Paullina Municipal Airport

Pavement Management Report

PREPARED BY

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applied pavement TECHNOLOGY

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PAULLINA MUNICIPAL AIRPORT
PAVEMENT MANAGEMENT REPORT

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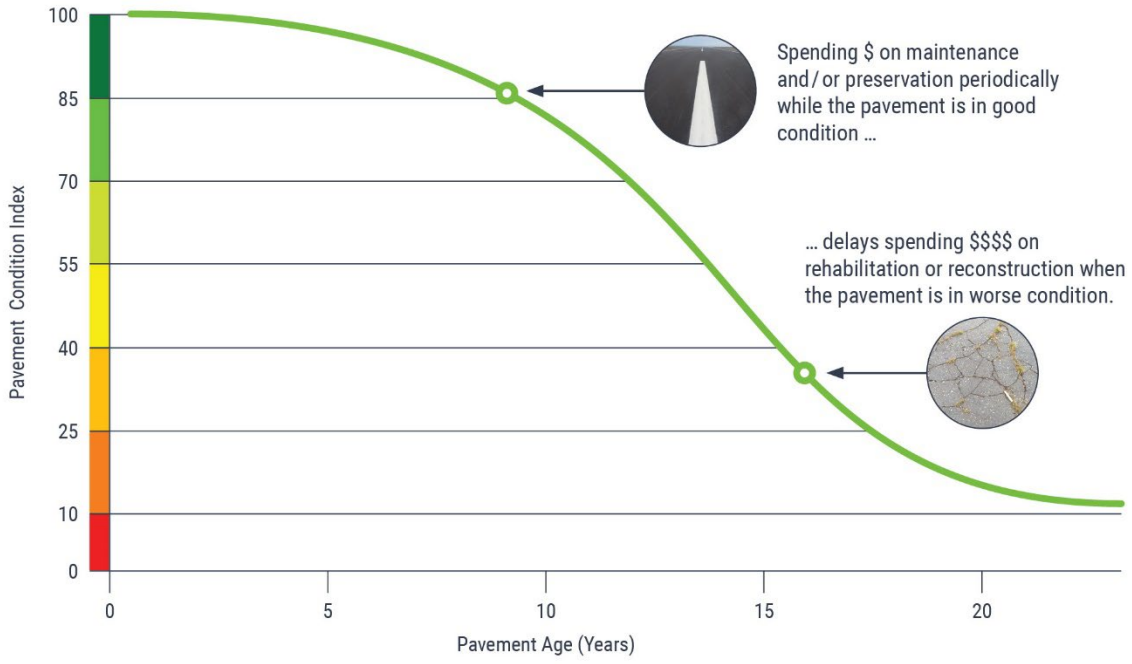
INTRODUCTION

Applied Pavement Technology, Inc. (APTech), with assistance from Robinson Engineering Company Consulting Engineers (Robinson), updated the Airport Pavement Management System (APMS) for the Iowa Department of Transportation, Modal Transportation Bureau (Iowa DOT). The APMS provides a means to monitor the condition of the pavements within the State of Iowa and to proactively plan for their preservation.

As part of this project, pavement conditions at Paullina Municipal Airport were visually assessed in March 2025 using the Pavement Condition Index (PCI) procedure. During a PCI inspection, the types, severities, and amounts of distress present on the pavement surface are quantified. This information is then used to develop a composite index that represents the overall condition of the pavement in numerical terms, ranging from 0 (*Failed*) to 100 (*Excellent*). The PCI provides an overall measure of condition and an indication of the level of work that will be required to maintain or repair a pavement. The distress information also provides insight into what is causing the pavement to deteriorate, which is the first step in selecting the appropriate repair action to correct the problem.

Programmed into an APMS, PCI data and results are used to determine when preventive maintenance actions (such as crack or joint sealing) are advisable and to identify the most cost-effective time to perform major rehabilitation (such as an overlay or whitetopping). Delaying maintenance and rehabilitation (M&R) until a pavement structure has seriously degraded can cost many times more than if M&R was applied earlier in a pavement's life cycle, as shown in Figure 1. From a safety perspective, pavement distresses, such as cracks and loose debris, may pose risks in terms of the potential for aircraft tire damage and the ability of a pilot to safely control aircraft.

