

Pavement Condition Report

Jeffersonville-Clark Regional Airport

Project 1480370



Prepared for:

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Executive Summary

Background

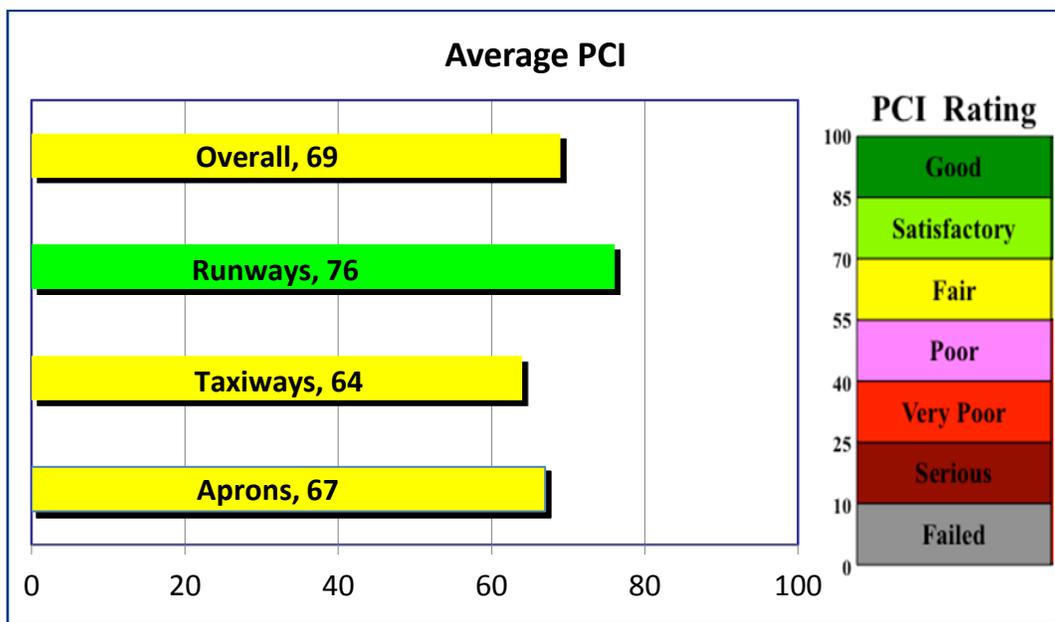
Since 1995, airports have been required to implement a pavement maintenance-management program to receive funding for any project constructed using Federal money. To assist individual airports in meeting this requirement and help improve airport pavement conditions statewide, the Indiana Department of Transportation, Office of Aviation contracted with Applied Research Associates, Inc. to provide pavement evaluation surveys at local airports. This report documents pavement condition at Clark Regional Airport in August 2013.

A primary objective of the pavement management program is to determine maintenance and rehabilitation needs by comparing pavement condition to a standardized benchmark called the minimum service level (MSL), defined as the minimum pavement condition acceptable in managing Indiana's airfield pavements. The benchmark MSL values used to trigger rehabilitation are shown below.

Runway	Taxiway	Apron
65	60	60

Pavement Condition

The overall Pavement Condition Index (PCI) for the airfield was 69. Runways had an average inspected PCI of 76 and are above the desired MSL of 65. Taxiways had an average inspected PCI of 64, and ramps had an average inspected PCI of 67.



Capital Improvement Program

The table below provides a summary of the projected pavement rehabilitation needs for the next 5 years of the capital improvement program, starting in 2013. The estimated cost for the rehabilitation actions that provide the greatest increase in pavement service life is approximately \$2.2 million in 2013 dollars. If no action is taken, the overall PCI is projected to drop to 60 by 2017.

Project Year	Calendar Year	Amount
Year 1	2013	796,043
Year 2	2014	1,164,154
Year 3	2015	76,320
Year 4	2016	38,318
Year 5	2017	100,070
5-Year Total		\$ 2,174,905

Maintenance

Analysis of potential maintenance projects identified approximately 1,300 square feet of patching needs and approximately 180,000 linear feet of crack sealing and crack repair needs, at an estimated total cost of approximately \$230,000.

Specific recommendations to help prioritize airfield maintenance are found in chapter 4 of this report. A summary of all identified maintenance needs is shown in the table below and in the figure on the following page.

Work Item	Quantity	Unit	Cost
AC RESTORATIVE CRACK REPAIR	173,640	LF	215,314
AC SUSTAINING CRACK REPAIR	8,163	LF	7,063
AC PATCH	1296	SF	11,243
Total:			\$ 233,620

AC = asphalt concrete; PCC = portland cement concrete; S.F. = square feet; L.F. = linear feet

Table of Contents

1. Introduction	1
1.1 Objective and Scope	1
1.2 Description of Tasks Performed.....	1
2. Pavement Condition Evaluation	7
2.1 Overview.....	7
2.2 Distress Types and Frequency	11
2.3 PCI Summary.....	12
2.4 Analysis Commentary	13
3. Capital Improvement Program.....	17
3.1 Analysis	17
3.2 Cost Estimates	17
3.3 Capital Improvement Strategies	21
4. Maintenance Management Program.....	25
4.1 General Comments	25
4.2 Recommended Maintenance Actions.....	25
4.3 Pavement Deterioration	29
4.4 Best Practices.....	32
4.5 Pavement Repair Materials	35
4.6 Pavement Repair Equipment.....	35
Appendix A. AIRPAV Software.....	37
Appendix B. Feature Analysis.....	39
Appendix C. General Maintenance Techniques.....	113
Appendix D. PCI Summary.....	121
Appendix E. Distress Identification	129
Appendix F. Airport Responsibilities.....	137

Table of Figures

Figure 1-1. Pavement Numbering System	3
Figure 1-2. PCI Value and Descriptive Rating	4
Figure 2-1. Inspected Pavement Condition	8
Figure 2-2. Pavement Condition by Branch Use	9
Figure 2-3. Typical Good AC Pavement (Feature 225)	9
Figure 2-4. Typical Fair AC Pavement (Feature 610)	10
Figure 2-5. Typical Poor AC Pavement (Feature 105).....	10
Figure 3-1. Programmed CIP.....	21
Figure 4-1. Recommended Maintenance	28

Table of Tables

Table 1-1. Minimum Service Levels	1
Table 1-2. Inspection Density	3
Table 2-1. Definition and Distribution of PCI Ratings	7
Table 2-2. Distress Frequency in AC Pavement	11
Table 2-3. PCI Results	12
Table 2-4. Runway Condition Distribution	13
Table 2-5. Taxiway Condition Distribution	14
Table 2-6. Apron Condition Distribution	15
Table 3-1. Unit Costs.....	18
Table 3-2. Most Comprehensive Repair	21
Table 3-3. Lowest Annual Cost Repair	22
Table 3-4. All Viable Options	23
Table 4-1. Recommend Maintenance Actions	25
Table 4-2. Recommend AC Patching	26
Table 4-3. Recommend AC Sustaining Crack Repair.....	26
Table 4-4. Recommend AC Restorative Crack Repair.....	27
Table 4-5. General Maintenance Policy (AC).....	33
Table 4-6. General Maintenance Policy (PCC)	34

GLOSSARY OF ABBREVIATIONS

AC	- asphalt concrete
ACC	- asphalt overlay on existing asphalt
APC	- asphalt overlay on existing concrete
APMS	- airport pavement management system
ARA	- Applied Research Associates, Inc.
CADD	- computer-aided design and drafting
CIP	- capital improvement program
FAA	- Federal Aviation Administration
FOD	- foreign object damage
GIS	- geographic information system
INDOT	- Indiana Department of Transportation
L&T	- longitudinal and transverse
LTD	- longitudinal, transverse, and diagonal
M&R	- maintenance and rehabilitation
MSL	- minimum service level
PCC	- portland cement concrete
PCI	- Pavement Condition Index
PCN	- Pavement Classification Number
PDF	- portable electronic document

1. Introduction

1.1 Objective and Scope

The Indiana Department of Transportation, Office of Aviation (INDOT) retained Applied Research Associates, Inc., (ARA) to provide airfield pavement inspection, pavement evaluation, and pavement management services for Indiana’s statewide network of airfield pavements. The pavement evaluations documented in this report were performed under purchase order number 14803170.

A primary objective of INDOT’s ongoing pavement evaluation and management program is to determine maintenance and rehabilitation (M&R) needs by comparing the Pavement Condition Index (PCI) to a standardized benchmark called the minimum service level (MSL). The MSL is defined as the minimum pavement condition acceptable in managing INDOT’s airside pavement. The benchmark MSL values used to trigger rehabilitation vary by airport classification and are shown in Table 1-1.

Table 1-1. Minimum Service Levels

Facility	Primary	Commercial Service	Large GA > 3600’Rwy	Large GA < 3600’Rwy
Runway	70	65	60	55
Taxiway	65	60	55	50
Apron	65	60	55	50

Additional goals of this project were to implement a software program to manage the pavement network, develop performance curves based on historical rates of pavement deterioration, forecast future pavement conditions, identify and recommend specific M&R actions to address the root cause of the documented pavement distress, and estimate the cost and ideal timing of the recommend M&R. The following tasks were performed in support of the project goals:

- Review record documents
- Define the pavement network
- Conduct an airfield condition survey
- Update the AIRPAV database & software
- Develop a 5-year airfield M&R work plan
- Report findings to INDOT

1.2 Description of Tasks Performed

1.2.1 Records Review

A detailed records review was performed to determine the airport’s construction history and the as-built cross section for each pavement feature. Plan sets for recent projects were provided to ARA in computer-aided design and drafting (CADD) format. Older plans sets were provided as hard copies or in portable electronic document (PDF) format.

1.2.2 Define Pavement Network

Prior to the field survey, a pavement network map was developed using available aerial photography and construction plans. The map was divided into facilities, features, and sample units. A facility is defined as a complete area of the airfield that is used for a particular type of operation. Facilities are typically named for complete functional elements of pavement, such as Runway 11-29, Taxiway A, or North Terminal Apron. After facilities are defined, they are divided into features based on pavement type, construction, structure, and usage. Note that the terms branch and section may be used interchangeably with facility and feature throughout this report.

Features are divided into sample units as prescribed by ASTM D5340-12, *Standard Test Method for Airport Pavement Condition Index Surveys*. A sample unit is a subdivision of a section used exclusively to aid in the inspection process and reduce the effort needed to determine distress quantities and the PCI. The specified sample unit size for an asphalt concrete (AC) pavement is $5,000 \text{ ft}^2 \pm 2,000 \text{ ft}^2$. Sample units on portland cement concrete (PCC) pavements contain 20 ± 8 slabs.

To allow users to search, sort, and identify airport pavement quickly, a numbering system is used in conjunction with the facility, feature, and sample unit convention. The format starts with facility, then feature, and finally identifies the sample unit. The number 1605.300 is parsed as an example in Figure 1-1. Most pavement references in this report are presented in this format.

Using statistical sampling methods, the PCI procedure provides a high confidence level in evaluating overall pavement condition while sampling only a portion of the pavement surface. Figure 1-2 shows the network-level inspection density used on this project. Where appropriate, “additional sample units” were identified and inspected to record pavement areas with distress patterns not representative of the overall pavement condition. The unique distress types documented in additional sample units are not extrapolated across the entire feature.

As the surveyors inspected the pavement, they were mindful to ensure that the pre-survey airfield map depicted the actual pavement, otherwise known as a “ground-truth” survey. Noticeable differences between what was present in the field and what was displayed on the maps were adjusted by a CADD technician.

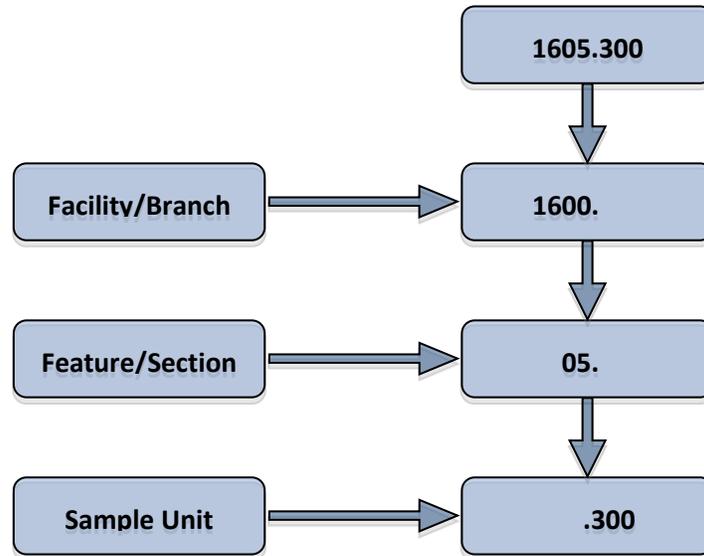


Figure 1-1. Pavement Numbering System

Table 1-2. Inspection Density

Sample Unit in Feature	Inspected Sample Units
1-2	ALL
3-4	2
5-7	3
8-10	4
11-14	5
15-19	6
20-25	7
26-30	8
31-37	9
38-45	10
46-55	11
56-80	12
> 80	15%

1.2.3 Conduct Airfield Condition Survey

The pavement condition surveys were performed in accordance with ASTM D5340-12. The procedure is based on the identification and measurement of visible distress at the pavement surface. Each PCI distress will deduct from the pavement's perfect condition of 100. Using pavement management software (or curves provided in ASTM D5340-12), a deduct value is determined for each combination of distress type, severity, and measured quantity. The PCI value is then determined from the unique combination of these variables.

A primary benefit of the PCI procedure is the ability to perform objective evaluations and compare pavement condition with an easy-to-understand numerical rating. Because the combined impact of multiple distresses is not cumulative, ASTM D5340-12 provides an additional family of curves to adjust for multiple distresses. The PCI is determined by applying the individual deduct value for each distress type along with any required correction factors to account for multiple distress types.

Figure 1-2 shows the relationship between PCI values, descriptive ratings, and typical repair actions. Generally, pavement maintenance is most cost-effective when the pavement is still in satisfactory condition. Rehabilitation, such as an asphalt mill and inlay, is typically performed for pavements with PCI values between 55 and 70. When the PCI value drops below 55, a mill and inlay may not provide the desired performance and complete reconstruction often becomes the most cost-effective means of repairing the pavement.

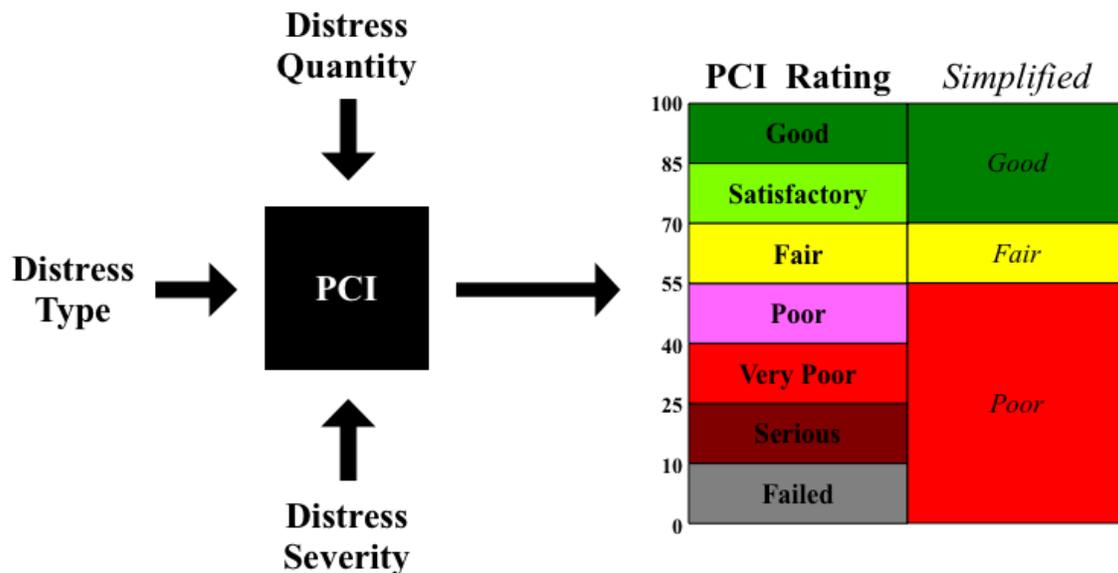


Figure 1-2. PCI Value and Descriptive Rating

1.2.4 Update AIRPAV Database & Software

The network definition, construction history, and data from the survey were entered into the AIRPAV pavement management system (APMS) software. After all data were entered, family curves were developed to model the change in pavement condition over time. These family curves are used to estimate future pavement condition. Typically, several curves are developed, with separate curves defined for different pavement surface types, such as AC, PCC, asphalt overlay on existing asphalt (ACC), and asphalt overlay on existing concrete (APC). The latest version of AIRPAV containing all survey data, deterioration curves, M&R policies, budgets, and construction history, was provided to INDOT on CD-ROM.

1.2.5 Develop 5-Year Airfield M&R Work Plans

A 5-year capital improvement program (CIP) was developed showing the year that each pavement feature was expected to fall below the MSL. The 5-year plan detailed in chapter 3 shows rehabilitation alternatives for each feature based on the PCI and the individual distress types observed during the pavement evaluation. The timing of each project is shown as the year that the PCI falls below the MSL and does not consider other important factors. Using reports like this for each airport in the State, INDOT engineers and planners develop a final 5-year statewide CIP plan that balances the sometimes conflicting priorities of pavement condition, operational constraints, construction staging considerations, and available funding.

1.2.6 Report Finding to INDOT

This report includes background information, PCI results and recommendations, and M&R budget scenarios. Photographs depicting typical pavement conditions observed during the survey are included in chapter 2. Appendix A contains general information about the AIRPAV pavement management software. Appendix B provides an analysis of each pavement section based on recorded distress. Appendix C contains a summary of general maintenance techniques and best practices. Appendix D provides a detailed summary of the airfield pavement condition. Appendix E describes common airfield distress types, and Appendix F contains exhibits to help the airport owner manage the airfield pavement system.

2. Pavement Condition Evaluation

2.1 Overview

Using statistical sampling methods, approximately 740,000 square feet of airside pavement was surveyed as part of this assessment. The average inspected PCI for all pavements was 69 (Fair). The average inspected PCI for runways, taxiways, and ramps were as follows: 76 (Satisfactory), 64 (Fair), and 67 (Fair). Table 2-1 provides a general description of the PCI rating categories, including a simplified rating scale of Good, Fair, and Poor. This table also shows the associated distress levels and general M&R requirements for each rating category.

Table 2-1. Definition and Distribution of PCI Ratings

Simplified PCI Rating	PCI Range	Definition	Pavement Area (ft ²)	Pavement Area (%)
Good	86-100	GOOD: Pavement has minor or no distresses and requires only routine maintenance.	355,597	14
	71-85	SATISFACTORY: Pavement has scattered low-severity distresses that need only routine maintenance.	506,078	20
Fair	56-70	FAIR: Pavement has a combination of generally low- and medium-severity distresses. M&R needs are routine to major in the near future.	1,478,328	60
Poor	41-55	POOR: Pavement has low-, medium-, and high-severity distresses that probably cause some operational problems. Near-term maintenance and repair needs may range from routine up to a requirement for reconstruction.	130,856	5
	26-40	VERY POOR: Pavement has predominantly medium- and high-severity distresses that cause considerable maintenance and operational problems. Near-term maintenance and repair needs will be intensive in nature.	-	-
	11-25	SERIOUS: Pavement has mainly high-severity distresses that cause operational restrictions; immediate repairs are needed.	-	-
	0-10	FAILED: Pavement deterioration has progressed to the point that safe operations are no longer possible; complete reconstruction is required.	-	-

Twenty pavement sections had a simplified PCI rating of Fair, indicating maintenance needs may vary from routine to major. Three pavement sections had a simplified PCI rating of Poor, indicating significant maintenance needs up to a requirement for reconstruction.

The pavement within each of the PCI condition categories is shown in Figure 2-1. The inspected PCI is summarized by branch use in Figure 2-2, and the photographs in Figure 2-3 through Figure 2-5 provide examples of the condition categories.

Jeffersonville-Clark Regional Airport - JVY
2013 PCI Inspection

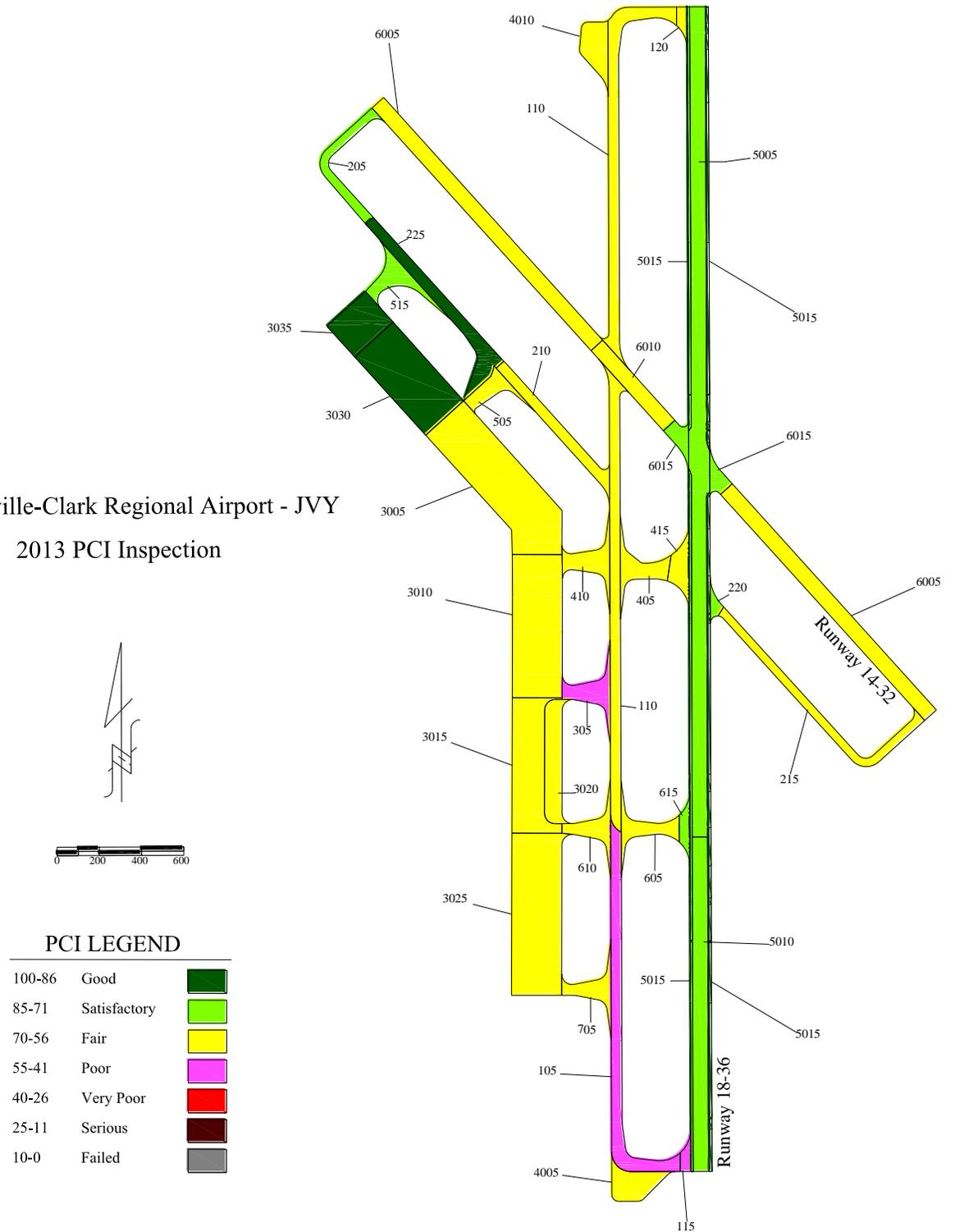


Figure 2-1. Inspected Pavement Condition

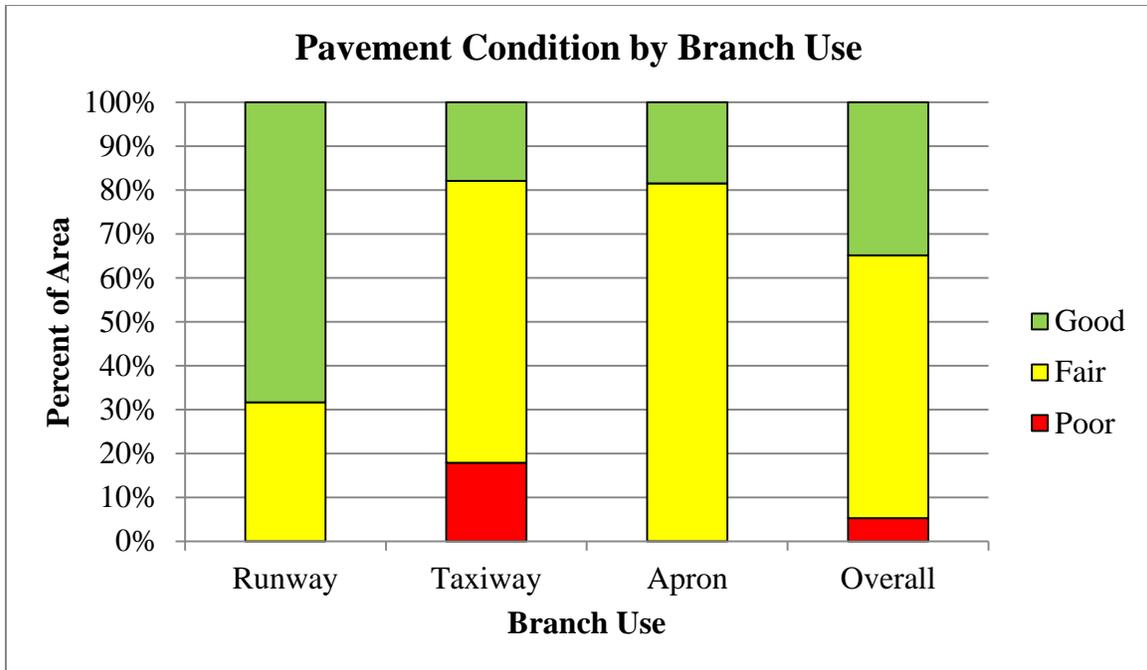


Figure 2-2. Pavement Condition by Branch Use



Figure 2-3. Typical Good AC Pavement (Feature 225)



Figure 2-4. Typical Fair AC Pavement (Feature 610)



Figure 2-5. Typical Poor AC Pavement (Feature 105)

2.2 Distress Types and Frequency

The inspectors surveyed approximately 740,000 ft² of AC pavement. The frequency of each distress type is shown in Table 2-2. The most common distress types were longitudinal and transverse (L&T) cracking, ravelling, alligator cracking, and block cracking. Block cracking, L&T cracking, and ravelling are climate-related distresses; alligator cracking is a load related distress.

Table 2-2. Distress Frequency in AC Pavement

Distress	Sample Units	% Inspected Sample Units
L&T CRACKING	159	94
RAVELING	76	45
ALLIGATOR CRACKING	38	22
BLOCK CRACKING	21	12
SWELL	9	5
BLEEDING	5	3
OIL SPILLAGE	4	2
RUTTING	4	2
DEPRESSIONS	3	2
PATCHING	1	1
WEATHERING	1	1

2.3 PCI Summary

The branch and section PCI values are shown below, along with the surface type, area, and last year construction occurred.

Table 2-3. PCI Results

Branch ID	Branch PCI	Section	Surface	Area (sf)	Built	2010 PCI	2013 PCI
100	57	105	AC/AC	98,238	1990	65	55
		110	AC/AC	208,197	1990	68	58
		115	AC/AC	6,128	1997	78	53
		120	AC/AC	6,128	1997	80	70
200	75	205	AC	29,583	1981	78	73
		210	AC/AC	39,911	1990	75	69
		215	AC	53,000	1981	70	65
		220	AC/AC	5,320	1997	81	78
		225	AC	60,032	2004	95	89
300	48	305	AC/AC	26,490	1990	63	48
400	65	405	AC/AC	27,224	1990	67	62
		410	AC/AC	26,610	1990	69	66
		415	AC/AC	18,900	1997	75	68
500	73	505	AC/AC	19,850	1990	68	62
		515	AC	26,340	2004	95	82
600	61	605	AC/AC	24,937	1990	60	57
		610	AC/AC	22,400	1990	72	57
		615	AC/AC	9,700	1997	82	79
700	61	705	AC	23,400	1992	62	61
3000	68	3005	AC/AC	194,575	1990	69	61
		3010	AC/AC	159,492	1990	68	62
		3015	AC	103,384	1990	73	69
		3020	AC	48,550	1992	65	59
		3025	AC	181,650	1992	66	61
		3030	AC	121,581	2003	93	89
		3035	AC	47,734	2004	98	96
4000	59	4005	AC/AC	31,000	1990	71	59
		4010	AC/AC	29,280	1990	68	58
5000	81	5005	AC/AC	296,495	1997	82	78
		5010	AC/AC	116,660	1997	80	74
		5015	AC/AC	126,250	2008	96	93
6000	67	6005	AC/AC	222,100	1992	74	66
		6010	AC/AC	37,740	1990	85	64
		6015	AC/AC	21,980	1997	85	79

2.4 Analysis Commentary

The following pages provide a brief overview of the 2013 inspected pavement conditions for each facility. Comments are based primarily on the AIRPAV analysis but also include field notes and remarks from the pavement condition inspectors. Where appropriate, individual pavement sections are referenced within the larger facility.

Several of the pavement sections had larger than normal deterioration rates since the last inspection. In most cases, the identified maintenance actions would increase the PCI substantially with the new PCI more closely resembling typically pavement deterioration rates throughout the state. Specific pavement features with an unusually large decrease in PCI are as follows:

- Feature 115 had a 25 point PCI drop since the last inspection, due to the development of alligator cracking and high severity L&T cracking.
- Feature 305 had a 15 point PCI drop since the last inspection, due largely to advancing alligator cracking.
- Feature 515 had a 13 point PCI drop since the last inspection, due to the development of medium severity L&T cracking.
- Feature 610 had a 15 point PCI drop since the last inspection, due largely to the doubling of medium severity L&T cracking.
- Feature 4005 had a 12 point PCI drop since the last inspection, due to the quantity of medium severity L&T cracking nearly tripling.
- Feature 6010 had a 21 point PCI drop since the last inspection, due to the development of medium severity L&T cracking and low severity ravelling.

2.4.1 Runways

Runways consisted of 6 sections of AAC pavement. The runways had a total area of 821,225 ft² with an average inspected PCI of 76 (Good). The distribution of pavement area and sections by PCI range are shown in Table 2-4.

Table 2-4. Runway Condition Distribution

PCI Range	Rating	Number of Sections	Pavement Area (ft ²)	Pavement Area (%)
100-71	Good	4	561,385	68
70-56	Fair	2	259,840	32
55-0	Poor	-	-	-

2.4.1.1 Runway 18-36

The 5000 runway branch consists of 3 sections of AAC pavement, with a total area of 539,405 ft² and an area-weighted average PCI of 81 (Good). Recorded distresses included L&T cracking and ravelling.

2.4.1.2 Runway 14-32

The 6000 runway branch consists of 3 sections of AAC pavement, with a total area of 281,820 ft² and area-weighted average PCI of 67 (Fair). Recorded distresses included alligator cracking, L&T cracking, ravelling, and swell.

2.4.2 Taxiways

The taxiways consisted of 7 branches containing 19 sections of AC or AAC pavement. The total taxiway area is 732,388 ft², and the area-weighted average PCI was 64 (Fair). The distribution of pavement area and sections by PCI range are shown in Table 2-5.

Table 2-5. Taxiway Condition Distribution

PCI Range	Rating	Number of Sections	Pavement Area (ft ²)	Pavement Area (%)
100-71	Good	5	130,975	18
70-56	Fair	11	470,557	64
55-0	Poor	3	130,856	18

2.4.2.1 100 Series

The 100 series taxiways consisted of 4 sections of AAC pavement. The branch had a total area of 318,691 ft² with an area-weighted average PCI of 57 (Fair). The recorded distresses included alligator cracking, block cracking, L&T cracking, ravelling, weathering, patches, and swell.

2.4.2.2 200 Series

The 200 series taxiways consisted of 3 sections of AC pavement and 2 sections of AAC pavement. The branch had a total area of 187,846 ft² with an area-weighted average PCI of 75 (Good). The dominate distresses were L&T cracking, alligator cracking, and ravelling.

2.4.2.3 300 Series

The 300 branch of taxiways consisted of 1 section of AAC pavement. The section had a total area of 26,490 ft² with a PCI of 48 (Poor). The recorded distresses included L&T cracking, alligator cracking, and ravelling.

2.4.2.4 400 Series

The 400 series taxiway consists of 4 sections of AAC pavement, with a total area of 72,734 ft² and an area-weighted average PCI of 65 (Fair). Recorded distresses included alligator cracking, bleeding, depression, L&T cracking, ravelling, and swell.

2.4.2.5 500 Series

The 500 series taxiway consists of 1 section of AC and 1 section of AAC pavement, with a total area of 46,190 ft² and an area-weighted average PCI of 73 (Good). Recorded distresses included L&T cracking, ravelling, and swell.

2.4.2.6 600 Series

The 600 series taxiway consists of 3 sections of AAC pavement, with a total area of 57,037 ft² and an area-weighted average PCI of 61 (Fair). Recorded distresses included alligator cracking, L&T cracking, and ravelling.

2.4.2.7 700 Series

The 700 series taxiway consists of 1 section of AC pavement, with a total area of 23,400 ft² and an area-weighted average PCI of 61 (Fair). Recorded distresses included block cracking, L&T cracking, and ravelling.

2.4.3 Aprons

The aprons consisted of 9 sections of AC or AAC pavement. The total area of apron pavements was 917,246 ft², and the area-weighted average PCI was 67 (Fair). The distribution of pavement area and sections by PCI range are shown in Table 2-6.

Table 2-6. Apron Condition Distribution

PCI Range	Rating	Number of Sections	Pavement Area (ft ²)	Pavement Area (%)
100-71	Good	2	169,315	18
70-56	Fair	7	747,931	82
55-0	Poor	-	-	-

2.4.3.1 3000 Series

The 3000 series ramps consisted of 7 sections of AC and AAC pavement, with a total area of 856,966 ft² and a PCI of 68 (Fair). The main recorded distresses were alligator, block cracking, and L&T cracking.

2.4.3.2 4000 Series

The 4000 series ramps consisted of 2 section of AAC pavement with a total area of 60,280 ft² and an average PCI of 59 (Fair). The recorded distresses included L&T cracking and ravelling.

3. Capital Improvement Program

3.1 Analysis

The individual feature analyses shown in appendix B document viable rehabilitation projects that address the causes of each pavement section failure while restoring the pavement to a condition above the desired MSL. The recommended timing of each improvement action is defined as the year that the pavement condition is projected to reach the MSL. By establishing benchmark MSL targets, it is possible to plan objectively for future needs against a standard set of performance criteria. This section categorizes the identified viable options into CIP strategies based on cost and expected service life.

The airport may find it desirable to adjust the timing of projects detailed in the CIP to meet fiscal and operational constraints. For example, if different sections of a runway were projected to reach the MSL in various years ranging from 2013 to 2015, it is not operationally feasible to stage rehabilitation over a 3-year period. Instead, runway rehabilitation would be programmed in a manner that balanced the need to minimize the length of the runway closure while maximizing the remaining service life.

3.2 Cost Estimates

Project costs were estimated based on the pavement area and the unit costs shown in Table 3-1 for specific M&R activities. Project costs are presented so planners and managers can compare the relative magnitude of funding required for various alternatives. The two-page AIRPAV feature analysis (see appendix B) provides cost estimates for each identified project. These cost estimates are for planning purposes only and do not constitute an engineering estimate.

Furthermore, these costs estimates represent the improvement of existing pavement structures and associated incidental work only. Other potential project line items, such as lighting, navigational aids, and drainage modifications are not included, and estimates for those items must be developed separately and incorporated into an overall project cost.

Typical examples of work that might be included in alternatives evaluated by AIRPAV are outlined on the following pages. These example projects would meet the requirements for each selected option; however, the descriptions are not intended to imply required, or even preferred, design configurations. Rehabilitation decisions, such as overlay thickness design, should be made in conjunction with engineering design analysis.

Table 3-1. Unit Costs

Rigid Pavement (PCC)	
Reconstruction	\$12.90 /sf
Slab Replacement & Full Depth Patching	\$12.48 /sf
Patching (Partial Depth)	\$16.70 /sf
Slab Repair & Overlay	\$4.69 /sf + \$0.41 /sf/in > 4"
Joint Seal Replacement	\$2.24 /lf
Joint Seal Repair	\$0.87 /lf
Undersealing	\$4.16 /sf
Flexible Pavement (AC)	
Reconstruction	\$5.36 /sf
Resurfacing	\$1.44 /sf
Structural Overlay	\$2.25 /sf + \$0.41 /sf/in > 4"
Surface Treatment	\$0.39 /sf
Patching	\$9.78 /lf
Crack Repair (Restorative)	\$1.24 /lf
Crack Repair (Sustaining)	\$0.85 /lf

3.2.1 Rigid Pavement Work Descriptions

The following descriptions provide additional information about the typical work items covered by the unit costs shown in Table 3-1.

3.2.1.1 Reconstruction

Reconstruction is recommended when the pavement defects would not be corrected by less extensive measures. Unit prices assume removal of the existing pavement to the subgrade and reconstruction pavement with 8 inches of high strength PCC pavement on 6 inches of aggregate subbase.



3.2.1.2 Repair and Overlay

This procedure usually consists of a crack and seat process, where the existing pavement is broken into segments of approximately 2 ft on a side by dropping a heavy breaker bar onto the pavement. Properly done, aggregate interlock between pavement segments is retained and reflective cracking is reduced. A flexible surface is then placed over the recycled PCC base.



3.2.1.3 Slab Replacement

Slab replacements are typically required for high-severity blow ups, scaling, and shattered slabs. Unit prices assume removal of the selected slab to the subgrade. Prepare subgrade to bearing strength equivalent to surrounding subgrade. Provide subbase support equivalent to existing and install load transfer steel as required. Place PCC pavement level with existing surface.



