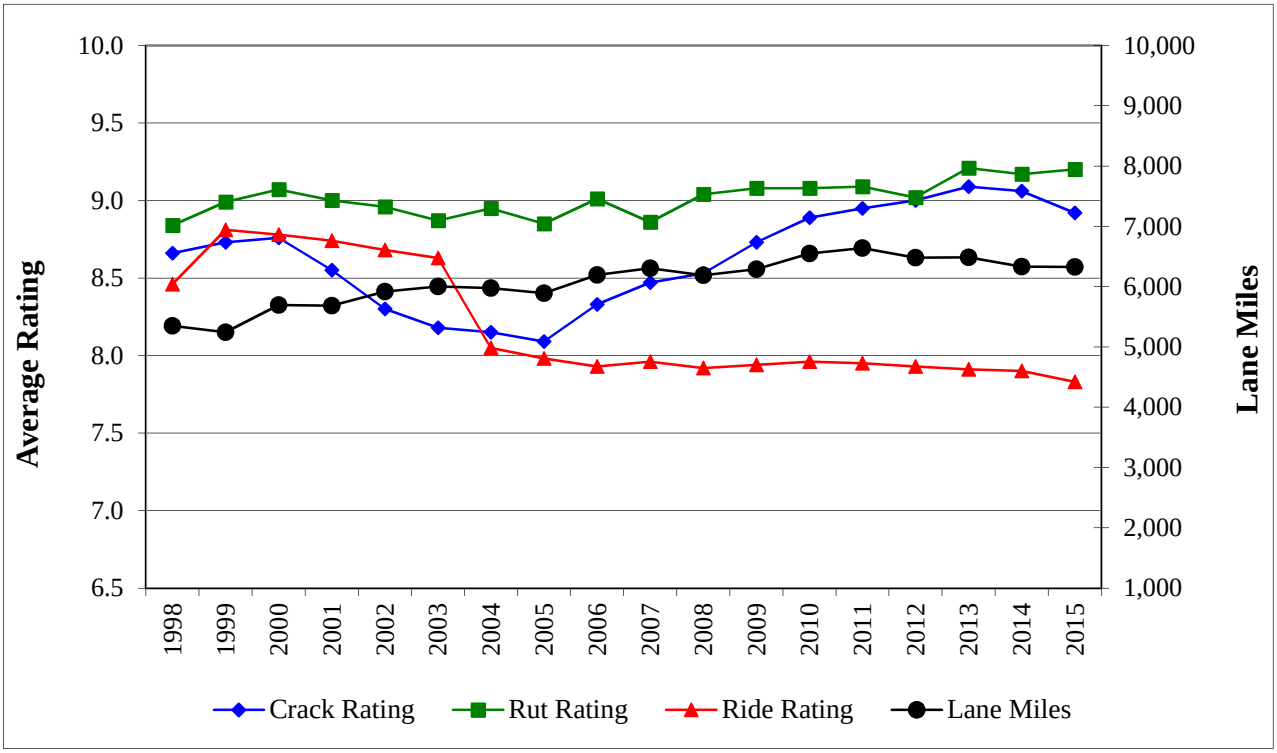
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Crack Rating	8.0	7.8	8.0	8.0	8.0	8.0	8.1	8.1	8.1
Rut Rating	8.8	8.9	8.9	8.9	8.9	8.8	8.9	8.8	8.9
Ride Rating	8.2	8.1	8.1	8.1	8.0	8.0	7.5	7.5	7.5
Lane Miles	28174	28535	28551	28983	29010	29499	29219	29416	29471

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Crack Rating	8.2	8.2	8.3	8.4	8.5	8.6	8.7	8.7	8.6
Rut Rating	8.8	9.0	9.0	9.0	9.0	9.0	9.1	9.1	9.1
Ride Rating	7.6	7.6	7.6	7.7	7.7	7.7	7.7	7.7	7.6
Lane Miles	29900	30310	30452	30526	30607	30670	30726	30686	30392

Note that with the start of the 2004 PCS, the profile data was collected using a sampling rate of 6 in. compared to a 12 in. sample interval used in previous years.