Figure 1. Pavement condition versus cost of repair.



The pavement evaluation results for Paullina Municipal Airport are presented within this report and can be used by Paullina Municipal Airport, the Iowa DOT, and the Federal Aviation Administration (FAA) to identify, prioritize, and schedule pavement M&R actions at the airport. In addition to this report, the web-based interactive pavement data visualization tool IDEA, containing the information collected during this project, was updated and may be accessed from the Iowa DOT's website or directly (Iowa APMS IDEA).

PAVEMENT INVENTORY

The project began with a review of the existing inventory information pertaining to the pavements at Paullina Municipal Airport. The date of original construction, along with the date of any subsequent rehabilitation; the location of completed work; and the type of work undertaken were gathered. The information was used to update the pavement management database and associated maps, as necessary, to account for pavement-related work that had been undertaken since the last time the airport was evaluated in 2018.

The pavement network at Paullina Municipal Airport was then divided into branches, sections, and sample units. A branch is a single entity that serves a distinct function. For example, a runway is considered a branch because it serves a single function (allowing aircraft to take off and land). Taxiways, aprons, and T-hangars are also separate branches.

Each branch was further divided into sections. Traditionally, sections are defined as parts of the branch that share common attributes, such as cross section, date of last construction, traffic level, and performance. Using this approach, if a runway was built in 1968 and then extended in 1984, it would contain two separate sections.

To estimate the overall condition of a pavement section, each section was subdivided into sample units. Portions of these sample units were evaluated during the pavement inspection, and the collected information was extrapolated to predict the overall section condition and quantities of distress.

Approximately 91,500 square feet of pavement were evaluated at Paullina Municipal Airport, as illustrated in Figure 2. This figure also shows the area-weighted age in years of the pavements at the time of the inspection. Figure 3 provides a map that details how the pavement network was divided into management units and identifies the sample units that were evaluated during the pavement inspection at Paullina Municipal Airport.

Figure 2. Pavement area by branch use at Paullina Municipal Airport.