3.2.1.4 Patching (Partial Depth)

While partial depth patching is most commonly used to repair joint and corner spalls, it is effective for a wide variety of distress types. Saw cut and remove area of pavement to sound concrete above reinforcing steel. Treat existing concrete to ensure firm bond. Place PCC level with existing surface.



3.2.1.5 Joint Seal Replacement

Rout joints and cracks to a depth of at least 1-1/4 inches, clean joint wall surfaces to expose fresh vital concrete, install backing rope, and apply rubberized sealant meeting ASTM D3405 specification, or equivalent.



3.2.1.6 Joint Seal Repair

Press existing sealant into joint for use as backer material; apply joint sealant meeting ASTM D3405 specification, or equivalent.

3.2.1.7 Undersealing

Undersealing is used to repair faulting between slabs or when corner breaks have settled relative to the slab. High-pressure injection is used to force material into the underlying voids and continues until the settled pavement is restored to its original elevation. Several materials have been used for undersealing, including cement grout, asphalt slurries, and proprietary formulations of expansive Styrofoam.



3.2.2 Flexible Pavement Work Descriptions

3.2.2.1 Reconstruction

Reconstruction is recommended when the pavement defects would not be corrected by less extensive measures. Unit prices assume removal of existing pavement to subgrade. Scarify and compact subgrade to 6-inch depth. Construct 4 inches of P401 AC surface course on 8 inches of aggregate base course.



3.2.2.2 Resurfacing

Resurfacing assumes a nominal 2-inch asphalt mill and inlay on existing prepared pavement.



3.2.2.3 Structural Overlay

Structural overlays are used to address load related distress or to increase pavement load bearing capacity. Apply a 4-inch AC overlay on existing prepared pavement. Add additional thickness as needed to achieve required strength.

3.2.2.4 Surface Treatment

Apply a high-quality, penetrating rejuvenating sealer



3.2.2.5 Patching

High-performance cold patching products can be used for short term repairs. Long-term patches should be made with plant mixed hot asphalt meeting FAA P401 specs.

3.2.2.6 Crack Repair (Restorative)

Rout existing crack to a minimum depth of 1-1/4 inches, install backing rope and apply rubberized crack filler meeting ASTM D3405 specification.

3.2.2.7 Crack Repair (Sustaining)

This is typically spot repairs of existing crack sealant.



3.3 Capital Improvement Strategies

Figure 3-1 shows a projection of the overall airport pavement condition for the next 10 years based on implementing one of three capital improvement strategies:

- No Action: No capital improvement action is undertaken
- Longest Life: The most comprehensive repair and longest life rehabilitation option
- Lowest Cost: The rehabilitation option with the projected lowest annual cost

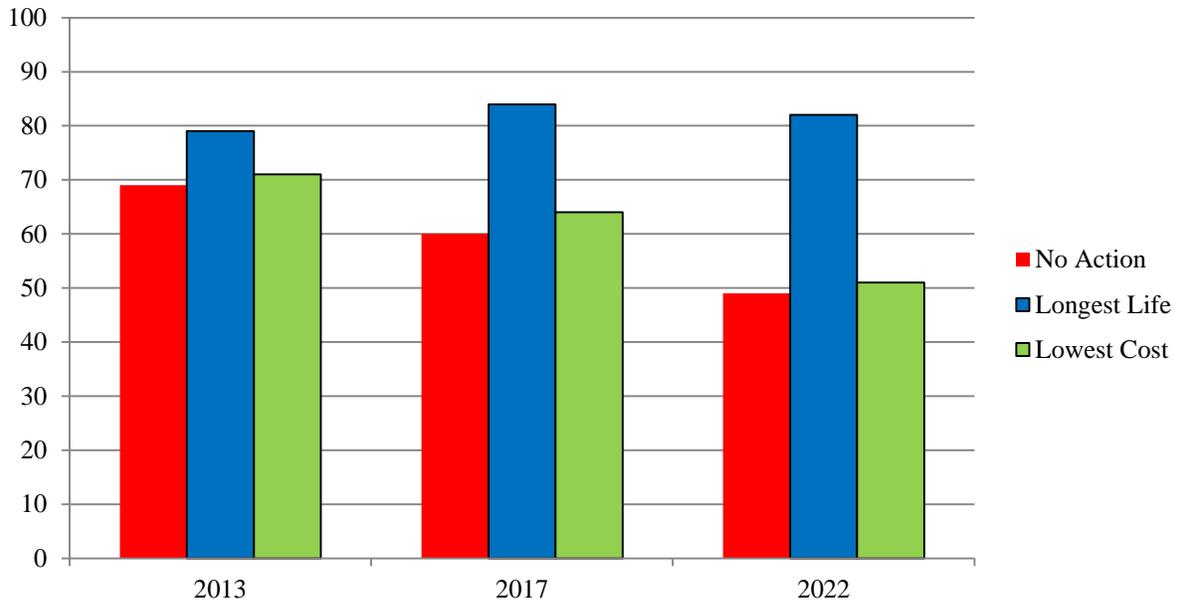


Figure 3-1. Programmed CIP

The longest life CIP scenario is projected to cost approximately **\$3 million** over the next 10 years. The lowest annual cost scenario is projected to cost approximately **\$800,000** over the next 10 years. Examples of each capital improvement strategy and a complete listing of all viable capital projects are presented in Table 3-2 through Table 3-4.

Table 3-2. Most Comprehensive Repair

Feature	Built	Description	Action Yr	Work Item	Cost, \$
105	1990	PARALLEL TAXIWAY	2013	Resurfacing	141,462
110	1990	PARALLEL TAXIWAY	2013	Resurfacing	299,803
115	1997	PARALLEL TAXIWAY	2013	Resurfacing	8,824
120	1997	PARALLEL TAXIWAY	2020	Resurfacing	8,824
205	1981	PARALLEL TAXIWAY	2017	Resurfacing	42,599
210	1990	PARALLEL TAXIWAY	2017	Resurfacing	57,471
215	1981	PARALLEL TAXIWAY	2015	Resurfacing	76,320
220	1997	PARALLEL TAXIWAY	2024	Resurfacing	7,660
305	1990	TAXIWAY TO RAMP	2013	Resurfacing	38,145
405	1990	TAXIWAY TO RAMP	2014	Resurfacing	39,202
410	1990	TAXIWAY TO RAMP	2016	Resurfacing	38,318

Feature	Built	Description	Action Yr	Work Item	Cost, \$
415	1997	TAXIWAY TO RAMP	2019	Resurfacing	27,216
505	1990	TAXIWAY TO RAMP	2013	Resurfacing	28,584
605	1990	TAXIWAY TO RAMP	2013	Resurfacing	35,909
610	1990	TAXIWAY TO RAMP	2013	Resurfacing	32,256
705	1992	TAXIWAY TO RAMP	2014	Resurfacing	33,696
3005	1990	RAMP	2014	Resurfacing	280,188
3010	1990	RAMP	2014	Resurfacing	229,668
3015	1990	RAMP	2018	Resurfacing	148,872
3020	1992	RAMP	2013	Resurfacing	69,912
3025	1992	SOUTH RAMP	2014	Resurfacing	261,576
4005	1990	RUNWAY 36 RUNUP	2013	Resurfacing	44,640
4010	1990	RUNWAY 18 RUNUP	2013	Resurfacing	42,163
5005	1997	RUNWAY 18-36	2022	Resurfacing	426,952
5010	1997	RUNWAY 18-36	2020	Resurfacing	167,990
6005	1992	RUNWAY 14-32	2014	Resurfacing	319,824
6010	1990	RUNWAY 14-32	2013	Resurfacing	54,345
6015	1997	RUNWAY 14/32	2023	Resurfacing	31,651
				Total	2,994,070

Table 3-3. Lowest Annual Cost Repair

Feature	Built	Description	Action Yr	Work Item	Cost, \$
105	1990	PARALLEL TAXIWAY	2013	Resurfacing	141,462
110	1990	PARALLEL TAXIWAY	2013	Crack Repair	22,576
115	1997	PARALLEL TAXIWAY	2013	Resurfacing	8,824
120	1997	PARALLEL TAXIWAY	2020	Crack Repair	225
205	1981	PARALLEL TAXIWAY	2017	Crack Repair	770
210	1990	PARALLEL TAXIWAY	2017	Crack Repair	3,295
215	1981	PARALLEL TAXIWAY	2015	Crack Repair	3,862
220	1997	PARALLEL TAXIWAY	2024	Crack Repair	353
305	1990	TAXIWAY TO RAMP	2013	Resurfacing	38,145
405	1990	TAXIWAY TO RAMP	2014	Crack Repair	1,478
410	1990	TAXIWAY TO RAMP	2016	Crack Repair	2,577
415	1997	TAXIWAY TO RAMP	2019	Crack Repair	1,308
505	1990	TAXIWAY TO RAMP	2013	Crack Repair	2,475
605	1990	TAXIWAY TO RAMP	2013	Resurfacing	35,909
610	1990	TAXIWAY TO RAMP	2013	Crack Repair	2,626
705	1992	TAXIWAY TO RAMP	2014	Surface Treatment	9,839
3005	1990	RAMP	2014	Surface Treatment	89,864
3010	1990	RAMP	2014	Resurfacing	229,668
3015	1990	RAMP	2018	Surface Treatment	46,372
3020	1992	RAMP	2013	Surface Treatment	19,639
3025	1992	SOUTH RAMP	2014	Surface Treatment	76,705
4005	1990	RUNWAY 36 RUNUP	2013	Crack Repair	3,987
4010	1990	RUNWAY 18 RUNUP	2013	Surface Treatment	14,066
5005	1997	RUNWAY 18-36	2022	Crack Repair	14,493

Feature	Built	Description	Action Yr	Work Item	Cost, \$
5010	1997	RUNWAY 18-36	2020	Crack Repair	7,299
6005	1992	RUNWAY 14-32	2014	Crack Repair	18,316
6010	1990	RUNWAY 14-32	2013	Crack Repair	3,917
6015	1997	RUNWAY 14/32	2023	Crack Repair	1,274
				Total	801,324

Table 3-4. All Viable Options

Feature	Built	Description	Action Yr	Work Item	Cost, \$
105	1990	PARALLEL TAXIWAY	2013	Surface Treatment	49,533
105	1990	PARALLEL TAXIWAY	2013	Crack Repair	19,374
105	1990	PARALLEL TAXIWAY	2013	Resurfacing	141,462
110	1990	PARALLEL TAXIWAY	2013	Surface Treatment	96,633
110	1990	PARALLEL TAXIWAY	2013	Crack Repair	22,576
110	1990	PARALLEL TAXIWAY	2013	Resurfacing	299,803
115	1997	PARALLEL TAXIWAY	2013	Surface Treatment	2,579
115	1997	PARALLEL TAXIWAY	2013	Resurfacing	8,824
120	1997	PARALLEL TAXIWAY	2020	Crack Repair	225
120	1997	PARALLEL TAXIWAY	2020	Resurfacing	8,824
205	1981	PARALLEL TAXIWAY	2017	Crack Repair	770
205	1981	PARALLEL TAXIWAY	2017	Resurfacing	42,599
210	1990	PARALLEL TAXIWAY	2017	Surface Treatment	17,185
210	1990	PARALLEL TAXIWAY	2017	Crack Repair	3,295
210	1990	PARALLEL TAXIWAY	2017	Resurfacing	57,471
215	1981	PARALLEL TAXIWAY	2015	Crack Repair	3,862
215	1981	PARALLEL TAXIWAY	2015	Resurfacing	76,320
220	1997	PARALLEL TAXIWAY	2024	Surface Treatment	2,131
220	1997	PARALLEL TAXIWAY	2024	Crack Repair	353
220	1997	PARALLEL TAXIWAY	2024	Resurfacing	7,660
225	2004	TAXIWAY AT RAMP	2013	No Action	-
305	1990	TAXIWAY TO RAMP	2013	Surface Treatment	11,884
305	1990	TAXIWAY TO RAMP	2013	Resurfacing	38,145
405	1990	TAXIWAY TO RAMP	2014	Surface Treatment	11,684
405	1990	TAXIWAY TO RAMP	2014	Crack Repair	1,478
405	1990	TAXIWAY TO RAMP	2014	Resurfacing	39,202
410	1990	TAXIWAY TO RAMP	2016	Surface Treatment	11,781
410	1990	TAXIWAY TO RAMP	2016	Crack Repair	2,577
410	1990	TAXIWAY TO RAMP	2016	Resurfacing	38,318
415	1997	TAXIWAY TO RAMP	2019	Crack Repair	1,308
415	1997	TAXIWAY TO RAMP	2019	Resurfacing	27,216
505	1990	TAXIWAY TO RAMP	2013	Surface Treatment	9,121
505	1990	TAXIWAY TO RAMP	2013	Crack Repair	2,475
505	1990	TAXIWAY TO RAMP	2013	Resurfacing	28,584
515	2004	TAXIWAY TO RAMP	2013	No Action	-
605	1990	TAXIWAY TO RAMP	2013	Surface Treatment	11,192
605	1990	TAXIWAY TO RAMP	2013	Crack Repair	1,905

Feature	Built	Description	Action Yr	Work Item	Cost, \$
605	1990	TAXIWAY TO RAMP	2013	Resurfacing	35,909
610	1990	TAXIWAY TO RAMP	2013	Surface Treatment	10,746
610	1990	TAXIWAY TO RAMP	2013	Crack Repair	2,626
610	1990	TAXIWAY TO RAMP	2013	Resurfacing	32,256
615	1997	TAXIWAY TO RAMP	2013	No Action	-
705	1992	TAXIWAY TO RAMP	2014	Surface Treatment	9,839
705	1992	TAXIWAY TO RAMP	2014	Crack Repair	6,424
705	1992	TAXIWAY TO RAMP	2014	Resurfacing	33,696
3005	1990	RAMP	2014	Surface Treatment	89,864
3005	1990	RAMP	2014	Crack Repair	60,489
3005	1990	RAMP	2014	Resurfacing	280,188
3010	1990	RAMP	2014	Surface Treatment	73,668
3010	1990	RAMP	2014	Crack Repair	30,685
3010	1990	RAMP	2014	Resurfacing	229,668
3015	1990	RAMP	2018	Surface Treatment	46,372
3015	1990	RAMP	2018	Crack Repair	13,880
3015	1990	RAMP	2018	Resurfacing	148,872
3020	1992	RAMP	2013	Surface Treatment	19,639
3020	1992	RAMP	2013	Crack Repair	34,651
3020	1992	RAMP	2013	Resurfacing	69,912
3025	1992	SOUTH RAMP	2014	Surface Treatment	76,705
3025	1992	SOUTH RAMP	2014	Crack Repair	118,803
3025	1992	SOUTH RAMP	2014	Resurfacing	261,576
3030	2003	RAMP EXPANSION	2013	No Action	-
3035	2004	RAMP EXPANSION	2013	No Action	-
4005	1990	RUNWAY 36 RUNUP	2013	Surface Treatment	14,259
4005	1990	RUNWAY 36 RUNUP	2013	Crack Repair	3,987
4005	1990	RUNWAY 36 RUNUP	2013	Resurfacing	44,640
4010	1990	RUNWAY 18 RUNUP	2013	Surface Treatment	14,066
4010	1990	RUNWAY 18 RUNUP	2013	Crack Repair	5,447
4010	1990	RUNWAY 18 RUNUP	2013	Resurfacing	42,163
5005	1997	RUNWAY 18-36	2022	Surface Treatment	119,717
5005	1997	RUNWAY 18-36	2022	Crack Repair	14,493
5005	1997	RUNWAY 18-36	2022	Resurfacing	426,952
5010	1997	RUNWAY 18-36	2020	Surface Treatment	49,465
5010	1997	RUNWAY 18-36	2020	Crack Repair	7,299
5010	1997	RUNWAY 18-36	2020	Resurfacing	167,990
5015	2008	RUNWAY 18-36	2013	No Action	-
6005	1992	RUNWAY 14-32	2014	Crack Repair	18,316
6005	1992	RUNWAY 14-32	2014	Resurfacing	319,824
6010	1990	RUNWAY 14-32	2013	Surface Treatment	16,598
6010	1990	RUNWAY 14-32	2013	Crack Repair	3,917
6010	1990	RUNWAY 14-32	2013	Resurfacing	54,345
6015	1997	RUNWAY 14/32	2023	Resurfacing	31,651
6015	1997	RUNWAY 14/32	2023	Crack Repair	1,274

4. Maintenance Management Program

4.1 General Comments

Most pavement distress is classified by severity (low, medium, or high). As a general rule, high-severity distresses should be patched, and medium-severity distress should be sealed. A detailed matrix of recommended maintenance policies to address various distress types is provided near the end of this section.

4.1.1 Inspected Crack Severity

Of the inspected pavement, 51 percent of the cracks were rated at low severity and require no maintenance beyond ongoing inspection and spot repair. About 49 percent of the cracks were rated at medium severity and would benefit from sealing and repair. None of the cracks were rated at high severity.

4.1.2 Other Distress

In asphalt pavement, area measured distresses such as rutting, depressions, fatigue cracks, and ravelling were recorded at low severity levels 97 percent of the time and medium severity 3 percent of the time.

4.2 Recommended Maintenance Actions

The following illustrations and tables show pavement areas that have maintenance and repair needs. Ongoing development of capital improvement projects may address some of these maintenance needs. To help budgeting and prevent duplication of effort, all pavement features recommended for maintenance should be compared to planned improvements prior to finalizing a maintenance program strategy.

Table 4-1. Recommend Maintenance Actions

Work Item	Quantity	Unit	Cost
AC RESTORATIVE CRACK REPAIR	173,640	LF	215,314
AC SUSTAINING CRACK REPAIR	8,163	LF	7,063
AC PATCH	1296	SF	11,243
Total:			\$ 233,620

4.2.1 Patching

Table 4-2. Recommend AC Patching

Feature	Work Item	Amount	Insp. PCI	Change	Est. PCI
110	AC PATCH	126	58	6	64
115	AC PATCH	3	53	12	65
120	AC PATCH	25	70	4	74
205	AC PATCH	36	73	3	76
215	AC PATCH	130	65	8	73
305	AC PATCH	19	48	15	63
405	AC PATCH	27	62	9	71
3010	AC PATCH	14	62	4	66
3020	AC PATCH	9	59	2	61
6005	AC PATCH	880	66	6	72
6015	AC PATCH	25	79	-	79
	TOTAL:	1,296	S.F.		
EQUIPMENT: SAW, AIR COMPRESSOR, HEATING KETTLE, HAND TOOLS					
EST. MATERIALS: 16 TON ASPHALT PATCH					
EST. MATERIAL COST: \$1,615					
EST. CREW HOURS: 37.0					
EST. CREW COST: \$9,627					
EST. PROJECT COST: \$11,243					

4.2.2 Crack Seal

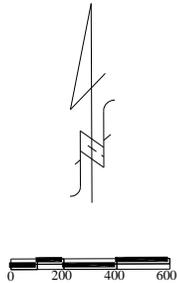
Table 4-3. Recommend AC Sustaining Crack Repair

Feature	Work Item	Amount	Insp. PCI	Change	Est. PCI
220	AC SUSTAINING CRACK REPAIR	42	78	N/A	78
705	AC SUSTAINING CRACK REPAIR	580	61	N/A	61
3025	AC SUSTAINING CRACK REPAIR	7,357	61	N/A	61
5015	AC SUSTAINING CRACK REPAIR	183	93	N/A	93
	TOTAL:	8,163	L.F.		
EQUIPMENT: AIR COMPRESSOR, HEATING KETTLE, HAND TOOLS					
EST. MATERIALS: 1,633 POUNDS ASTM D3405 SEALANT OR EQUIVALENT					
EST. MATERIAL COST: \$1,632					
EST. CREW HOURS: 35.5					
EST. CREW COST: \$5,430					
EST. PROJECT COST: \$7,063					

Table 4-4. Recommend AC Restorative Crack Repair

Feature	Work Item	Amount	Insp. PCI	Change	Est. PCI
105	AC RESTORATIVE CRACK REPAIR	15,287	55	10	65
110	AC RESTORATIVE CRACK REPAIR	18,145	58	8	66
115	AC RESTORATIVE CRACK REPAIR	281	53	5	58
120	AC RESTORATIVE CRACK REPAIR	165	70	10	80
205	AC RESTORATIVE CRACK REPAIR	596	73	7	80
210	AC RESTORATIVE CRACK REPAIR	2,657	69	5	74
215	AC RESTORATIVE CRACK REPAIR	3,028	65	9	74
305	AC RESTORATIVE CRACK REPAIR	1,967	48	10	58
405	AC RESTORATIVE CRACK REPAIR	1,174	62	1	63
410	AC RESTORATIVE CRACK REPAIR	2,079	66	8	74
415	AC RESTORATIVE CRACK REPAIR	1,055	68	5	73
505	AC RESTORATIVE CRACK REPAIR	1,996	62	9	71
515	AC RESTORATIVE CRACK REPAIR	689	82	10	92
605	AC RESTORATIVE CRACK REPAIR	1,537	57	4	61
610	AC RESTORATIVE CRACK REPAIR	2,118	57	13	70
615	AC RESTORATIVE CRACK REPAIR	374	79	9	88
3005	AC RESTORATIVE CRACK REPAIR	38,375	61	6	67
3010	AC RESTORATIVE CRACK REPAIR	24,745	62	5	67
3015	AC RESTORATIVE CRACK REPAIR	11,194	69	5	74
3030	AC RESTORATIVE CRACK REPAIR	2,641	89	4	93
4005	AC RESTORATIVE CRACK REPAIR	3,216	59	8	67
4010	AC RESTORATIVE CRACK REPAIR	4,393	58	6	64
5005	AC RESTORATIVE CRACK REPAIR	11,688	78	4	82
5010	AC RESTORATIVE CRACK REPAIR	5,887	74	7	81
6005	AC RESTORATIVE CRACK REPAIR	14,183	66	11	77
6010	AC RESTORATIVE CRACK REPAIR	3,159	64	6	70
6015	AC RESTORATIVE CRACK REPAIR	1,011	79	9	88
	TOTAL:	173,640	L.F.		
EQUIPMENT: AIR COMPRESSOR, HEATING KETTLE, HAND TOOLS					
EST. MATERIALS: 34,728 POUNDS ASTM D3405 SEALANT OR EQUIVALENT					
EST. MATERIAL COST: \$34,728					
EST. CREW HOURS: 868.2					
EST. CREW COST: \$180,586					
EST. PROJECT COST: \$215,314					

Jeffersonville-Clark Regional Airport - JVY
2013 PCI Inspection



Recommended Maintenance	
Patching	
Crack Sealing	
Both	

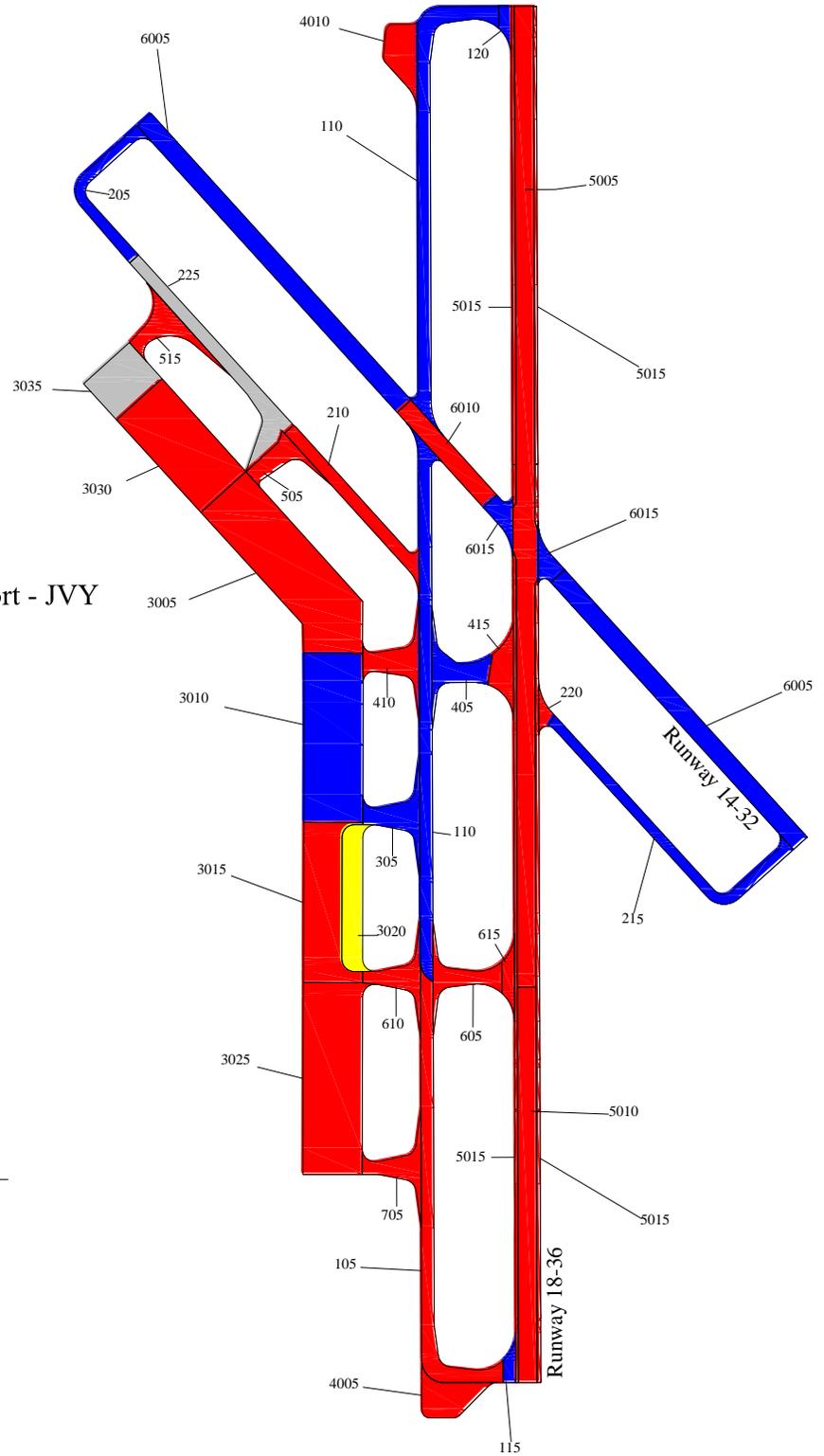


Figure 4-1. Recommended Maintenance

4.3 Pavement Deterioration

Before attempting maintenance and repairs, it helps to understand pavement performance and pavement deterioration. The factors that contribute most to deterioration are environmental, materials, and/or load related. Brief discussions of each are presented in the following sections.

4.3.1 Environmental/Age-Related Deterioration

Seasonal and daily temperature changes cause expansion and contraction of the pavement materials. The shear stresses created by expansion and contraction can cause transverse cracking in flexible pavement and mid-slab cracking in rigid pavement. Further, expansion and contraction will cause cracks, and rigid pavement joints, to open and close with changes in temperature.

Flexible pavement oxidizes as it ages, losing its lighter, volatile, components and becoming brittle with time. Surface treatments and seal coats are designed, in part, to provide a protective barrier and prevent this type of oxidation.

Subsurface water can have the greatest impact on pavement deterioration. A wet subgrade greatly reduces the ability of a pavement to support wheel loads, and the results often show up as rutting and cracking of flexible pavement. The fine materials in a wet base can be pumped up through the cracks and eventually result in a loss of support. This loss of support can be evidenced as corner breaks and faulting in rigid pavement. Moisture inside a pavement system expands when it freezes, creating stresses that cause the pavement surface to heave. Subsequent freeze-thaw cycles leave voids in the pavement structure that enable further rutting and breaking. Repeated freeze-thaw cycles eventually cause the pavement to disintegrate. Freeze-thaw deterioration requires frost-susceptible material, sub-zero temperatures, and water. If we remove one of these factors, freeze-thaw damage will not occur. One of the best ways to ensure pavement longevity is to provide drainage and keep it dry.

4.3.2 Materials-Related Deterioration

The pavement thickness and type of subgrade play a large role in the formation and spacing of transverse cracks. If the subgrade and base materials are smooth or rounded and allow for relatively free movement of the pavement surface, transverse cracks will often be spaced far apart (>60 feet). If the subgrade and base material are rough or angular and provide greater resistance to movement of the pavement surface, transverse cracks will be spaced more closely (<40 feet). The distance between transverse cracks also depends on the pavement thickness, as a thicker pavement can resist cracking for longer lengths. At general aviation airport pavements, around 50 feet is typical transverse crack spacing.

Aggregate is the biggest component of any pavement structure, and it is the contact between the aggregate particles that actually transfers the load and provides the strength. Aggregate durability and shape are major factors affecting pavement performance. Durability is the ability of the aggregate to perform satisfactorily over time and resist deterioration. Sharp, well-angled aggregates that interlock, compact densely, and resist movement are the most desirable.

In flexible pavement, the selection of asphalt cement can have a significant impact on pavement performance. Asphalt is visco-elastic, which means it is stiff at low temperatures and flows at high temperatures. With this in mind, we expect asphalt pavement to remain stiff on hot summer days to resist plastic deformation (rutting and shoving). In addition, we expect asphalt pavement to have

sufficient cold temperature flexible on cold winter days to resist transverse cracking. The proper selection of asphalt cement grade and maintaining adequate mix volumetrics (air voids, voids in the mineral aggregate, etc.) are key factors in the performance of flexible pavement.

As water freezes, it expands and occupies a greater volume than in a liquid state. In PCC pavement, interconnected, well-distributed air voids are required to allow for expansion of moisture with the PCC. PCC mixes with insufficient air entrainment are susceptible to freeze-thaw damage, as the expansive forces have been shown to cause concrete deterioration. Small, closely spaced, interconnected air voids provide the greatest degree of protection.

Asphalt paving mixes also require air voids, but for reasons different than for PCC pavement. When a well-constructed asphalt pavement is subjected to vehicle loading, it will nevertheless experience some minor secondary consolidation. Air voids allow for the safe movement of the asphalt binder within the mix. With insufficient air voids, the asphalt binder will migrate to the surface of the pavement—it will in essence, get squeezed out of the mix. This phenomenon is called flushing. In addition, these mixes become unstable and are prone to rutting in the wheel paths.

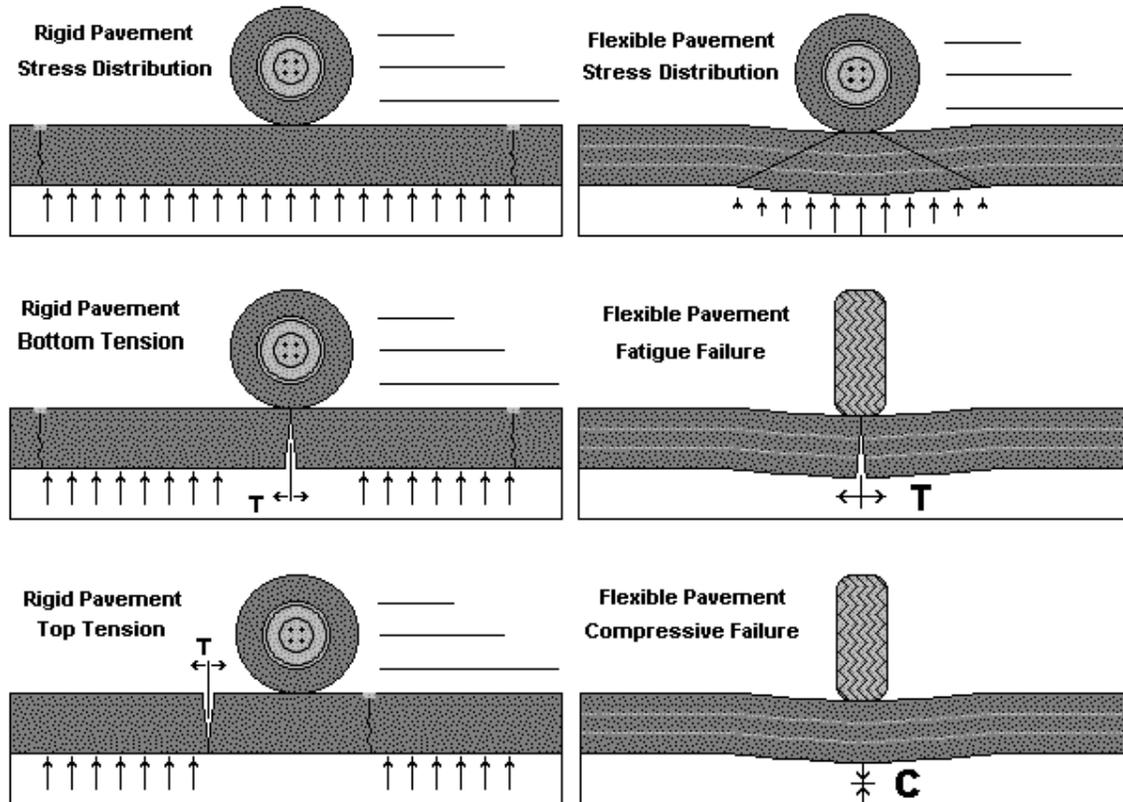
However, if the air voids become too high, air and water can penetrate the pavement, reducing both durability and flexibility. Air infiltration will accelerate oxidization of the binder, while water penetration will increase the moisture susceptibility of the mix (i.e., stripping of the asphalt cement from the aggregate). Air voids in flexible pavement should be kept low enough to prevent water and air from penetrating the asphalt layers, but high enough to minimize the potential of plastic deformation.

Regardless of whether the pavement binder is AC or PCC, binder materials are mixed with aggregate to coat all aggregate particles with a thin binder film. Durability of flexible asphalt pavement is increased with a thicker binder film, and the pavement becomes more resistant to age hardening; however, if the film is too thick, the asphalt acts like a lubricant, promoting ruts, shoving, and bleeding. Each asphalt mix should be customized for materials available locally.

With a concrete pavement, aggregate interlock supports the wheel loads, and the hydrated cement binder further interlocks the aggregate particles to inhibit all movement. “Hydration” is the term for the chemical reaction of portland cement with water. In the hydration process, dry cement particles react with water to form gels, and then crystals, that grow and bond with the aggregate and form a rigid interlocking structure. Hydration can continue for years, but much of the ultimate strength will be reached within 28 days. Hydration is a sensitive chemical process. Typically, any admixtures used to accelerate the hydration process will reduce durability, and admixture use should be considered carefully or avoided.

4.3.3 Load-Related Deterioration

As illustrated below, rigid and flexible pavements differ in the way loads are distributed. A concrete slab resists bending and transfers loads evenly, while an asphalt pavement is designed to bend, gradually spreading loads over wider areas.



Load-related cracks can start at the top or bottom of a pavement section. In asphalt sections, load-related (fatigue) cracks start at the bottom. If a load-related crack reaches the surface, it usually indicates structural deficiency. In rigid pavement, corner breaks are caused by tensile forces at the top of the slab, and the crack propagates downward. Mid-slab LTD cracks are distress examples resulting from tensile forces at the bottom of the slab.

Both wheel loads and environmental factors can cause spalls anytime there is movement between adjacent slabs. If non-compressible material (such as a small rock) is allowed into a joint, stresses will build up between adjacent slabs and can cause a spall. Keeping joint and crack sealant intact can help to reduce the infiltration of non-compressible material and minimize spalling.

4.4 Best Practices

4.4.1 Flexible Pavement

L&T cracks at medium severity should be filled with a good quality crack sealant material. High-severity cracks normally must be patched.

Cracks rated at low severity may be narrow unsealed cracks or sealed cracks up to 3 inches wide. The PCI procedure does not distinguish between narrow unfilled cracks and wider filled cracks. Some L&T cracks at low severity are included in the estimated sealing quantities and costs in this maintenance plan. In general, when medium- or high-severity cracking constitutes less than 25 percent of the total crack quantity, sustaining maintenance usually is more cost-effective. When 25 percent or more of the total crack quantity is at medium or high severity, a restorative program typically becomes more cost-effective.

Existing patches rated as medium and high severity should be replaced with new patches. Small areas (usually less than 100 square feet per patch) of alligator cracking and rutting at medium and high severity also may be repaired cost-effectively by patching. Larger patches should be considered if equipment can be made available to accomplish the work. Patching to repair up to 10 percent of the surface of a pavement feature that is otherwise serviceable can result in significant cost savings as compared to rehabilitation of the entire feature.

An example maintenance policy treatment matrix for flexible pavement is shown in Table 4-5. Examples of various maintenance techniques are provided in appendix C.

4.4.2 Rigid Pavement

Joint seal damage rated at medium and high severity should be repaired. If medium- and high-severity damage is limited to less than about 25 percent of the total joint length, sustaining maintenance is recommended. If medium- and high-severity damage exceeds 25 percent of the total joint length, the joint sealant should be removed and replaced under a restorative repair project.

LTD cracks at low and medium severity should be considered for sealing as part of the joint sealing project. High-severity LTD cracks require sealing, patching, or slab replacement, depending on the extent of deterioration.

Small patches are typically used to repair medium- and high-severity spalls or to replace deteriorated older patches. Restorative small patches are typically partial-depth repairs, usually to a maximum depth of 1/3 of the slab thickness. Large patches and corner breaks at medium and high severity should be repaired by full-depth large patches.

High-severity LTD cracks and shattered slabs are candidates for patching and slab replacement. Low-severity shattered slabs can be left in place pending further deterioration.

An example maintenance policy treatment matrix for rigid pavement is shown in Table 4-5. Examples of various maintenance techniques are provided in appendix C.