Historical Distress Ratings - Interstate System

All Districts



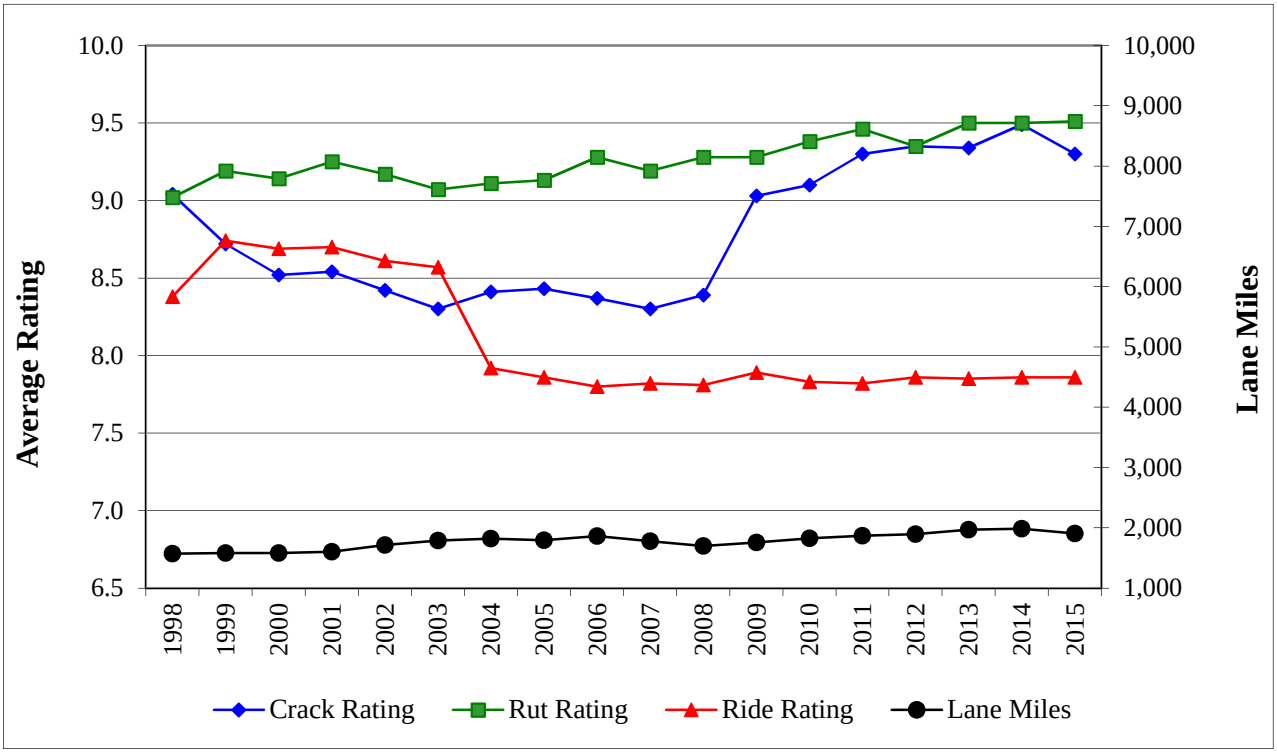
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Crack Rating	8.7	8.7	8.8	8.6	8.3	8.2	8.2	8.1	8.3
Rut Rating	8.8	9.0	9.1	9.0	9.0	8.9	9.0	8.9	9.0
Ride Rating	8.5	8.8	8.8	8.7	8.7	8.6	8.1	8.0	7.9
Lane Miles	5349	5244	5695	5685	5920	6002	5974	5889	6194

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Crack Rating	8.5	8.5	8.7	8.9	9.0	9.0	9.1	9.1	8.9
Rut Rating	8.9	9.0	9.1	9.1	9.1	9.0	9.2	9.2	9.2
Ride Rating	8.0	7.9	7.9	8.0	8.0	7.9	7.9	7.9	7.8
Lane Miles	6307	6186	6288	6547	6639	6481	6488	6330	6326

Note that with the start of the 2004 PCS, the profile data was collected using a sampling rate of 6 in. compared to a 12 in. sample interval used in previous years.