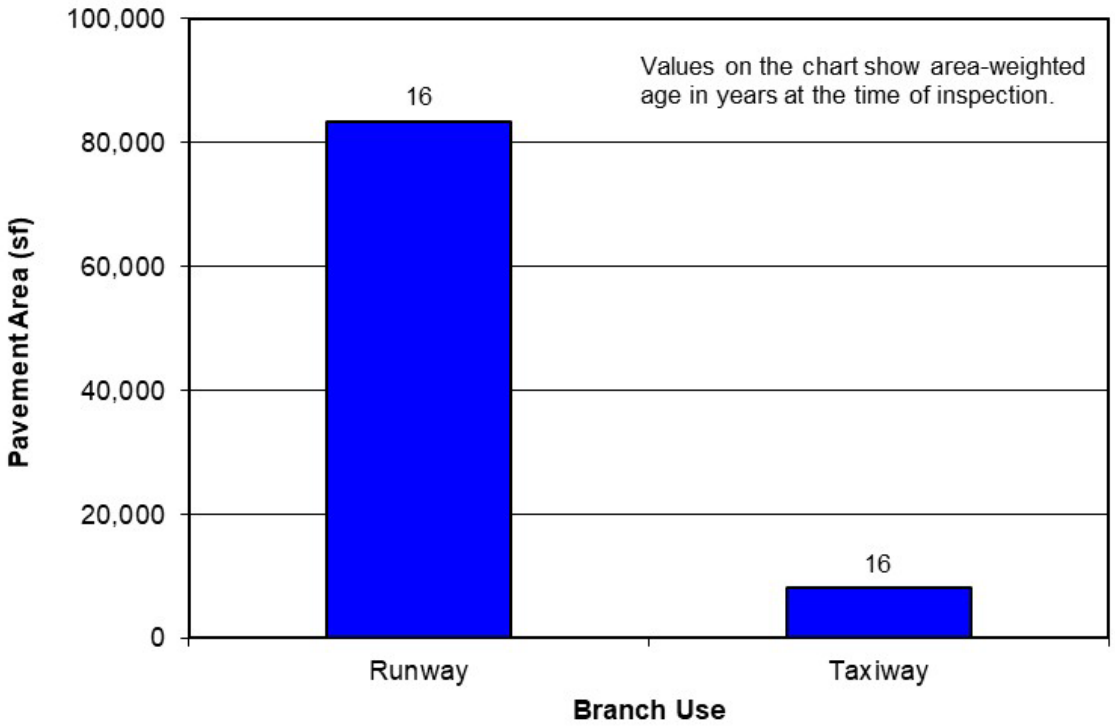
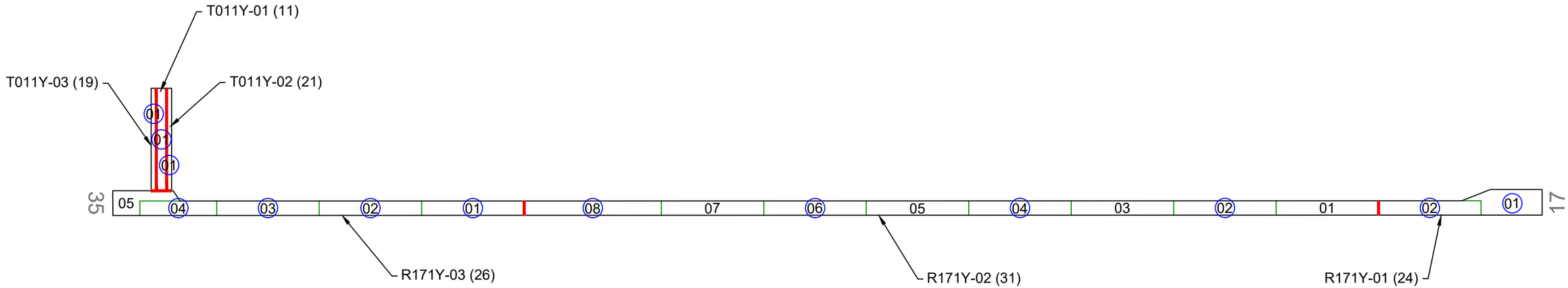


FIGURE 3. NETWORK DEFINITION MAP.



NETWORK DEFINITION LEGEND

- BRANCH IDENTIFIER
- SECTION IDENTIFIER
- PCI VALUE

R12AG-01 (79)

- SECTION BREAK LINE
- SAMPLE UNIT BREAK LINE
- SLAB JOINT
- 03 — SAMPLE UNIT NUMBER
- 03 — SAMPLE UNIT INSPECTED
- 03 — ADDITIONAL SAMPLE UNIT

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AGENCY: Iowa Department of Transportation, Office of Aviation			
LOCATION: Paullina Municipal Airport, Paullina, Iowa			
PAGE TITLE: Network Definition Map			
PROJECT DATE: NOV. 2024	CREATION DATE: NOV. 2024	PROJECT MANAGER: LJR	JOB NUMBER: 2021-125-AM03
DRAWING SCALE: 1"=200'	LAST MODIFIED DATE: JUN. 2025	REVISED BY: KEW	DRAWN BY: KEW
FILENAME: Paullina.dwg		LAYOUT NAME/NUMBER: NET. DEF.	PAGE NUMBER: 5

PAVEMENT EVALUATION

Pavement Evaluation Procedure

APTech visually inspected the pavements at Paullina Municipal Airport using the PCI procedure described in:

- FAA Advisory Circular 150/5380-6C, *Guidelines and Procedures for Maintenance of Airport Pavements*.
- FAA Advisory Circular 150/5380-7B, *Airport Pavement Management Program (PMP)*.
- ASTM D5340, *Standard Test Method for Airport Pavement Condition Index Surveys*.

