2015

Idaho Transportation System Pavement Performance Report

State Highway 21, Near Mores Creek Summit

Idaho Transportation Department
Pavement Performance
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1.0 INTRODUCTION/PURPOSE OF THIS REPORT

The Idaho Transportation Department's (ITD's) Idaho Transportation System Performance Report is an annual summary of the status of ITD-jurisdiction pavements. This report provides the reader with an accurate and useful review of the historical and current condition of Idaho's pavement.

2.0 PURPOSE OF A PAVEMENT MANAGEMENT SYSTEM (PMS)

A Pavement Management System (PMS) is defined as *a system which involves the identification of optimum strategies at various management levels and maintains pavements at an adequate level of serviceability*. These strategies include, but are not limited to, systematic procedures for scheduling maintenance and rehabilitation activities to optimize benefit and minimize cost.

Historically, Idaho has managed about **5,000 centerline miles**, or **12,000 lane miles**, with additions and subtractions annually. ITD strives to reduce deficient pavement and give motorists a safer and smoother ride. Pavement deficiencies on the State Highway System have been reduced from 33% in 1995 to **15%** by the end of calendar year 2015. This has been accomplished by:

1. Continuously searching for more efficient ways to program pavement projects
2. Focusing on preservation and restoration before expansion, and applying cost savings to pavement rehabilitation
3. Using a preventative maintenance program which slows the rate of pavement deterioration (a *preservation-first* approach)
4. Improving the way we collect, analyze, and report pavement data
5. Improving and updating project planning and construction project history

In 2009, the Idaho Transportation Department invested in a new pavement management system (PMS). This system became active on December 17, 2010. This new PMS has greatly aided in the storage and analysis of our data by providing a robust database in which to store data from several sections in a central location. The new PMS also contains an analysis engine which accurately and consistently predicts pavement deterioration. The new PMS is further explained in detail in Section 3.0, The Current Pavement Management System (PMS).

3.0 THE CURRENT PAVEMENT MANAGEMENT SYSTEM (PMS)

This section discusses the pavement management systems that ITD has used in the past, and how we have come to use the system we do today. It describes in detail the current pavement management system.

3.1 A BRIEF HISTORY OF IDAHO PAVEMENT MANAGEMENT

In 1977, the Idaho Transportation Department began a review of existing pavement management programs with the goal of adopting one to fit Idaho's needs. The following year, ITD acquired a Pavement Performance Management Information System (PPMIS) and made it operational on ITD's mainframe computer. From 1978, ITD steadily improved the PPMIS and modified it to meet specific conditions in Idaho. It was tested and refined by both ITD and consultant contract. By 1986, it was able to perform simplistic economic analysis and optimization.

In 2007, ITD began running our pavement data through the HERS-ST (Highway Economic Requirements System, STate model). This online software from Federal Highway Administration (FHWA) uses pavement deterioration curves to predict pavement behavior. However, the HERS-ST model results had to be mathematically manipulated by hand in order to meet the conditions of Idaho weather, terrain and other factors, which was a painstaking process.

3.2 THE CURRENT PMS SYSTEM

In 2009, ITD purchased a pavement and maintenance management software package. This new software housed a pavement management system (PMS) and a maintenance management system (MMS) to work in tandem as part of the Department's long-term vision for asset management. This software contains a robust database that houses several kinds of data, such as bridge and pavement condition, maintenance activities, traffic counts, surface friction values, boring logs and several others.

The Pavement Management System (PMS) has allowed ITD to refine the way we calculate and analyze data, by:

- implementing new pavement performance curves calibrated by ITD engineers
- implementing decision trees that mimic District engineering choices
- creating performance models that accurately track and display pavement projects
- employing an analysis engine that uses integer optimization to maximize benefit

These new abilities are helping Idaho become an efficient practitioner of preservation-first pavement management.

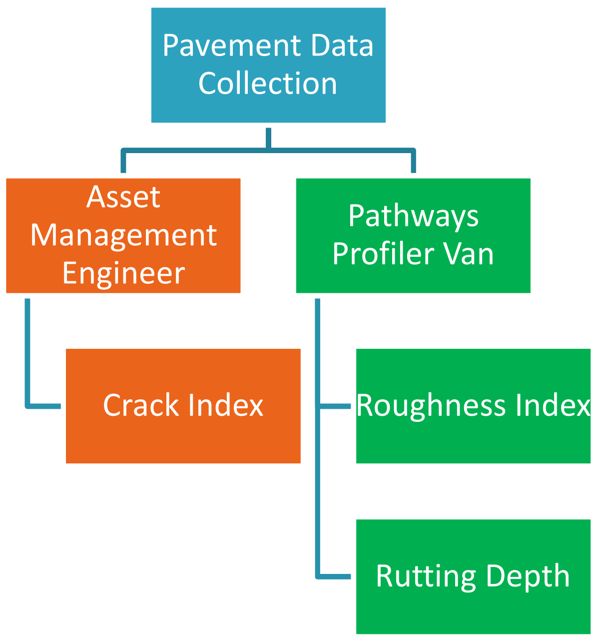
With all users of the PMS having instant access to all available data, the system has given the District pavement designers and engineers an extensive toolbox. The system suggests pavement project choices based on budget constraints and desired deficiency goals, which the engineers balance against needs and their expert knowledge of the system.

4.0 Data Collected for Pavement Analysis

Idaho collects pavement data annually, using two methods: visual windshield survey and a Pathways® Profiler van.