Table 4-5. General Maintenance Policy (AC)

Distress Type	Distress Severity	Maintenance Action
Alligator Cracking	Low	Crack Sealing - AC
	Medium	Patching - AC Deep
	High	Patching - AC Deep
Bleeding	N/A	Monitor
Depression	Low	Monitor
	Medium	Patching - AC Shallow
	High	Patching - AC Deep
Jet Blast	N/A	Patching - AC Shallow
Longitudinal, Transverse, Joint Reflective, & Block Cracking	Low	Monitor
	Medium	Crack Sealing - AC
	High	Patching - AC Deep
Oil Spill	N/A	Patching - AC Shallow
Patching	Low	Monitor
	Medium	Crack Sealing - AC
	High	Patching - AC Deep
Polished Aggregate	N/A	Monitor
Weathering / Raveling	Low	Monitor
	Medium	Surface Treatment
	High	Patching - AC Shallow
Rutting, Corrugation and Swell	Low	Monitor
	Medium	Patching - AC Deep
	High	Patching - AC Deep
Shoving	Low	Monitor
	Medium	Patching - AC Shallow
	High	Patching - AC Deep
Slippage Cracking	N/A	Patching - AC Shallow

Table 4-6. General Maintenance Policy (PCC)

Distress Type	Distress Severity	Maintenance Action
Blow Up	Low	Patching - PCC Partial Depth
	Medium	Slab Replacement - PCC
	High	Slab Replacement - PCC
Longitudinal, Transverse & Diagonal Cracking	Low	Monitor
	Medium	Crack Sealing - PCC
	High	Patching - PCC Full Depth
Durability Cracking	Low	Monitor
	Medium	Patching - PCC Full Depth
	High	Slab Replacement - PCC
Large Patch & Corner Break	Low	Monitor
	Medium	Patching - PCC Full Depth
	High	Patching - PCC Full Depth
Popout / Shrinkage Cracks	N/A	Monitor
Scaling	Low	Monitor
	Medium	Patching - PCC Partial Depth
	High	Slab Replacement - PCC
Faulting	Low	Monitor
	Medium	Grinding (Localized)
	High	Grinding (Localized)
Shattered Slab	Low	Monitor
	Medium	Crack Sealing - PCC
	High	Slab Replacement - PCC
Joint Spall, Corner Spall & Small Patch	Low	Monitor
	Medium	Patching - PCC Partial Depth
	High	Patching - PCC Partial Depth
Alkali Silica Reactivity	Low	Monitor
	Medium	Slab Replacement - PCC
	High	Slab Replacement - PCC

4.5 Pavement Repair Materials

New pavement repair materials are introduced and improved regularly. This section provides information on products compatible with airport needs.

4.5.1 Joint and Crack Sealer

Hot-poured, pressure-injected, polymeric rubberized asphalt sealant meeting ASTM D3405 specifications is suitable for most sealing requirements. This product is relatively inexpensive, durable, and suitable for both rigid and flexible pavements. Other, more expensive, hot-applied sealants that promise longer life are being developed for specialty applications. Twin component cold applied sealants also have been used with success. Contact your local distributor.

4.5.2 Flexible Pavement Patch

High-performance plant mixed cold patching products that can be stockpiled on-site can be used for short term repairs to maintain safety. Long-term patches should be made with high-quality plant mixed hot asphalt having a ¾-inch maximum aggregate size and meeting Federal Aviation Administration (FAA) P401, or highest quality highway specifications. Low-quality packaged materials available from local hardware type stores should be avoided.

4.5.3 Rigid Pavement Patch

Permanent patches in rigid pavement should be made with air-entrained concrete with 1-inch maximum size aggregate. If the area must be quickly opened to traffic, high early concrete should be considered. Concrete should have zero slump and a coarse texture. As with asphalt patches, low-quality packaged materials should be used only as temporary patches to maintain safety and service until a more permanent repair can be made.

4.6 Pavement Repair Equipment

Many pavement repair and sealing products are available. Specialized tools and equipment help ensure high-quality repairs. This section discusses equipment compatible with airport needs.

4.6.1 Air Compressor

Used to remove non-compressible sand and debris from prepared cracks and joints, the compressor should have a sustained capacity of 120 cubic feet per minute with a nozzle velocity of 100 psi. Trailer-mounted compressors typically have capacities in this range.

4.6.2 Concrete Saw

A saw capable of making a minimum 3-inch-deep cut is required. The saw should be capable of making cuts in both asphalt and concrete. Gasoline-powered 5- to 25-hp wheel-mounted saws typically are preferred for this type of work, but electric and pneumatic tools also are available.

4.6.3 Heating Kettle

Applying sealant is the most time-consuming operation, and a sealing machine with heating and pressure application capabilities is a critical item in a successful sealing program. The capacity of the sealing equipment dictates the rate at which a crew progresses. For large sealing projects, a minimum 100-gallons/hour sustained capacity is recommended. The unit should be a double boiler type, with mechanical agitators or continuous recirculation. Kettle temperature must be monitored to ensure that the sealant is not “burned.” Overheating the sealant will prematurely age harden the material.

4.6.4 Router

A concrete saw can be used to prepare joints, but for random cracking, a mechanical router with a vertical impact mechanism is preferred. When cracks are being routed, this activity will dictate the speed of the crew. Crack routers in the 25-hp range are commonly used and are available from a variety of manufacturers.

4.6.5 Sand Cleaner

A sand blaster helps to clean loose particles and dust from prepared cracks. The unit must have sufficient force to expose fresh, vital pavement to bond with sealant and patching materials.

4.6.6 Vibratory Roller or Plate Compactor

Required to compact plant mixed and packaged patching materials properly. Small rollers are best for pothole type applications; plate compactors are best for large areas.

4.6.7 Other Equipment

Other general use equipment that can be helpful in a maintenance program includes bucket loaders, dump trucks, water tanks, and a power sweeper unit.

Appendix A. AIRPAV Software

The Software

Data analysis was performed using the AIRPAV pavement evaluation and management software. In addition to calculating and documenting PCI values, AIRPAV evaluates the collected inspection data and recommends rehabilitation actions that address the cause of pavement distress. AIRPAV can incorporate traffic and structural capacity evaluations into the pavement evaluation matrix, and AIRPAV also performs preliminary life cycle cost analysis of the various rehabilitation alternatives, providing guidance on the lowest annual cost repair strategy.



A complete database, along with an updated version of AIRPAV, is provided on INDOT computers for ongoing management of the INDOT pavement systems.

Capital Improvements

AIRPAV creates interactive CIPs, providing the user with the ability to control unit costs, develop new projects, move projects between years, and even increase or decrease the scope and cost of individual projects.

Maintenance

AIRPAV calculates and develops maintenance work orders organized by type of work. Maintenance work orders can be printed and issued directly to maintenance crews.

Traffic

AIRPAV provides the ability to model aircraft ground movements. Traffic can be sorted by airline, aircraft type, destination gate or ramp, and runway used. The program graphically displays each taxi path, accumulates total operations, automatically determines design aircraft, and calculates structural overlay requirements for each pavement feature. The software can provide Pavement Classification Numbers (PCN) for each pavement feature or report results directly as inches of overlay required.

Maps

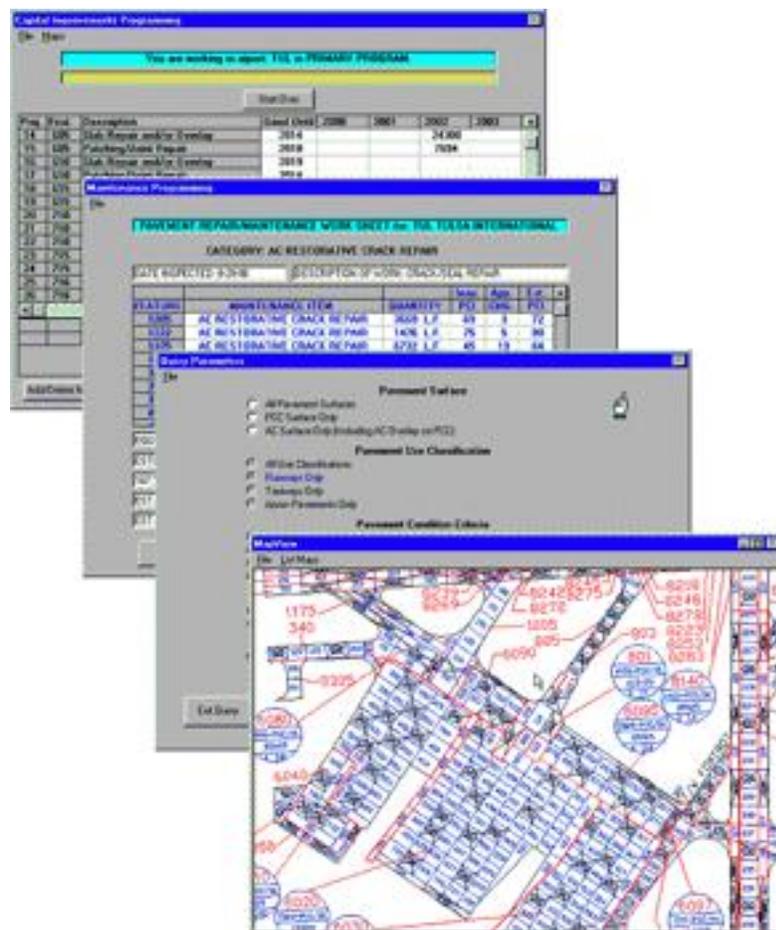
AIRPAV permits viewing and printing of PCI maps. Inspection layout, pavement condition, and other views are available from within the software.

Query

The AIRPAV query function is a powerful search tool that allows users to extract useful reports meeting various criteria. As examples, lists can be created for taxiway pavement, asphalt pavement, or areas below MSL at the time of inspection.

Global Information System (GIS) Integration

AIRPAV is fully GIS-enabled. A single click in AIRPAV exports all data to an MS Access database that can be linked to shape files used in an ESRI product. In this way, virtually all data in the pavement management database can be accessed in GIS format.



Appendix B. Feature Analysis

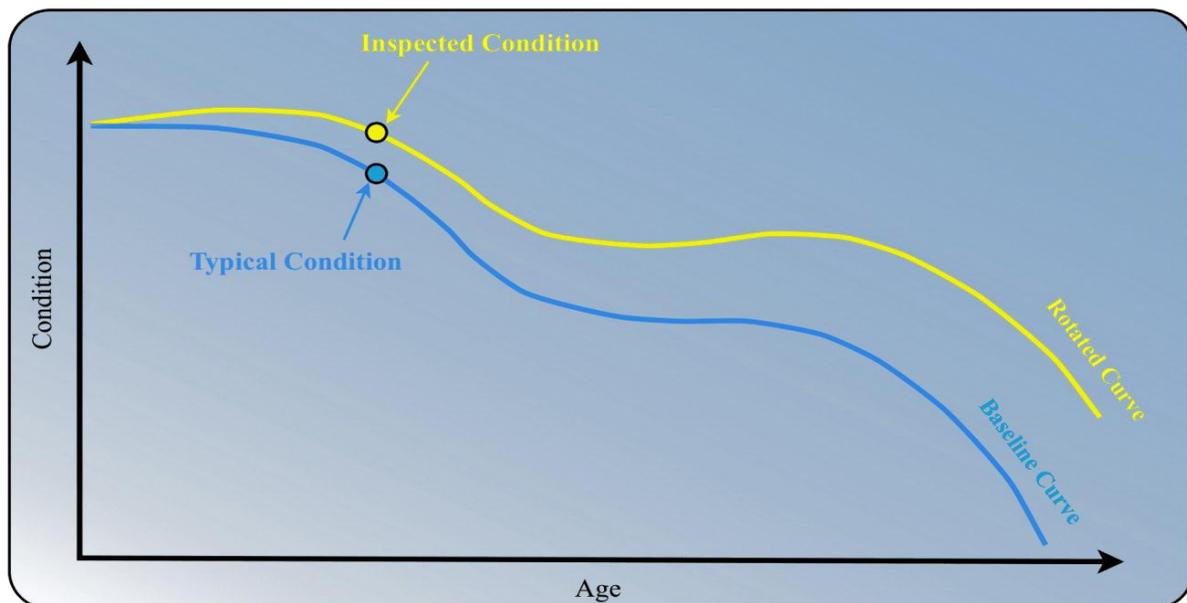
Pavement Performance Models

Projected performance is determined by relating current pavement condition to expected pavement condition. Projected performance varies based on pavement type. There are four pavement types in Indiana: AC, PCC, ACC, and APC. Each pavement type has a unique deterioration curve, created by plotting all data for that group as PCI vs. age and then finding a performance curve to best fit the data. These curves represent the historic performance of pavement in the group and become the baseline for future projections. The baseline curves are modeled with a third order polynomial equation as shown below.

$$PCI = X(\text{Age})^3 + Y(\text{Age})^2 + Z(\text{Age}) + C$$

Current Condition (rotating the curves)

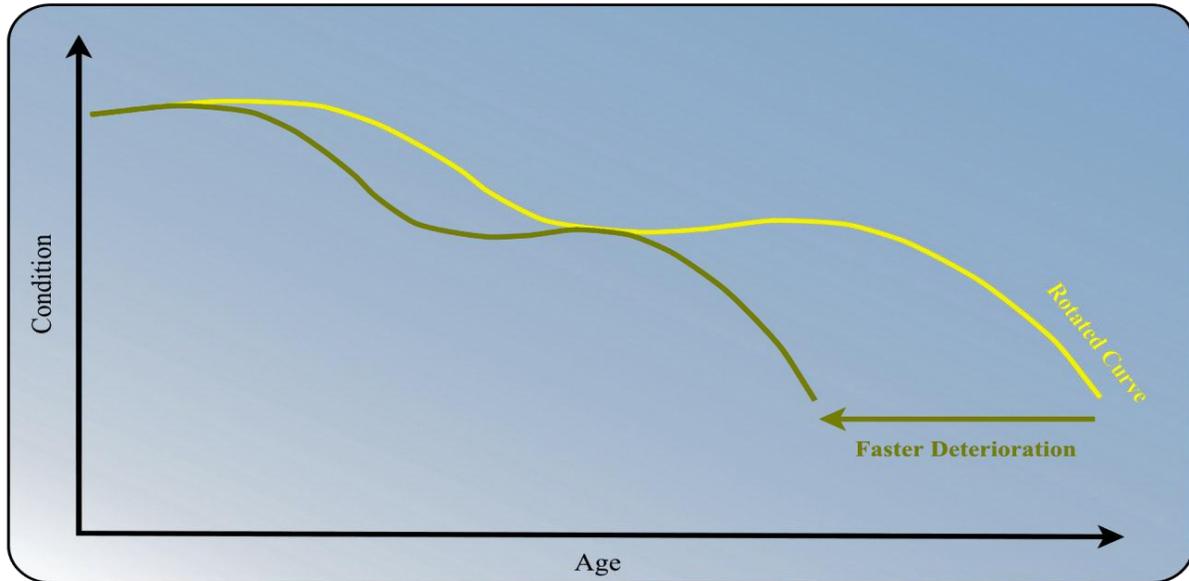
Starting with the baseline curve for comparison, current pavement condition is plotted, and the baseline curve is rotated to meet the current condition. The rotated curve provides the starting point for projecting the future pavement condition.



Advanced Analysis (accounting for distress)

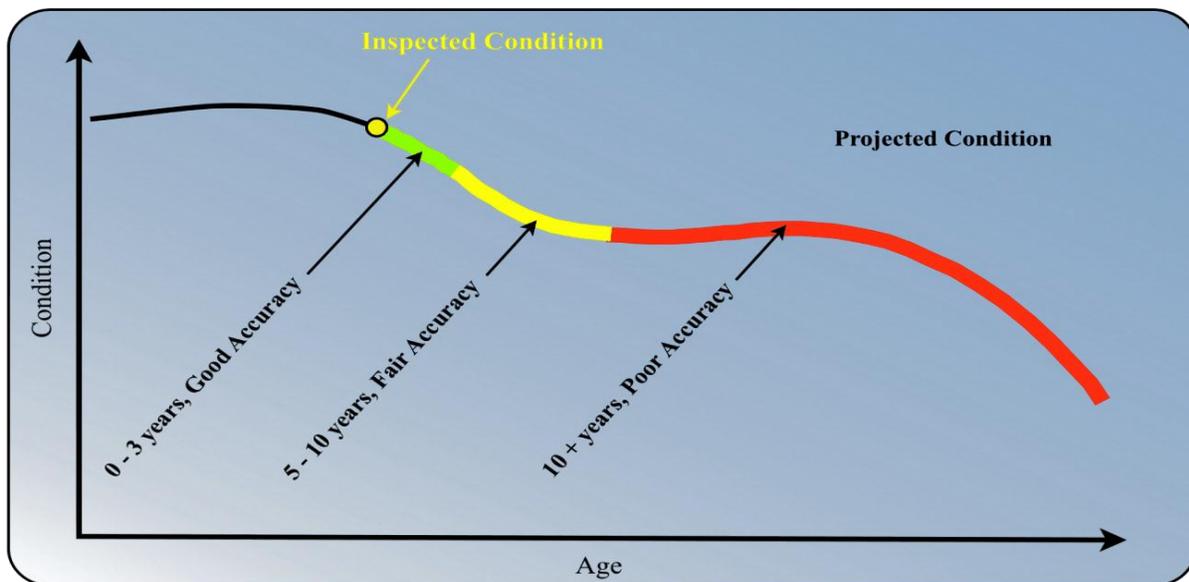
Some types of pavement distress have a greater impact on pavement deterioration than others. Rutting and alligator (fatigue) cracking are major structural failures and can lead to rapid pavement deterioration. Other distress types, like L&T cracking, develop slowly over time and typically do not cause a significant deviation from the baseline curve.

After current condition is accounted for with the curve rotation, pavement distress is addressed in the advanced analysis by compressing or expanding the baseline curve to account for the expected rate of pavement deterioration.



Projected PCI (near term vs. longer term)

Projecting pavement condition with advanced analysis is a combination of rotating, expanding, and contracting the baseline curves. This projection method provides good short-term results for all pavement sections and fair long-term projections on pavement sections with conditions near the baseline model. The long-term accuracy of outlier data is discussed on the following page.

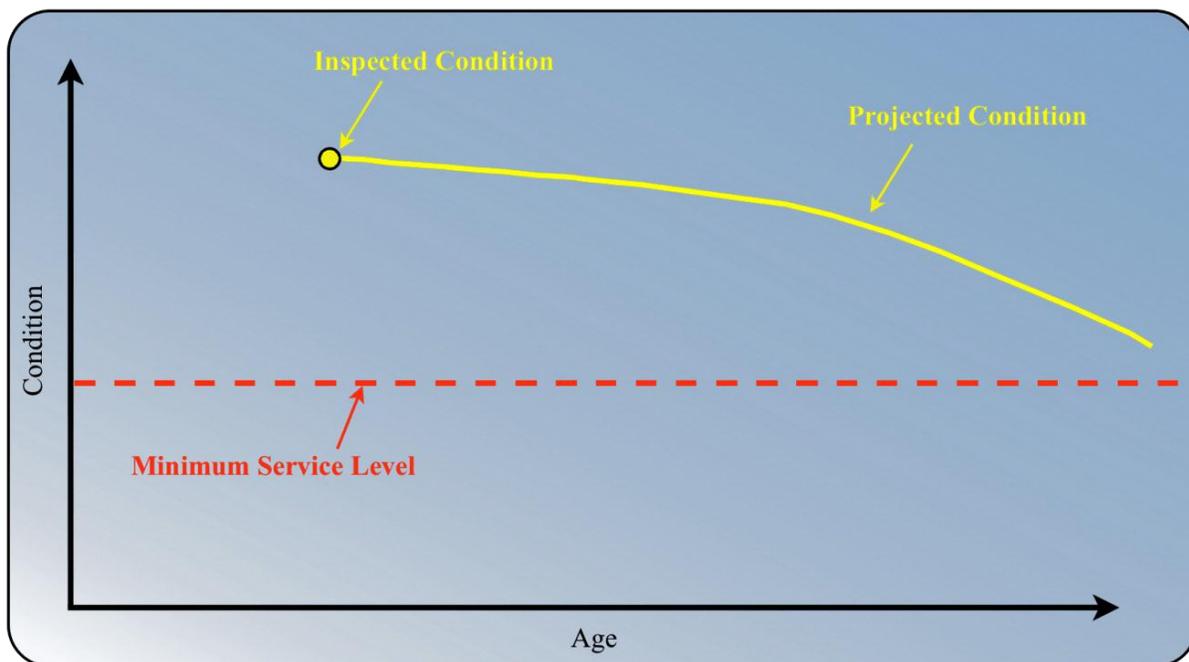


Projected PCI (why some features have unexpected projections)

Long-term PCI projections can be very useful for planning purposes. However, projections in excess of 10 years are well beyond the intended scope of the PCI procedure. FAA Advisory Circular 150/5380-6B establishes a maximum 3-year interval between detailed PCI surveys.

Curve rotation, expansion, and contraction are performed to produce the best possible accuracy of future pavement condition over the next 3 to 5 years. This methodology can overemphasize certain performance trends in the long term. This is especially true for outlier data, such as pavement features that are performing much better or worse than is typical.

The curve below shows an example of a performance trend being overemphasized in the long-term projection. Because the pavement feature is performing much better than the baseline curve, the long-term projection shows the pavement lasting an additional 30+ years before reaching the MSL. Rotation of the curve to provide the most accurate projection over 3 to 5 years has resulted in a long-term projection that is likely unrealistic.



When long-term projections such as this are encountered, airport managers should not rely on projections in excess of 10 years. Managers can be confident that the pavement is performing much better than average and will not require rehabilitation within the current 5-year CIP planning window. As new distress develops over time, future PCI surveys will determine the ideal timing for rehabilitation.

Feature Analysis

As part of the PCI evaluation, a detailed analysis is presented for each airside pavement feature using the two-page format depicted below.

Page 1

The first page of the analysis is a feature summary. Located near the top left-hand corner is the feature number and pavement description. Construction history and inspector comments are listed below, along with a photo of the pavement section if available. Distress totals recorded during the PCI survey are listed next, and an approximation of the cause of the pavement deterioration is shown at the bottom. If the pavement is projected to fall below the desired MSL during the next 12 years, the analysis year will be shown along with the optimum year for pavement rehabilitation.

AIRPAV

AIRPORT: BLOOMINGTON/MONROE COUNTY
AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 5007

ANALYSIS YEAR: 2011 OPTIMIZED FOR: 2019

PAVEMENT TYPE: AC
FEATURE AREA: 1,278,750
INSPECTED AREA: 40,000
MINIMUM SERVICE LEVEL: 0.5

DESCRIPTION: RUNWAY 17-35 KEEL

INSPECTION DATE: 8-11-11

FEATURE'S HIGH PCI: 72
FEATURE'S LOW PCI: 59
AVERAGE PCI: 69 GOOD
ESTIMATED PCI IS: 65 in 2019

COMMENTS/HISTORY FOR FEATURE 5007, RUNWAY 17-35 KEEL

1989: 4" P401 / 5" P401 / 13" P209

DISTRESS QUANTITIES FOR FEATURE 5007					
DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF ALL DISTRESS
ALLIGATOR CRACKING	LOW	66	2,199	S.F.	8.3
LONG & TRANS. CRACK	MED	995	31,808	L.F.	30.4
LONG & TRANS. CRACK	LOW	2,824	90,279	L.F.	34.8
RAVELING/WEATHERING	LOW	9,450	302,104	S.F.	26.3

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	8 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	52 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	39 %

PAGE 1

Description & Feature # →

Optimized Rehab Year →

Construction History ←

Distress Totals ←

AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 105

DESCRIPTION: PARALLEL TAXIWAY

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

FEATURE'S HIGH PCI: 64

FEATURE AREA: 98,238

FEATURE'S LOW PCI: 49

INSPECTED AREA: 35,000

AVERAGE PCI: 55 POOR

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 55 in 2013

COMMENTS/HISTORY FOR FEATURE 105, PARALLEL TAXIWAY

1990 5" P401 ON
 1986 3" P401 ON 9" P208
 *
 *

DISTRESS QUANTITIES FOR FEATURE 105

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
BLOCK CRACKING	LOW	400	1,122	S.F.	3.4
LONG.& TRANS. CRACK	MED	3,224	9,049	L.F.	53.3
LONG.& TRANS. CRACK	LOW	2,103	5,902	L.F.	24.6
RAVELING	LOW	5,550	15,577	S.F.	17.3
SWELL	LOW	39	109	S.F.	.6
WEATHERING	MED	200	561	S.F.	.5

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS: 0 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS: 59 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS: 41 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 105

DESCRIPTION: PARALLEL TAXIWAY

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 55 POOR

CONSTRUCTION YEAR: 1990

ESTIMATED PCI IS: 55 in 2013

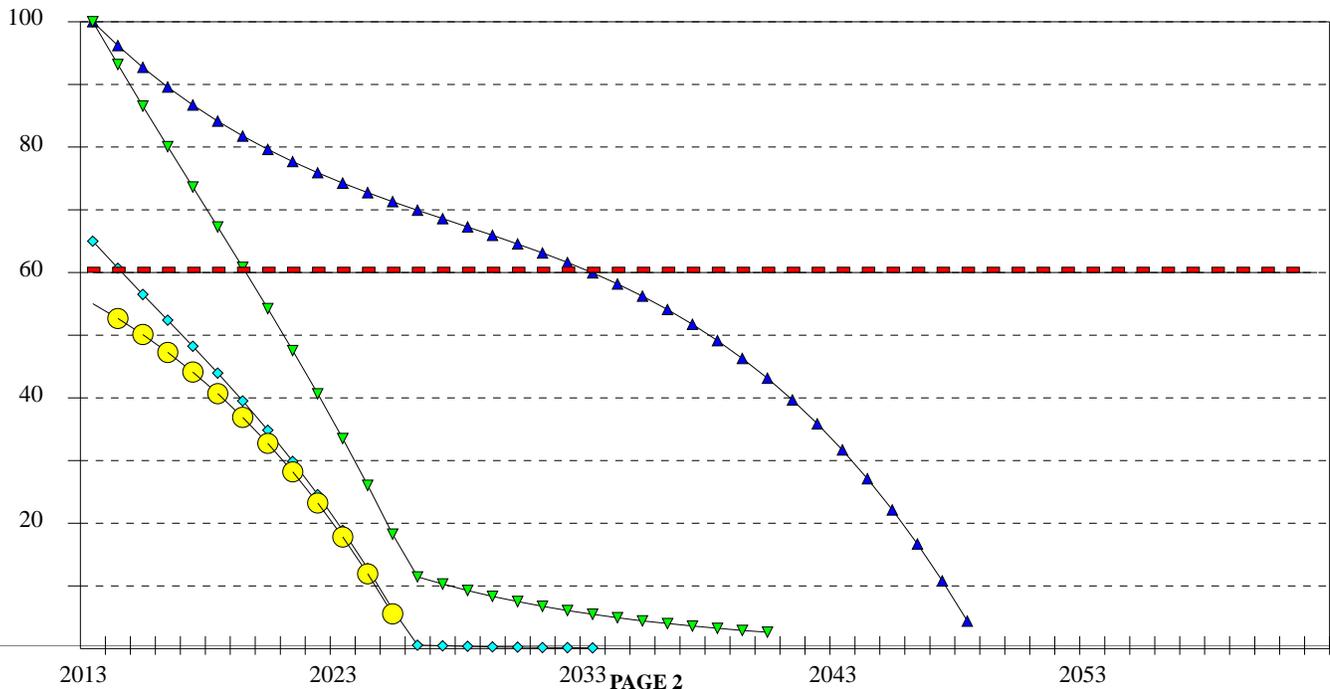
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 54

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$141,462	20 YEARS
▼	SURFACE TREATMENT	\$49,533	7 YEARS
◆	CRACK REPAIR	\$19,374	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 110

DESCRIPTION: PARALLEL TAXIWAY

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

FEATURE'S HIGH PCI: 67

FEATURE AREA: 208,197

FEATURE'S LOW PCI: 47

INSPECTED AREA: 50,000

AVERAGE PCI: 58 FAIR

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 58 in 2013

COMMENTS/HISTORY FOR FEATURE 110, PARALLEL TAXIWAY

1990 5" P401 ON
 1981 3" P401 ON 8" P208
 *
 *

DISTRESS QUANTITIES FOR FEATURE 110

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
ALLIGATOR CRACKING	MED	8	33	S.F.	2.1
ALLIGATOR CRACKING	LOW	374	1,557	S.F.	18.7
LONG.& TRANS. CRACK	HIGH	15	62	L.F.	2.7
LONG.& TRANS. CRACK	MED	2,975	12,387	L.F.	43.6
LONG.& TRANS. CRACK	LOW	1,383	5,758	L.F.	13.6
RAVELING	LOW	7,400	30,813	S.F.	19.1

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS: 21 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS: 46 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS: 33 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 110

DESCRIPTION: PARALLEL TAXIWAY

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 58 FAIR

CONSTRUCTION YEAR: 1990

ESTIMATED PCI IS: 58 in 2013

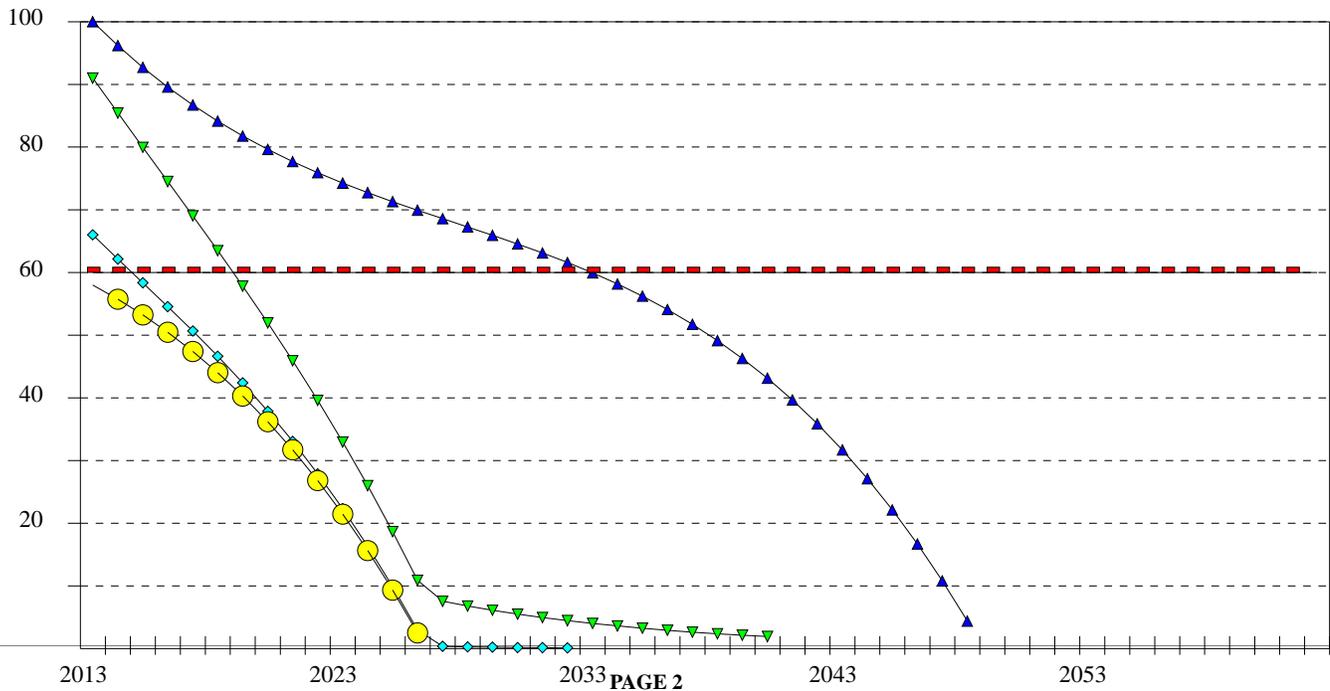
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 54

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$299,803	20 YEARS
▼	SURFACE TREATMENT	\$96,633	6 YEARS
◆	CRACK REPAIR	\$22,576	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 115

DESCRIPTION: PARALLEL TAXIWAY

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

FEATURE'S HIGH PCI: 53

FEATURE AREA: 6,128

FEATURE'S LOW PCI: 53

INSPECTED AREA: 5,750

AVERAGE PCI: 53 POOR

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 53 in 2013

COMMENTS/HISTORY FOR FEATURE 115, PARALLEL TAXIWAY

1997 P401 ON
 1990 5" P401 ON
 1981 3" P401 ON 8" P208
 *

DISTRESS QUANTITIES FOR FEATURE 115

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
ALLIGATOR CRACKING	LOW	63	67	S.F.	33.8
LONG.& TRANS. CRACK	HIGH	2	2	L.F.	10.9
LONG.& TRANS. CRACK	MED	142	151	L.F.	24.6
LONG.& TRANS. CRACK	LOW	122	130	L.F.	10.1
RAVELING	LOW	200	213	S.F.	9
SWELL	LOW	150	159	S.F.	11.3

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	34 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	45 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	21 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 115

DESCRIPTION: PARALLEL TAXIWAY

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 53 POOR

CONSTRUCTION YEAR: 1997

ESTIMATED PCI IS: 53 in 2013

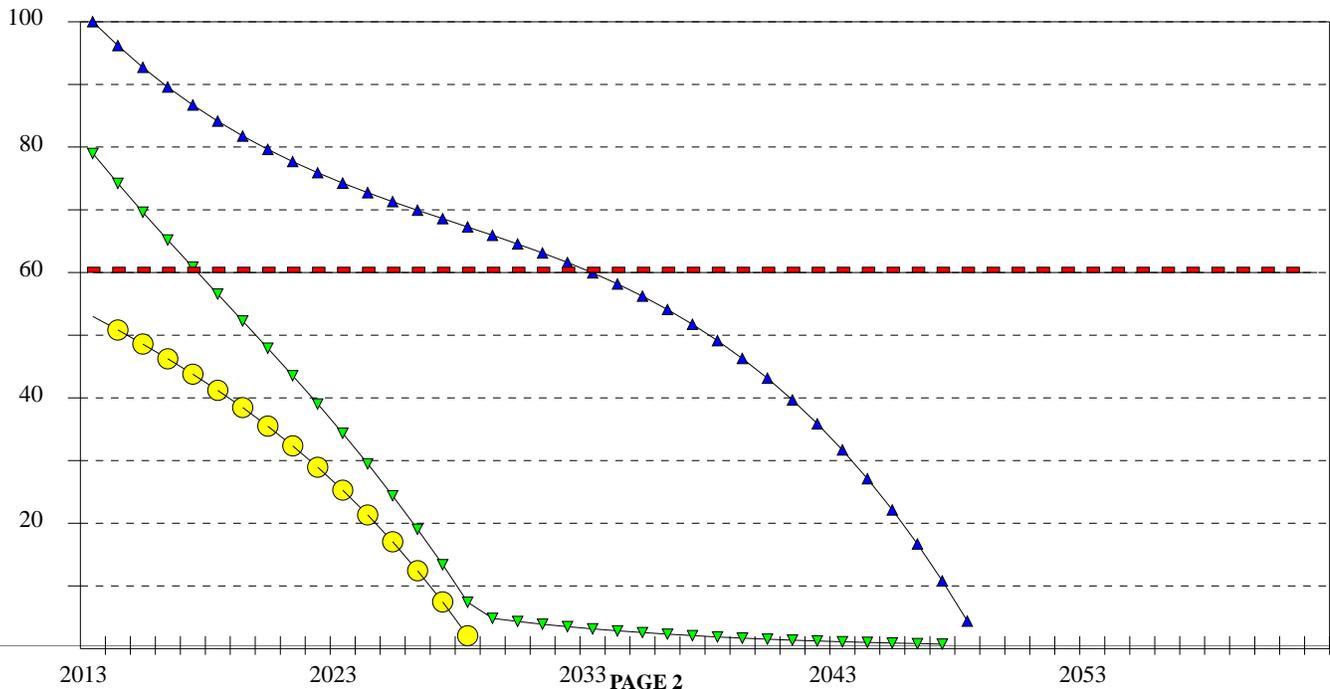
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 65

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$8,824	20 YEARS
▼	SURFACE TREATMENT	\$2,579	5 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 120	DESCRIPTION: PARALLEL TAXIWAY
ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2020	INSPECTION DATE: 8-14-13
PAVEMENT TYPE: AC OVERLAY	FEATURE'S HIGH PCI: 70
FEATURE AREA: 6,128	FEATURE'S LOW PCI: 70
INSPECTED AREA: 5,720	AVERAGE PCI: 70 FAIR
MINIMUM SERVICE LEVEL: 60	ESTIMATED PCI IS: 59 in 2020

COMMENTS/HISTORY FOR FEATURE 120, PARALLEL TAXIWAY

1997 P401 ON
 1990 5" P401 ON
 1986 3" P401 ON 9" P208
 *

DISTRESS QUANTITIES FOR FEATURE 120

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
ALLIGATOR CRACKING	LOW	24	25	S.F.	36.4
LONG.& TRANS. CRACK	HIGH	16	17	L.F.	25.9
LONG.& TRANS. CRACK	MED	41	43	L.F.	22.4
LONG.& TRANS. CRACK	LOW	114	122	L.F.	15.2

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	36 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	42 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	21 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 120