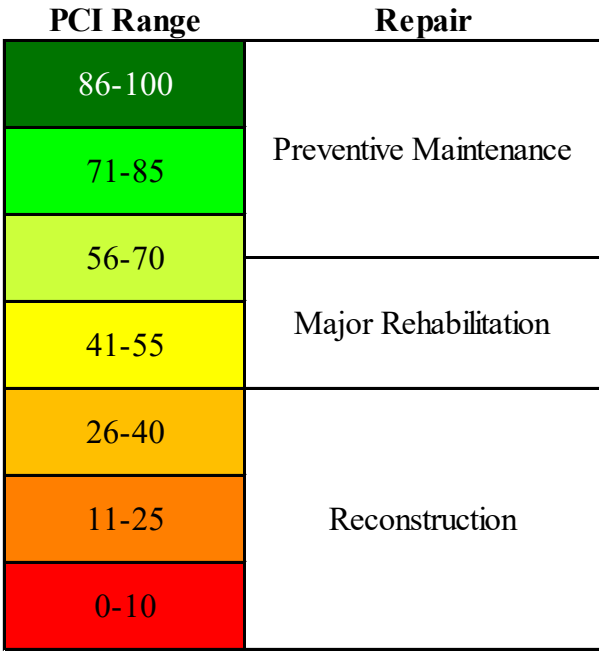
During the PCI inspection, a cursory inspection of the entirety of a pavement section was performed. Sample units identified for more detailed inspection were verified, and adjustments to the selected sample units for inspection were made as needed to ensure an accurate assessment of the pavement's condition. Data pertaining to the types, severities, and quantities of observed pavement distresses were then collected within each sample unit. These data were then used to calculate the composite PCI of each pavement section. The PCI provides a numerical indication of overall pavement condition, as illustrated in Figure 4. The PCI ranges from a value of 0, which represents a pavement in a *Failed* condition, to a value of 100, which represents a pavement in *Excellent* condition with no visible signs of deterioration. It is important to note that factors other than overall PCI need to be considered when identifying the appropriate type of repair, including types of distress present and rate of deterioration. Also, since the PCI does not assess the structural integrity or capacity of the pavement structure, further testing may be needed to validate and refine the treatment strategy.

Figure 4. Visual representation of PCI scale on typical pavement surfaces.

Note: Photographs shown are not specific to Paullina Municipal Airport.

Generally, pavements with relatively high PCIs that are not exhibiting significant load-related distress will benefit from preventive maintenance actions, such as crack sealing or joint resealing. As the PCI drops, the pavements may require major rehabilitation, such as an overlay or whitetopping. In some situations where the PCI has dropped low enough, reconstruction may be the only viable alternative due to the substantial damage to the pavement structure. Figure 5 illustrates how the appropriate repair type varies with the PCI of a pavement section and provides the corresponding colors used for the maps and charts in this report for each range of PCIs.

Figure 5. PCI versus repair type.



The types of distress identified during the PCI inspection provide insight into the cause of pavement deterioration, which is useful when selecting M&R strategies. Understanding the cause of distress helps in selecting a rehabilitation alternative that corrects the cause and thus eliminates or delays its recurrence. PCI distress types are characterized as:

- Load-related—These distress types are defined as being caused by aircraft or vehicular traffic and may indicate a structural deficiency. Examples of load-related distress include alligator cracking on asphalt-surfaced pavements and corner breaks on portland cement concrete (PCC) pavements.
- Climate/durability-related—These distress types often signify the presence of aged or environmentally susceptible (or both) material and include durability-related issues. Examples of climate/durability-related distress include weathering on asphalt-surfaced pavements, which is climate-related, and durability cracking on PCC pavements, which is durability-related.
- Other—Distress types that fall into this category cannot be attributed solely to load or climate/durability. Examples of this type of distress include depressions on asphalt-surfaced pavements and shrinkage cracking on PCC pavements.

Appendix A identifies the distress types considered during a PCI inspection and describes the likely cause of each distress type. It should be noted that a PCI is based on visual signs of pavement deterioration and does not provide a measure of structural capacity.