- The asset management engineer performs an annual inspection with a district representative of every state highway by visual (windshield) inspection. **This results in a crack index for the pavement (see Section 4.1.)**
- The Profiler van drives the same highways, collecting hundreds of miles of video images, rutting data, and roughness data. **This results in a roughness index and a rutting depth (see Section 4.4.)**

Figure 1: Pavement Data Collection: Which Items Are Collected and By Whom



4.1 Cracking Index and the Idaho Method

ITD's pavement management engineer uses the Idaho Method to rate the state-jurisdiction roads every year- by either windshield collection (driving the roads) or by using the digital images collected by the Profiler van.

The ITD Pavement Rating Manual can be viewed here:

http://itd.idaho.gov/highways/docs/ITD%20Pavement%20Rating%20Manual%202011.pdf

A condition index (Cracking Index) between 0.0 and 5.0 is given to the pavement, based on size and location of cracks, percentage of the roadway surveyed that shows distress, and type of road surface. A 5.0 rating is good pavement with no visible distress and 0.0 is maximum distress.

PHOTO 1: PAVEMENT AT 5.0 CRACK RATING (IMAGE TAKEN FROM IDAHO RATING MANUAL):

PHOTO 2: PAVEMENT AT 0.0 CRACK RATING (IMAGE TAKEN FROM IDAHO RATING MANUAL):

Additionally, the roadways are rated for 6 different types of cracking, and each of those cracking types is assessed for severity and extent (low, medium, and high.) These cracking types are shown in Table 1.

TABLE 1: CRACKING TYPES COLLECTED IN IDAHO

Flexible (asphalt) cracking collected	Rigid (concrete) cracking collected
Alligator	Transverse slab
Block	Spalling
Edge	Scaling
Transverse	Meander
Longitudinal	Faulting
Patching/Potholes	Corner

- A roadway that receives a structural improvement (improving the ability of a pavement to support traffic loads through reconstruction or rehabilitation) **receives a rating of 5.0 the year that the construction project is open to traffic.**
- A roadway that receives a maintenance project (preserving the structural condition of a pavement - typically a sealcoat) **will preserve the current rating until further deterioration is detected or a structural improvement is made.**

4.2 COLLECTOR APP

The pavement management engineer rides in a vehicle and uses ESRI's Collector App on a mobile device to record the condition of the pavement distress for each section of state highway. The Collector App allows the engineer to follow along the road using GPS and then edit the associated cracking index as needed. This information is then synced back to ArcGIS online when the mobile device is within wireless range. When the engineer returns to the office, the updated ratings are transferred from ArcGIS Online to TAMS where they can be accessed by all users and used to determine appropriate pavement treatment types.

4.3 THE PATHWAY PROFILER VAN

Since 1995, Idaho has used Pathways® Profiler van technology to gather the majority of the roadway data. In 2008, ITD purchased a new road profiler van to greatly enhance the data quality and quantity that we are able to obtain and process (Photo 3). The profiler van drives every mile of state jurisdiction highway in the State of Idaho and digitally records its condition. From that data, the Pavement Analysis section extracts two values for pavement: roughness index and rutting depth.

PHOTO 3: ITD'S CURRENT PATHWAYS PROFILER VAN

Video images from the forward facing cameras as well as the pavement surface are available online at:

http://pathweb.pathwayservices.com/idaho/

With the new 2008 van, the rutting detection lasers are vastly improved (previous versions used 5 laser points to collect rutting data; the new van uses 1280 points). Additionally, the images are of much higher resolution. Our roughness data and rutting depth saw a major improvement in accuracy and detection in 2008.

4.4 INTERNATIONAL ROUGHNESS INDEX (IRI) AND ROUGHNESS INDEX (RI)

ITD uses a worldwide standard for measuring pavement smoothness called the International Roughness Index, or IRI. IRI was developed by the World Bank in the 1980's and is used in all of the states, as well as several countries. IRI is used to define a characteristic of the longitudinal profile of a traveled wheel track and constitutes a standardized roughness measurement. The commonly recommended units are meters per kilometer (m/km) (inches per mile (in/mi)) or millimeters per meter (mm/m). IRI is gathered by the Profiler van.

The index measures pavement roughness in terms of the number of inches per mile that a laser, mounted on the Profiler van, jumps as the van is driven along the roadway. Typically, the lower the IRI number, the smoother the ride; but **IRI is not known as a direct measure of rider discomfort.**

Idaho takes the measured IRI values for pavement and compresses them onto a 0.0-5.0 scale, similar to the Cracking Index scale, where 0.0 is very rough and 5.0 is very smooth. ITD calls this the pavement Roughness Index, or "RI". These numbers are collected and reported annually.

4.5 FRICTION TESTING

The Department collects friction data (a number typically between 20 - 100, with the higher numbers representing a higher friction value) by towing a trailer that measures the force on a wheel that is locked but not rotating (i.e., skidding). The friction represents the friction experienced by tires traveling on the pavement surface while wet. The pavement engineers can use this number to calculate whether a pavement needs a sealcoat or other remedy to improve surface friction. Most of this data is collected every other year on state routes and annually on the interstate system.

PHOTO 4: ITD'S CURRENT SKID TRUCK

4.6 FALLING WEIGHT DEFLECTOMETER (FWD) TESTING

The FWD is a non-destructive testing device that is used to complete structural testing for pavement rehabilitation projects, research, and pavement structure failure detection. The FWD is a device capable of applying dynamic loads to the pavement surface, similar in magnitude and duration to that of a single heavy moving wheel load. The response of the pavement system is measured in terms of vertical deformation, or deflection, over a given area using seismometers. ITD collects this data on sections of state highways that are eligible for paving projects, and uses the results to design the new pavement that is needed.