DESCRIPTION: PARALLEL TAXIWAY

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2020

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 70 FAIR

CONSTRUCTION YEAR: 1997

ESTIMATED PCI IS: 59 in 2020

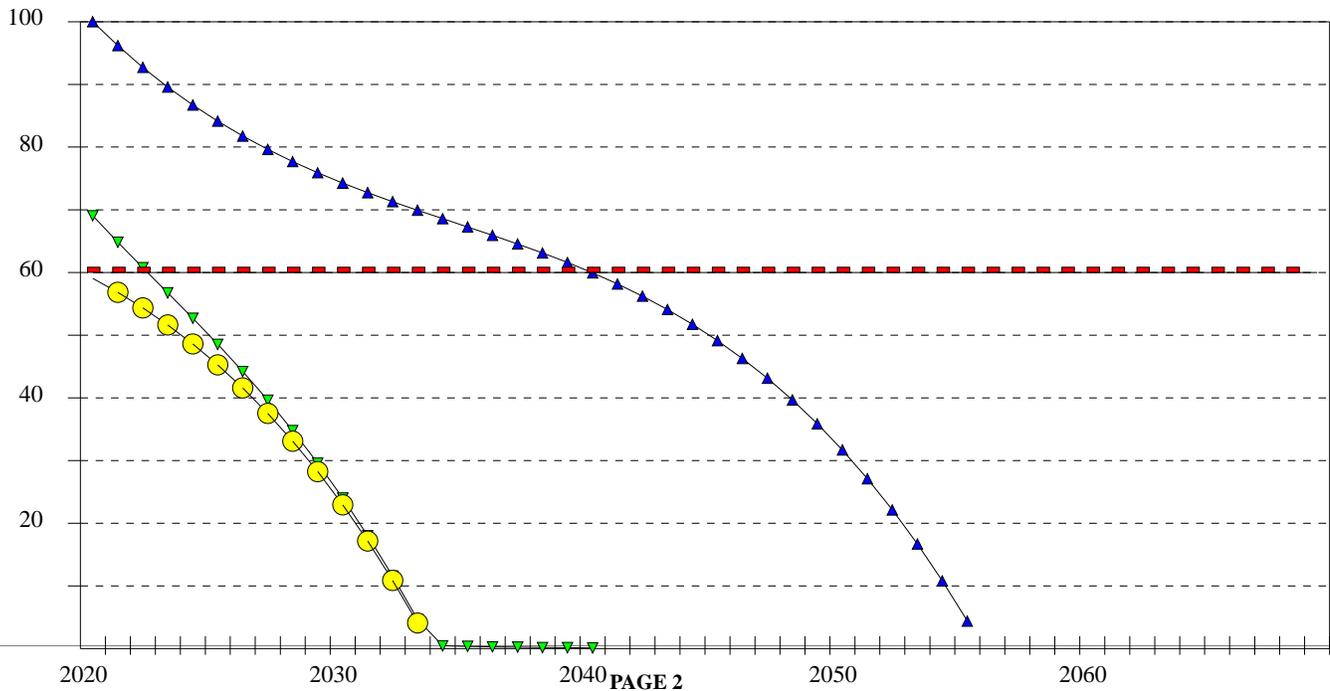
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 54

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$8,824	20 YEARS
▼	CRACK REPAIR	\$225	3 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 205

DESCRIPTION: PARALLEL TAXIWAY

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2017

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC

FEATURE'S HIGH PCI: 81

FEATURE AREA: 29,583

FEATURE'S LOW PCI: 67

INSPECTED AREA: 16,000

AVERAGE PCI: 73 SATISFACTORY

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 59 in 2017

COMMENTS/HISTORY FOR FEATURE 205, PARALLEL TAXIWAY

1981 3" P401 ON 8" P208

*
*
*

DISTRESS QUANTITIES FOR FEATURE 205

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
ALLIGATOR CRACKING	LOW	95	175	S.F.	40.8
LONG.& TRANS. CRACK	HIGH	13	24	L.F.	12.5
LONG.& TRANS. CRACK	MED	298	551	L.F.	41.4
LONG.& TRANS. CRACK	LOW	25	46	L.F.	5

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	41 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	39 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	20 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 205

DESCRIPTION: PARALLEL TAXIWAY

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2017

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC

AVERAGE PCI AT INSPECTION: 73 SATISFACTORY

CONSTRUCTION YEAR: 1981

ESTIMATED PCI IS: 59 in 2017

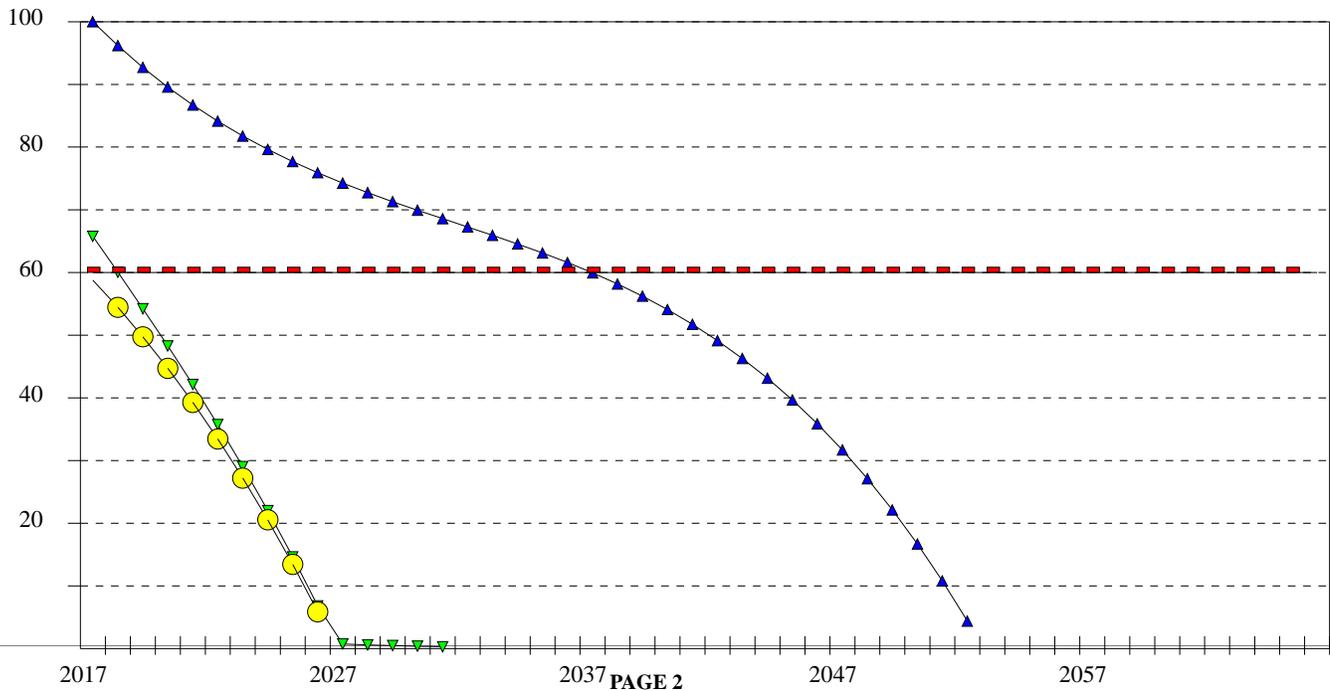
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 16

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$42,599	20 YEARS
▼	CRACK REPAIR	\$770	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 210	DESCRIPTION: PARALLEL TAXIWAY
ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2017	INSPECTION DATE: 8-14-13
PAVEMENT TYPE: AC OVERLAY	FEATURE'S HIGH PCI: 71
FEATURE AREA: 39,911	FEATURE'S LOW PCI: 65
INSPECTED AREA: 19,350	AVERAGE PCI: 69 FAIR
MINIMUM SERVICE LEVEL: 60	ESTIMATED PCI IS: 59 in 2017

COMMENTS/HISTORY FOR FEATURE 210, PARALLEL TAXIWAY

1990 5" P401 ON
 1981 3" P401 ON 8" P208
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 *

DISTRESS QUANTITIES FOR FEATURE 210

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
ALLIGATOR CRACKING	LOW	18	37	S.F.	8.3
LONG.& TRANS. CRACK	MED	634	1,307	L.F.	45.1
LONG.& TRANS. CRACK	LOW	655	1,351	L.F.	24.2
PATCH & UTILITY CUT	LOW	110	226	S.F.	4.1
RAVELING	LOW	1,200	2,475	S.F.	18

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	11 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	54 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	35 %

AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 210

DESCRIPTION: PARALLEL TAXIWAY

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2017

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 69 FAIR

CONSTRUCTION YEAR: 1990

ESTIMATED PCI IS: 59 in 2017

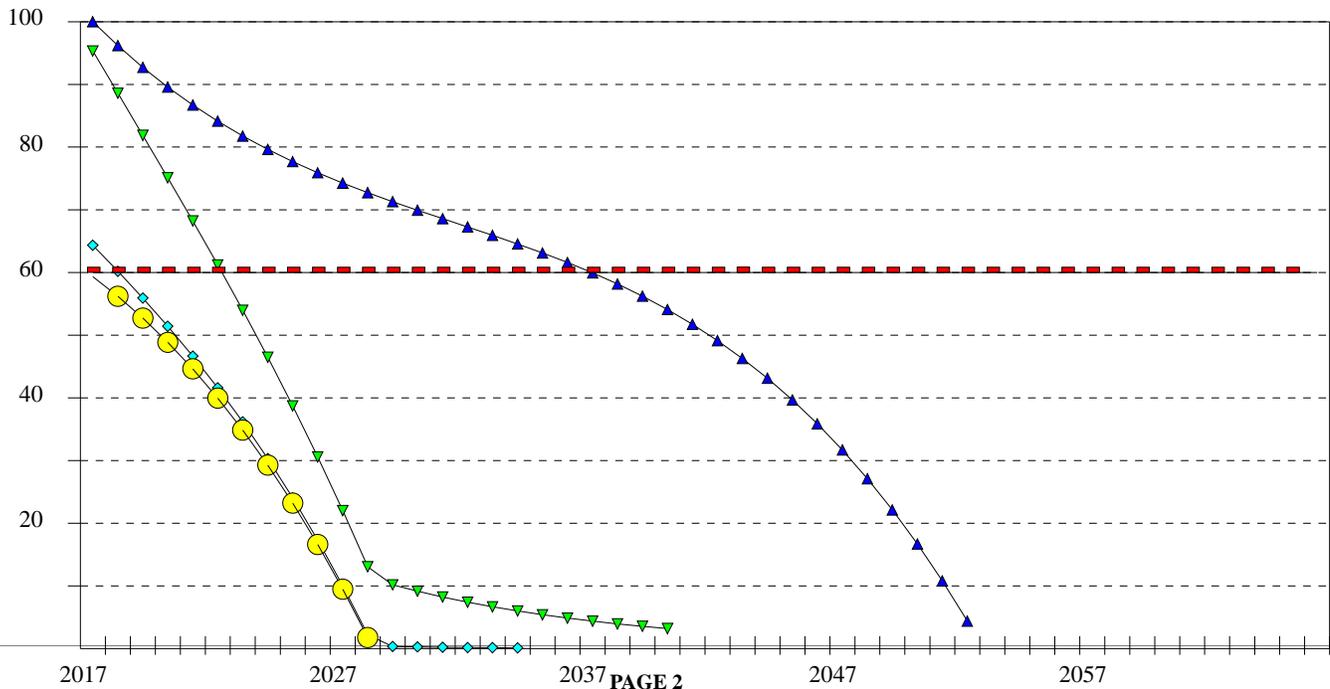
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 43

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$57,471	20 YEARS
▼	SURFACE TREATMENT	\$17,185	6 YEARS
◆	CRACK REPAIR	\$3,295	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 215

DESCRIPTION: PARALLEL TAXIWAY

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2015

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC

FEATURE'S HIGH PCI: 70

FEATURE AREA: 53,000

FEATURE'S LOW PCI: 57

INSPECTED AREA: 20,000

AVERAGE PCI: 65 FAIR

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 58 in 2015

COMMENTS/HISTORY FOR FEATURE 215, PARALLEL TAXIWAY

1981 3" P401 ON 8" P208

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DISTRESS QUANTITIES FOR FEATURE 215

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
ALLIGATOR CRACKING	LOW	170	450	S.F.	34.6
LONG.& TRANS. CRACK	HIGH	33	87	L.F.	14.4
LONG.& TRANS. CRACK	MED	625	1,656	L.F.	35.6
LONG.& TRANS. CRACK	LOW	518	1,372	L.F.	15.3

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	35 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	44 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	22 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 215

DESCRIPTION: PARALLEL TAXIWAY

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2015

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC

AVERAGE PCI AT INSPECTION: 65 FAIR

CONSTRUCTION YEAR: 1981

ESTIMATED PCI IS: 58 in 2015

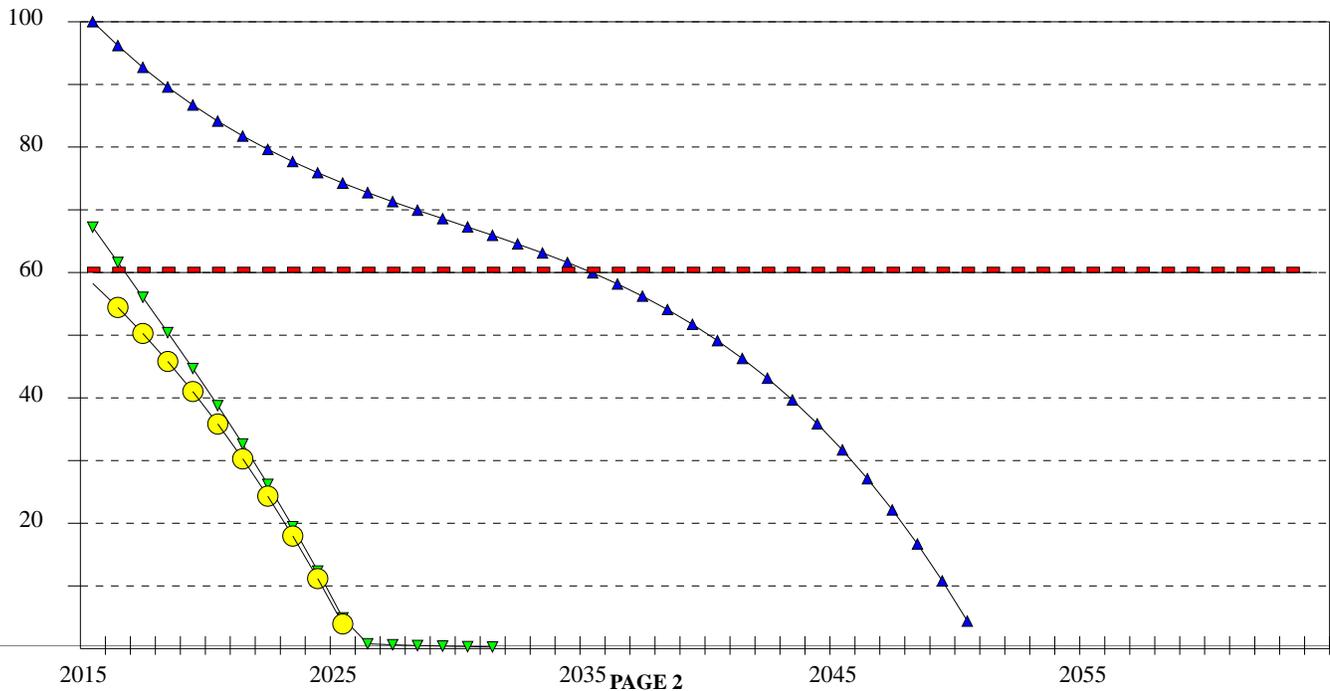
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 25

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$76,320	20 YEARS
▼	CRACK REPAIR	\$3,862	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 220	DESCRIPTION: PARALLEL TAXIWAY
ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2024	INSPECTION DATE: 8-14-13
PAVEMENT TYPE: AC OVERLAY	FEATURE'S HIGH PCI: 78
FEATURE AREA: 5,320	FEATURE'S LOW PCI: 78
INSPECTED AREA: 4,660	AVERAGE PCI: 78 SATISFACTORY
MINIMUM SERVICE LEVEL: 60	ESTIMATED PCI IS: 59 in 2024

COMMENTS/HISTORY FOR FEATURE 220, PARALLEL TAXIWAY

1997 P401 ON
 1981 3" P401 ON 8" P208
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DISTRESS QUANTITIES FOR FEATURE 220

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF ALL DISTRESS
LONG.& TRANS. CRACK	MED	41	46	L.F.	37
LONG.& TRANS. CRACK	LOW	210	239	L.F.	46.8
RAVELING	LOW	100	114	S.F.	16.1

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	0 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	61 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	39 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 220

DESCRIPTION: PARALLEL TAXIWAY

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2024

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 78 SATISFACTORY

CONSTRUCTION YEAR: 1997

ESTIMATED PCI IS: 59 in 2024

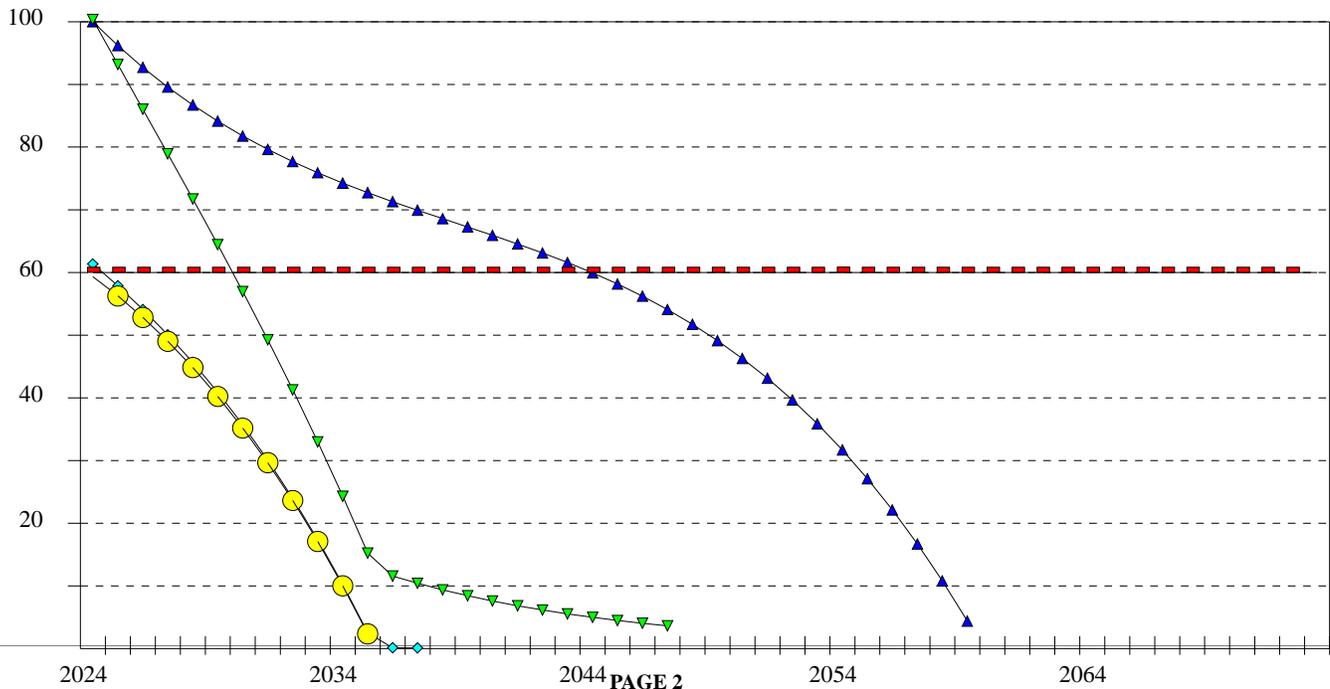
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 43

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$7,660	20 YEARS
▼	SURFACE TREATMENT	\$2,131	6 YEARS
◆	CRACK REPAIR	\$353	1 YEAR
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 225

DESCRIPTION: TAXIWAY AT RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC +

FEATURE'S HIGH PCI: 90

FEATURE AREA: 60,032

FEATURE'S LOW PCI: 86

INSPECTED AREA: 20,000

AVERAGE PCI: 89 GOOD

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 87 in 2013

COMMENTS/HISTORY FOR FEATURE 225, TAXIWAY AT RAMP

2004: 5" P401 Overlay on Existing

1981: 3" P401 ON 9" P209

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DISTRESS QUANTITIES FOR FEATURE 225

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
LONG.& TRANS. CRACK	LOW	789	2,368	L.F.	100

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	0 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	67 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	33 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 225

DESCRIPTION: TAXIWAY AT RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC +

AVERAGE PCI AT INSPECTION: 89 GOOD

CONSTRUCTION YEAR: 2004

ESTIMATED PCI IS: 87 in 2013

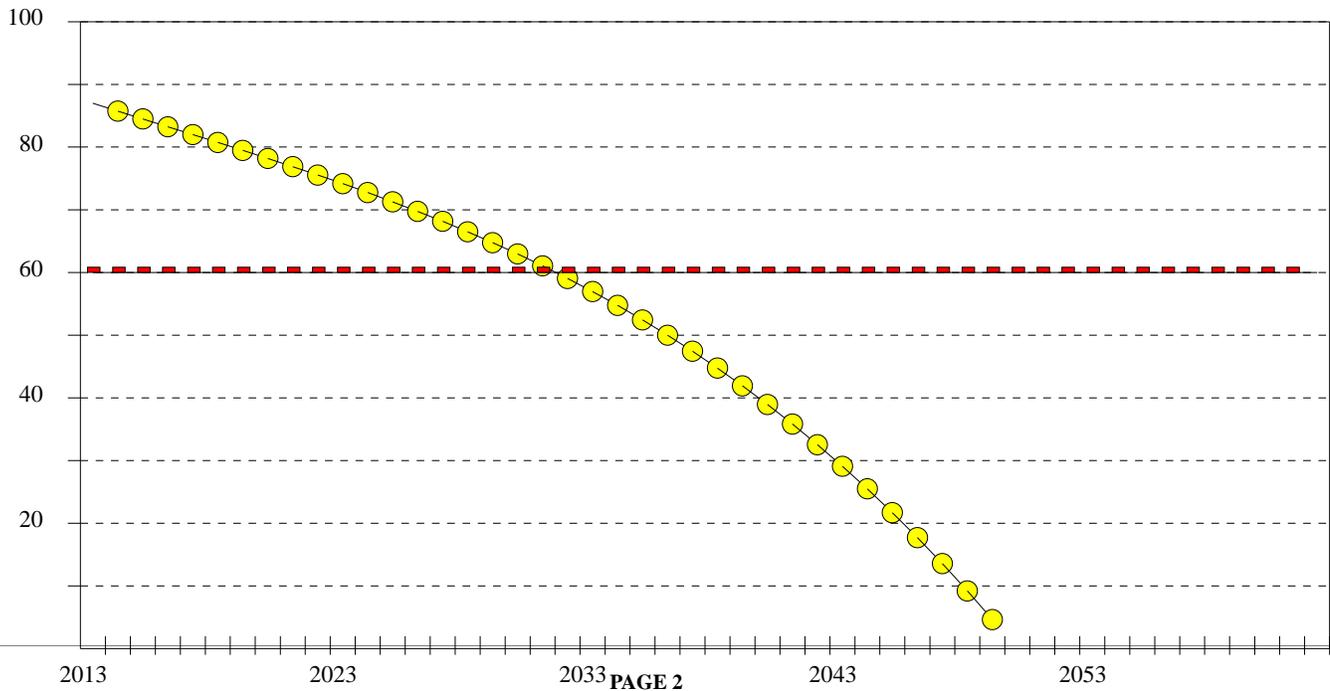
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 87

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 305

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

FEATURE'S HIGH PCI: 54

FEATURE AREA: 26,490

FEATURE'S LOW PCI: 43

INSPECTED AREA: 13,000

AVERAGE PCI: 48 POOR

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 48 in 2013

COMMENTS/HISTORY FOR FEATURE 305, TAXIWAY TO RAMP

1990 5" P401 ON
 1981 3" P401 ON 8" P208
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DISTRESS QUANTITIES FOR FEATURE 305

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
ALLIGATOR CRACKING	MED	2	4	S.F.	5.7
ALLIGATOR CRACKING	LOW	116	236	S.F.	23
LONG.& TRANS. CRACK	HIGH	5	10	L.F.	8
LONG.& TRANS. CRACK	MED	610	1,243	L.F.	27
LONG.& TRANS. CRACK	LOW	356	725	L.F.	9.4
RAVELING	MED	210	427	S.F.	10.8
RAVELING	LOW	2,600	5,298	S.F.	15.7

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS: 29 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS: 39 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS: 33 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 305

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 48 POOR

CONSTRUCTION YEAR: 1990

ESTIMATED PCI IS: 48 in 2013

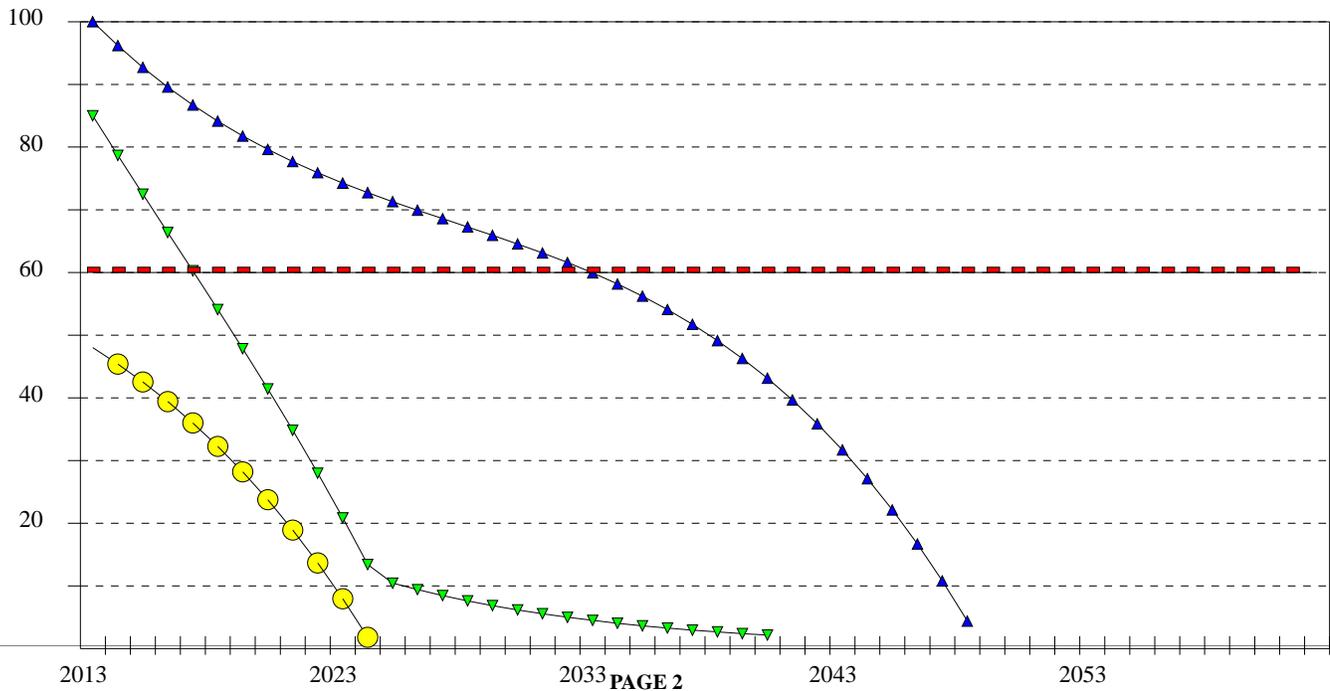
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 54

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$38,145	20 YEARS
▼	SURFACE TREATMENT	\$11,884	5 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 405

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2014

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

FEATURE'S HIGH PCI: 78

FEATURE AREA: 27,224

FEATURE'S LOW PCI: 44

INSPECTED AREA: 12,000

AVERAGE PCI: 62 FAIR

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 60 in 2014

COMMENTS/HISTORY FOR FEATURE 405, TAXIWAY TO RAMP

1990 5" P401 ON
 1981 3" P401 ON 8" P208
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DISTRESS QUANTITIES FOR FEATURE 405

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
ALLIGATOR CRACKING	LOW	149	338	S.F.	30.9
DEPRESSION	LOW	24	54	S.F.	1.7
LONG.& TRANS. CRACK	HIGH	8	18	L.F.	4.5
LONG.& TRANS. CRACK	MED	372	843	L.F.	31.9
LONG.& TRANS. CRACK	LOW	146	331	L.F.	8.2
RAVELING	MED	50	113	S.F.	4.2
RAVELING	LOW	1,300	2,949	S.F.	18.2

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS: 31 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS: 39 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS: 30 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 405

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2014

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 62 FAIR

CONSTRUCTION YEAR: 1990

ESTIMATED PCI IS: 60 in 2014

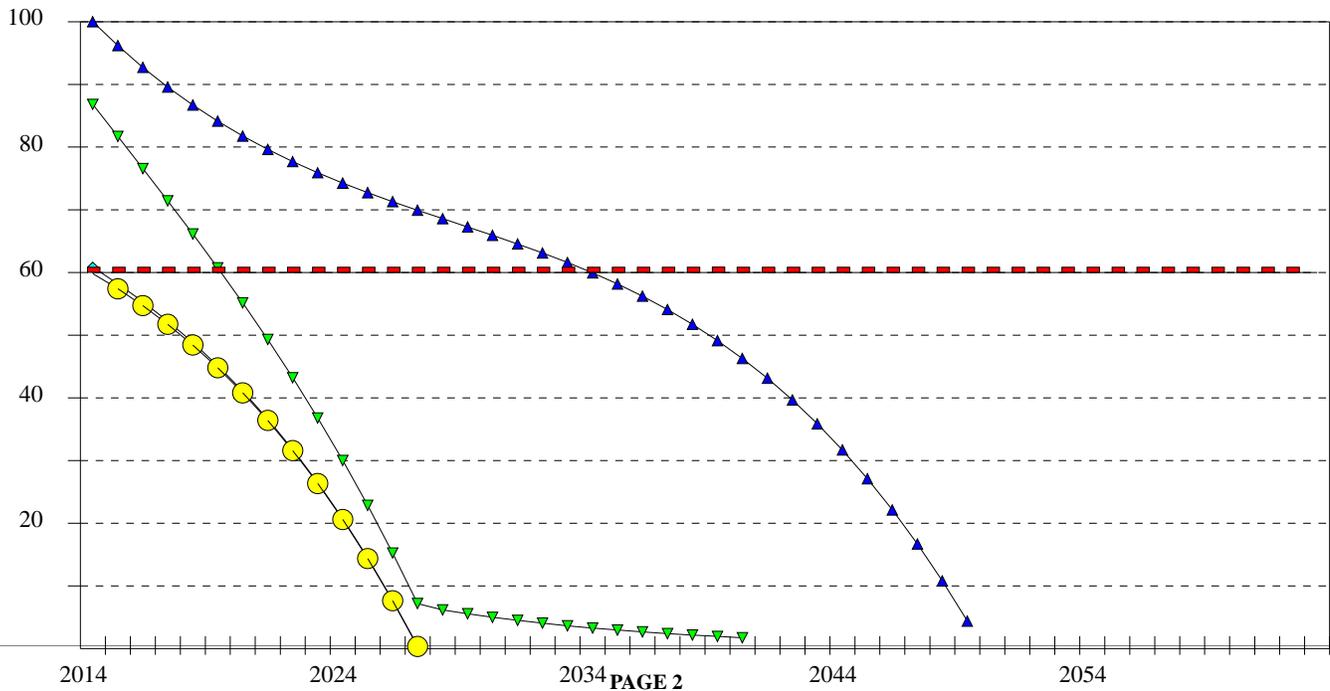
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 51

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$39,202	20 YEARS
▼	SURFACE TREATMENT	\$11,684	6 YEARS
◆	CRACK REPAIR	\$1,478	1 YEAR
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 410	DESCRIPTION: TAXIWAY TO RAMP
ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2016	INSPECTION DATE: 8-14-13
PAVEMENT TYPE: AC OVERLAY	FEATURE'S HIGH PCI: 71
FEATURE AREA: 26,610	FEATURE'S LOW PCI: 64
INSPECTED AREA: 9,750	AVERAGE PCI: 66 FAIR
MINIMUM SERVICE LEVEL: 60	ESTIMATED PCI IS: 59 in 2016

COMMENTS/HISTORY FOR FEATURE 410, TAXIWAY TO RAMP

1990 5" P401 ON
 1981 3" P401 ON 8" P208
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DISTRESS QUANTITIES FOR FEATURE 410

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
BLEEDING	N/A	23	62	S.F.	3.7
LONG.& TRANS. CRACK	MED	415	1,132	L.F.	50.1
LONG.& TRANS. CRACK	LOW	347	947	L.F.	23.6
RAVELING	LOW	1,000	2,729	S.F.	22.4

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	0 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	60 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	40 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 410

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2016

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 66 FAIR

CONSTRUCTION YEAR: 1990

ESTIMATED PCI IS: 59 in 2016

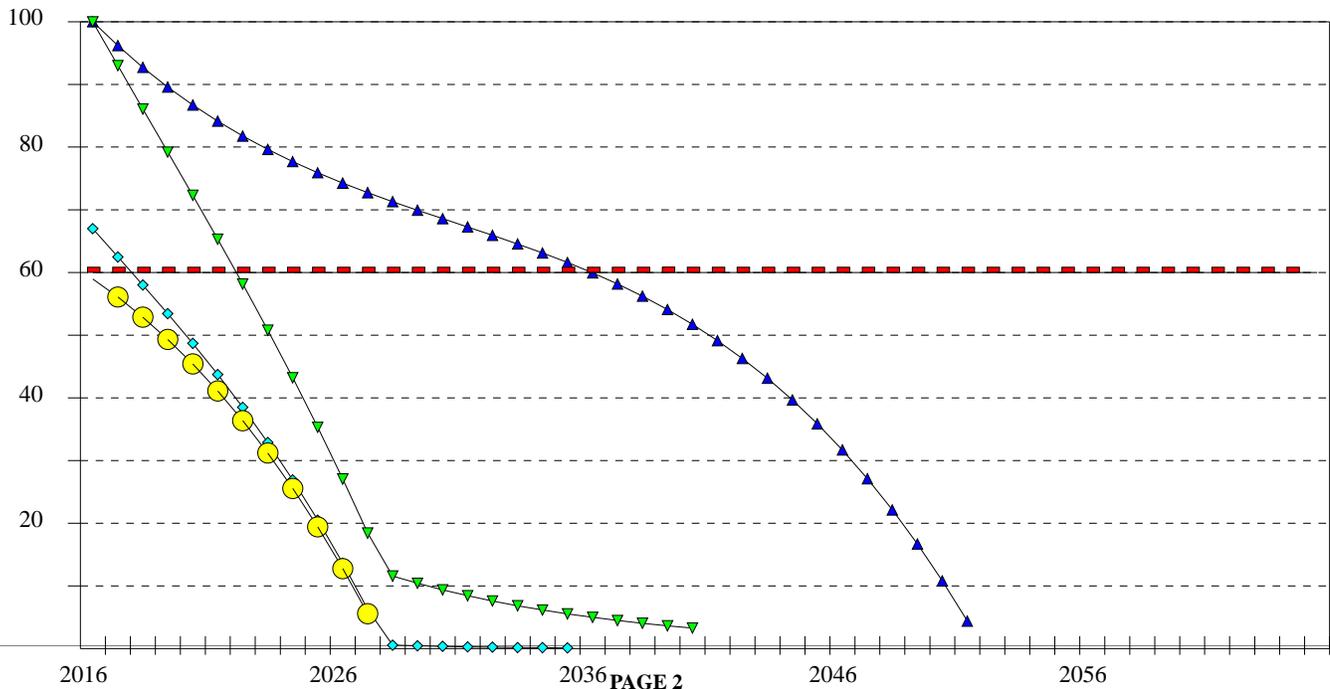
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 46

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$38,318	20 YEARS
▼	SURFACE TREATMENT	\$11,781	6 YEARS
◆	CRACK REPAIR	\$2,577	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 415

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2019

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

FEATURE'S HIGH PCI: 75

FEATURE AREA: 18,900

FEATURE'S LOW PCI: 60

INSPECTED AREA: 9,000

AVERAGE PCI: 68 FAIR

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 59 in 2019

COMMENTS/HISTORY FOR FEATURE 415, TAXIWAY TO RAMP

1997 P401 ON
 1990 5" P401 ON
 1981 3" P401 ON 8" P208
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DISTRESS QUANTITIES FOR FEATURE 415

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
ALLIGATOR CRACKING	LOW	44	92	S.F.	26.1
LONG.& TRANS. CRACK	MED	366	768	L.F.	47.2
LONG.& TRANS. CRACK	LOW	137	287	L.F.	10.3
SWELL	LOW	300	630	S.F.	16.2

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	26 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	55 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	19 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 415

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2019

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 68 FAIR

CONSTRUCTION YEAR: 1997

ESTIMATED PCI IS: 59 in 2019

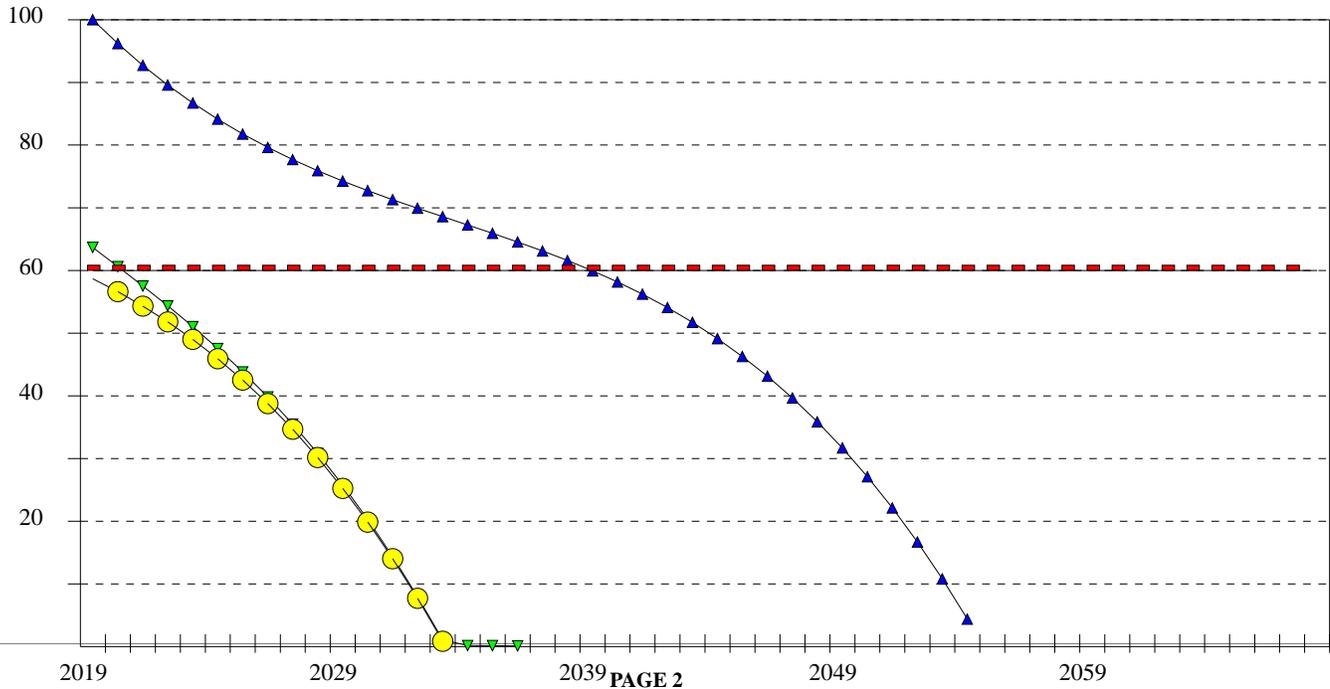
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 56