Historical Distress Ratings - Turnpike System

All Districts



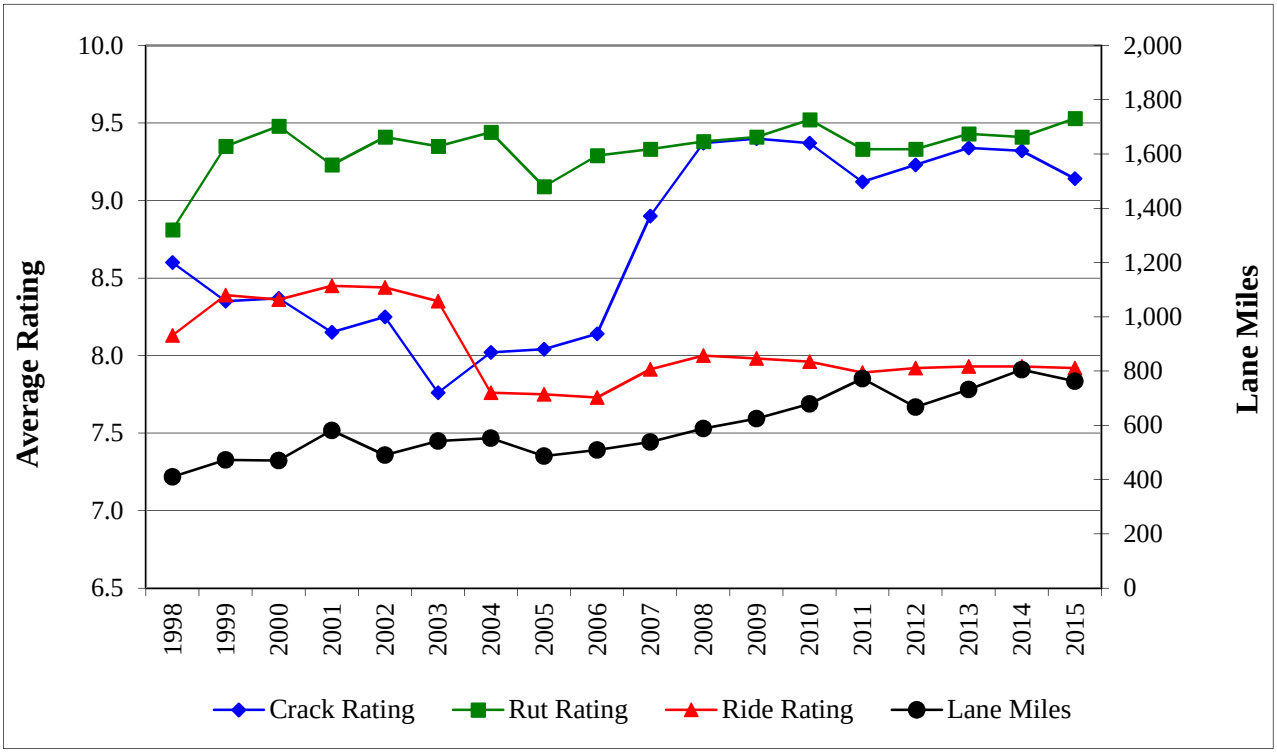
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Crack Rating	9.0	8.7	8.5	8.5	8.4	8.3	8.4	8.4	8.4
Rut Rating	9.0	9.2	9.1	9.3	9.2	9.1	9.1	9.1	9.3
Ride Rating	8.4	8.7	8.7	8.7	8.6	8.6	7.9	7.9	7.8
Lane Miles	1573	1579	1583	1602	1712	1790	1818	1795	1864

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Crack Rating	8.3	8.4	9.0	9.1	9.3	9.4	9.3	9.5	9.3
Rut Rating	9.2	9.3	9.3	9.4	9.5	9.4	9.5	9.5	9.5
Ride Rating	7.8	7.8	7.9	7.8	7.8	7.9	7.9	7.9	7.9
Lane Miles	1778	1696	1757	1825	1869	1892	1968	1986	1904

Note that with the start of the 2004 PCS, the profile data was collected using a sampling rate of 6 in. compared to a 12 in. sample interval used in previous years.