The FWD consists of a trailer mounted non-destructive pavement testing unit towed behind an F-250 pickup. Data collected from this equipment is used to evaluate the strength of both flexible (AC) and rigid (PCC) pavements. The evaluation includes base and subbase materials, checking load transfers across PCC joints, and detecting voids under the pavement.

The Department has initiated a pilot program to explore the use of Ground Penetrating Radar (GPR) to visualize the pavement sub-surface structure. The intent is to provide pavement engineers better data from a continuous scan of a section rather than just the 1/10th or ½ mile data from the FWD and borings. This will enable them to better estimate and plan for variations in sub-surface conditions when programming roadway improvements.

PHOTO 5: ITD'S CURRENT FWD TRUCK AND TRAILER (WITH GPR HORN ANTENNA MOUNTED TO THE FRONT BUMPER).

5.0 HOW DO WE DETERMINE "DEFICIENCY"?

The term "deficient" is used to indicate that a pavement has fallen below a certain threshold and requires a structural remedy. In this section, we outline the Classic Methodology that ITD has used for several years and show how ITD uses the thresholds to determine how to program the right remedy at the right time.

5.1 Classic Methodology: The 3-Legged Stool

Historically, the pavement management system has used thresholds in the cracking index and roughness index to determine whether or not a pavement is "deficient." These thresholds were triggered by two tiers of thresholds, based on the functional class of a roadway:

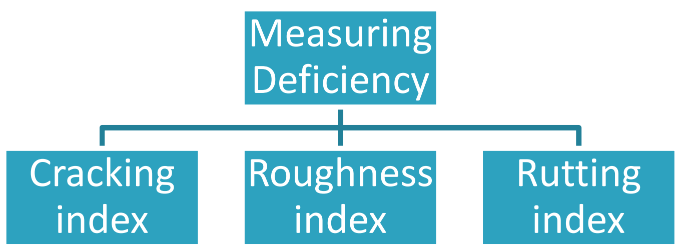
- Tier 1: Interstates and arterials
- Tier 2: Collectors

Districts would use the deficient threshold notification to realize that a roadway was ready for a structural project.

Through 2009, the Classic Methodology employed two measurements for deficiency: cracking index and roughness index. In 2010, our improved Profiler van technology and the new PMS system led to the addition of rutting data deficiency thresholds. These rutting thresholds were applied in 2010 as a third method to rate pavements as deficient.

The 3-legged stool of measuring deficiency looks like this:

Figure 2: The 3-Legged Stool of Measuring Deficiency



5.2 Pavement Condition Tables by Functional Class: Classic Methodology

This section contains the tables denoting for Cracking Index, Roughness Index, and Rutting thresholds, divided by functional class. Table 2 shows the tolerated thresholds for Good, Fair, Poor and Very Poor pavements for Idaho using the Classic Methodology.

Note that "poor" and "very poor" constitute our deficient measurement (in grey cells.)

TABLE 2: DEFICIENT THRESHOLDS, CLASSIC METHODOLOGY, BY FUNCTIONAL CLASS

Condition: Cracking Index		
Pavement Condition	Functional Class	
	Interstate and Arterials	Collectors
Good	CI > 3.0	CI > 3.0
Fair	2.5 ≤ CI ≤ 3.0	2.0 ≤ CI ≤ 3.0
Poor	2.0 ≤ CI < 2.5	1.5 ≤ CI < 2.0
Very Poor	CI < 2.0	CI < 1.5

Condition: Roughness Index		
Pavement Condition	Functional Class	
	Interstate and Arterials	Collectors
Good	RI > 3.0	RI > 3.0
Fair	2.5 ≤ RI ≤ 3.0	2.0 ≤ RI ≤ 3.0
Poor	2.0 ≤ RI < 2.5	1.5 ≤ RI < 2.0
Very Poor	RI < 2.0	RI < 1.5

Condition: Rutting		
Pavement Condition	Functional Class	
	Interstate and Arterials	Collectors
Good	0.00”- 0.24”	0.00”- 0.49”
Fair	0.25”- 0.49”	0.50”- 0.99”
Poor	0.50”- 0.74”	1.00”- 1.49”
Very Poor	≥0.75”	≥1.50”

6.0 2015 STATE HIGHWAY CONDITION: CLASSIC METHODOLOGY

The following section details the condition of state highway pavement in Idaho for 2015 and previous years using the methodology outlined in Section 5.0. In March 2016, **15%** of the state-jurisdiction roads were considered deficient by the Classic Methodology.

6.1 PAVED LANE MILEAGE INFORMATION FOR 2015

The official paved lane mileage for the State Highway System as of June 30, 2016 (according to the PMS) was **12,271**.

The paved lane mileage by district is presented in Table 3.

TABLE 3: PAVED LANE MILEAGE PER DISTRICT, IDAHO STATE HIGHWAY

District	Paved Lane Mileage*	Unpaved Lane Mileage*
1	1,520.122	0
2	1,469.058	30.872
3	2,647.047	0
4	2,424.975	0
5	1,888.492	0
6	2,320.931	18.568
Total	12,270.625	49.440

**Lane Mileage is from the PMS and is a snapshot from June 21, 2016.*

6.2 2015 DEFICIENT LANE MILES: HISTORICALLY AND NOW

Here, the past three years of deficiency, in both lane mileage and percentage, will be displayed in tabular form using the Classic Methodology. 2015 numbers are as of June 2016.