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$27,216	20 YEARS
▼	CRACK REPAIR	\$1,308	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 505

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

FEATURE'S HIGH PCI: 64

FEATURE AREA: 19,850

FEATURE'S LOW PCI: 60

INSPECTED AREA: 12,000

AVERAGE PCI: 62 FAIR

MINIMUM SERVICE LEVEL: 65

ESTIMATED PCI IS: 62 in 2013

COMMENTS/HISTORY FOR FEATURE 505, TAXIWAY TO RAMP

1990 5" P401 ON
ESTIMATED 1986 P401 SECTION

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DISTRESS QUANTITIES FOR FEATURE 505

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
LONG.& TRANS. CRACK	MED	673	1,113	L.F.	53.1
LONG.& TRANS. CRACK	LOW	534	883	L.F.	25.2
RAVELING	LOW	1,250	2,067	S.F.	19.1
SWELL	LOW	40	66	S.F.	2.4

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS: 0 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS: 61 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS: 39 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 505

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 62 FAIR

CONSTRUCTION YEAR: 1990

ESTIMATED PCI IS: 62 in 2013

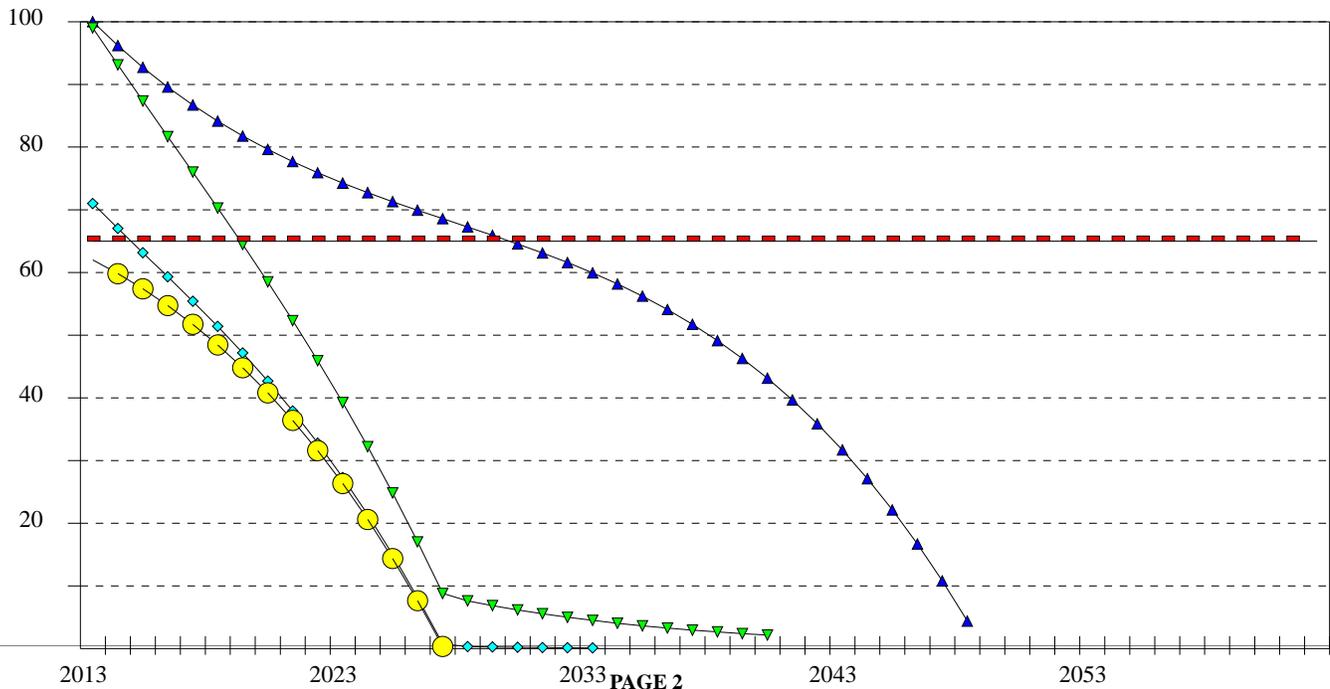
MINIMUM SERVICE LEVEL: 65

NORMAL PCI FOR THIS AGE: 54

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$28,584	17 YEARS
▼	SURFACE TREATMENT	\$9,121	6 YEARS
◆	CRACK REPAIR	\$2,475	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 65		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 515

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC

FEATURE'S HIGH PCI: 85

FEATURE AREA: 26,340

FEATURE'S LOW PCI: 79

INSPECTED AREA: 10,000

AVERAGE PCI: 82 SATISFACTORY

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 82 in 2013

COMMENTS/HISTORY FOR FEATURE 515, TAXIWAY TO RAMP

2004: 5" P401 on 14" P208

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DISTRESS QUANTITIES FOR FEATURE 515

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
LONG.& TRANS. CRACK	MED	237	624	L.F.	86.2
LONG.& TRANS. CRACK	LOW	25	65	L.F.	13.7

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	0 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	67 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	33 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 515

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC

AVERAGE PCI AT INSPECTION: 82 SATISFACTORY

CONSTRUCTION YEAR: 2004

ESTIMATED PCI IS: 82 in 2013

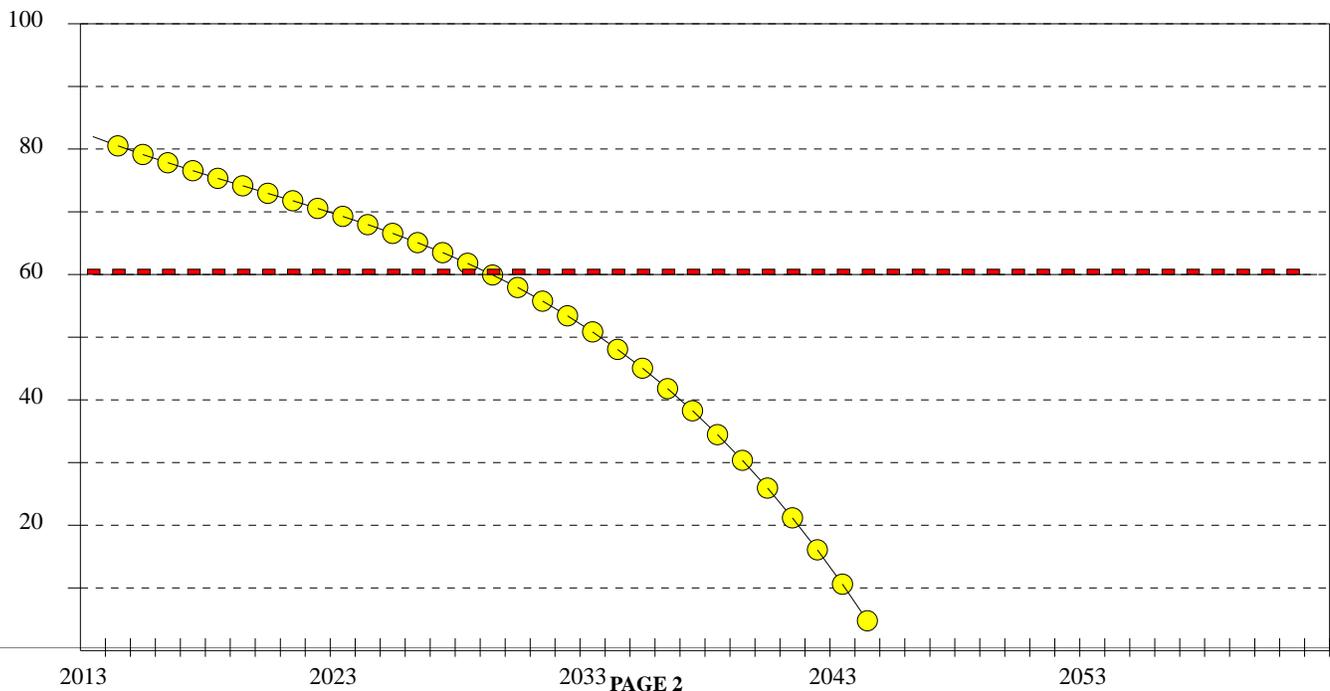
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 78

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 605

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

FEATURE'S HIGH PCI: 66

FEATURE AREA: 24,937

FEATURE'S LOW PCI: 47

INSPECTED AREA: 13,165

AVERAGE PCI: 57 FAIR

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 57 in 2013

COMMENTS/HISTORY FOR FEATURE 605, TAXIWAY TO RAMP

1990 5" P401 ON
 1981 3" P401 ON 8" P208
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DISTRESS QUANTITIES FOR FEATURE 605

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
ALLIGATOR CRACKING	LOW	216	409	S.F.	37.2
LONG.& TRANS. CRACK	MED	625	1,183	L.F.	37.5
LONG.& TRANS. CRACK	LOW	187	354	L.F.	8.4
RAVELING	LOW	1,600	3,030	S.F.	16.7

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	37 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	36 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	27 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 605

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 57 FAIR

CONSTRUCTION YEAR: 1990

ESTIMATED PCI IS: 57 in 2013

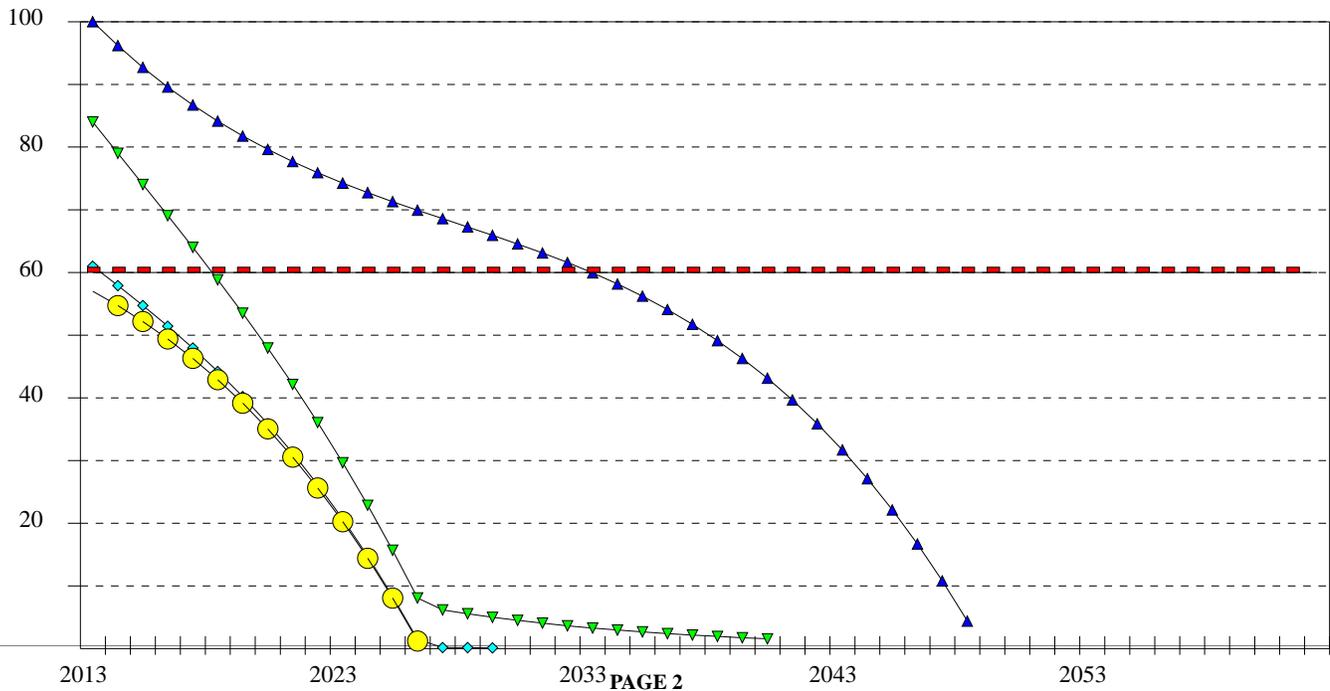
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 54

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$35,909	20 YEARS
▼	SURFACE TREATMENT	\$11,192	5 YEARS
◆	CRACK REPAIR	\$1,905	1 YEAR
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 610

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

FEATURE'S HIGH PCI: 58

FEATURE AREA: 22,400

FEATURE'S LOW PCI: 56

INSPECTED AREA: 10,000

AVERAGE PCI: 57 FAIR

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 57 in 2013

COMMENTS/HISTORY FOR FEATURE 610, TAXIWAY TO RAMP

1990 5" P401 ON
ESTIMATED 1986 P401 SECTION

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DISTRESS QUANTITIES FOR FEATURE 610

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF ALL DISTRESS
LONG.& TRANS. CRACK	MED	724	1,621	L.F.	55.7
LONG.& TRANS. CRACK	LOW	222	497	L.F.	12.4
RAVELING	HIGH	2	4	S.F.	6.4
RAVELING	LOW	2,000	4,480	S.F.	25.3

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	0 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	56 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	44 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 610

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 57 FAIR

CONSTRUCTION YEAR: 1990

ESTIMATED PCI IS: 57 in 2013

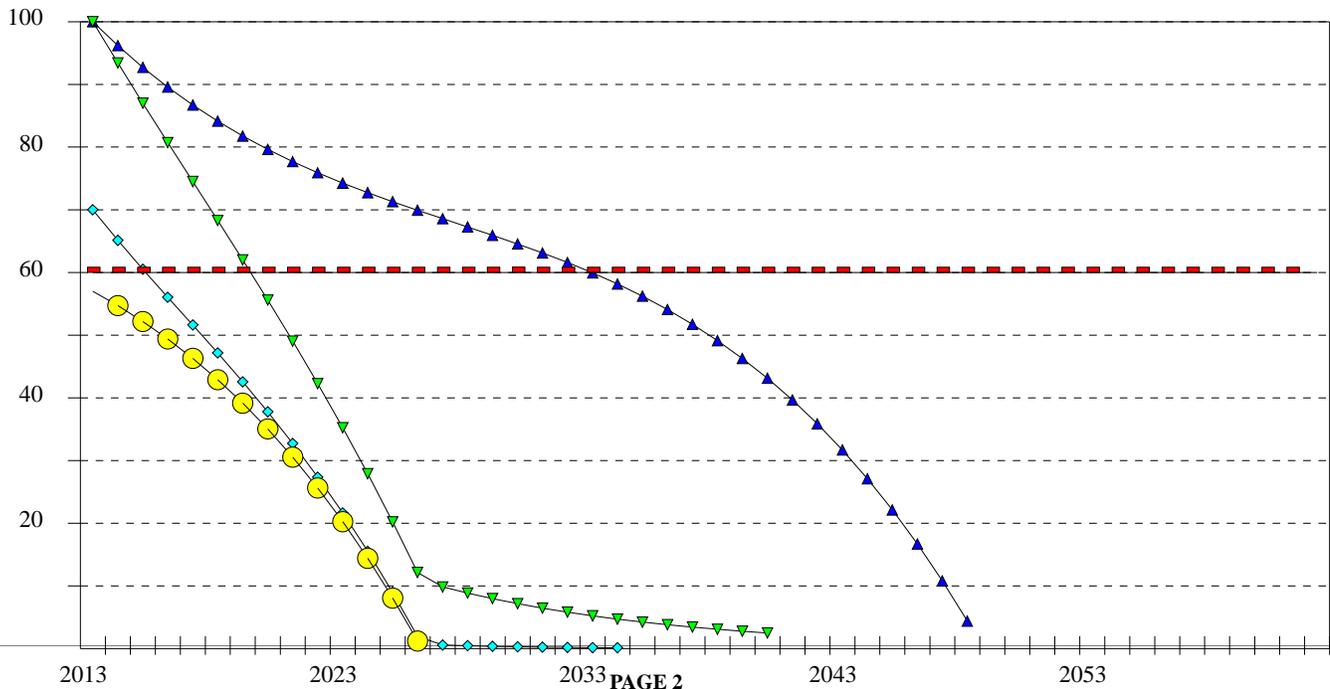
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 54

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$32,256	20 YEARS
▼	SURFACE TREATMENT	\$10,746	7 YEARS
◆	CRACK REPAIR	\$2,626	3 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 615

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

FEATURE'S HIGH PCI: 79

FEATURE AREA: 9,700

FEATURE'S LOW PCI: 78

INSPECTED AREA: 6,520

AVERAGE PCI: 79 SATISFACTORY

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 79 in 2013

COMMENTS/HISTORY FOR FEATURE 615, TAXIWAY TO RAMP

1997 P401 ON
 1990 5" P401 ON
 ESTIMATED 1986 P401 SECTION
 *

DISTRESS QUANTITIES FOR FEATURE 615

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF ALL DISTRESS
LONG.& TRANS. CRACK	MED	185	275	L.F.	81.9
LONG.& TRANS. CRACK	LOW	67	99	L.F.	18

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS: 0 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS: 67 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS: 33 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 615

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 79 SATISFACTORY

CONSTRUCTION YEAR: 1997

ESTIMATED PCI IS: 79 in 2013

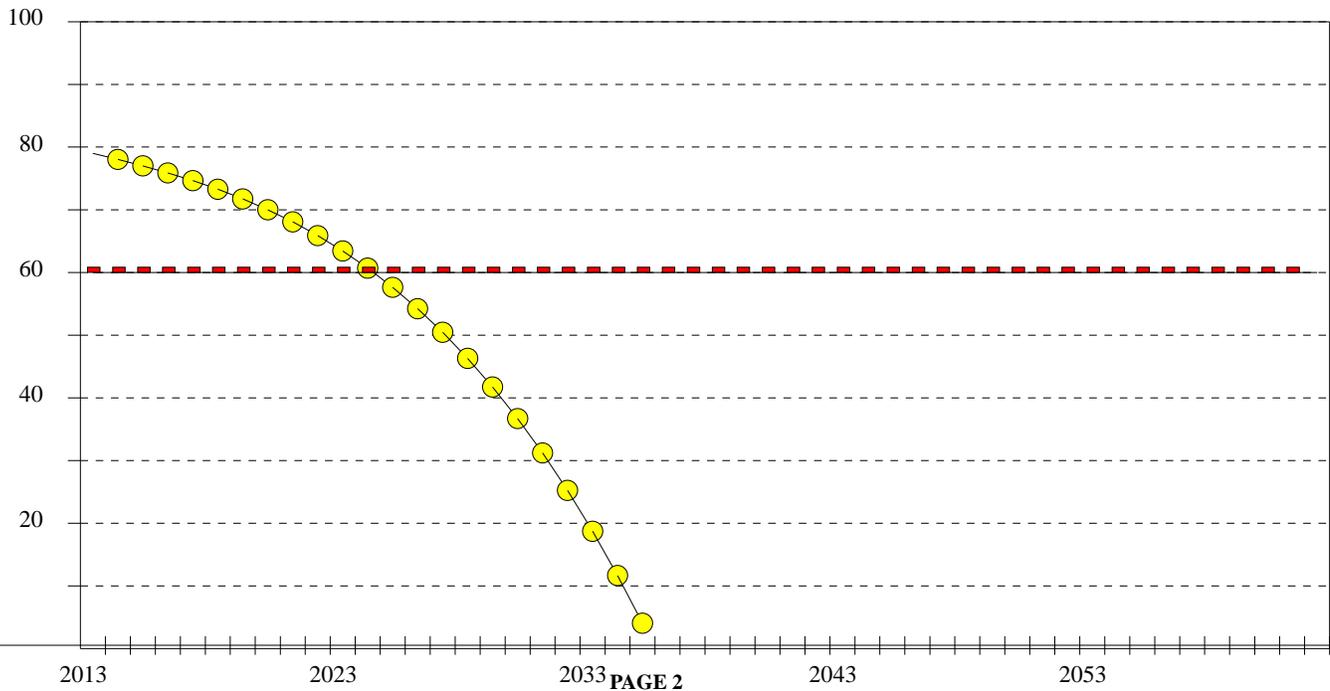
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 65

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 705

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2014

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC

FEATURE'S HIGH PCI: 61

FEATURE AREA: 23,400

FEATURE'S LOW PCI: 60

INSPECTED AREA: 10,000

AVERAGE PCI: 61 FAIR

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 59 in 2014

COMMENTS/HISTORY FOR FEATURE 705, TAXIWAY TO RAMP

1992 5" P401 ON 14" P208

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DISTRESS QUANTITIES FOR FEATURE 705

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF ALL DISTRESS
BLOCK CRACKING	MED	150	351	S.F.	11.7
BLOCK CRACKING	LOW	1,719	4,022	S.F.	29.8
LONG.& TRANS. CRACK	MED	156	365	L.F.	18.7
LONG.& TRANS. CRACK	LOW	937	2,192	L.F.	32.6
RAVELING	LOW	240	561	S.F.	7

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	0 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	37 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	63 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 705

DESCRIPTION: TAXIWAY TO RAMP

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2014

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC

AVERAGE PCI AT INSPECTION: 61 FAIR

CONSTRUCTION YEAR: 1992

ESTIMATED PCI IS: 59 in 2014

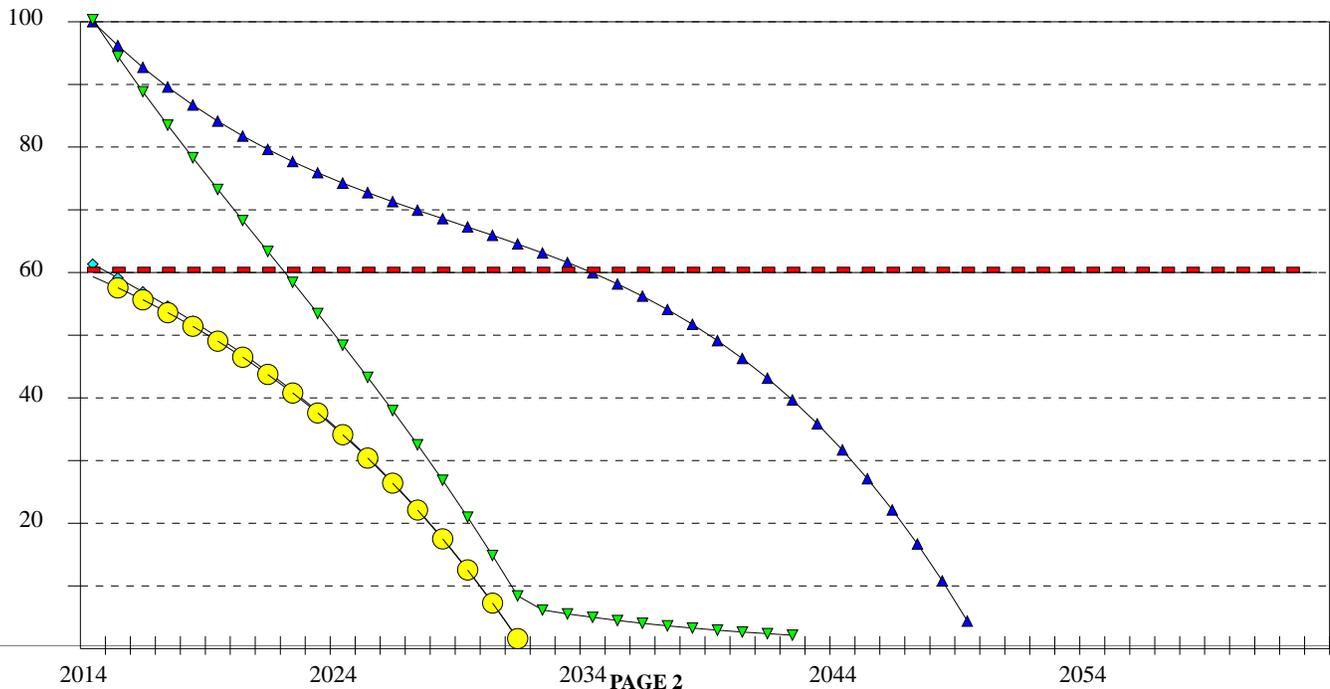
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 58

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$33,696	20 YEARS
▼	SURFACE TREATMENT	\$9,839	8 YEARS
◆	CRACK REPAIR	\$6,424	1 YEAR
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 3005

DESCRIPTION: RAMP

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2014

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

FEATURE'S HIGH PCI: 72

FEATURE AREA: 194,575

FEATURE'S LOW PCI: 46

INSPECTED AREA: 48,800

AVERAGE PCI: 61 FAIR

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 59 in 2014

COMMENTS/HISTORY FOR FEATURE 3005, RAMP

1990 5" P401 ON
 1986 3" P401 ON 9" P208
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DISTRESS QUANTITIES FOR FEATURE 3005

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
BLOCK CRACKING	MED	500	1,993	S.F.	6.4
BLOCK CRACKING	LOW	8,200	32,695	S.F.	14.7
LONG.& TRANS. CRACK	MED	2,528	10,079	L.F.	40.2
LONG.& TRANS. CRACK	LOW	4,487	17,890	L.F.	35.7
OIL SPILLAGE	N/A	60	239	S.F.	1.4
RAVELING	HIGH	2	8	S.F.	1.2

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS: 0 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS: 51 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS: 49 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 3005

DESCRIPTION: RAMP

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2014

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 61 FAIR

CONSTRUCTION YEAR: 1990

ESTIMATED PCI IS: 59 in 2014

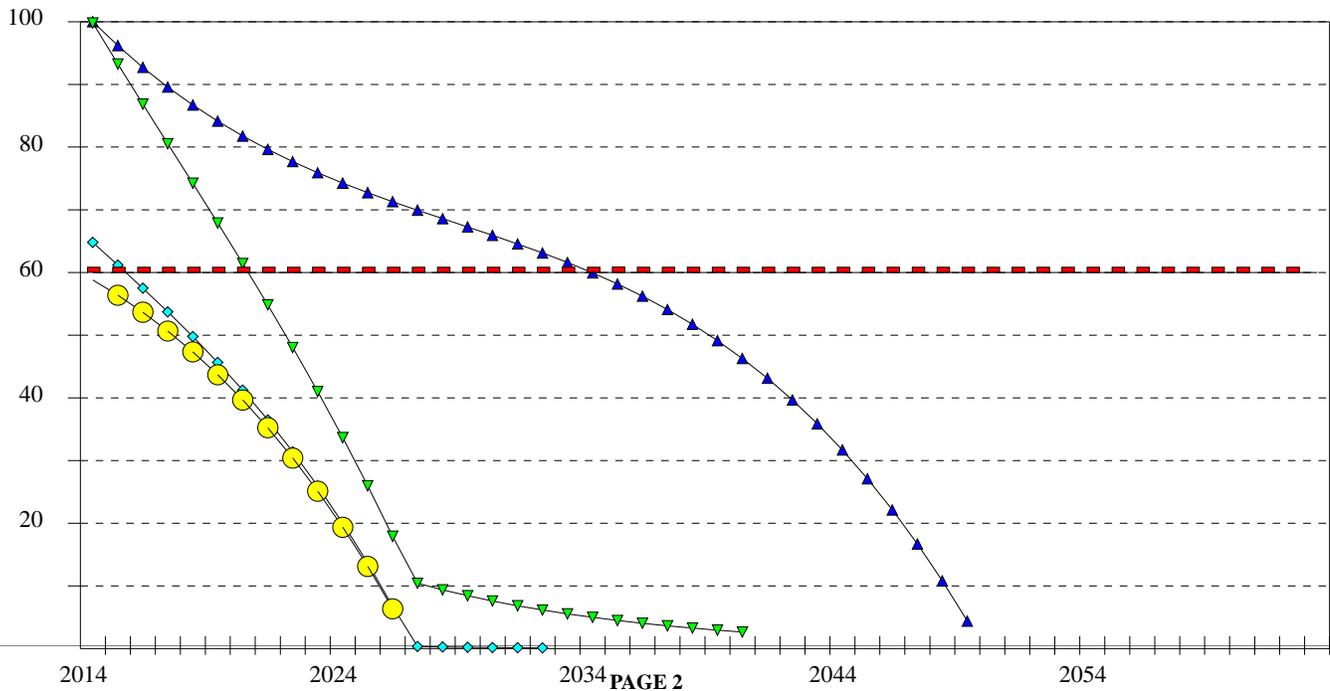
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 51

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$280,188	20 YEARS
▼	SURFACE TREATMENT	\$89,864	7 YEARS
◆	CRACK REPAIR	\$60,489	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 3010

DESCRIPTION: RAMP

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2014

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

FEATURE'S HIGH PCI: 78

FEATURE AREA: 159,492

FEATURE'S LOW PCI: 45

INSPECTED AREA: 45,000

AVERAGE PCI: 62 FAIR

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 60 in 2014

COMMENTS/HISTORY FOR FEATURE 3010, RAMP

1990 5" P401 ON
 1981 3" P401 ON 8" P208
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DISTRESS QUANTITIES FOR FEATURE 3010

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF ALL DISTRESS
ALLIGATOR CRACKING	MED	4	14	S.F.	1.9
ALLIGATOR CRACKING	LOW	30	106	S.F.	3.3
BLEEDING	N/A	95	336	S.F.	1.9
DEPRESSION	LOW	2	7	S.F.	0
LONG.& TRANS. CRACK	MED	2,609	9,247	L.F.	46.2
LONG.& TRANS. CRACK	LOW	4,373	15,499	L.F.	37.8
OIL SPILLAGE	N/A	20	70	S.F.	.5
RAVELING	HIGH	4	14	S.F.	2.7
RUTTING	LOW	19	67	S.F.	5.4

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS: 9 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS: 61 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS: 30 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 3010

DESCRIPTION: RAMP

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2014

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 62 FAIR

CONSTRUCTION YEAR: 1990

ESTIMATED PCI IS: 60 in 2014

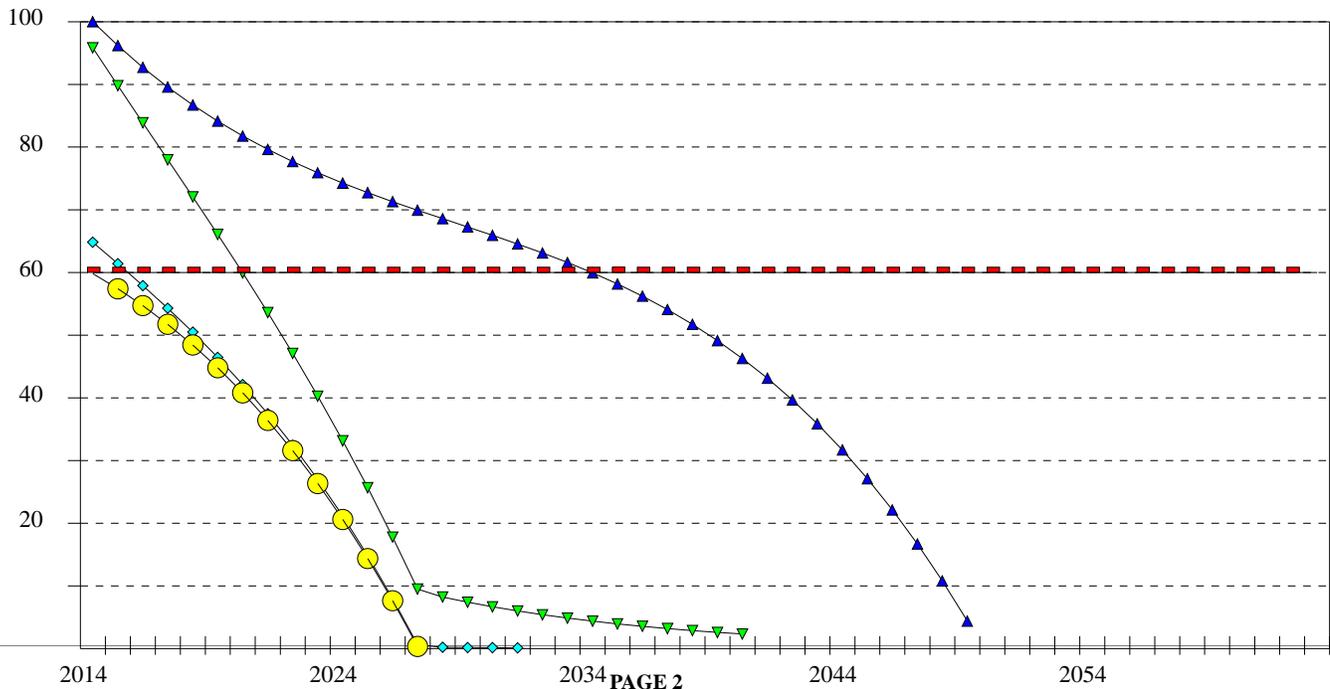
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 51

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$229,668	20 YEARS
▼	SURFACE TREATMENT	\$73,668	6 YEARS
◆	CRACK REPAIR	\$30,685	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 3015

DESCRIPTION: RAMP

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2018

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC

FEATURE'S HIGH PCI: 77

FEATURE AREA: 103,384

FEATURE'S LOW PCI: 63

INSPECTED AREA: 35,600

AVERAGE PCI: 69 FAIR

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 59 in 2018

COMMENTS/HISTORY FOR FEATURE 3015, RAMP

1990 5" P401 ON 14" P208

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DISTRESS QUANTITIES FOR FEATURE 3015

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF ALL DISTRESS
ALLIGATOR CRACKING	LOW	8	23	S.F.	3
LONG.& TRANS. CRACK	MED	1,681	4,881	L.F.	54.1
LONG.& TRANS. CRACK	LOW	2,174	6,313	L.F.	36.8
RAVELING	HIGH	20	58	S.F.	5.2
RAVELING	LOW	12	34	S.F.	.6

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS: 3 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS: 63 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS: 34 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 3015

DESCRIPTION: RAMP

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2018

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC

AVERAGE PCI AT INSPECTION: 69 FAIR

CONSTRUCTION YEAR: 1990

ESTIMATED PCI IS: 59 in 2018

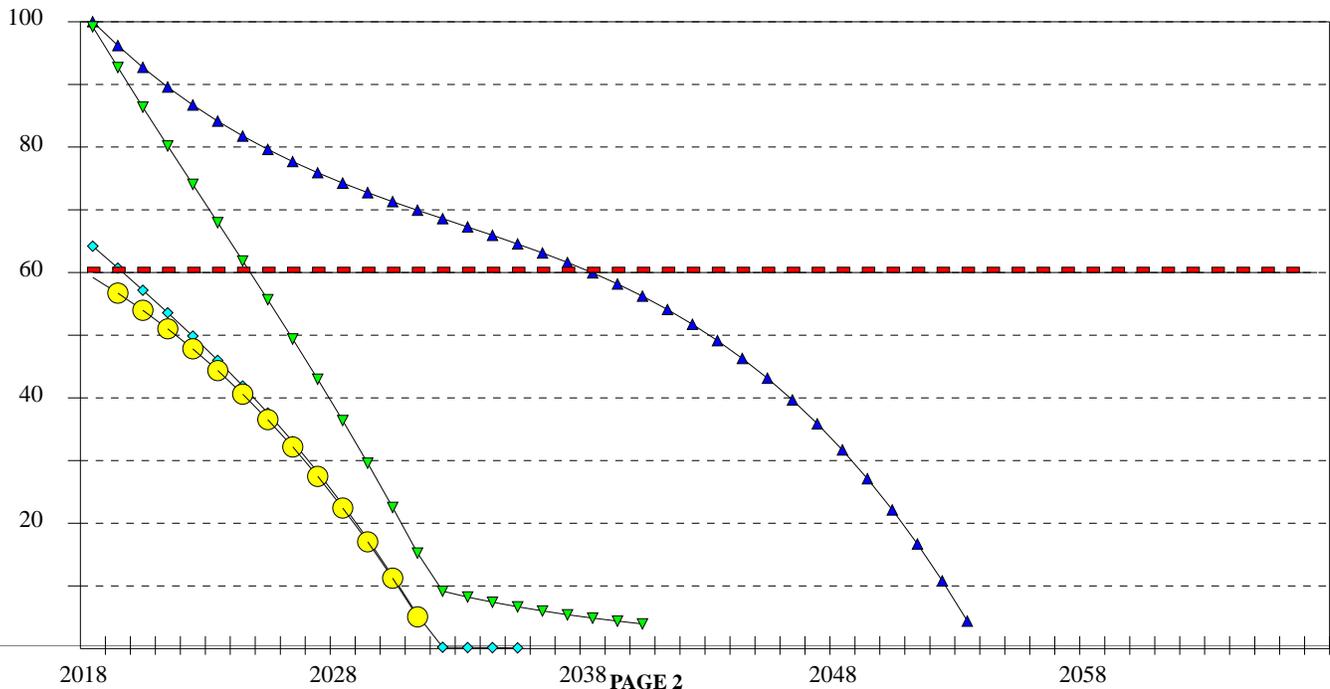
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 45

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$148,872	20 YEARS
▼	SURFACE TREATMENT	\$46,372	7 YEARS
◆	CRACK REPAIR	\$13,880	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 3020

DESCRIPTION: RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC

FEATURE'S HIGH PCI: 61

FEATURE AREA: 48,550

FEATURE'S LOW PCI: 53

INSPECTED AREA: 20,500

AVERAGE PCI: 59 FAIR

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 59 in 2013

COMMENTS/HISTORY FOR FEATURE 3020, RAMP

1992 5" P401 ON 14" P208

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DISTRESS QUANTITIES FOR FEATURE 3020

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
ALLIGATOR CRACKING	MED	4	9	S.F.	4.1
ALLIGATOR CRACKING	LOW	35	82	S.F.	8
BLEEDING	N/A	30	71	S.F.	2.3
BLOCK CRACKING	MED	400	947	S.F.	12.9
BLOCK CRACKING	LOW	19,100	45,234	S.F.	65.8
LONG.& TRANS. CRACK	LOW	100	236	L.F.	3.3
RAVELING	HIGH	3	7	S.F.	2.7
SWELL	LOW	2	4	S.F.	.5