Historical Distress Ratings - Toll System

All Districts



Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Crack Rating	8.6	8.4	8.4	8.2	8.3	7.8	8.0	8.0	8.1
Rut Rating	8.8	9.4	9.5	9.2	9.4	9.4	9.4	9.1	9.3
Ride Rating	8.1	8.4	8.4	8.5	8.4	8.4	7.8	7.8	7.7
Lane Miles	410	472	470	581	490	542	552	487	509

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Crack Rating	8.9	9.4	9.4	9.4	9.1	9.2	9.3	9.3	9.1
Rut Rating	9.3	9.4	9.4	9.5	9.3	9.3	9.4	9.4	9.5
Ride Rating	7.9	8.0	8.0	8.0	7.9	7.9	7.9	7.9	7.9
Lane Miles	539	588	624	679	772	667	732	805	763

Note that with the start of the 2004 PCS, the profile data was collected using a sampling rate of 6 in. compared to a 12 in. sample interval used in previous years.

Section VII
Raveling Distribution
By District and System
1998 - 2015

Section VII

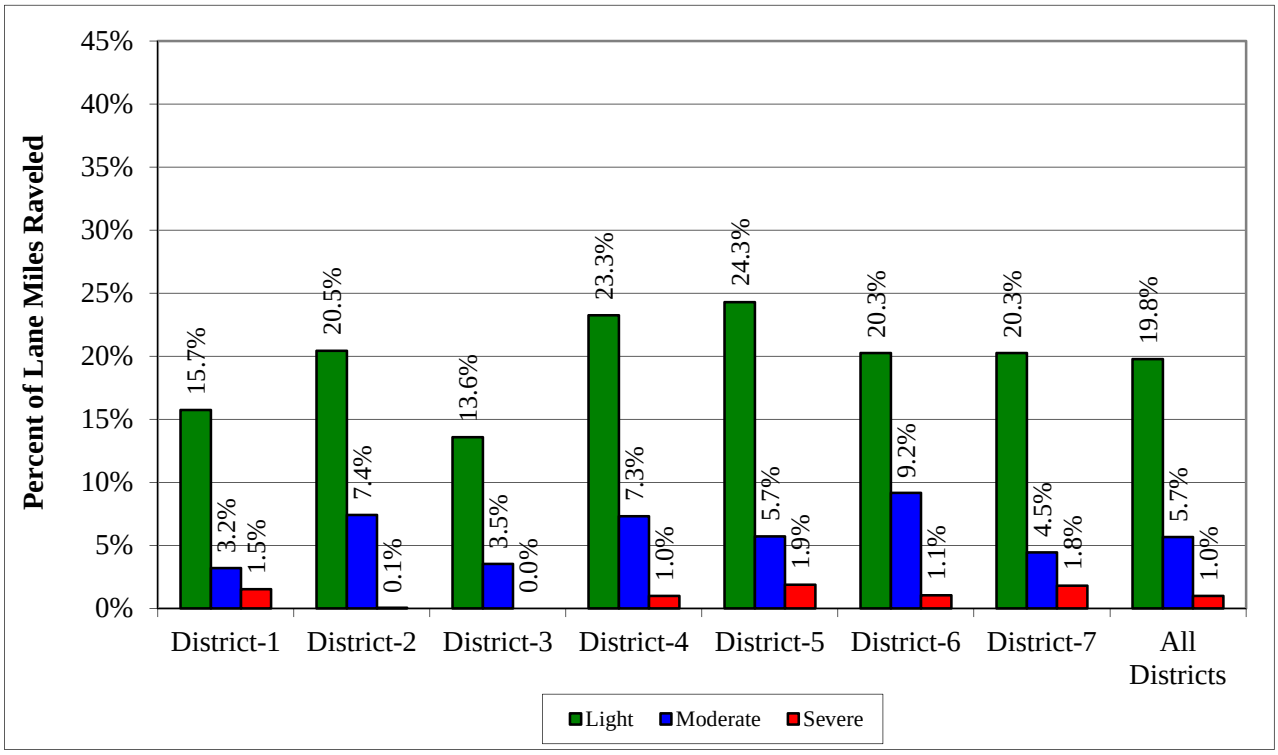
Raveling

Raveling Rating Criteria

1. Raveling is the wearing away of the pavement surface caused by the dislodging of aggregate particles and the loss of asphalt binder due to weathering.
2. Raveling for a rated section is combined with the Crack Rating.
3. Raveling and weathering may be caused by:
   - Hardening of the asphalt binder
   - Low adhesion of the asphalt binder
   - Low wear resistant aggregate in the mix or poor asphalt mix (dirty aggregate in the mix)
   - Water sensitive asphalt-aggregate mixture
   - Any combination of the above factors
4. Raveling became a noticeable defect by raters and was required to be listed in their comments as of 1992.
5. Since 1995, Raveling was rated by severity level (light, moderate, and severe) and percent of affected area, where only predominate severity level was recorded.
   - **Light Raveling** occurs when the aggregate and/or binder has begun to wear away but has not progressed significantly. Some loss of fine aggregate is present.
   - **Moderate Raveling** occurs when the aggregate and/or binder has worn away and the surface texture is becoming rough and pitted, loose particles generally exist, and loss of fine aggregate and some loss of coarse aggregate exists.
   - **Severe Raveling** occurs when the aggregate and/or binder have worn away and the surface texture is very rough and pitted; loss of coarse aggregate is very noticeable.