TABLE 4: DEFICIENT LANE MILES, CLASSIC METHODOLOGY, IDAHO STATE HIGHWAY

DEFICIENT LANE MILES			
District	**2013**	**2014**	**2015**
1	229	248	258
2	247	229	237
3	577	524	533
4	452	445	517
5	176	222	272
6	102	79	161

TABLE 5: PERCENT DEFICIENT, CLASSIC METHODOLOGY, IDAHO STATE HIGHWAY

% DEFICIENT LANE MILES			
District	**2013**	**2014**	**2015**
1	15%	16%	17%
2	17%	16%	16%
3	22%	20%	20%
4	19%	18%	21%
5	9%	12%	14%
6	4%	3%	7%

6.3 2015 STATEWIDE PAVEMENT CONDITION: CLASSIC METHODOLOGY

The following section shows 2015 pavement condition (Figures 3 through 5) as calculated by the Classic Methodology. Remember that "deficient" includes poor and very poor pavement condition.

Through 2009, deficiency was calculated from cracking index and roughness index. Either one could trigger a pavement as deficient, using the thresholds outlined in Section 5.2. In 2010, ITD designated rutting as a third measurement of deficiency. From 2010 forward, deficiency is calculated using cracking index, roughness index and rutting, shown in purple in Figure 3.

FIGURE 3: STATEWIDE PAVEMENT CONDITION, CLASSIC METHODOLOGY, 1995 TO 2015

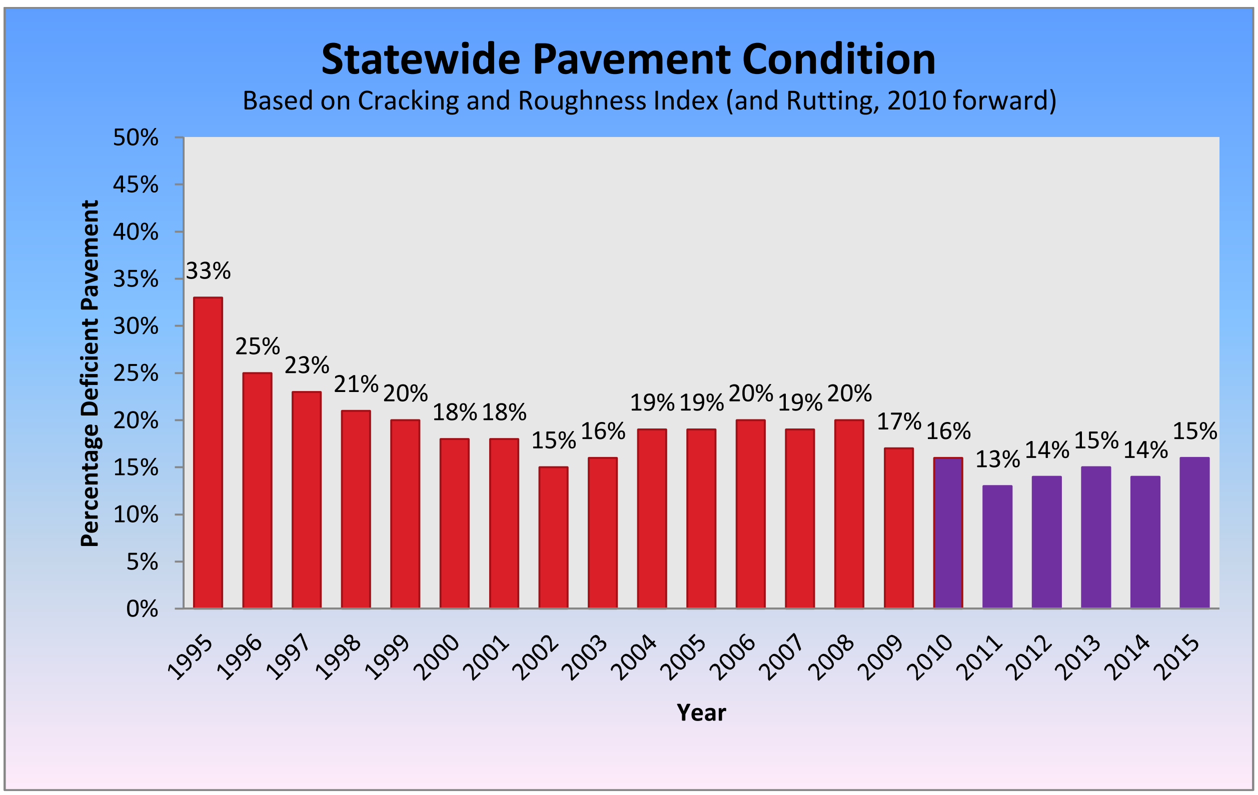


FIGURE 4: 2015 STATEWIDE PAVEMENT CONDITION, CLASSIC METHODOLOGY, PIE CHART

This figure shows the overall state highway system pavement condition for 2015, using the Classic thresholds outlined in Section 5.2.