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	12 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	6 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	82 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 3020

DESCRIPTION: RAMP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC

AVERAGE PCI AT INSPECTION: 59 FAIR

CONSTRUCTION YEAR: 1992

ESTIMATED PCI IS: 59 in 2013

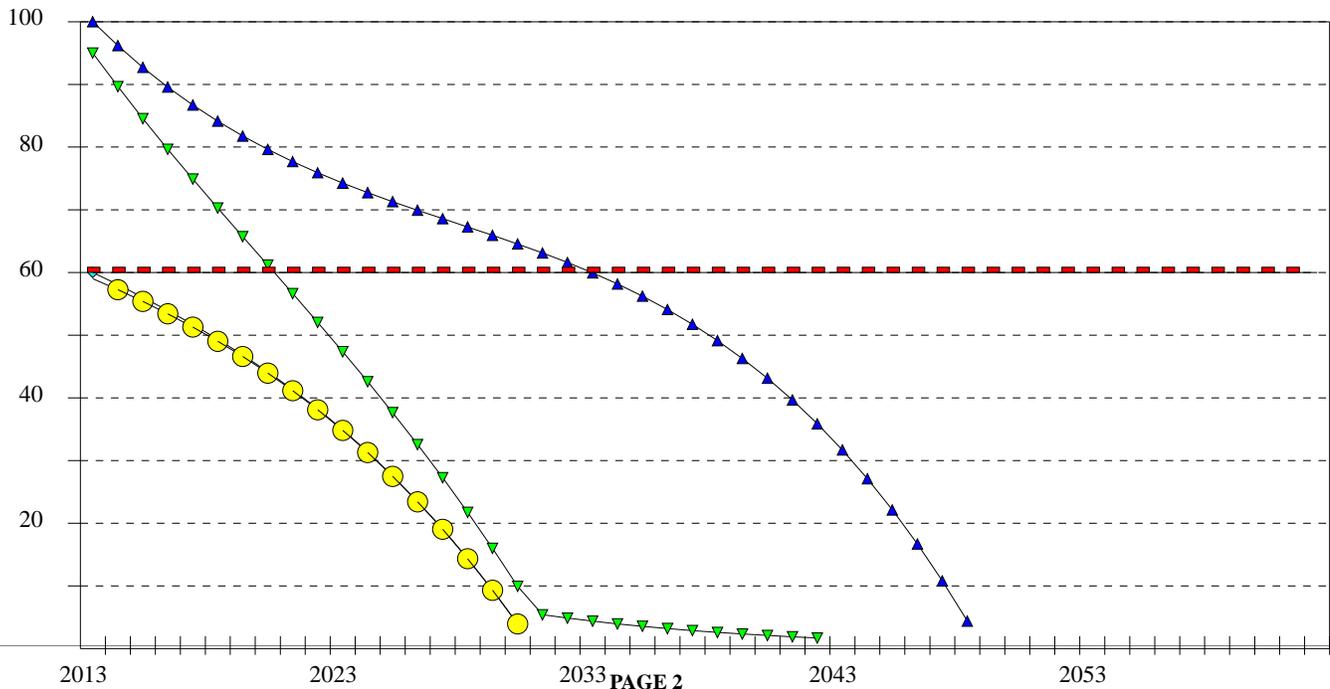
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 60

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$69,912	20 YEARS
▼	SURFACE TREATMENT	\$19,639	8 YEARS
◆	CRACK REPAIR	\$34,651	1 YEAR
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 3025	DESCRIPTION: SOUTH RAMP
ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2014	INSPECTION DATE: 8-14-13
PAVEMENT TYPE: AC	FEATURE'S HIGH PCI: 65
FEATURE AREA: 181,650	FEATURE'S LOW PCI: 54
INSPECTED AREA: 48,600	AVERAGE PCI: 61 FAIR
MINIMUM SERVICE LEVEL: 60	ESTIMATED PCI IS: 59 in 2014

COMMENTS/HISTORY FOR FEATURE 3025, SOUTH RAMP

1992 5" P401 ON 14" P208

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DISTRESS QUANTITIES FOR FEATURE 3025

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
BLEEDING	N/A	13	48	S.F.	.3
BLOCK CRACKING	MED	1,800	6,727	S.F.	15.6
BLOCK CRACKING	LOW	39,900	149,132	S.F.	69.5
LONG.& TRANS. CRACK	MED	185	691	L.F.	5.7
LONG.& TRANS. CRACK	LOW	429	1,603	L.F.	6.7
RUTTING	LOW	3	11	S.F.	1.6
SWELL	LOW	10	37	S.F.	.2

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	1 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	9 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	89 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 3025

DESCRIPTION: SOUTH RAMP

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2014

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC

AVERAGE PCI AT INSPECTION: 61 FAIR

CONSTRUCTION YEAR: 1992

ESTIMATED PCI IS: 59 in 2014

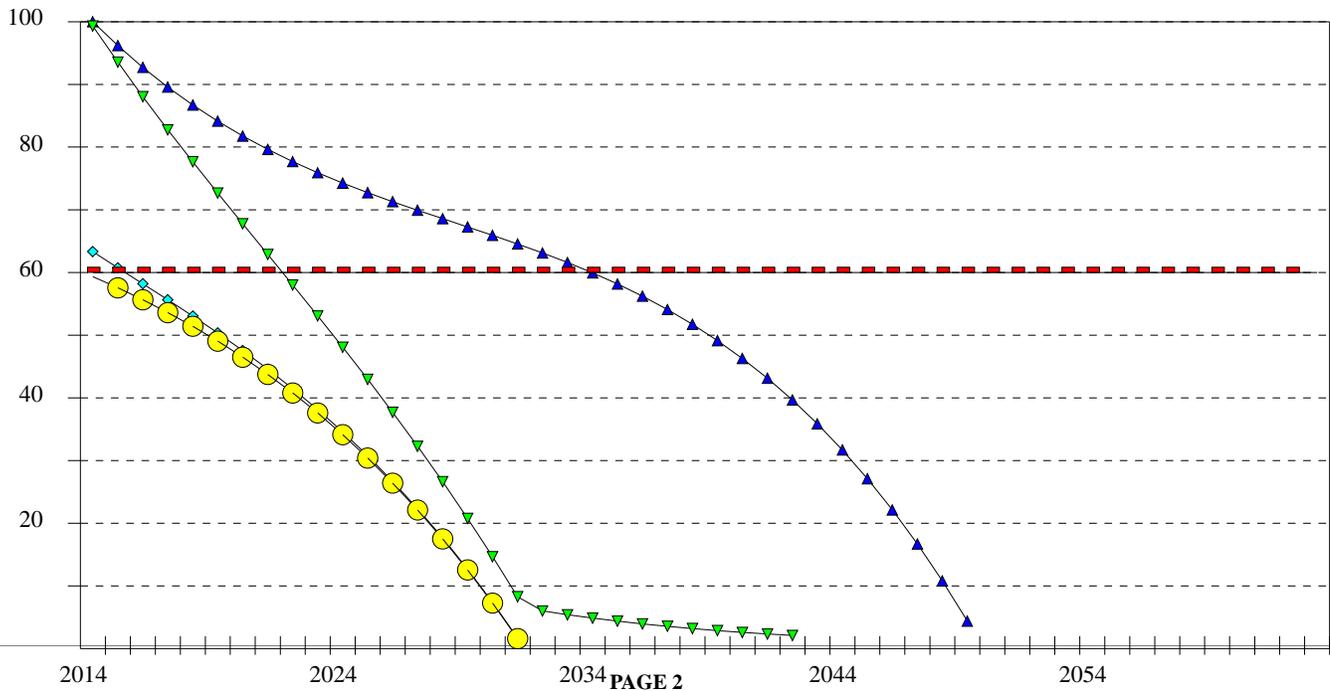
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 58

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$261,576	20 YEARS
▼	SURFACE TREATMENT	\$76,705	8 YEARS
◆	CRACK REPAIR	\$118,803	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 3030

DESCRIPTION: RAMP EXPANSION

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC +

FEATURE'S HIGH PCI: 100

FEATURE AREA: 121,581

FEATURE'S LOW PCI: 82

INSPECTED AREA: 33,600

AVERAGE PCI: 89 GOOD

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 87 in 2013

COMMENTS/HISTORY FOR FEATURE 3030, RAMP EXPANSION

2003: 5" P401 on 14" P208

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DISTRESS QUANTITIES FOR FEATURE 3030

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
LONG.& TRANS. CRACK	MED	275	995	L.F.	60.8
LONG.& TRANS. CRACK	LOW	455	1,646	L.F.	39.1

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	0 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	67 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	33 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 3030

DESCRIPTION: RAMP EXPANSION

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC +

AVERAGE PCI AT INSPECTION: 89 GOOD

CONSTRUCTION YEAR: 2003

ESTIMATED PCI IS: 87 in 2013

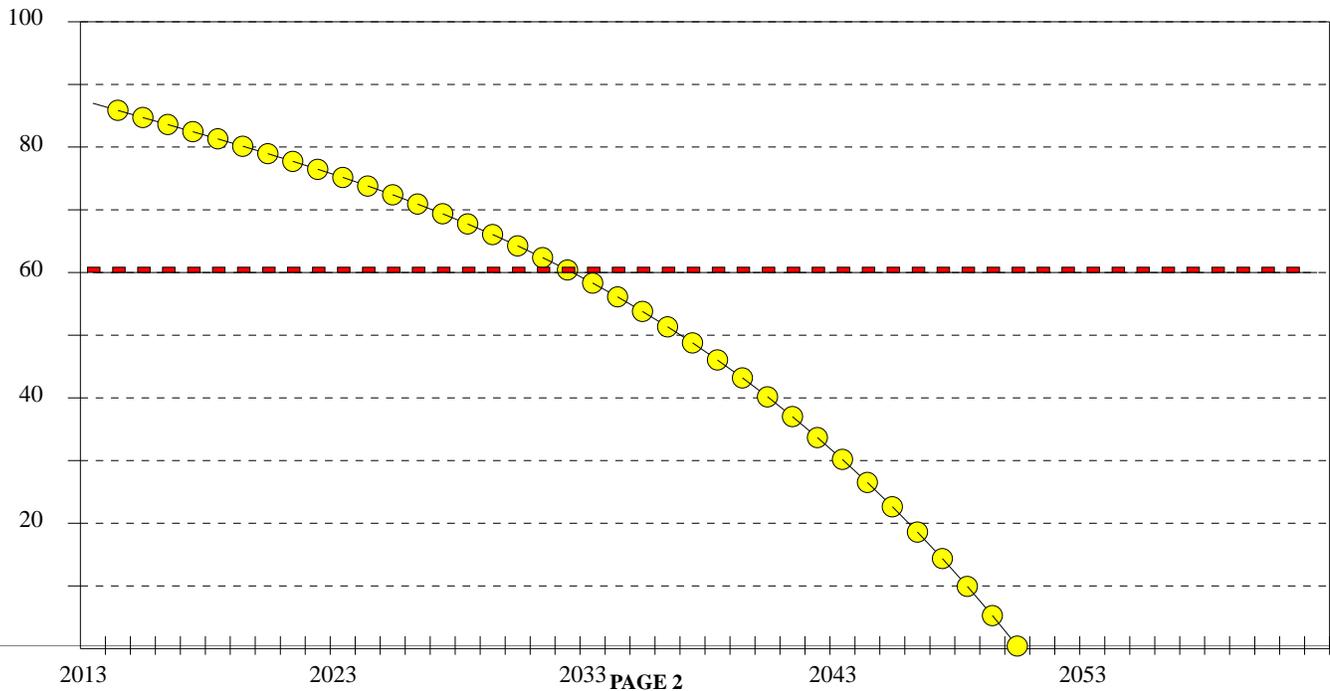
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 86

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 3035

DESCRIPTION: RAMP EXPANSION

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC +

FEATURE'S HIGH PCI: 98

FEATURE AREA: 47,734

FEATURE'S LOW PCI: 95

INSPECTED AREA: 20,000

AVERAGE PCI: 96 GOOD

MINIMUM SERVICE LEVEL: 60

ESTIMATED PCI IS: 89 in 2013

COMMENTS/HISTORY FOR FEATURE 3035, RAMP EXPANSION

2004: 5" P401 on 14" P208

*
*
*

DISTRESS QUANTITIES FOR FEATURE 3035

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
LONG.& TRANS. CRACK	LOW	170	405	L.F.	100

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	0 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	67 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	33 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 3035

DESCRIPTION: RAMP EXPANSION

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC +

AVERAGE PCI AT INSPECTION: 96 GOOD

CONSTRUCTION YEAR: 2004

ESTIMATED PCI IS: 89 in 2013

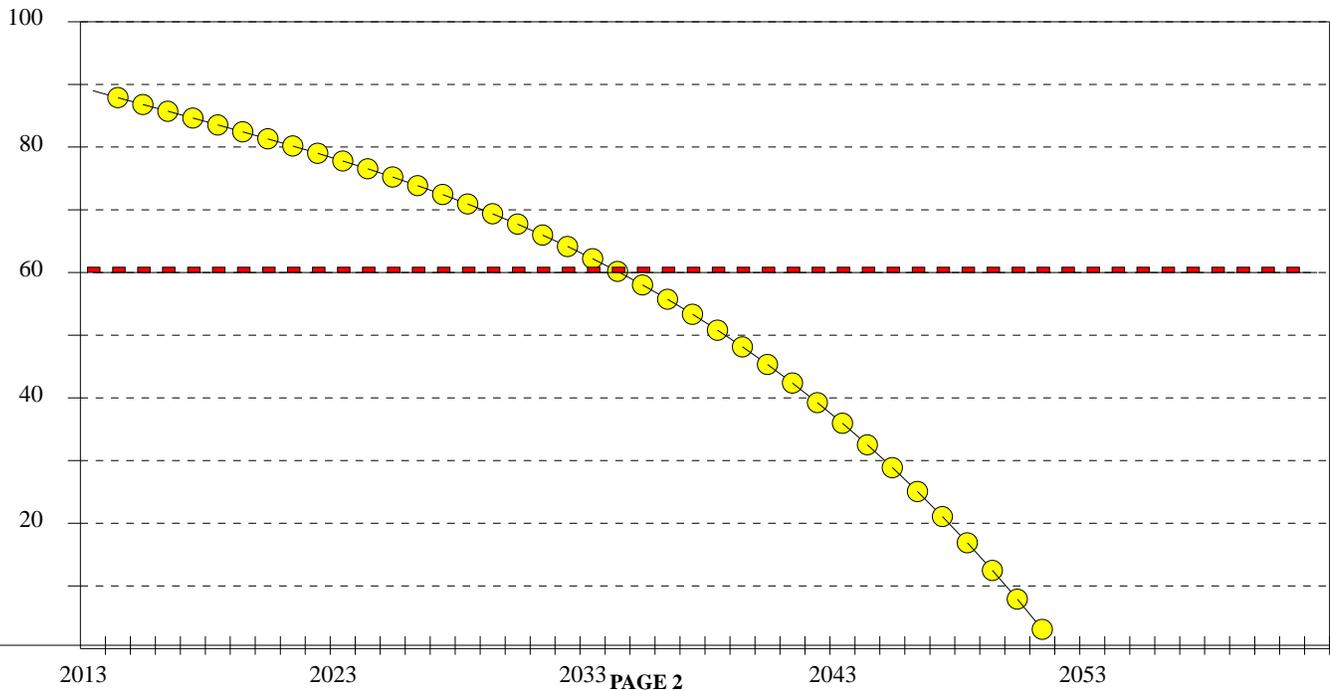
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 87

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 4005	DESCRIPTION: RUNWAY 36 RUNUP
ANALYSIS YEAR: 2013	INSPECTION DATE: 8-14-13
PAVEMENT TYPE: AC OVERLAY	FEATURE'S HIGH PCI: 63
FEATURE AREA: 31,000	FEATURE'S LOW PCI: 56
INSPECTED AREA: 17,820	AVERAGE PCI: 59 FAIR
MINIMUM SERVICE LEVEL: 60	ESTIMATED PCI IS: 59 in 2013

COMMENTS/HISTORY FOR FEATURE 4005, RUNWAY 36 RUNUP

1990 5" P401 ON
 1989 3" P401 ON 9" P208
 *
 *

DISTRESS QUANTITIES FOR FEATURE 4005

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
LONG.& TRANS. CRACK	MED	1,006	1,750	L.F.	40.8
LONG.& TRANS. CRACK	LOW	843	1,466	L.F.	18.4
RAVELING	MED	650	1,130	S.F.	17.7
RAVELING	LOW	4,450	7,741	S.F.	22.9

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	0 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	53 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	47 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 4005

DESCRIPTION: RUNWAY 36 RUNUP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 59 FAIR

CONSTRUCTION YEAR: 1990

ESTIMATED PCI IS: 59 in 2013

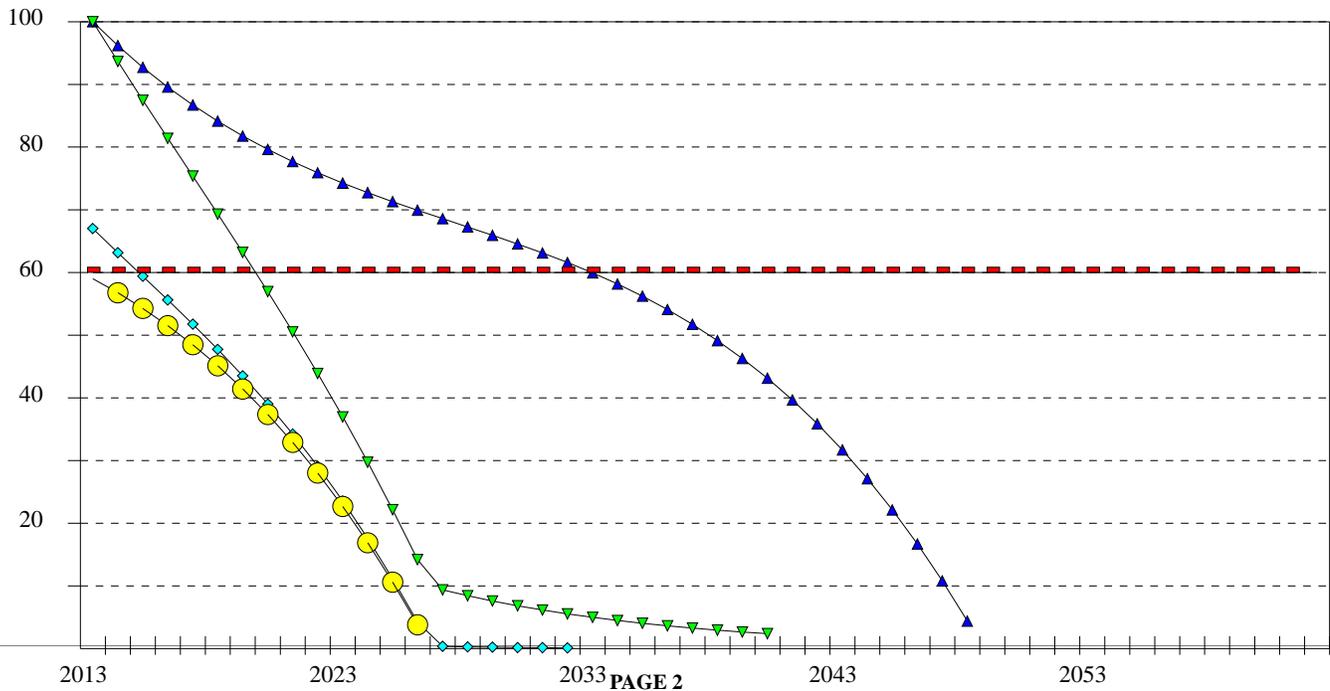
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 54

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$44,640	20 YEARS
▼	SURFACE TREATMENT	\$14,259	7 YEARS
◆	CRACK REPAIR	\$3,987	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 4010	DESCRIPTION: RUNWAY 18 RUNUP
ANALYSIS YEAR: 2013	INSPECTION DATE: 8-14-13
PAVEMENT TYPE: AC OVERLAY	FEATURE'S HIGH PCI: 61
FEATURE AREA: 29,280	FEATURE'S LOW PCI: 55
INSPECTED AREA: 15,000	AVERAGE PCI: 58 FAIR
MINIMUM SERVICE LEVEL: 60	ESTIMATED PCI IS: 58 in 2013

COMMENTS/HISTORY FOR FEATURE 4010, RUNWAY 18 RUNUP

1990 5" P401 ON
 1989 3" P401 ON 9" P208
 *
 *

DISTRESS QUANTITIES FOR FEATURE 4010

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
LONG.& TRANS. CRACK	MED	1,094	2,135	L.F.	51.9
LONG.& TRANS. CRACK	LOW	1,157	2,258	L.F.	32.4
RAVELING	MED	50	97	S.F.	4.6
RAVELING	LOW	650	1,268	S.F.	10.9

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	0 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	61 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	39 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 4010

DESCRIPTION: RUNWAY 18 RUNUP

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 58 FAIR

CONSTRUCTION YEAR: 1990

ESTIMATED PCI IS: 58 in 2013

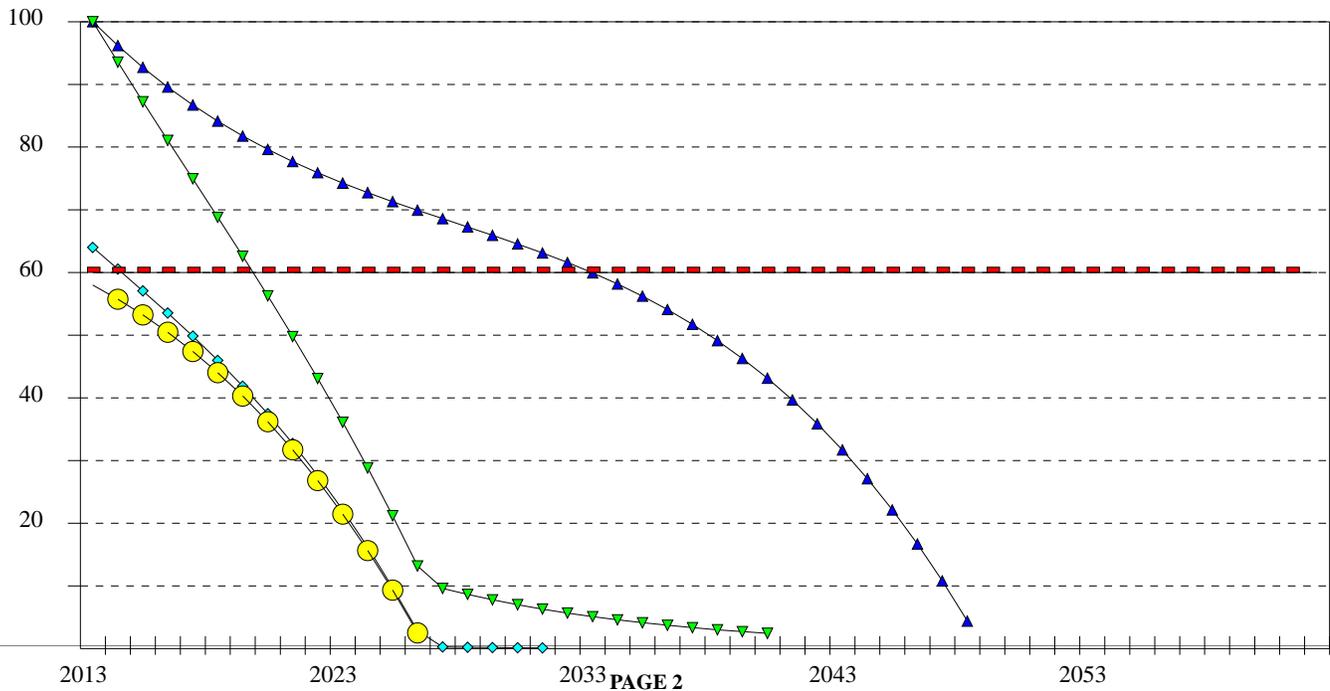
MINIMUM SERVICE LEVEL: 60

NORMAL PCI FOR THIS AGE: 54

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$42,163	20 YEARS
▼	SURFACE TREATMENT	\$14,066	7 YEARS
◆	CRACK REPAIR	\$5,447	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 60		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 5005

DESCRIPTION: RUNWAY 18-36

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2022

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

FEATURE'S HIGH PCI: 82

FEATURE AREA: 296,495

FEATURE'S LOW PCI: 72

INSPECTED AREA: 45,000

AVERAGE PCI: 78 SATISFACTORY

MINIMUM SERVICE LEVEL: 65

ESTIMATED PCI IS: 65 in 2022

COMMENTS/HISTORY FOR FEATURE 5005, RUNWAY 18-36

1997 P401 ON
 1989 4" P401 ON
 1981 3" P401 ON 8" P208
 *

DISTRESS QUANTITIES FOR FEATURE 5005

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
LONG.& TRANS. CRACK	MED	500	3,294	L.F.	36.7
LONG.& TRANS. CRACK	LOW	1,274	8,394	L.F.	30.1
RAVELING	LOW	4,200	27,672	S.F.	33.1

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS: 0 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS: 56 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS: 44 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 5005

DESCRIPTION: RUNWAY 18-36

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2022

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 78 SATISFACTORY

CONSTRUCTION YEAR: 1997

ESTIMATED PCI IS: 65 in 2022

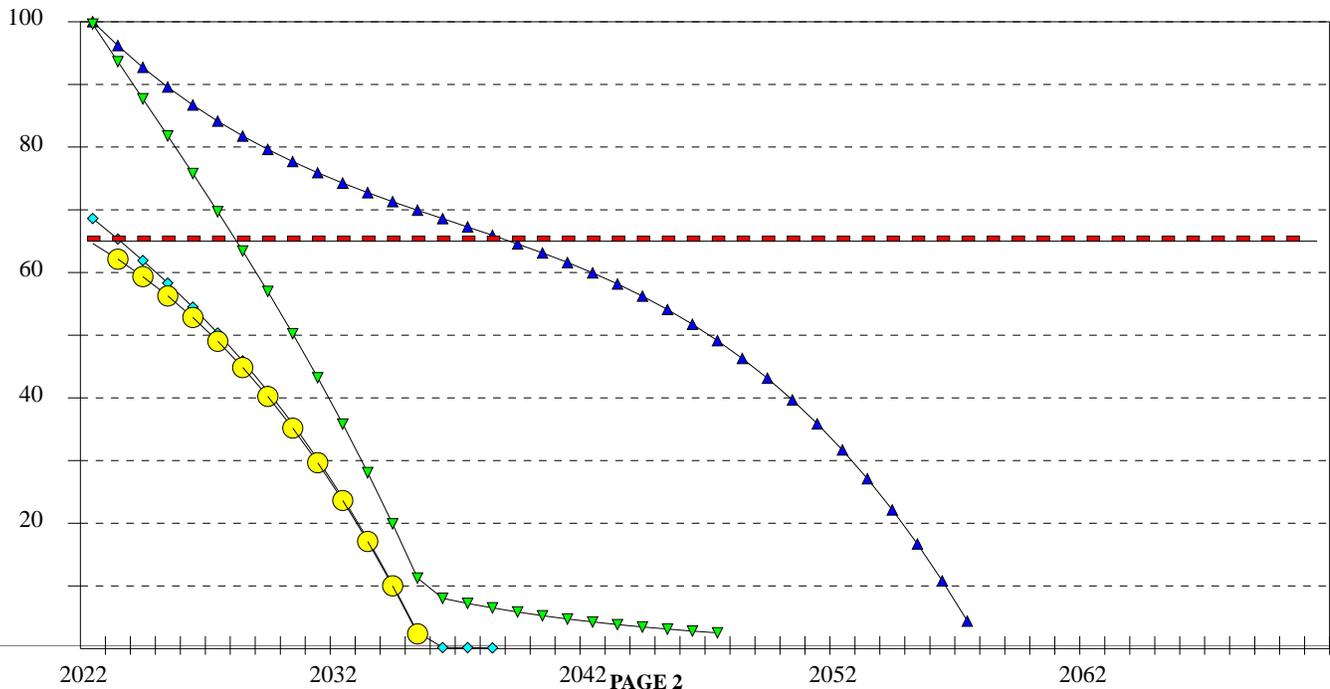
MINIMUM SERVICE LEVEL: 65

NORMAL PCI FOR THIS AGE: 49

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$426,952	17 YEARS
▼	SURFACE TREATMENT	\$119,717	6 YEARS
◆	CRACK REPAIR	\$14,493	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 65		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 5010

DESCRIPTION: RUNWAY 18-36

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2020

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

FEATURE'S HIGH PCI: 80

FEATURE AREA: 116,660

FEATURE'S LOW PCI: 69

INSPECTED AREA: 30,000

AVERAGE PCI: 74 SATISFACTORY

MINIMUM SERVICE LEVEL: 65

ESTIMATED PCI IS: 64 in 2020

COMMENTS/HISTORY FOR FEATURE 5010, RUNWAY 18-36

1997 P401 ON
 1989 4" P401 ON
 1986 4" P401 ON 9" P208
 *

DISTRESS QUANTITIES FOR FEATURE 5010

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
LONG.& TRANS. CRACK	MED	823	3,200	L.F.	52.1
LONG.& TRANS. CRACK	LOW	691	2,687	L.F.	22.8
RAVELING	LOW	2,575	10,013	S.F.	24.9

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS: 0 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS: 58 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS: 42 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 5010

DESCRIPTION: RUNWAY 18-36

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2020

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 74 SATISFACTORY

CONSTRUCTION YEAR: 1997

ESTIMATED PCI IS: 64 in 2020

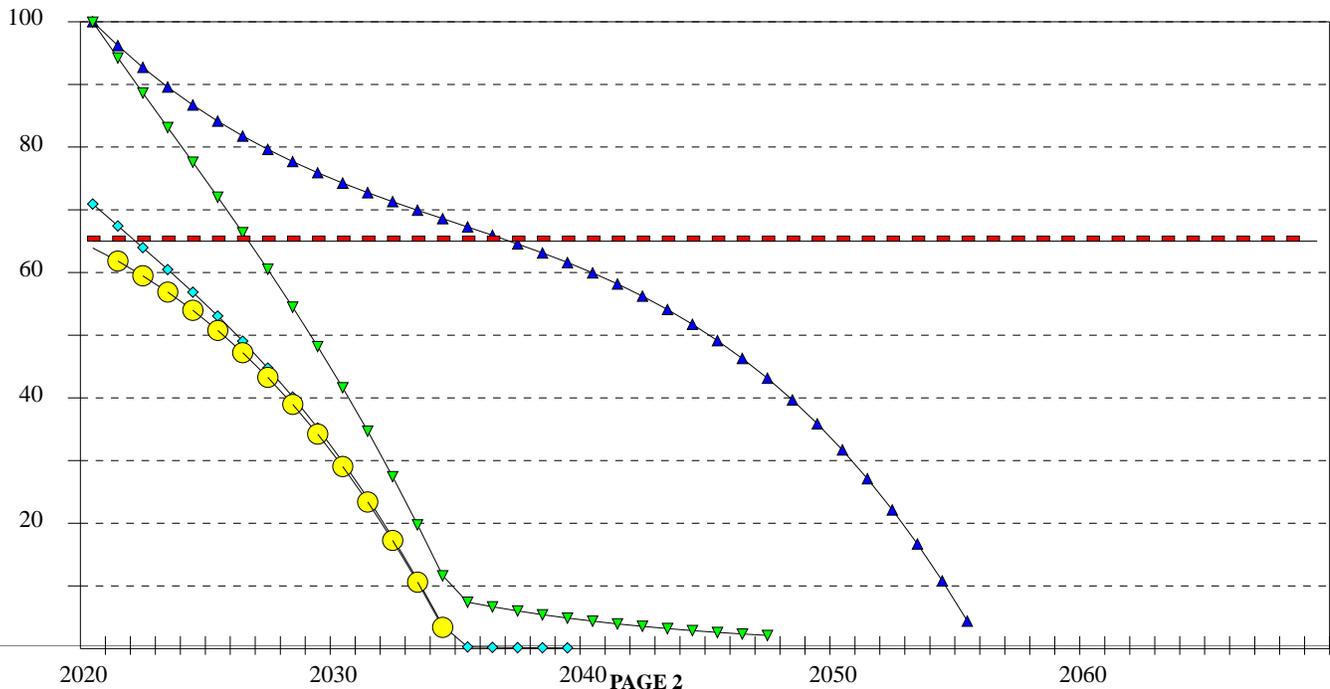
MINIMUM SERVICE LEVEL: 65

NORMAL PCI FOR THIS AGE: 54

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$167,990	17 YEARS
▼	SURFACE TREATMENT	\$49,465	7 YEARS
◆	CRACK REPAIR	\$7,299	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 65		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 5015

DESCRIPTION: RUNWAY 18-36

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC +

FEATURE'S HIGH PCI: 100

FEATURE AREA: 126,250

FEATURE'S LOW PCI: 85

INSPECTED AREA: 27,500

AVERAGE PCI: 93 GOOD

MINIMUM SERVICE LEVEL: 65

ESTIMATED PCI IS: 93 in 2013

COMMENTS/HISTORY FOR FEATURE 5015, RUNWAY 18-36

1997 P401 ON
 1989 8" P401 ON 9" P208
 *
 *

DISTRESS QUANTITIES FOR FEATURE 5015

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF ALL DISTRESS
LONG.& TRANS. CRACK	MED	50	229	L.F.	43.7
LONG.& TRANS. CRACK	LOW	216	991	L.F.	52.6
RAVELING	LOW	22	101	S.F.	3.6

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS: 0 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS: 65 %
 APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS: 35 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 5015

DESCRIPTION: RUNWAY 18-36

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC +

AVERAGE PCI AT INSPECTION: 93 GOOD

CONSTRUCTION YEAR: 2008

ESTIMATED PCI IS: 93 in 2013

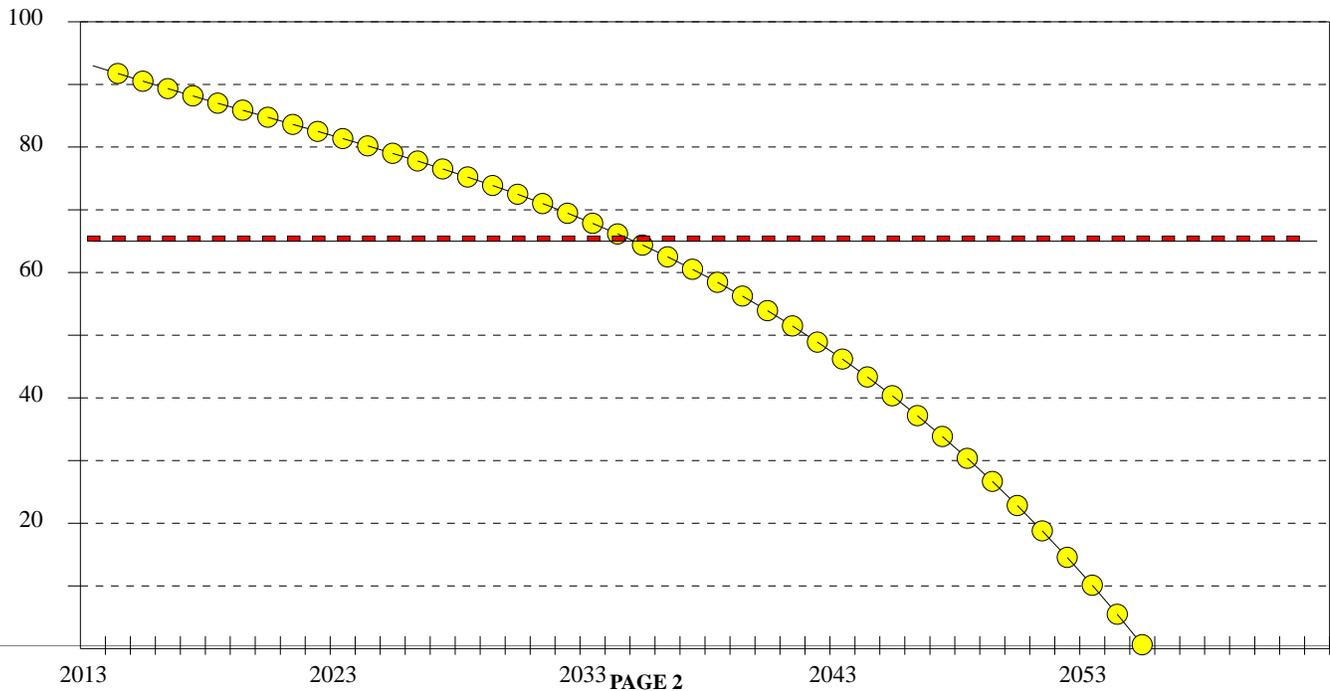
MINIMUM SERVICE LEVEL: 65

NORMAL PCI FOR THIS AGE: 92

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 65		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 6005	DESCRIPTION: RUNWAY 14-32
ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2014	INSPECTION DATE: 8-14-13
PAVEMENT TYPE: AC OVERLAY	FEATURE'S HIGH PCI: 75
FEATURE AREA: 222,100	FEATURE'S LOW PCI: 56
INSPECTED AREA: 45,000	AVERAGE PCI: 66 FAIR
MINIMUM SERVICE LEVEL: 65	ESTIMATED PCI IS: 64 in 2014

COMMENTS/HISTORY FOR FEATURE 6005, RUNWAY 14-32

1992 2" P401 ON
 1981 3" P401 ON 9" P208
 *
 *

DISTRESS QUANTITIES FOR FEATURE 6005

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF ALL DISTRESS
ALLIGATOR CRACKING	LOW	233	1,150	S.F.	23.8
LONG.& TRANS. CRACK	HIGH	119	587	L.F.	16.6
LONG.& TRANS. CRACK	MED	1,896	9,357	L.F.	44.5
LONG.& TRANS. CRACK	LOW	978	4,827	L.F.	14.4
SWELL	LOW	30	148	S.F.	.4

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	24 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	51 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	25 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 6005