Pavement Evaluation Results

The pavements at Paullina Municipal Airport were inspected in March 2025. The 2025 area-weighted condition of Paullina Municipal Airport is 27, with conditions ranging from 11 to 31 (on a scale of 0 [failed] to 100 [excellent]). During the previous pavement inspection in 2018, the area-weighted PCI of the airport was 51.

Figure 6 summarizes the overall condition of the pavements at Paullina Municipal Airport, and Figure 7 presents area-weighted condition (average PCI adjusted to account for the relative size of the pavement sections) by branch use. Figure 8 is a map that displays the condition of the evaluated pavements. Table 1 summarizes the results of the pavement evaluation. Appendix B presents photographs taken during the PCI inspection, and Appendix C contains detailed information on the distress types observed during the visual survey. Appendix D includes detailed work history information that was collected during the record review process.

Figure 6. Pavement area by PCI range at Paullina Municipal Airport.

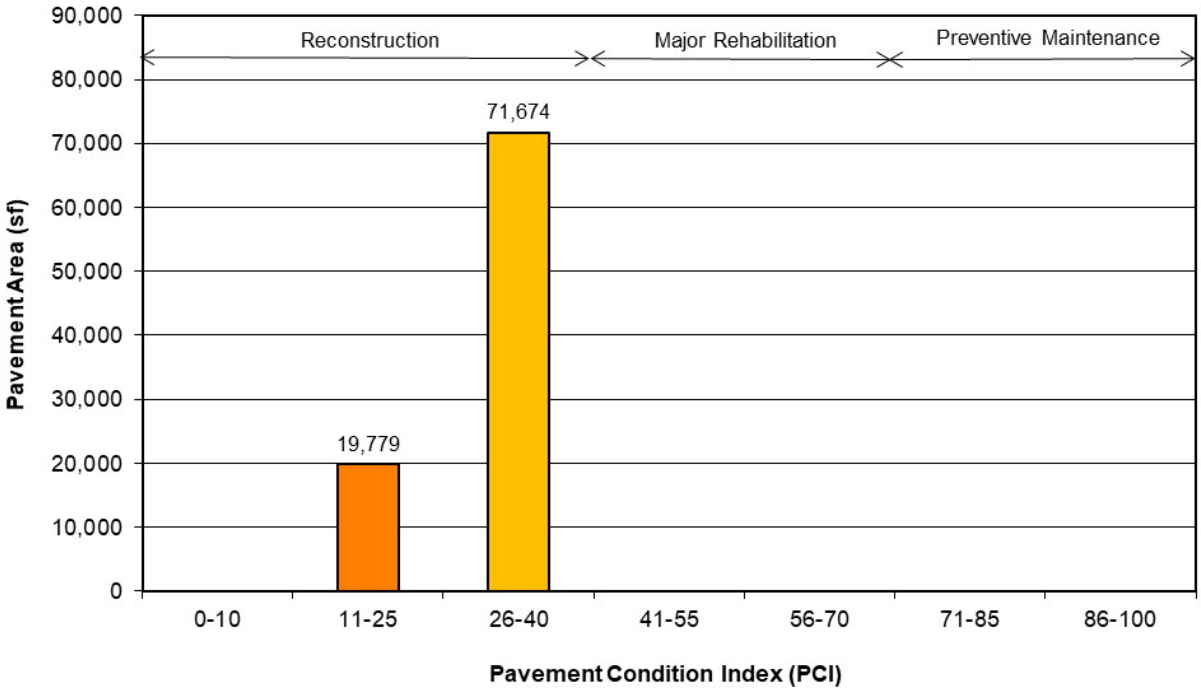


Figure 7. Area-weighted PCI by branch use at Paullina Municipal Airport.

(Values on chart are area weighted.)