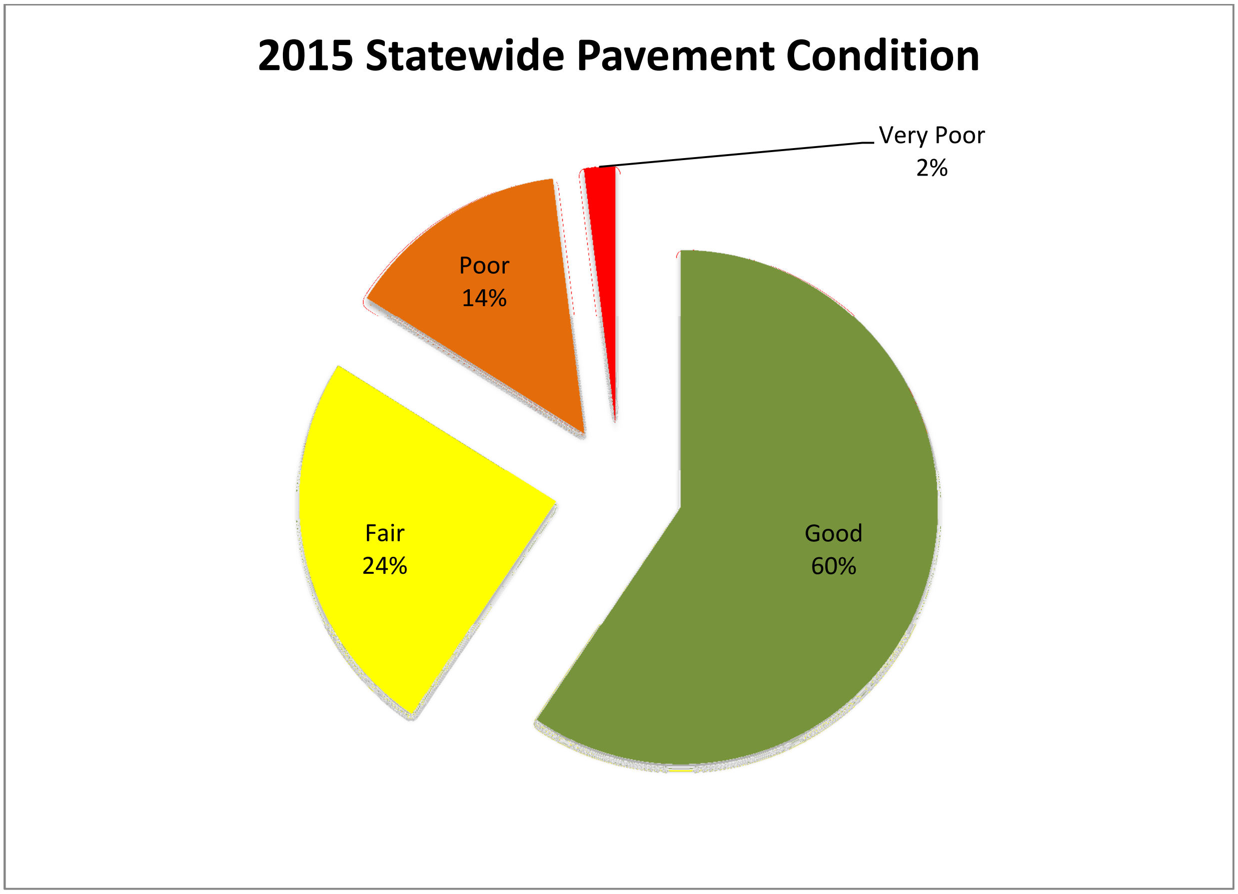
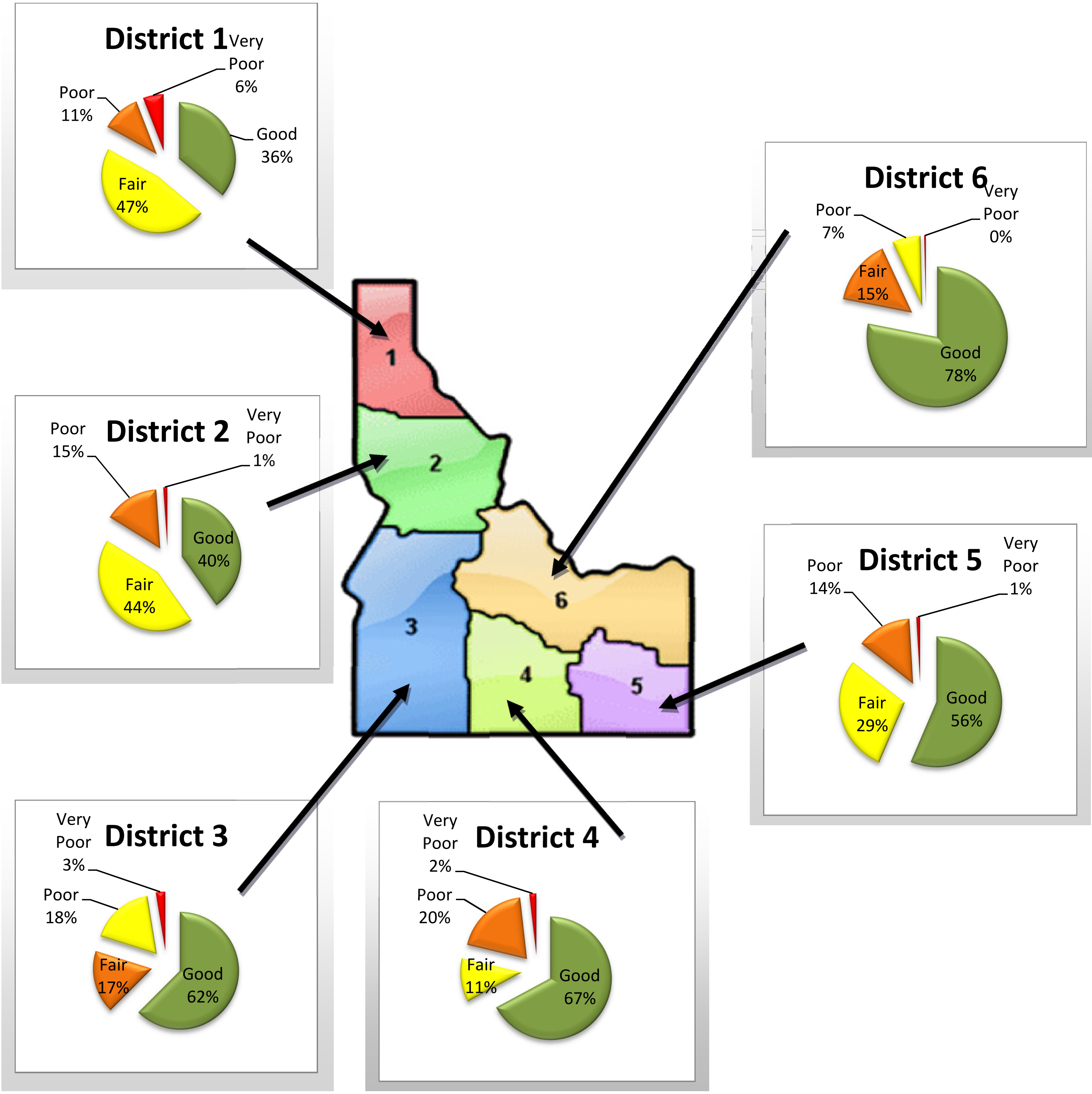