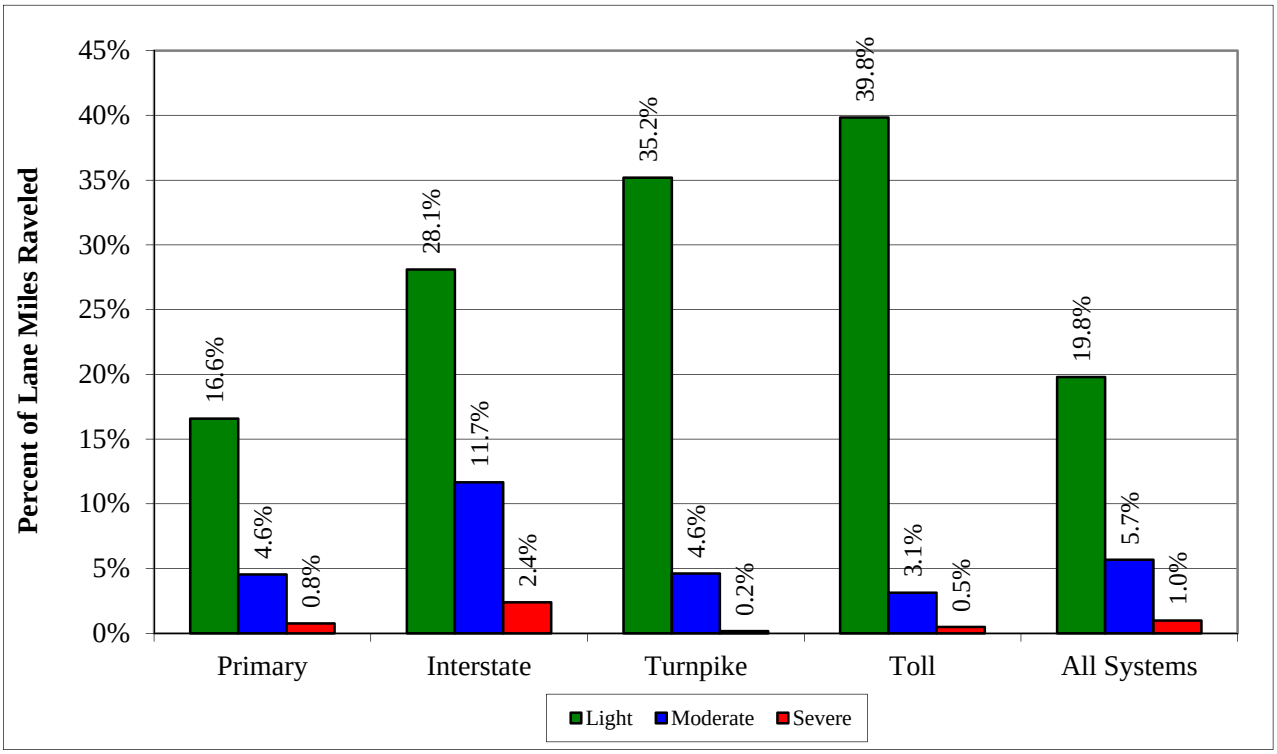
2015 Raveling Survey by District

All Systems



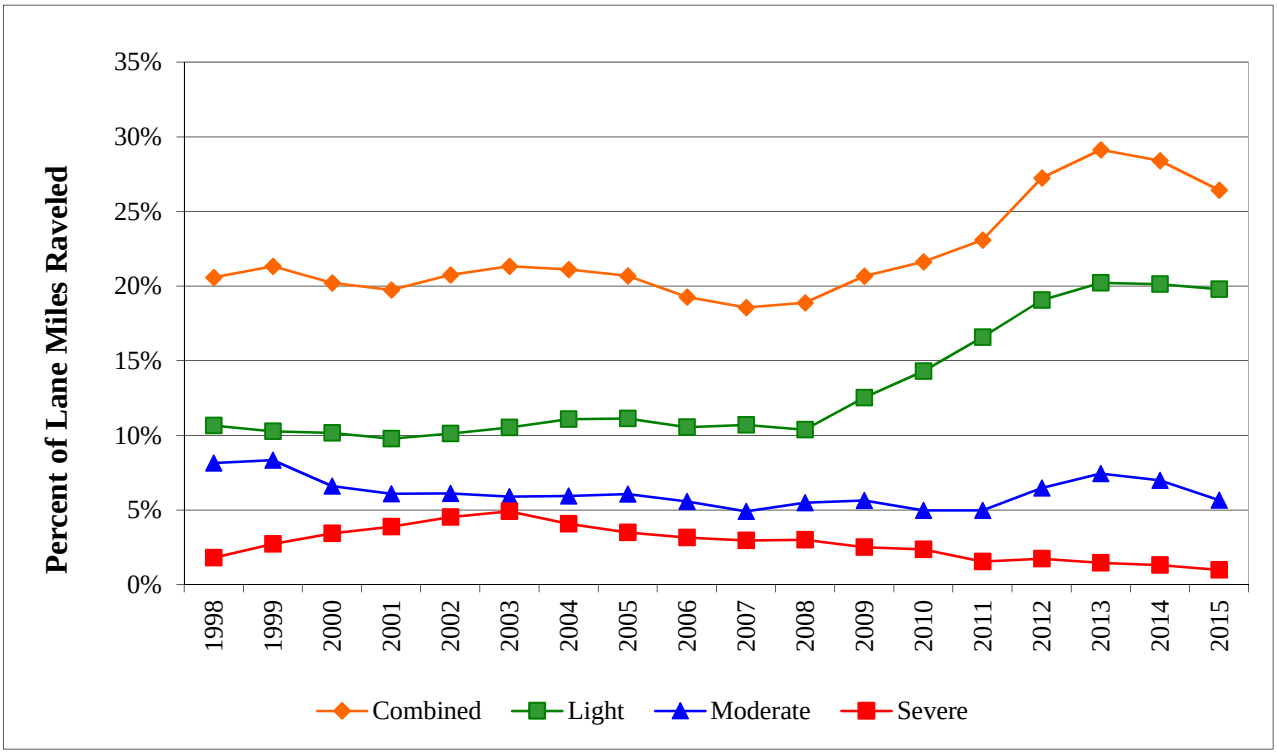
2015 Raveling Survey by System

All Districts



Raveling Survey History

All Systems and All Districts Combined



Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Combined	20.6%	21.3%	20.2%	19.7%	20.8%	21.3%	21.1%	20.7%	19.3%
Light	10.7%	10.3%	10.2%	9.8%	10.1%	10.5%	11.1%	11.1%	10.5%
Moderate	8.1%	8.3%	6.6%	6.1%	6.1%	5.9%	5.9%	6.1%	5.6%
Severe	1.8%	2.7%	3.4%	3.9%	4.5%	4.9%	4.1%	3.5%	3.2%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Combined	18.6%	18.9%	20.7%	21.6%	23.1%	27.3%	29.1%	28.4%	26.4%
Light	10.7%	10.4%	12.5%	14.3%	16.6%	19.1%	20.2%	20.1%	19.8%
Moderate	4.9%	5.5%	5.6%	5.0%	5.0%	6.5%	7.4%	7.0%	5.7%
Severe	3.0%	3.0%	2.5%	2.4%	1.6%	1.7%	1.5%	1.3%	1.0%

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Section VIII
Distress Ratings
Comparison
2014 vs. 2015

Section VIII

Crack, Rut, and Ride Ratings Comparison

Rating Comparison Criteria

Only Type 1 Flexible Pavements are included in the comparison. The following pavement types have been omitted from this comparison since they exhibit notable changes to the pavement surface as indicated below:

Type 0 - Pavement sections not State-maintained, duplicated under another county section number, or added under the Rigid PCS.

Type 2 - Surface Treatment or pavement improvement without new construction, such as intersection improvements, wheel path leveling, bridge approach or area resurfacing.

Type 3 - Skin Patch

Type 4 - Rigid Pavements

Type 5 - New Construction

Type 6 - No Ride taken for this section (normally because of length constraint)

Type 7 - New Pavement (Overlays)