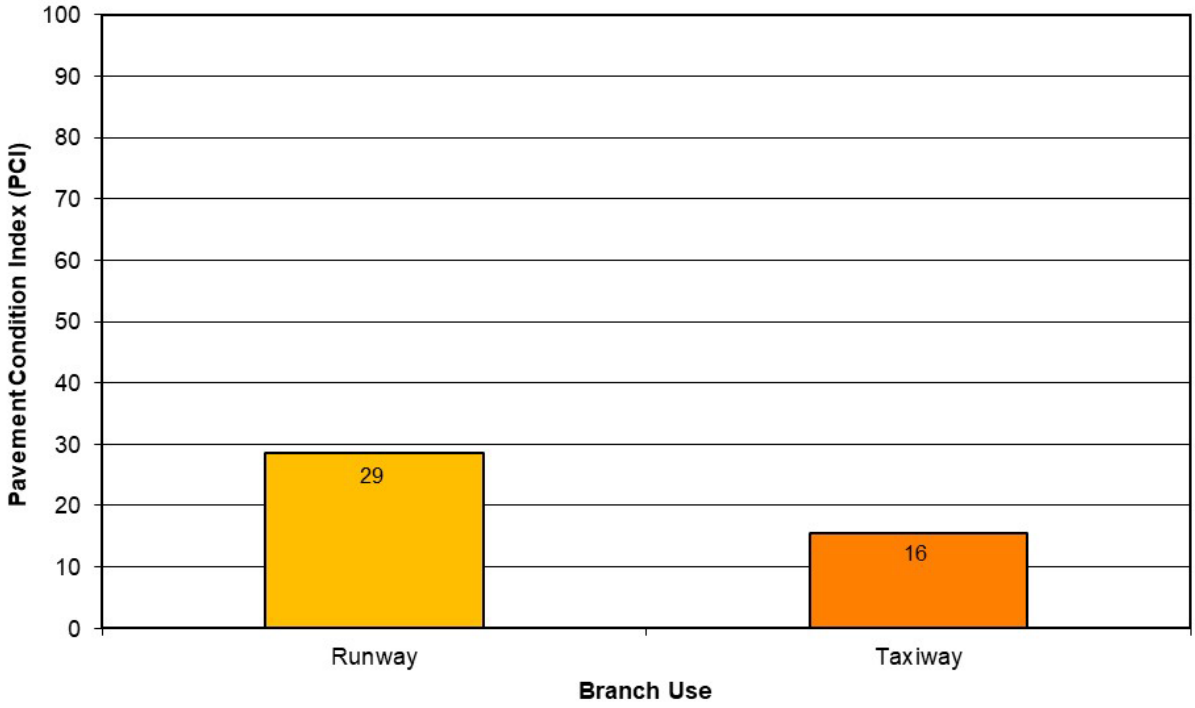
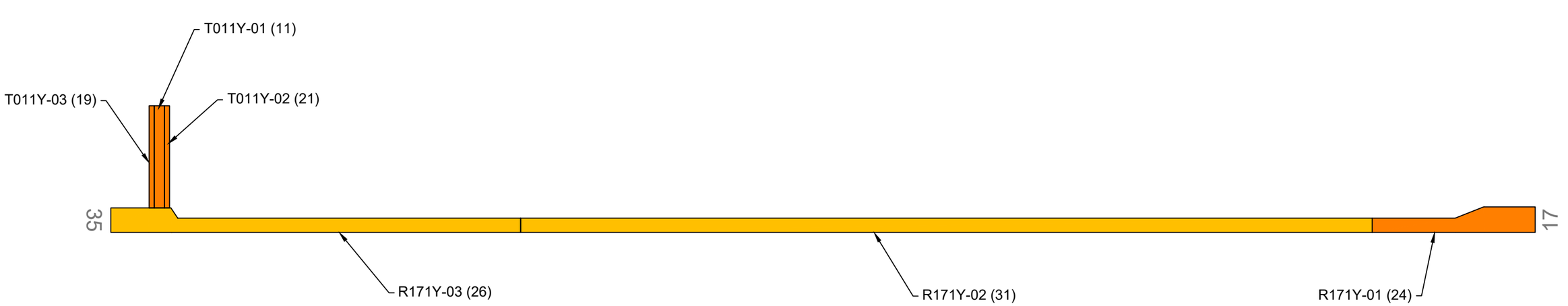


FIGURE 8. PCI MAP.