Figure 5 shows the 2015 pavement condition, calculated with the Classic Methodology, by district.

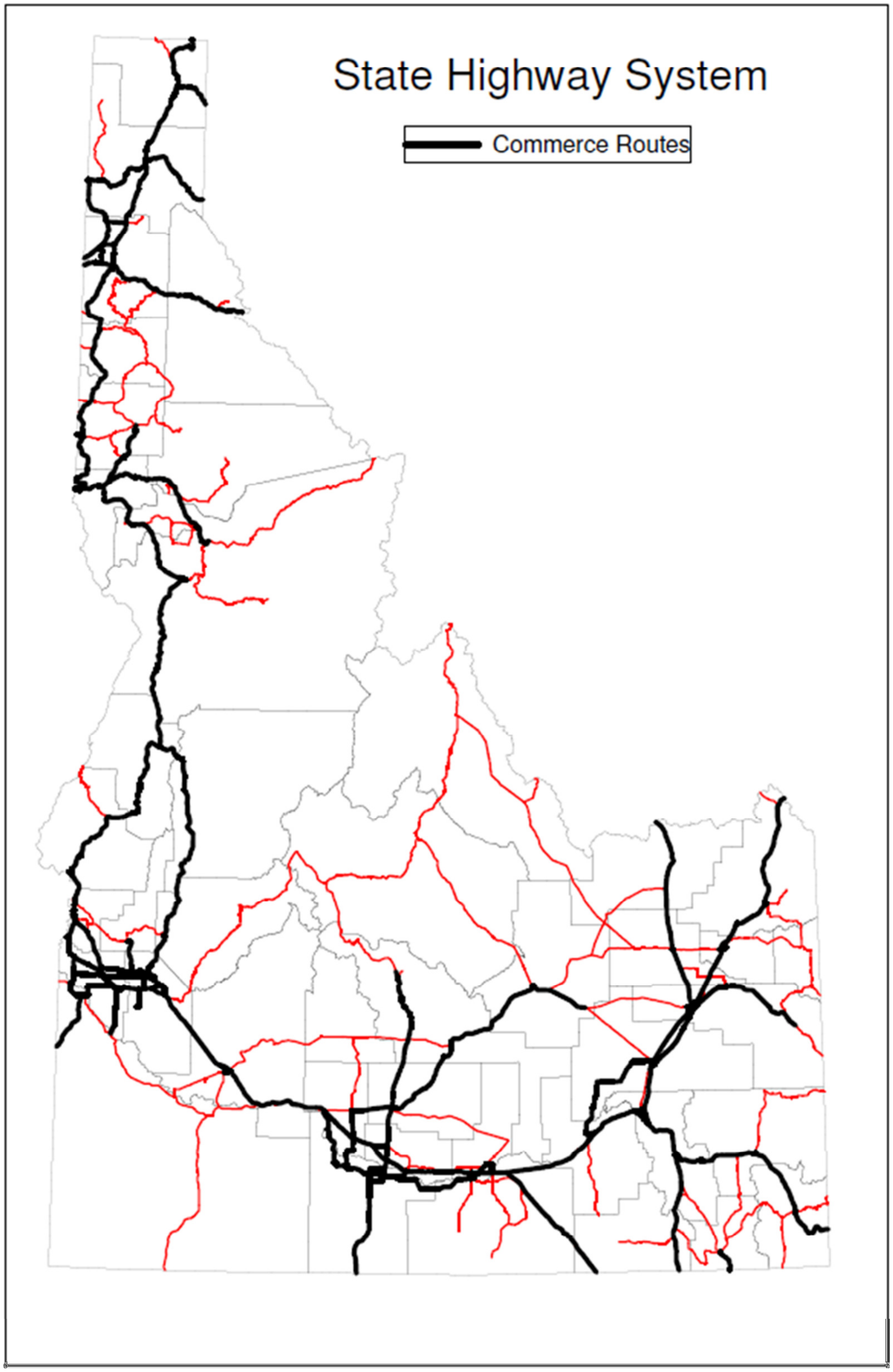
FIGURE 5: 2015 PAVEMENT CONDITION BY DISTRICT