DESCRIPTION: RUNWAY 14-32

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2014

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 66 FAIR

CONSTRUCTION YEAR: 1992

ESTIMATED PCI IS: 64 in 2014

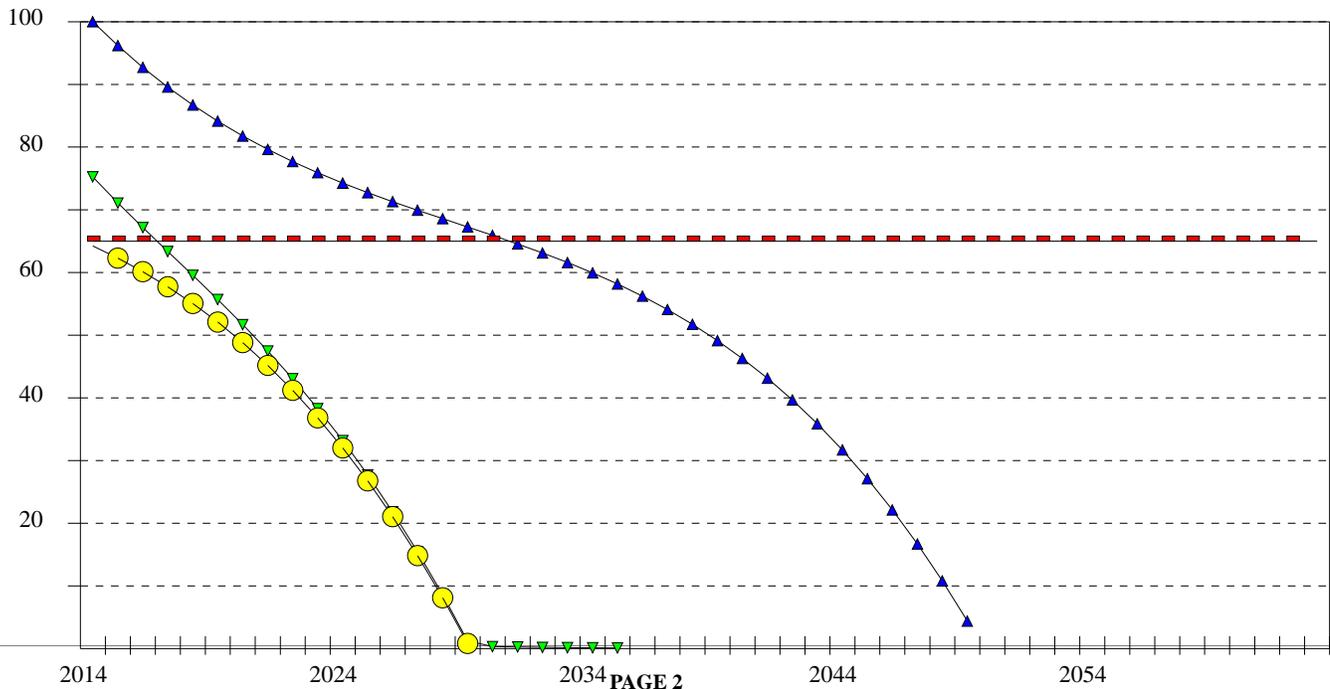
MINIMUM SERVICE LEVEL: 65

NORMAL PCI FOR THIS AGE: 56

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$319,824	17 YEARS
▼	CRACK REPAIR	\$18,316	3 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 65		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 6010	DESCRIPTION: RUNWAY 14-32
ANALYSIS YEAR: 2013	INSPECTION DATE: 8-14-13
PAVEMENT TYPE: AC OVERLAY	FEATURE'S HIGH PCI: 71
FEATURE AREA: 37,740	FEATURE'S LOW PCI: 57
INSPECTED AREA: 11,250	AVERAGE PCI: 64 FAIR
MINIMUM SERVICE LEVEL: 65	ESTIMATED PCI IS: 64 in 2013

COMMENTS/HISTORY FOR FEATURE 6010, RUNWAY 14-32

1990 5" P401 ON
 1981 3" P401 ON 9" P208
 *
 *

DISTRESS QUANTITIES FOR FEATURE 6010

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
LONG.& TRANS. CRACK	MED	452	1,516	L.F.	37.2
LONG.& TRANS. CRACK	LOW	490	1,643	L.F.	21.6
RAVELING	LOW	8,250	27,676	S.F.	41.1

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	0 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	53 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	47 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 6010

DESCRIPTION: RUNWAY 14-32

ANALYSIS YEAR: 2013

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 64 FAIR

CONSTRUCTION YEAR: 1990

ESTIMATED PCI IS: 64 in 2013

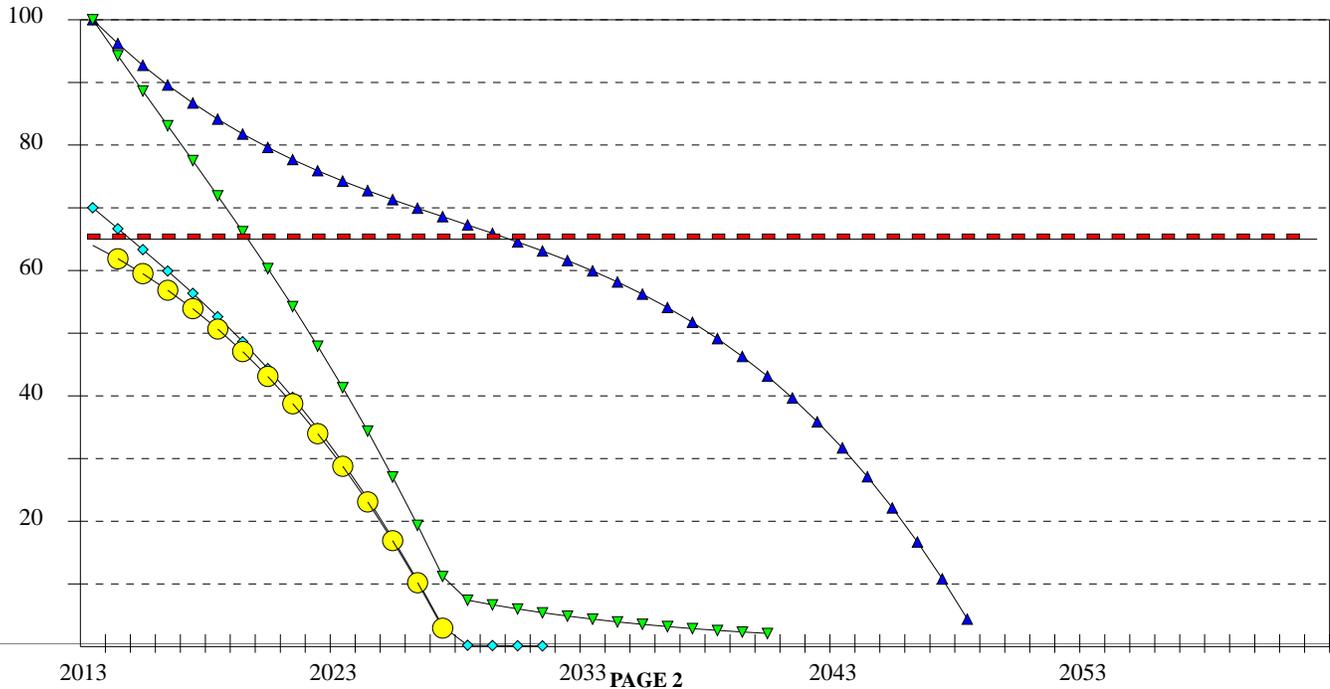
MINIMUM SERVICE LEVEL: 65

NORMAL PCI FOR THIS AGE: 54

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$54,345	17 YEARS
▼	SURFACE TREATMENT	\$16,598	7 YEARS
◆	CRACK REPAIR	\$3,917	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 65		

PROJECTED PERFORMANCE



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 6015	DESCRIPTION: RUNWAY 14/32
ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2023	INSPECTION DATE: 8-14-13
PAVEMENT TYPE: AC OVERLAY	FEATURE'S HIGH PCI: 84
FEATURE AREA: 21,980	FEATURE'S LOW PCI: 71
INSPECTED AREA: 11,250	AVERAGE PCI: 79 SATISFACTORY
MINIMUM SERVICE LEVEL: 65	ESTIMATED PCI IS: 63 in 2023

COMMENTS/HISTORY FOR FEATURE 6015, RUNWAY 14/32

1997 P401 ON
 ASSUME: 1992 2" P401 ON
 ASSUME: 1981 3" P401 ON 9" P208
 *

DISTRESS QUANTITIES FOR FEATURE 6015

DISTRESS TYPE	SEVERITY	MEASURED QUANTITY	ESTIMATED TOTAL QUANTITY	UNITS	PERCENTAGE OF All DISTRESS
LONG.& TRANS. CRACK	HIGH	9	17	L.F.	12.9
LONG.& TRANS. CRACK	MED	234	457	L.F.	56.7
LONG.& TRANS. CRACK	LOW	284	554	L.F.	30.2

BASIC DISTRESS CAUSES

APPROXIMATE AMOUNT OF DISTRESS RELATED TO LOAD ON THE PAVEMENT IS:	0 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO MATERIALS PROBLEMS IN THE FEATURE IS:	67 %
APPROXIMATE AMOUNT OF DISTRESS RELATED TO AGE OF PAVEMENT AND TRAFFIC REPETITIONS IS:	33 %



AIRPORT: JEFFERSONVILLE/CLARK REGIONAL

AIRPAV FEATURE ANALYSIS PROGRAM OUTPUT

FEATURE: 6015

DESCRIPTION: RUNWAY 14/32

ANALYSIS YEAR: 2013 OPTIMIZED FOR: 2023

INSPECTION DATE: 8-14-13

PAVEMENT TYPE: AC OVERLAY

AVERAGE PCI AT INSPECTION: 79 SATISFACTORY

CONSTRUCTION YEAR: 1997

ESTIMATED PCI IS: 63 in 2023

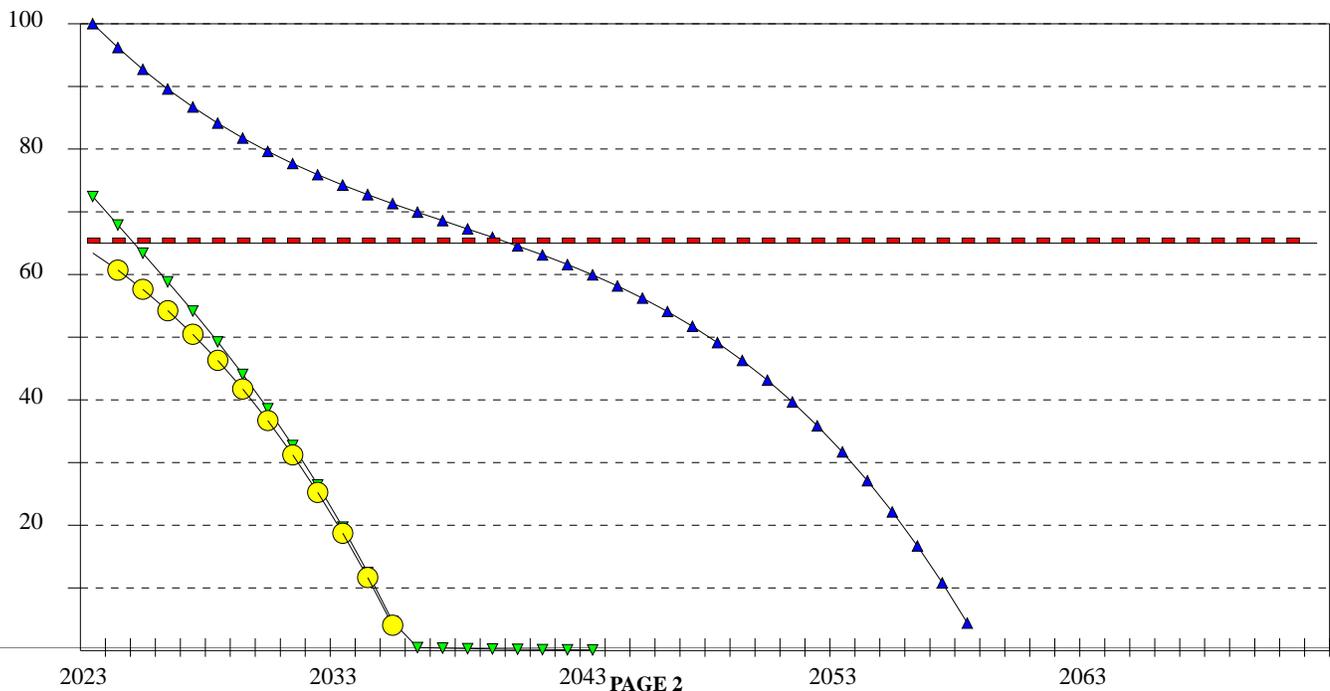
MINIMUM SERVICE LEVEL: 65

NORMAL PCI FOR THIS AGE: 46

THE FOLLOWING PROJECTS HAVE BEEN SELECTED AS VIABLE ALTERNATIVES

LEGEND	DESCRIPTION	COST	LIFE EXTENSION
▲	RESURFACING	\$31,651	17 YEARS
▼	CRACK REPAIR	\$1,274	2 YEARS
●	NO ACTION	N/A	N/A
-	MINIMUM SERVICE LEVEL, CURRENTLY 65		

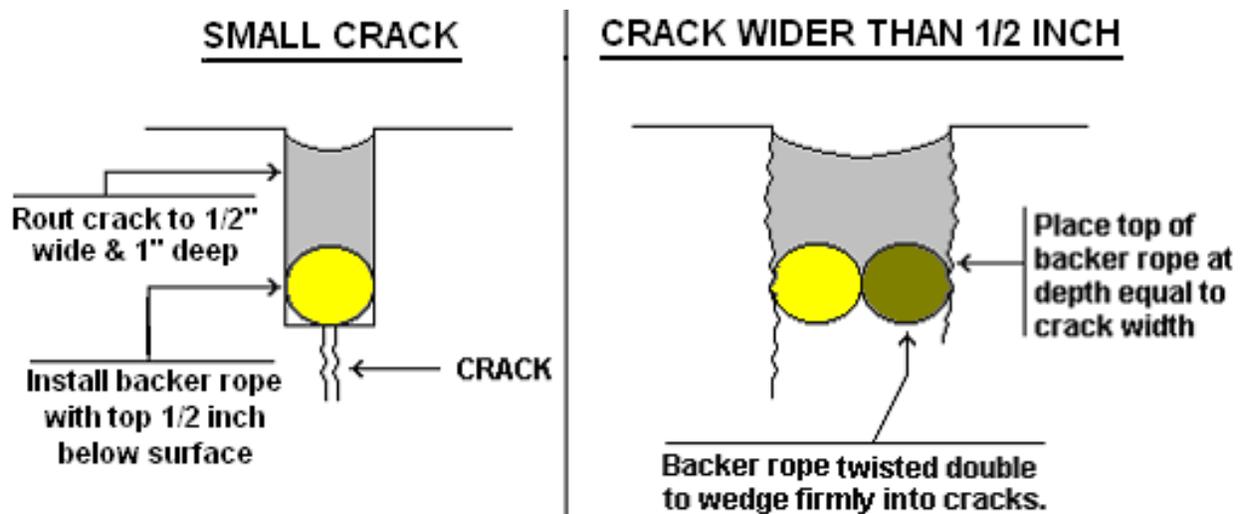
PROJECTED PERFORMANCE



Appendix C. General Maintenance Techniques

Crack Sealing

- Cracks over ¼ inches wide should be sealed.
- Cracks wider than 3 inches should be patched.
- Sealant depth above the backer rope should be equal to the width of the reservoir, or as recommended by the manufacturer.
- Routed cracks should be sand blasted, to prepare for bonding with the sealant.
- Clean cracks with compressed air prior to sealing.
- Backing material should always be placed into the cracks. Commercial products are available. Several sizes of rope should be available to accommodate various crack sizes.
- Apply sealant after placing the backer rope. Follow the manufacturer's instructions. Sealant should be applied to within ¼ inch of the pavement surface.
- The final activity is to clean the surrounding pavement areas. A vacuum sweeper works well for this. Allow the sealant time to set before using a broom.
- Consider hot-applied, pourable patch material for cracks > ½ inch and any subsidence or depressions.



Overband Technique

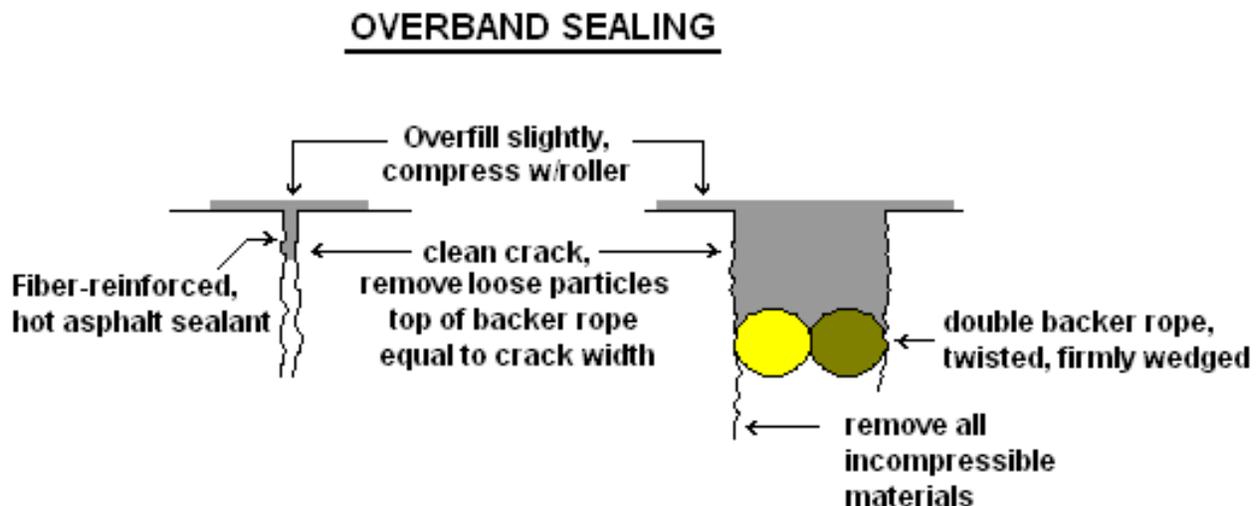
An alternate crack sealing technique using the procedures outlined below.

Material

- Blend grade 20 or equivalent asphalt cement and latex rubber at 5 percent by weight asphalt.
- Again, at 5 percent by weight of asphalt, add polyester fibers into agitator tank.
- Maintain blended asphalt temperature at least 20 degrees below flash point.
- Continuously recycle hot blended asphalt through pumps and hoses when heating kettle is in standby mode.

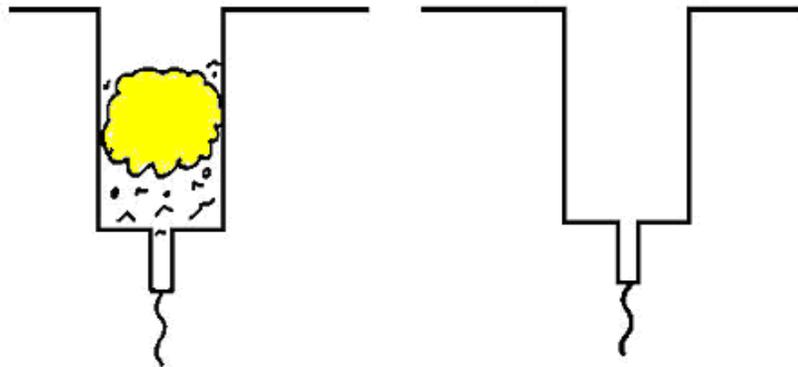
Application

- Sealant should be applied to dry pavement, with ambient temperatures above 40 degrees.
- Cracks should be sand cleaned and blown free of debris immediately before sealing.
- Application of sealant immediately follows cleaning of the crack.
- Sealant should be pressure applied from a wand-type applicator with “overband” nozzle.
- Seat the sealant with a steel-wheeled roller immediately after placement.
- In wider cracks, a backer rope is recommended to limit material quantities required.



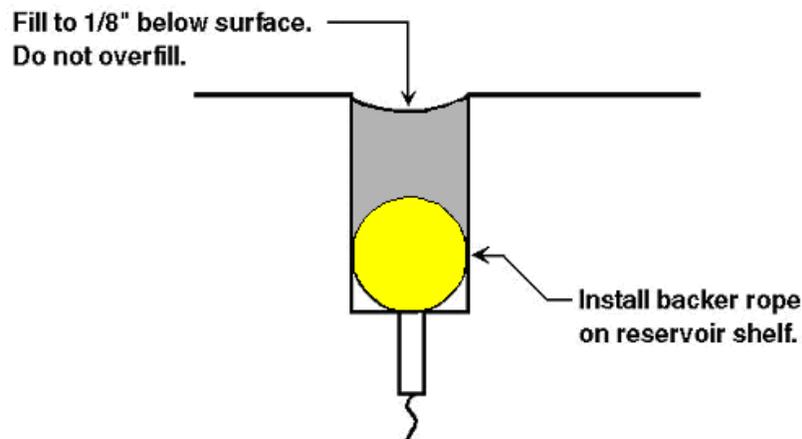
Joint Repair (portland cement)

- Rout a reservoir for the sealant ½ inch wide and 1 inch deep.
- Cracks wider than ½ inch should have reservoirs ¼ inch wider than the crack. Reservoir height above backer rope should be less than reservoir width, or as recommended by manufacturer.
- Routed cracks should be cleaned to expose fresh, vital pavement on the vertical crack edge.
- Cracks should be cleaned to remove all sand, debris, and other materials from the crack.
- Backing material should be placed into the crack.
- Apply sealant to within ¼ inch of pavement surface, following manufacturer’s instructions.
- Clean the surrounding pavement area.



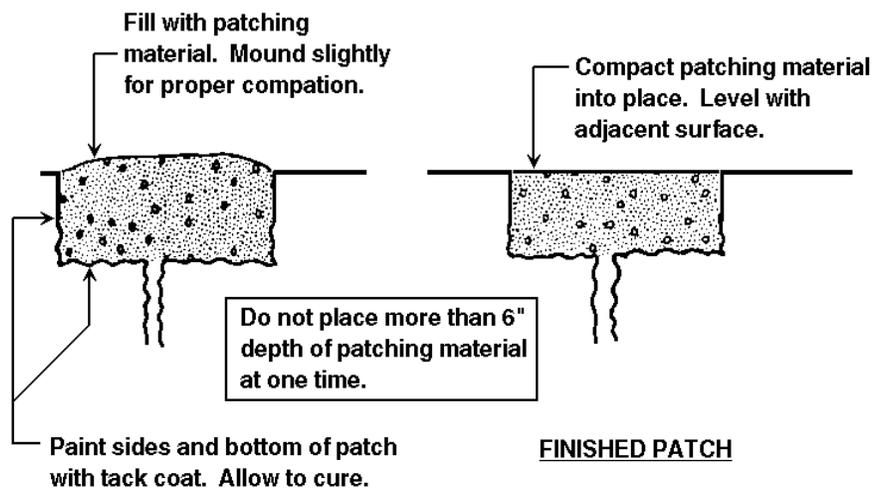
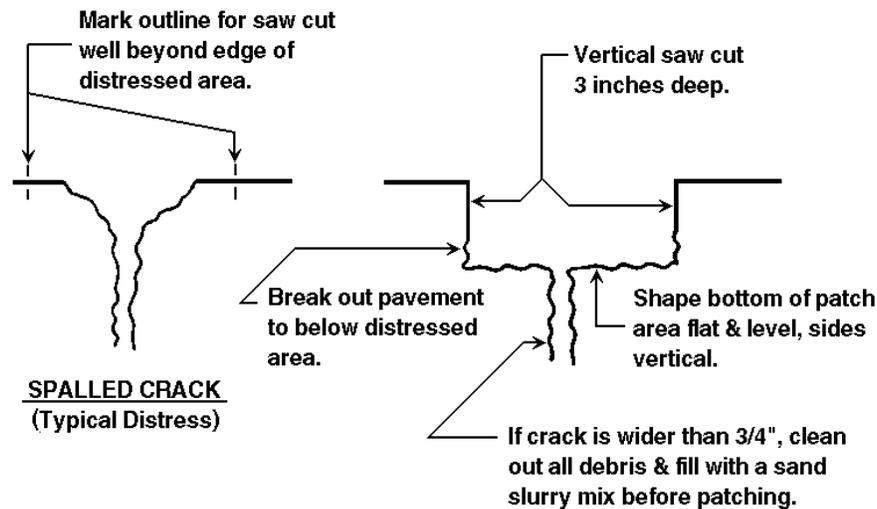
Typical failed joint sealant, w/ debris and incompressibles.

Clean joints exposing fresh, clean concrete and stone. Retain existing reservoir shape.



Patching (bituminous material)

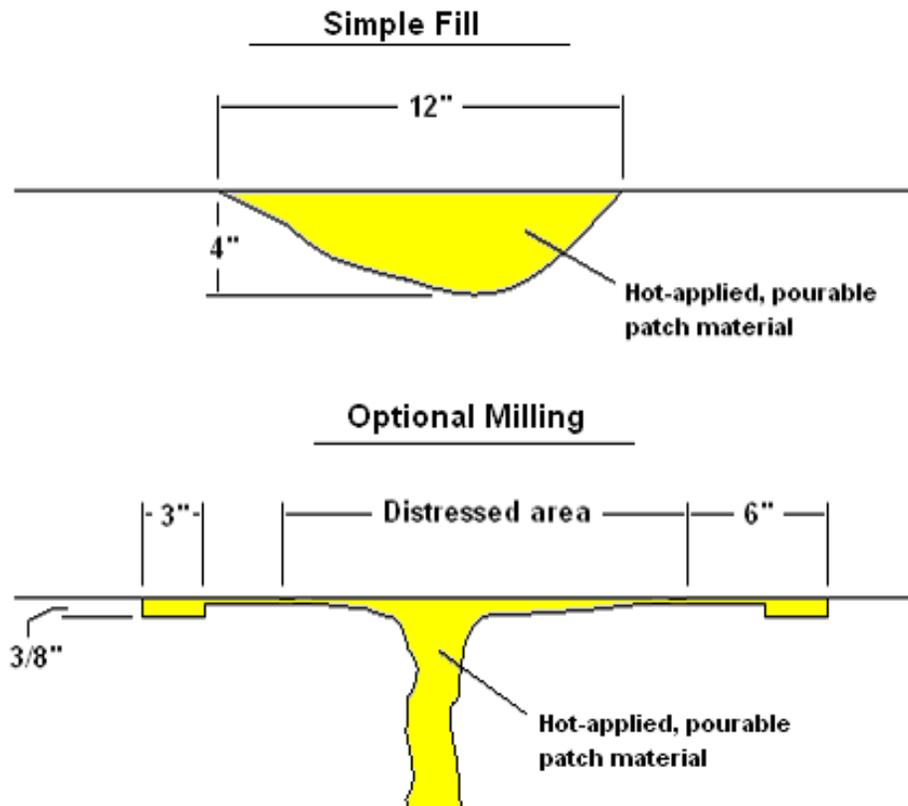
- Examine distressed area and mark patch outline.
- Cut patch area with saw, no less than 3 inches deep.
- Remove enclosed pavement, leaving the vertical sawed edges undamaged.
- Clean sides and bottom and blow out with compressed air
- Paint sides and bottom with rapid curing asphalt tack coat. Prevent pooling on bottom.
- Allow tack coat to cure until it reaches a gummy consistency.
- Place hot mixed asphalt concrete and mound slightly, allowing for compaction.
- Compact with vibratory roller or plate compactor, in layers no greater than 6 inches.



Patching (pourable materials)

Hot-applied, pourable materials generally are used to repair deficiencies larger than can be repaired by sealants, but smaller than those where traditional techniques would be required. Suggested uses for this type of repair include cracks over 2 inches wide, potholes less than 4 inches deep, as a leveling for small depressions, as a cap for settled utility cuts, and as a skin patch for areas of alligator cracking.

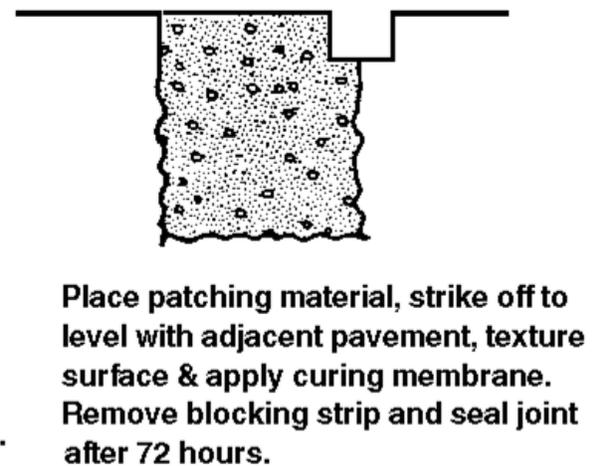
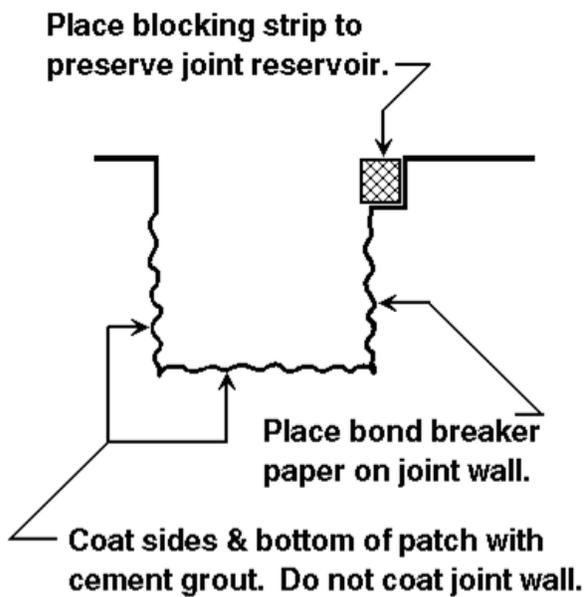
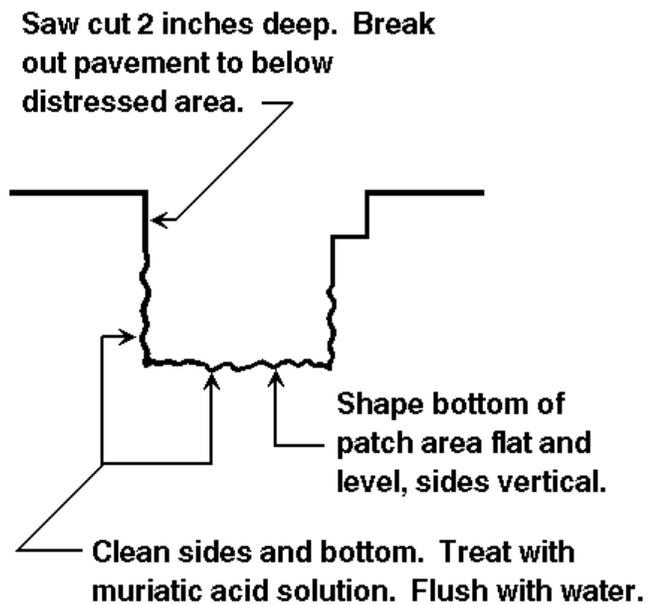
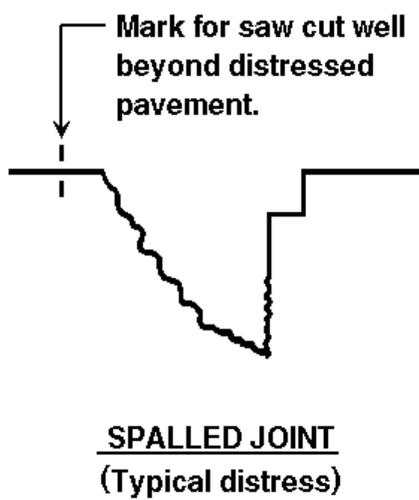
- Examine and mark the patch outline. Boundaries should extend to sound pavement.
- Apply patch material to clean, dry surfaces.
- A heating lance to preheat or dry existing pavement is recommended in cold or wet conditions.
- Patch material should be poured into the area to be repaired and leveled as appropriate.
- Patch edges should be sealed after application to assure good adhesion, preventing surface moisture from migrating under patch edges.



Patching (PCC)

The technique outlined here simulates a thin bonded PCC overlay. This procedure has been proven effective in service throughout the country.

- Examine and mark patch outline.
- Saw cut area to a depth of 2 inches. The enclosed area is then chipped or jack hammered to solid pavement, but not less than a 2-inch nominal depth.
- The sides and bottom are sand cleaned and air-blasted to expose vital, clean concrete.
- A 25 percent solution of muriatic acid is applied to all exposed surfaces within the patch.
- The muriatic acid solution is thoroughly flushed from the patch area with water.
- Compressed air is used to remove excess water from the area, but exposed concrete must be maintained in a moist condition.
- The sides and bottom of the area are then coated with approximately a 1/16-inch layer of cement grout applied at the consistency of paste. The grout acts as an adhesive to bond the fresh concrete to existing concrete.
- If the patch is adjacent to joints, the continuity of the joint must be maintained by placing inserts approximately the shape of the desired joint against the wall of the patch.
- Before concrete grout begins to dry, concrete is placed in the patch area and is compacted into position with hand tampers or a vibrating plate tamper.
- When the patch has been struck to the proper slope and elevation, a surface texture is applied to approximate the texture of adjacent pavement.
- Joint edges may be edged slightly to remove sharp edges. The patch should be covered with polyethylene or sprayed with a curing compound.
- Clean the surrounding pavement before concrete spillover has a chance to set up.
- The patch may be open to traffic in 72 hours.



Appendix D. PCI Summary

The PCI summary provides an index of pavement conditions at the airport. The letter in the first column indicates the type of pavement, asphalt or portland cement. The last column lists the distress types found in each sample unit. The distress types are listed by a numbering code for each type of pavement, shown at the beginning of the summary.

AIRPAV						
CONDITION SURVEY SUMMARY						
AIRPORT: 417 GREENCASTLE-PUTNAM COUNTY				DATE: 12-30-2009		
"A" FLEXIBLE PAVEMENT DISTRESS CODES				"T" RIGID PAVEMENT DISTRESS CODES		
1. ALLIGATOR CRACKING 2. BLEEDING 3. BLOCK CRACKING 4. CORRUGATION 5. DEPRESSION 6. JET BLAST EROSION 7. JOINT REFL. CRACKING 8. LONG & TRANS. CRACKING 9. OIL SPILL 10. PATCHING 11. POLISHED AGGREGATE 12. RAVELLING/WEATHERING 13. RUTTING 14. SHOIVING FROM PCC SLAB 15. SLIPPAGE CRACKING 16. SWELLING				1. BLOW UP 2. CORNER BREAK 3. LTD CRACKING 4. "D" CRACKING 5. JOINT SEAL DAMAGE 6. SMALL PATCH 7. LARGE PATCH 8. POPOUTS 9. PUMPING 10. SCALING-MAP CRACKING/CRAZING 11. FAULTING 12. SHATTERED SLAB 13. SHRINKAGE CRACKING 14. JOINT SPALLING 15. CORNER SPALLING		
FEATURE:	SAMPLE UNIT:	AREA:	DATE:	SURVEYED BY:	PCI:	DISTRESSES PRESENT:
105 A	105.100	3750	8-16-09	JB	83	8 12
105 A	105.103	3500	8-16-09	JB	79	8 12
105 A	105.105	3500	8-16-09	JB	63	5 8 10 12*
105 A	105.106	3500	8-16-09	AN	79	1 8
105 A	105.109	3500	8-16-09	AN	86	8
105 A	105.112	3500	8-16-09	AN	84	8 12
MEAN FEATURE PCI = 81 BASED ON A SAMPLED AREA OF 21250 SQUARE FEET - PCI SPREAD FOR FEATURE = 22.74 DESCRIPTION: TAXIWAY A						
110 A	110.102	3500	8-16-09	JB	100	
110 A	110.106	3500	8-16-09	JB	100	
110 A	110.110	3500	8-16-09	JB	100	
110 A	110.112	3500	8-16-09	JB	100	
110 A	110.114	3500	8-16-09	JB	100	
110 A	110.118	1750	8-16-09	JB	94	8
AVERAGE FEATURE PCI = 99 BASED ON A SAMPLED AREA OF 19250 SQUARE FEET - PCI SPREAD FOR FEATURE = 6.20 DESCRIPTION: TAXIWAY A						
115 A	115.118	1750	8-16-09	JB	94	8
115 A	115.122	3500	8-16-09	JB	95	8
115 A	115.126	3500	8-16-09	JB	96	8
115 A	115.130	3500	8-16-09	JB	96	8
115 A	115.134	3500	8-16-09	JB	96	8
115 A	115.136	3500	8-16-09	JB	94	8
115 A	115.138	3500	8-16-09	JB	96	8
115 A	115.142	3500	8-16-09	AN	93	8
AVERAGE FEATURE PCI = 95 BASED ON A SAMPLED AREA OF 26250 SQUARE FEET - PCI SPREAD FOR FEATURE = 3.38 DESCRIPTION: TAXIWAY A						
210 A	210.200	3500	8-16-09	AN	94	8
210 A	210.201	3500	8-16-09	AN	94	8
210 A	210.202	1190	8-16-09	AN	86	8
AVERAGE FEATURE PCI = 91 BASED ON A SAMPLED AREA OF 8190 SQUARE FEET - PCI SPREAD FOR FEATURE = 7.93 DESCRIPTION: CONNECTOR TAXIWAY B						

Sample units marked with an asterisk (*) are additional sample units. Additional sample units do not represent the typical condition of surrounding sample units in the pavement features.

The PCI summary provides a quick overview of the pavement condition and consistency. Are the distress types similar? Do the individual sample units have consistent PCI ratings? Answering these questions is a start to understanding your dynamic pavement system.