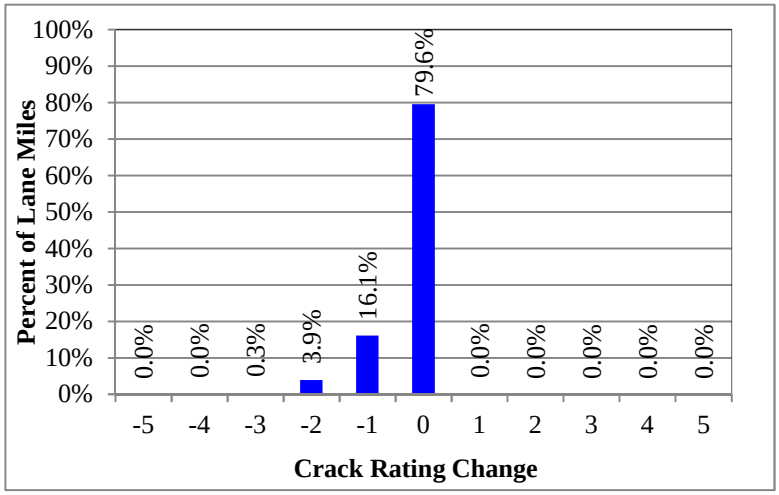
Type 8 - Under Construction

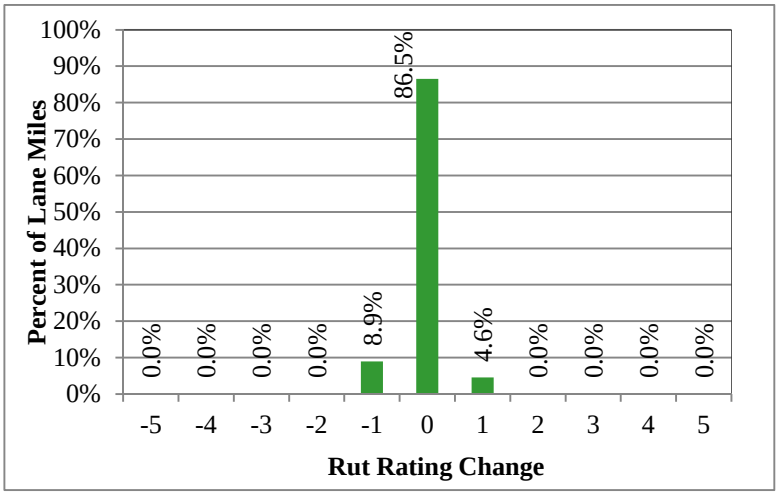
Type 9 - Structures or exceptions that are State-maintained

Crack, Rut, and Ride Rating Changes

2014 compared to 2015

96% of the 2015 lane miles were within +/- 1 point compared to 2014 survey

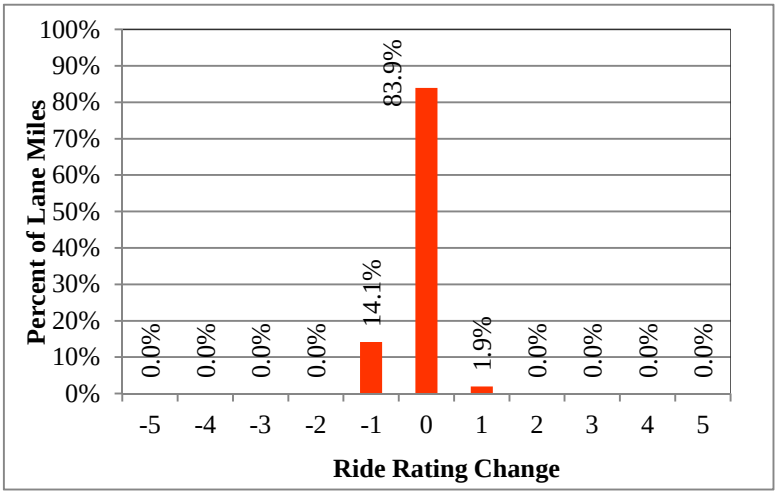




100% of the 2015 lane miles were within +/-1 point compared to 2014 survey

100% of the 2015 lanes miles were within +/-1 point compared to 2014 survey

Negative values are indicative of the deterioration in the pavement and/or the variability in the data collection process. Positive values are indicative of the variability in the data collection process.



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Section IX
Customer Service Survey

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2015 Flexible Pavement Condition Survey

Facts and Figures

Customer Service Form

In an effort to continuously improve customer service, the Pavement Materials Section asks for your input by filling out and returning this survey form.

(Optional)

Name: _____ Title: _____
Company/Office: _____
Address: _____ City/State/Zip: _____
Phone: _____ E-mail: _____

Please rate each of the following on the scale provided by circling the appropriate number. ***One*** *corresponds to* ***Very Poor,*** *and* ***Five*** *corresponds to* ***Excellent****.*

Usefulness of Content ……..…….. 1 2 3 4 5

Organization of Information…...…….. 1 2 3 4 5

Clarity of Graphical Illustrations……..... 1 2 3 4 5

Format of Tables …...……..…….....….. 1 2 3 4 5

Overall Value of this Report ....…….. 1 2 3 4 5

Please provide an answer to the following questions. Attach an additional sheet(s) if needed.
What was the most useful/informative part of this report?

_____

What was the least useful/informative part of this report?

_____

What changes do you recommend to improve this report?

_____

Detach and mail to:
State Materials Office, Attention: Stacy Scott, 5007 NE 39th Ave., Gainesville, FL 32609 or send via email to: stacy.scott@dot.state.fl.us