7.0 COMMERCE ROUTES

In 2015, the Idaho Transportation Board approved a modified pavement management strategy that focused available funding on those routes that carry commerce. Initially "commerce routes" were defined as any route with 300 or more Commercial Annual Average Daily Traffic (CAADT). In turn, "non-commerce routes" were defined as any route with less than 300 CAADT. Because traffic volumes vary along any given route, routes that have a predominance of traffic volume over 300 CAADT were considered commerce routes in their entirety. Consequently, those routes that only had small portions with counts over 300 CAADT were removed. The final "Commerce Route Map" can be seen in Figure 6 with commerce routes shown in black and non-commerce routes shown in red. The strategy was to invest in all types of treatments (from sealcoats to full reconstructs), as warranted, on commerce routes. Non-commerce routes would be preserved and maintained at their current condition.

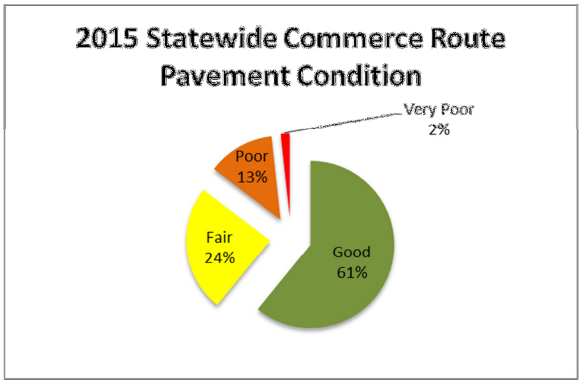
Figure 6: Commerce Route Map



7.1 Commerce and Non-Commerce Route Conditions

The following figures and tables show the statewide and district conditions for both commerce and non-commerce routes.

Figure 7: 2015 Statewide Commerce and Non-Commerce Route Pavement Condition



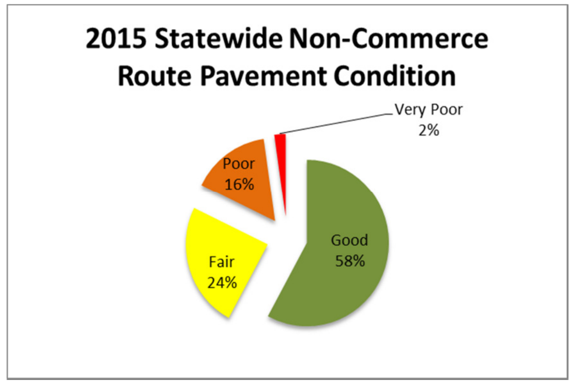


Table 6: 2015 Commerce Route Pavement Condition, by District

	Good	Fair	Poor	Very Poor	Deficient Lane Miles	Total District Lane Miles	% Deficient
District 1	320	458	133	61	195	**973**	20%
District 2	223	303	79	8	87	**613**	14%
District 3	1018	311	199	19	218	**1547**	14%
District 4	1081	108	243	15	258	**1447**	18%
District 5	664	290	125	11	136	**1090**	12%
District 6	678	130	66	0	66	**874**	8%
Total Statewide Lane Miles	**3984**	**1601**	**845**	**114**	**959**	**6544**	**15%**

Table 7: 2015 Non-Commerce Route Pavement Condition, by District

	Good	Fair	Poor	Very Poor	Deficient Lane Miles	Total District Lane Miles	% Deficient
District 1	229	254	35	28	64	**547**	12%
District 2	367	338	143	8	151	**856**	18%
District 3	636	149	266	49	315	**1100**	29%
District 4	549	171	231	28	259	**978**	26%
District 5	402	260	130	6	137	**798**	17%
District 6	1134	219	86	9	94	**1447**	7%
Total Statewide Lane Miles	**3316**	**1391**	**891**	**128**	**1019**	**5727**	**18%**

8.0 How Does ITD Predict and Recommend Pavement Projects?

This section details how Idaho uses pavement condition data to determine which pavement remedies are appropriate.

8.1 Historically

Historically, ITD generated rehabilitation and reconstruction project recommendations from the Highway Economic Requirements System – STate Version (HERS-ST). HERS-ST is a federally maintained computer model which was run with data taken from ITD's mainframe.

The model required manual manipulation in order to produce results that were specific to Idaho's weather, climate, terrain, construction practices, and several other variables. The manipulation was a time-consuming process.

The projects that were recommended by HERS-ST were given to staff as project suggestions, and the staff would then weigh the recommendations against construction history, public need, and funding limitations to come up with a project list.

8.2 The Pavement Management System (PMS)

In 2009, ITD purchased new pavement management system software, which was implemented by December 2010. The PMS can now be used to predict pavement deterioration and recommend projects. The PMS has very powerful performance models and decision trees that were directly designed by ITD pavement engineers to mimic their project choices and mimic how Idaho's pavement typically deteriorates. Mathematical manipulation of results is no longer required, as the system is specifically designed for Idaho and provides results that account for our climate, construction history, weather, and other variables.

8.3 The Idaho Transportation Improvement Program (ITIP)

The Idaho Transportation Improvement Program (ITIP) is created annually by ITD to provide project recommendations for the next 5 years. The 5-year ITIP program is directly uploaded into the PMS, where ITD runs the projects in the analysis engine and analyzes how those projects will benefit the system. The analysis uses the predicted deterioration of roadways and programmed improvements to provide results of how ITD can best optimize their budget when programming new projects. These optimized investment strategies are sent to the Districts who then make the ultimate decision of which projects will be programmed.