CONDITION SURVEY SUMMARY

AIRPORT: JVY JEFFERSONVILLE/CLARK REGIONAL

DATE: 12-20-2013

"A" FLEXIBLE PAVEMENT DISTRESS CODES

1. ALLIGATOR CRACKING
2. BLEEDING
3. BLOCK CRACKING
4. CORRUGATION
5. DEPRESSION
6. JET BLAST EROSION
7. JOINT REFL. CRACKING
8. LONG. & TRANS. CRACKING
9. OIL SPILL
10. PATCHING
11. POLISHED AGGREGATE
12. RAVELLING
13. RUTTING
14. SHOVING FROM PCC SLAB
15. SLIPPAGE CRACKING
16. SWELLING
17. WEATHERING

"P" RIGID PAVEMENT DISTRESS CODES

1. BLOW UP
2. CORNER BREAK
3. LTD CRACKING
4. "D" CRACKING
5. JOINT SEAL DAMAGE
6. SMALL PATCH
7. LARGE PATCH
8. POPOUTS
9. PUMPING
10. SCALING/MAP CRACKING/CRAZING
11. FAULTING
12. SHATTERED SLAB
13. SHRINKAGE CRACKING
14. JOINT SPALLING
15. CORNER SPALLING
16. ALKALI SILICA REACTION

FEATURE:	SAMPLE UNIT:	AREA:	DATE:	SURVEYED BY:	PCI:	DISTRESSES PRESENT:
105 A	105.101	5000	8-14-13	ARA	49	3 8 12
105 A	105.103	5000	8-14-13	ARA	53	8 12 17
105 A	105.106	5000	8-14-13	ARA	61	8 12
105 A	105.109	5000	8-14-13	ARA	51	8 12 16
105 A	105.112	5000	8-14-13	ARA	52	8 12
105 A	105.115	5000	8-14-13	ARA	64	8
105 A	105.118	5000	8-14-13	ARA	51	8 12 16

AVERAGE FEATURE PCI = 55

BASED ON A SAMPLED AREA OF 35000 SQUARE FEET - PCI SPREAD FOR FEATURE = 15.37

DESCRIPTION: PARALLEL TAXIWAY

110 A	110.121	5000	8-14-13	ARA	54	1 8 12
110 A	110.125	5000	8-14-13	ARA	47	1 8 12
110 A	110.129	5000	8-14-13	ARA	67	8 12
110 A	110.133	5000	8-14-13	ARA	59	8 12
110 A	110.137	5000	8-14-13	ARA	63	8 12
110 A	110.142	5000	8-14-13	ARA	62	1 8 12
110 A	110.146	5000	8-14-13	ARA	64	8 12
110 A	110.150	5000	8-14-13	ARA	51	1 8 12
110 A	110.154	5000	8-14-13	ARA	54	1 8 12
110 A	110.158	5000	8-14-13	ARA	56	1 8 12

AVERAGE FEATURE PCI = 58

BASED ON A SAMPLED AREA OF 50000 SQUARE FEET - PCI SPREAD FOR FEATURE = 20.15

DESCRIPTION: PARALLEL TAXIWAY

115 A	115.100	5750	8-14-13	ARA	53	1 8 12 16
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AVERAGE FEATURE PCI = 53

BASED ON A SAMPLED AREA OF 5750 SQUARE FEET - PCI SPREAD FOR FEATURE = 0.00

DESCRIPTION: PARALLEL TAXIWAY

120 A	120.160	5720	8-14-13	ARA	70	1 8
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AVERAGE FEATURE PCI = 70

BASED ON A SAMPLED AREA OF 5720 SQUARE FEET - PCI SPREAD FOR FEATURE = 0.00

DESCRIPTION: PARALLEL TAXIWAY

FEATURE: SAMPLE UNIT: AREA: DATE: SURVEYED BY: PCI: DISTRESSES PRESENT:

205 A	205.101	4000	8-14-13	ARA	67	1 8
205 A	205.103	4000	8-14-13	ARA	68	1 8
205 A	205.104	4000	8-14-13	ARA	77	1 8
205 A	205.106	4000	8-14-13	ARA	81	8

**AVERAGE FEATURE PCI = 73
 BASED ON A SAMPLED AREA OF 16000 SQUARE FEET - PCI SPREAD FOR FEATURE = 14.42
 DESCRIPTION: PARALLEL TAXIWAY**

210 A	210.116	4350	8-14-13	EOJ	68	8 10 12
210 A	210.118	5000	8-14-13	EOJ	71	8 12
210 A	210.120	5000	8-14-13	EOJ	71	8 12
210 A	210.122	5000	8-14-13	EOJ	65	1 8 12

**AVERAGE FEATURE PCI = 69
 BASED ON A SAMPLED AREA OF 19350 SQUARE FEET - PCI SPREAD FOR FEATURE = 5.50
 DESCRIPTION: PARALLEL TAXIWAY**

215 A	215.101	4000	8-14-13	EOJ	70	1 8
215 A	215.104	4000	8-14-13	ARA	57	1 8
215 A	215.106	4000	8-14-13	ARA	67	1 8
215 A	215.109	4000	8-14-13	ARA	66	1 8
215 A	215.111	4000	8-14-13	EOJ	66	1 8

**AVERAGE FEATURE PCI = 65
 BASED ON A SAMPLED AREA OF 20000 SQUARE FEET - PCI SPREAD FOR FEATURE = 13.08
 DESCRIPTION: PARALLEL TAXIWAY**

220 A	220.113	4660	8-14-13	ARA	78	8 12
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**AVERAGE FEATURE PCI = 78
 BASED ON A SAMPLED AREA OF 4660 SQUARE FEET - PCI SPREAD FOR FEATURE = 0.00
 DESCRIPTION: PARALLEL TAXIWAY**

225 A	225.108	5000	8-14-13	ARA	88	8
225 A	225.110	5000	8-14-13	ARA	86	8
225 A	225.112	5000	8-14-13	ARA	90	8
225 A	225.114	5000	8-14-13	ARA	90	8

**AVERAGE FEATURE PCI = 89
 BASED ON A SAMPLED AREA OF 20000 SQUARE FEET - PCI SPREAD FOR FEATURE = 3.72
 DESCRIPTION: TAXIWAY AT RAMP**

305 A	305.100	6500	8-14-13	ARA	43	1 8 12
305 A	305.101	6500	8-14-13	ARA	54	1 8 12

**AVERAGE FEATURE PCI = 48
 BASED ON A SAMPLED AREA OF 13000 SQUARE FEET - PCI SPREAD FOR FEATURE = 10.69
 DESCRIPTION: TAXIWAY TO RAMP**

405 A	405.102	3000	8-14-13	ARA	78	8 12
405 A	405.103	3000	8-14-13	ARA	44	1 5 8 12
405 A	405.104	3000	8-14-13	ARA	68	1 8 12
405 A	405.105	3000	8-14-13	ARA	58	1 5 8 12

**AVERAGE FEATURE PCI = 62
 BASED ON A SAMPLED AREA OF 12000 SQUARE FEET - PCI SPREAD FOR FEATURE = 34.41
 DESCRIPTION: TAXIWAY TO RAMP**

410 A	410.108	3250	8-14-13	ARA	64	8 12
410 A	410.109	3250	8-14-13	ARA	71	8 12
410 A	410.111	3250	8-14-13	ARA	64	2 8 12

**AVERAGE FEATURE PCI = 66
 BASED ON A SAMPLED AREA OF 9750 SQUARE FEET - PCI SPREAD FOR FEATURE = 7.56
 DESCRIPTION: TAXIWAY TO RAMP**

415 A	415.100	3000	8-14-13	ARA	70	1 8
415 A	415.101	3000	8-14-13	ARA	60	1 8 16

FEATURE: SAMPLE UNIT: AREA: DATE: SURVEYED BY: PCI: DISTRESSES PRESENT:

415 A 415.301 3000 8-14-13 ARA 75 8 16

**AVERAGE FEATURE PCI = 68
 BASED ON A SAMPLED AREA OF 9000 SQUARE FEET - PCI SPREAD FOR FEATURE = 14.70
 DESCRIPTION: TAXIWAY TO RAMP**

505 A 505.100 6000 8-14-13 ARA 64 8 12
 505 A 505.101 6000 8-14-13 ARA 60 8 12 16

**AVERAGE FEATURE PCI = 62
 BASED ON A SAMPLED AREA OF 12000 SQUARE FEET - PCI SPREAD FOR FEATURE = 3.66
 DESCRIPTION: TAXIWAY TO RAMP**

515 A 515.100 5000 8-14-13 ARA 79 8
 515 A 515.101 5000 8-14-13 ARA 85 8

**AVERAGE FEATURE PCI = 82
 BASED ON A SAMPLED AREA OF 10000 SQUARE FEET - PCI SPREAD FOR FEATURE = 5.87
 DESCRIPTION: TAXIWAY TO RAMP**

605 A 605.101 5000 8-14-13 ARA 66 1 8 12
 605 A 605.102 5000 8-14-13 ARA 59 1 8 12
 605 A 605.202 3165 8-14-13 ARA 47 1 8 12

**AVERAGE FEATURE PCI = 57
 BASED ON A SAMPLED AREA OF 13165 SQUARE FEET - PCI SPREAD FOR FEATURE = 18.61
 DESCRIPTION: TAXIWAY TO RAMP**

610 A 610.100 5000 8-14-13 ARA 56 8 12
 610 A 610.101 5000 8-14-13 ARA 58 8 12

**AVERAGE FEATURE PCI = 57
 BASED ON A SAMPLED AREA OF 10000 SQUARE FEET - PCI SPREAD FOR FEATURE = 1.06
 DESCRIPTION: TAXIWAY TO RAMP**

615 A 615.100 2600 8-14-13 ARA 78 8
 615 A 615.200 3920 8-14-13 ARA 79 8

**AVERAGE FEATURE PCI = 79
 BASED ON A SAMPLED AREA OF 6520 SQUARE FEET - PCI SPREAD FOR FEATURE = 0.86
 DESCRIPTION: TAXIWAY TO RAMP**

705 A 705.100 5000 8-14-13 ARA 60 3 8 12
 705 A 705.101 5000 8-14-13 ARA 61 3 8 12

**AVERAGE FEATURE PCI = 61
 BASED ON A SAMPLED AREA OF 10000 SQUARE FEET - PCI SPREAD FOR FEATURE = 0.84
 DESCRIPTION: TAXIWAY TO RAMP**

3005 A 3005.221 5000 8-14-13 EOJ 46 3 8 9
 3005 A 3005.223 5000 8-14-13 EOJ 56 8 9
 3005 A 3005.225 5000 8-14-13 EOJ 68 8
 3005 A 3005.227 5000 8-14-13 EOJ 54 8
 3005 A 3005.324 5000 8-14-13 ABN 72 8
 3005 A 3005.328 5000 8-14-13 ABN 69 8
 3005 A 3005.423 5000 8-14-13 ABN 56 3 8
 3005 A 3005.425 5000 8-14-13 ABN 56 3 8
 3005 A 3005.427 5000 8-14-13 ABN 69 8
 3005 A 3005.526 3800 8-14-13 ABN 60 8 9 12

**AVERAGE FEATURE PCI = 61
 BASED ON A SAMPLED AREA OF 48800 SQUARE FEET - PCI SPREAD FOR FEATURE = 25.30
 DESCRIPTION: RAMP**

3010 A 3010.114 5000 8-14-13 EOJ 45 1 8 12
 3010 A 3010.215 5000 8-14-13 EOJ 74 8
 3010 A 3010.217 5000 8-14-13 EOJ 63 2 8
 3010 A 3010.219 5000 8-14-13 EOJ 45 2 8 13
 3010 A 3010.314 5000 8-14-13 ABN 71 8

FEATURE: SAMPLE UNIT: AREA: DATE: SURVEYED BY: PCI: DISTRESSES PRESENT:

3010 A	3010.316	5000	8-14-13	ABN	56	8 12 13
3010 A	3010.318	5000	8-14-13	ABN	57	8 9 13
3010 A	3010.415	5000	8-14-13	ABN	78	5 8
3010 A	3010.417	5000	8-14-13	ABN	73	8

**AVERAGE FEATURE PCI = 62
 BASED ON A SAMPLED AREA OF 45000 SQUARE FEET - PCI SPREAD FOR FEATURE = 32.46
 DESCRIPTION: RAMP**

3015 A	3015.109	5000	8-14-13	ABN	72	8
3015 A	3015.111	5000	8-14-13	ABN	68	1 8
3015 A	3015.208	5000	8-14-13	ABN	67	8
3015 A	3015.210	5000	8-14-13	ABN	77	8
3015 A	3015.212	5000	8-14-13	ABN	73	8 12
3015 A	3015.309	5300	8-14-13	ABN	63	8 12
3015 A	3015.311	5300	8-14-13	ABN	65	8 12

**AVERAGE FEATURE PCI = 69
 BASED ON A SAMPLED AREA OF 35600 SQUARE FEET - PCI SPREAD FOR FEATURE = 14.13
 DESCRIPTION: RAMP**

3020 A	3020.410	5000	8-14-13	ABN	61	3
3020 A	3020.412	5000	8-14-13	ABN	60	3
3020 A	3020.509	3500	8-14-13	ABN	60	2 3
3020 A	3020.511	3500	8-14-13	ABN	58	3 8 12
3020 A	3020.513	3500	8-14-13	ABN	53	1 3 16

**AVERAGE FEATURE PCI = 59
 BASED ON A SAMPLED AREA OF 20500 SQUARE FEET - PCI SPREAD FOR FEATURE = 7.15
 DESCRIPTION: RAMP**

3025 A	3025.100	5000	8-14-13	ABN	63	3 8
3025 A	3025.103	5000	8-14-13	ABN	61	3 8
3025 A	3025.201	5000	8-14-13	ABN	54	3 8
3025 A	3025.204	5000	8-14-13	ABN	62	3 8
3025 A	3025.302	5000	8-14-13	ABN	65	3
3025 A	3025.305	5000	8-14-13	ABN	56	3 8 13
3025 A	3025.400	5000	8-14-13	ABN	61	3
3025 A	3025.403	5000	8-14-13	ABN	62	2 3 16
3025 A	3025.406	5000	8-14-13	ABN	60	3
3025 A	3025.504	3600	8-14-13	ABN	65	3

**AVERAGE FEATURE PCI = 61
 BASED ON A SAMPLED AREA OF 48600 SQUARE FEET - PCI SPREAD FOR FEATURE = 10.86
 DESCRIPTION: SOUTH RAMP**

3030 A	3030.130	5000	8-14-13	EOJ	84	8
3030 A	3030.133	5000	8-14-13	ABN	94	8
3030 A	3030.231	5000	8-14-13	EOJ	82	8
3030 A	3030.329	5000	8-14-13	ABN	89	8
3030 A	3030.332	5000	8-14-13	ABN	87	8
3030 A	3030.433	5000	8-14-13	ABN	84	8
3030 A	3030.530	3600	8-14-13	ABN	100	

**AVERAGE FEATURE PCI = 89
 BASED ON A SAMPLED AREA OF 33600 SQUARE FEET - PCI SPREAD FOR FEATURE = 17.60
 DESCRIPTION: RAMP EXPANSION**

3035 A	3035.134	5000	8-14-13	ABN	96	8
3035 A	3035.235	5000	8-14-13	ABN	95	8
3035 A	3035.334	5000	8-14-13	ABN	98	8
3035 A	3035.435	5000	8-14-13	ABN	95	8

**AVERAGE FEATURE PCI = 96
 BASED ON A SAMPLED AREA OF 20000 SQUARE FEET - PCI SPREAD FOR FEATURE = 3.18
 DESCRIPTION: RAMP EXPANSION**

4005 A	4005.202	5000	8-14-13	ABN	62	8 12
4005 A	4005.302	5000	8-14-13	ABN	57	8 12

FEATURE: SAMPLE UNIT: AREA: DATE: SURVEYED BY: PCI: DISTRESSES PRESENT:

4005 A	4005.303	5000	8-14-13	ABN	63	8 12
4005 A	4005.402	2820	8-14-13	ABN	56	8 12

**AVERAGE FEATURE PCI = 59
 BASED ON A SAMPLED AREA OF 17820 SQUARE FEET - PCI SPREAD FOR FEATURE = 6.54
 DESCRIPTION: RUNWAY 36 RUNUP**

4010 A	4010.101	5000	8-14-13	ARA	56	8 12
4010 A	4010.102	5000	8-14-13	ARA	61	8 12
4010 A	4010.202	5000	8-14-13	ARA	55	8 12

**AVERAGE FEATURE PCI = 58
 BASED ON A SAMPLED AREA OF 15000 SQUARE FEET - PCI SPREAD FOR FEATURE = 5.90
 DESCRIPTION: RUNWAY 18 RUNUP**

5005 A	5005.102	3750	8-14-13	ARA	79	8 12
5005 A	5005.109	3750	8-14-13	ARA	82	8 12
5005 A	5005.116	3750	8-14-13	ARA	79	8 12
5005 A	5005.123	3750	8-14-13	ARA	78	8 12
5005 A	5005.129	3750	8-14-13	ARA	77	8 12
5005 A	5005.136	3750	8-14-13	EOJ	77	8 12
5005 A	5005.142	3750	8-14-13	ARA	72	8 12
5005 A	5005.148	3750	8-14-13	ARA	80	8 12
5005 A	5005.155	3750	8-14-13	EOJ	75	8 12
5005 A	5005.162	3750	8-14-13	ARA	78	8 12
5005 A	5005.169	3750	8-14-13	ARA	79	8 12
5005 A	5005.176	3750	8-14-13	ARA	79	8 12

**AVERAGE FEATURE PCI = 78
 BASED ON A SAMPLED AREA OF 45000 SQUARE FEET - PCI SPREAD FOR FEATURE = 9.52
 DESCRIPTION: RUNWAY 18-36**

5010 A	5010.180	3750	8-14-13	ABN	72	8 12
5010 A	5010.187	3750	8-14-13	ABN	80	8
5010 A	5010.191	3750	8-14-13	EOJ	70	8 12
5010 A	5010.194	3750	8-14-13	ABN	77	8
5010 A	5010.198	3750	8-14-13	ABN	79	8 12
5010 A	5010.201	3750	8-14-13	ABN	69	8 12
5010 A	5010.204	3750	8-14-13	ABN	74	8 12
5010 A	5010.207	3750	8-14-13	ABN	69	8 12

**AVERAGE FEATURE PCI = 74
 BASED ON A SAMPLED AREA OF 30000 SQUARE FEET - PCI SPREAD FOR FEATURE = 10.87
 DESCRIPTION: RUNWAY 18-36**

5015 A	5015.308	2500	8-14-13	EOJ	85	8 12
5015 A	5015.332	2500	8-14-13	EOJ	95	8
5015 A	5015.348	2500	8-14-13	EOJ	95	8
5015 A	5015.368	2500	8-14-13	EOJ	96	8
5015 A	5015.384	2500	8-14-13	EOJ	97	8
5015 A	5015.400	2500	8-14-13	EOJ	89	8
5015 A	5015.508	2500	8-14-13	EOJ	89	8
5015 A	5015.532	2500	8-14-13	EOJ	89	8
5015 A	5015.568	2500	8-14-13	EOJ	96	8
5015 A	5015.584	2500	8-14-13	EOJ	93	8
5015 A	5015.600	2500	8-14-13	EOJ	100	

**AVERAGE FEATURE PCI = 93
 BASED ON A SAMPLED AREA OF 27500 SQUARE FEET - PCI SPREAD FOR FEATURE = 15.20
 DESCRIPTION: RUNWAY 18-36**

6005 A	6005.101	3750	8-14-13	ARA	75	1 8
6005 A	6005.104	3750	8-14-13	ARA	58	1 8
6005 A	6005.108	3750	8-14-13	ARA	66	1 8
6005 A	6005.116	3750	8-14-13	ARA	61	1 8
6005 A	6005.121	3750	8-14-13	ARA	56	1 8
6005 A	6005.129	3750	8-14-13	ARA	73	8
6005 A	6005.150	3750	8-14-13	ARA	71	8
6005 A	6005.154	3750	8-14-13	ARA	56	1 8

FEATURE:	SAMPLE UNIT:	AREA:	DATE:	SURVEYED BY:	PCI:	DISTRESSES PRESENT:
6005 A	6005.160	3750	8-14-13	ARA	62	1 8
6005 A	6005.164	3750	8-14-13	ARA	75	8
6005 A	6005.170	3750	8-14-13	ARA	69	1 8
6005 A	6005.174	3750	8-14-13	ARA	65	8 16

AVERAGE FEATURE PCI = 66
BASED ON A SAMPLED AREA OF 45000 SQUARE FEET - PCI SPREAD FOR FEATURE = 19.05
DESCRIPTION: RUNWAY 14-32

6010 A	6010.132	3750	8-14-13	ARA	57	8 12
6010 A	6010.134	3750	8-14-13	ARA	65	8 12
6010 A	6010.138	3750	8-14-13	ARA	71	8 12

AVERAGE FEATURE PCI = 64
BASED ON A SAMPLED AREA OF 11250 SQUARE FEET - PCI SPREAD FOR FEATURE = 14.35
DESCRIPTION: RUNWAY 14-32

6015 A	6015.142	3750	8-14-13	ARA	83	8
6015 A	6015.147	3750	8-14-13	ARA	84	8
6015 A	6015.148	3750	8-14-13	ARA	71	8

AVERAGE FEATURE PCI = 79
BASED ON A SAMPLED AREA OF 11250 SQUARE FEET - PCI SPREAD FOR FEATURE = 12.88
DESCRIPTION: RUNWAY 14/32

TOTAL NUMBER OF INSPECTED FEATURES = 34
TOTAL NUMBER OF INSPECTED SAMPLE UNITS = 170

TOTAL AREA OF INSPECTED PAVEMENT = 736,835 S.F.

* INDICATES "ADDITIONAL" SAMPLE UNITS.

Appendix E. Distress Identification

This chapter describes pavement distress types commonly identified during airport PCI inspections.

Rigid Pavement Distress

Longitudinal, Transverse & Diagonal Cracking

LTD cracking is often a result of load or temperature deformations. External loads cause flexure. Temperature changes can cause curling. When any of these stresses exceed the slab strength, cracking occurs.

LTD cracking is recorded at low, medium, or high severity, depending on the width of crack opening and degree of deterioration.

At low severity, a crack is less than 1/8 inch wide with little spalling, and no corrective action is indicated. At medium severity, LTD cracks can be up to 1 inch wide with moderate spalling and should be repaired using procedures similar to joint sealing. At high severity, cracks exceed 1 inch in width and may be severely spalled. High-severity LTD cracking is evidence of serious load failure, and correction may require patching or slab replacement. If distress occurs in several adjacent slabs at medium or high severity, major rehabilitation of that area is indicated.

A slab divided into four or more pieces is said to be “divided” or “shattered.” Shattered slab is a separate distress category and indicates a significant structural failure. A shattered slab has lost its ability to distribute loads. Shattered slabs are rated in three severities, but the recommended action in any case is slab replacement.



Shrinkage Cracking

Shrinkage cracks are small, non-working cracks visible at the pavement surface but not penetrating the full depth of concrete. Shrinkage cracks most commonly occur shortly after construction due to concrete shrinkage during the curing process.

Shrinkage cracks are usually so small that they are not visible until staining or loss of material at crack edges begins to take place. Shrinkage cracks do not represent structural weakness, and no corrective action is prescribed.



Durability Cracking

Durability cracking (D-cracking) is caused by environmental factors, the most common being freeze/thaw. D-cracking usually appears as either a pattern of hairline cracks running parallel to a joint or crack, or in a corner, where water tends to collect. D-cracking eventually leads to disintegration of the pavement, creating foreign object damage (FOD) potential.

At low severity, D-cracking is evident, but no disintegration has occurred. Medium severity is evident over a significant area of the slab, and some disintegration and FOD potential exist. High-severity D-cracking is evidenced by extensive cracking with loose and missing pieces and significant FOD potential.



Joint Spall and Corner Spall

Spalls at slab joints and corners are caused by excessive internal stress in the pavement. Spalls occur when these stresses exceed the shear strength of the concrete.

Spalling usually results from thermal expansion during hot weather when slabs push and expand against one another. If the joints are filled with incompressible material, such as sand, stresses can become severe, causing spalls. Spalling can be reduced significantly by maintenance of joint sealant.

Spall repair requires patching. The extent and severity of spalling suggests the appropriate action. At low severity, spalled concrete remains securely in place in the slab. A low-severity spall should be monitored closely for further deterioration and should be patched when spalled particles become loose, or during the next scheduled patching activity. Medium- and high-severity spalls should be repaired immediately to prevent FOD. If the pavement can be restored to serviceable condition, spalls should be patched for long-term service. If the pavement is beyond repair, temporary patching should be considered to control FOD.



Patches, Large and Small

Large and small patches, by PCI inspection criteria, are distress conditions. Patches indicate deterioration and aging of pavement that contributes to shortened service life. However, patching also indicates that pavement is being maintained.

A patch that is performing well and shows no outward distress is recorded at low severity, and no corrective action is required. Medium-severity patches are serviceable but are beginning to deteriorate. Maintenance or replacement is indicated. At high severity, replacement is indicated.

By definition, small patches are smaller than 5 square feet in surface area, and they usually result from spall repair at slab joints and corners.

Large patches also may be the result of spall repair, but they often indicate more serious deficiencies, such as corner breaks or other full-depth failure smaller than panel size.



Joint Seal Damage

When joint sealant is in perfect condition (no damage), there is no distress.

At low severity, at least 10 percent of the sealant is debonded but still in contact with the joint edges. Medium-severity joint seal damage is recorded when at least 10 percent of the sealant has visible gaps smaller than 1/8 inch and is an indicator that replacement should be programmed as soon as is practical. In the meantime, aggressive inspection and sustaining maintenance is recommended to minimize subsurface damage from moisture penetration. At high severity, visible gaps exceed 1/8 inch, and the amount and degree of joint seal damage typically requires complete removal and replacement of the existing sealant.

On serviceable pavement, deteriorated joint sealant should be repaired or replaced to preserve pavement and subgrade integrity and prolong service life. The issue is not so clear-cut with unserviceable pavement. Pavement that can be restored to serviceable condition by maintenance activities such as patching and joint seal repair, or by slab replacement, should be so maintained as long as the process is cost-effective. However, when age and condition preclude economical return to serviceable condition by such means, joint seal repair would no longer be cost-effective and should be suspended except for an interim maintenance program to control FOD potential.



Flexible Pavement Distress

Longitudinal & Trans. Cracking

L&T cracks are caused by age, construction, and subsurface conditions. Age-related cracking occurs as oxidizing pavement loses components to the atmosphere and becomes more brittle. Consistent application of seal coats can help to prevent age-related cracks.

Construction-related cracking often develops along paving joints. Ensuring that joints are made when both sides are still hot, and near the same temperature, is one of the best ways to mitigate this potential problem.

Seasonal movement caused by changes in subsurface moisture or temperature differences also can cause pavement cracking. Asphalt pavement placed over a PCC pavement or cement stabilized base course may evidence reflective cracking from the underlying material. Wheel loads do not cause L&T cracks, although traffic may worsen their condition.

Low-severity L&T cracks are less than ¼ inch wide, or if sealed with suitable filler material in satisfactory condition can be any width less than 3 inches, if they are not spalled. Maintenance usually is not indicated for low-severity cracking. Moderately spalled cracks and cracks wider than ¼ inch which are not satisfactorily sealed are at medium severity. Medium-severity cracks should be sealed with a high-quality crack filling material. Severely spalled cracks and cracks wider than 3 inches are at high severity. High-severity L&T cracks normally require patching.



Alligator Cracking

Alligator cracks are a series of interconnected load-related cracks caused by fatigue of the asphalt surface. Alligator cracking is a significant structural distress and develops only in places subject to traffic loads. These cracks typically initiate at the bottom of the asphalt layer and propagate upward. Once a fatigue crack is visible at the surface, significant damage has already occurred.

At low severity, alligator cracks are evidenced by a series of parallel hairline cracks (usually in a wheel path). Medium-severity alligator cracking is a well-defined pattern of interconnected cracks, and some spalling may be present. High-severity alligator cracks have lost aggregate interlock between adjacent pieces, and the cracks may be severely spalled with FOD potential. Most likely, the pieces will move freely under traffic.

Alligator cracking is a serious structural failure that cannot be repaired with sealant. The proper repair is patching.



Raveling/Weathering

Raveling and weathering are the wearing away of the pavement surface. Failure can be caused by the dislodging of aggregate particles or the loss of asphalt binder. These distresses are usually evident over large areas and may indicate that the asphalt binder has hardened significantly.

Raveling is the loss of coarse aggregate, weathering is the loss of fine aggregate or binder.

Raveling: At low severity, 5 to 20 coarse aggregate particles are missing per square yard. Medium severity is defined by 20 to 40 missing coarse aggregate particles per square yard. At high severity, more than 40 coarse aggregate particles are missing per square yard, and the top layer of aggregate has eroded away.

Weathering: At low severity, edges of coarse aggregate are exposed less than 1 mm. At medium severity, loss of fine aggregate is noticeable and edges of coarse aggregate are exposed up to 6 mm (1/4 inch). High severity weathering has edges of coarse aggregate exposed > 6 mm, with considerable loss of fine aggregate matrix and potential for loss of coarse aggregate.

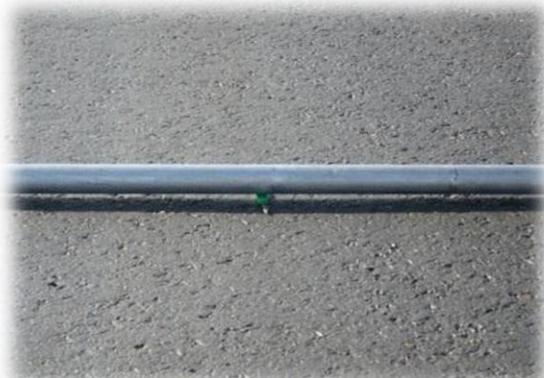


Rutting

Ruts are localized areas of pavement having elevations lower than the surrounding sections.

Rutting is due to base and subgrade consolidation caused by excessive wheel loads or poor compaction. Ruts indicate structural failure and can cause hydroplaning.

At low severity, ruts have an average depth of ¼ to ½ inches. At medium severity, ruts have an average depth of ½ to 1 inch. At high severity, ruts have an average depth greater than 1 inch. Patching is the appropriate repair for ruts.



Appendix F. Airport Responsibilities

Grant Assurances

In 1995, Congress mandated that the FAA require, as a condition of grant funding, that airport sponsors prepare documentation of a maintenance management program on pavement that has been constructed, reconstructed, or repaired with Federal assistance.

This report fulfills many of the grant assurance requirements, including documenting:

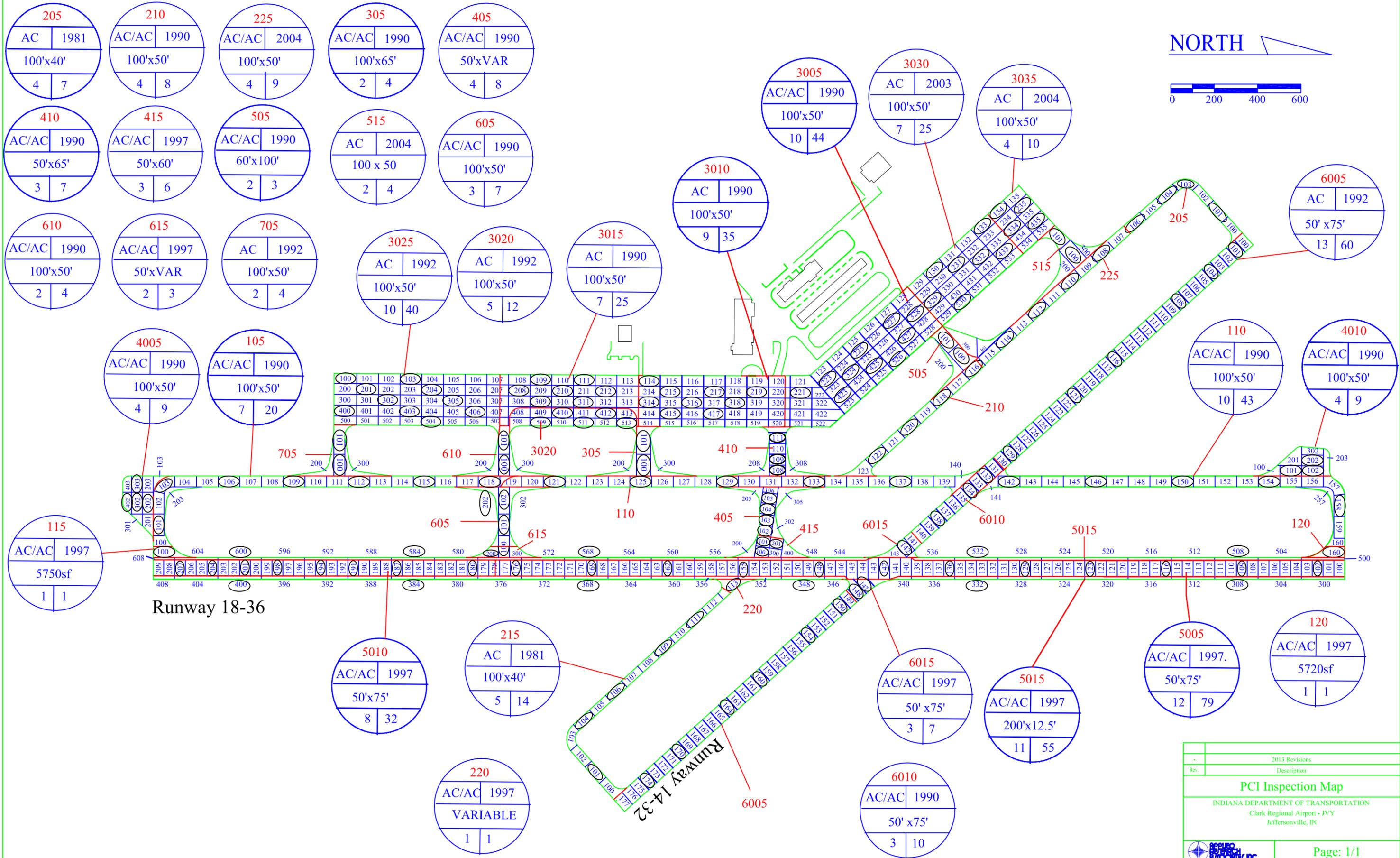
- Locating all runways, taxiways, and aprons.
- Documenting pavement dimensions.
- Documenting types of pavement.
- Documenting year of construction or most recent major rehabilitation.

The airport owners must be an active participant in maintaining compliance. Actions taken to ensure compliance include:

- Annotating areas constructed or repaired with Federal aid.
- Conducting monthly drive-by inspections to detect changes in pavement condition.
- Recording each drive-by inspection and any maintenance performed as a result.
- Keeping complete records of all maintenance activities.
- Keeping records for 5 years.
- Documenting detailed inspection information with a history of recorded pavement deterioration by PCI survey (e.g., this report).

ASSURANCES Airport Sponsors	
A. General.	<ol style="list-style-type: none"> 1. These assurances shall be complied with in the performance of grant agreements for airport development, airport planning, and noise compatibility program grants for airport sponsors. 2. These assurances are required to be submitted as part of the project application by sponsors requesting funds under the provisions of Title 49, U.S.C., subtitle VII, as amended. As used herein, the term "public agency sponsor" means a public agency with control of a public-use airport; the term "private sponsor" means a private owner of a public-use airport; and the term "sponsor" includes both public agency sponsors and private sponsors. 3. Upon acceptance of the grant offer by the sponsor, these assurances are incorporated in and become part of the grant agreement.
B. Duration and Applicability.	<ol style="list-style-type: none"> 1. Airport development or Noise Compatibility Program Projects Undertaken by a Public Agency Sponsor. The terms, conditions and assurances of the grant agreement shall remain in full force and effect throughout the useful life of the facilities developed or equipment acquired for an airport development or noise compatibility program project, or throughout the useful life of the project items installed within a facility under a noise compatibility program project, but in any event not to exceed twenty (20) years from the date of acceptance of a grant offer of Federal funds for the project. However, there shall be no limit on the duration of the assurances regarding Exclusive Rights and Airport Revenue so long as the airport is used as an airport. There shall be no limit on the duration of the terms, conditions, and assurances with respect to real property acquired with federal funds. Furthermore, the duration of the Civil Rights assurance shall be specified in the assurances. 2. Airport Development or Noise Compatibility Projects Undertaken by a Private Sponsor. The preceding paragraph 1 also applies to a private sponsor except that the useful life of project items installed within a facility or the useful life of the facilities developed or equipment acquired under an airport development or noise compatibility program project shall be no less than ten (10) years from the date of acceptance of Federal aid for the project. 3. Airport Planning Undertaken by a Sponsor. Unless otherwise specified in the grant agreement, only Assurances 1, 2, 3, 5, 6, 13, 18, 30, 32, 33, and 34 in section C apply to planning projects. The terms, conditions, and assurances of the grant agreement shall remain in full force and effect during the life of the project.
C. Sponsor Certification.	<p>The sponsor hereby assures and certifies, with respect to this grant that:</p> <ol style="list-style-type: none"> 1. General Federal Requirements. It will comply with all applicable Federal laws, regulations, executive orders, policies, guidelines, and requirements as they relate to the application, acceptance and use of Federal funds for this project including but not limited to the following: <ul style="list-style-type: none"> Federal Legislation a. Title 49, U.S.C., subtitle VII, as amended. b. Davis-Bacon Act - 40 U.S.C. 276(a), <i>et seq.</i>¹ c. Federal Fair Labor Standards Act - 29 U.S.C. 201, <i>et seq.</i> d. Hatch Act - 5 U.S.C. 1501, <i>et seq.</i>²
Airport Assurances (3/2005)	

The table on the following pages is available for maintaining a record of drive-by inspections and maintenance repairs.

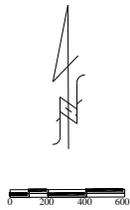


NORTH



-	2013 Revisions
Rev.	Description
PCI Inspection Map	
INDIANA DEPARTMENT OF TRANSPORTATION Clark Regional Airport - JVV Jeffersonville, IN	
	Page: 1/1

Jeffersonville-Clark Regional Airport - JVY
2013 PCI Inspection



PCI LEGEND

100-86	Good	
85-71	Satisfactory	
70-56	Fair	
55-41	Poor	
40-26	Very Poor	
25-11	Serious	
10-0	Failed	