The performance trees and decision trees used in the PMS system use a slightly modified version of determining deficiency when suggesting programmed projects. This is called the Greek Method, which is detailed in Section 8.0.

9.0 How Does the PMS Classify and Deteriorate Pavement?

This section outlines how the PMS divides up the pavements by traffic volume, truck traffic volume, and speed limit to determine a hierarchy of pavement need. These thresholds, called the "Greek Method", are used for predicting pavement behavior, **but are not currently used to calculate deficiency.**

9.1 The Greek Method

The use of functional class to classify deficient pavement has served the Department for a long time and helps us trend how our pavements are behaving. Currently, functional class is still used to report the overall deficiency percentage for the state and districts (Section 5.0.)

However, dividing up pavements by only 2 classes did not maximize the analysis engine capability in the PMS. ITD seized the opportunity to further enhance project prediction by applying a new 4-tier (Alpha, Beta, Gamma, Delta) pavement classification system, called the Greek Method. ITD's district engineers decided that speed limit, Average Annual Daily Traffic (AADT) and Commercial Average Annual Daily Traffic (CAADT) were the best data sources to classify roadways. The Greek Method divides up the pavement according to three items:

- The greater of **speed limit** or **AADT** (Greek functional class)
- Commercial truck traffic (**CAADT**) (Greek structural class)

The pavement is then classified with an Overall Greek Classification based on the higher of these two categories. Thus, if a pavement is classified as Alpha functionally, and Beta structurally, it will be an Alpha road overall.

Roadways with low speed limits or low AADT have manholes and utility patches and other surface deformities that are more easily tolerated at lower speeds. Thus, these roadways can be in a lower classification, where the PMS will not recommend a deep remedy until the roadway deteriorates a little further than a high-speed, high traffic roadway like an interstate.

Truck traffic has been proven to cause the majority of cracking, roughness and rutting on a roadway. Thus roadways with heavy truck traffic will require deeper remedies at a faster pace.

The thresholds in this section reflect the Department's initial calibration of the Greek Method. Research is ongoing, and we expect to revisit these thresholds periodically as we validate our assumptions.

These four tiers are presented below in Table 6.

TABLE 8: THE GREEK METHOD THRESHOLDS FOR THE PMS

Road Tier	Greek Functional Class		Greek Structural Class
	(Take the greater of Speed Limit or AADT)		
	SPEED LIMIT	**AADT**	**DAILY TRUCK TRAFFIC (CAADT)**
ALPHA	≥65 MPH	≥6000	≥ 2000 TRUCKS PER DAY
BETA	≥55 MPH	≥2500	≥ 500 TRUCKS PER DAY
GAMMA	≥35 MPH	≥1000	≥ 100 TRUCKS PER DAY
DELTA	<35 MPH	<1000	< 100 TRUCKS PER DAY

9.2 GREEK METHOD CLASSIFICATION THRESHOLDS FOR THE PMS

In this four tier Greek Method system, ITD created deficient thresholds for **four** tiers instead of the two tiers of functional classes shown in Section 5.2. These thresholds are used in PMS analysis, to predict how quickly Idaho's pavements will need repair or maintenance. These thresholds are not used to calculate deficiency of pavement. The thresholds for the PMS system analysis are presented below in Tables 7 through 9.

TABLE 9: GREEK METHOD CRACK INDEX THRESHOLDS

Greek Method Crack Index Thresholds				
Road Classification	**Alpha Roads**	**Beta Roads**	**Gamma Roads**	**Delta Roads**
Good	5.0 – 4.0	5.0- 3.5	5.0-3.0	5.0- 2.5
Fair	3.9- 3.0	3.4- 2.5	2.9-2.0	2.4- 1.5
Poor	2.9- 2.5	2.4- 2.0	1.9- 1.5	1.4- 1.0
Very Poor	≤ 2.4	≤1.9	≤1.4	≤ 0.9

TABLE 10: GREEK METHOD ROUGHNESS INDEX THRESHOLDS

Greek Method Roughness Index Thresholds				
Road Classification	**Alpha Roads**	**Beta Roads**	**Gamma Roads**	**Delta Roads**
Good	5.00 – 3.25	5.00- 3.00	5.00-2.75	5.0- 2.50
Fair	3.24- 3.00	2.99- 2.75	2.75-2.50	2.49- 2.25
Poor	2.99- 2.75	2.74- 2.50	2.49- 2.25	2.24- 2.00
Very Poor	≤ 2.74	≤2.49	≤2.24	≤ 1.99

TABLE 11: GREEK METHOD RUTTING THRESHOLDS

Greek Method Rutting Thresholds				
Road Classification	**Alpha Roads**	**Beta Roads**	**Gamma Roads**	**Delta Roads**
Good	0.00”- 0.25”	0.00”- 0.50”	0.00”- 0.75”	0.00”- 1.00”
Fair	0.26”- 0.50”	0.51”- 0.75”	0.76”- 1.00”	1.01”- 1.25”
Poor	0.51”-0.75”	0.76”- 1.00”	1.01”- 1.25”	1.26”- 1.50”
Very Poor	>0.75”	>1.00”	>1.25”	>1.50”

These thresholds are currently in use in the system in 2014. We expect to continue to refine them as we validate the assumptions we have made thus far.

10.0 CONCLUSION

We hope that you have found the information in this report useful and informative. If you have suggestions for additional information you would like to see presented in this report, please contact the Pavement Management Engineer at ITD using the contact information on the cover page of this report.