LEGEND

BRANCH IDENTIFIER
SECTION IDENTIFIER
PCI VALUE
RW927GL-10 (74)
SECTION BREAK LINE

PAVEMENT CONDITION INDEX

PCI

86-100
71-85
56-70
41-55
26-40
11-25
0-10

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AGENCY: Iowa Department of Transportation
Office of Aviation

LOCATION: Paullina Municipal Airport
Paullina, Iowa

PAGE TITLE: 2025 Pavement Condition Index Map

PROJECT DATE:	CREATION DATE:	PROJECT MANAGER:	JOB NUMBER:
NOV. 2024	NOV. 2024	LJR	2021-125-AM03
DRAWING SCALE:	LAST MODIFIED DATE:	REVISED BY:	DRAWN BY:
1"=200'	JUN. 2025	KEW	KEW
FILENAME:		LAYOUT NAME/NUMBER:	PAGE NUMBER:
Paullina.dwg		PCI	10

Table 1. 2025 pavement evaluation results.

Branch	Section	Surface Type	Section Area (sf)	LCD	2025 PCI	% Distress Due to Load	% Distress Due to Climate/ Durability	% Distress Due to Other	Type of Distress
R171Y	01	AAC	11,779	6/2/2009	24	61	39	0	Alligator Cracking, L&T Cracking, Patching, Rutting, Weathering
R171Y	02	AAC	46,704	6/2/2009	31	52	48	0	Alligator Cracking, L&T Cracking, Patching, Raveling, Weathering
R171Y	03	AAC	24,970	6/2/2009	26	49	51	0	Alligator Cracking, L&T Cracking, Patching, Raveling, Weathering
T011Y	01	AAC	4,000	6/2/2009	11	54	46	0	Alligator Cracking, L&T Cracking, Raveling, Weathering
T011Y	02	AAC	2,000	6/2/2009	21	44	56	0	Alligator Cracking, L&T Cracking, Raveling, Weathering
T011Y	03	AAC	2,000	6/2/2009	19	48	52	0	Alligator Cracking, L&T Cracking, Raveling, Weathering

Table Notes:

1. See Figure 3 for the location of the branch and section.
2. Surface Type: AC = asphalt cement concrete; AAC = asphalt overlay on AC; PCC = portland cement concrete; APC = asphalt overlay on PCC.
3. LCD = last construction date.
4. Distress due to load includes distress types that are attributed to a structural deficiency in the pavement, such as alligator cracking or rutting on asphalt-surfaced pavements or shattered slabs on PCC pavements.
5. Distress due to climate or durability includes distress types that are attributed to either the aging of the pavement and the effects of the environment (such as weathering, raveling, or block cracking on asphalt-surfaced pavements) or to a materials-related problem (such as durability cracking or alkali-silica reaction [ASR] on PCC pavements). If materials-related distresses were recorded during the inspection, further laboratory testing is required to definitively determine the type present.
6. Distress due to other refers to distress types that are not attributed to one factor but rather may be caused by a combination of factors.
7. Distress types are defined by ASTM D5340. L&T cracking = longitudinal and transverse cracking; LTD cracking = longitudinal, transverse, and diagonal cracking; ASR = alkali-silica reaction.

Inspection Comments

Paullina Municipal Airport was inspected on March 15, 2025. There were six pavement sections defined during the inspection.

Runway

Runway 17/35 was defined by three sections in *Poor* condition. Section 01 was located at the northern approach of the runway. A substantial amount of medium-severity alligator cracking was observed. Additionally, low-severity patching and medium-severity longitudinal and transverse (L&T) cracking, rutting, and weathering were identified during the inspection. Section 02 contained low- and medium-severity of alligator cracking and L&T cracking, low-severity patching, high-severity raveling, and medium-severity weathering. The low-severity L&T cracking was unsealed, while the medium-severity L&T cracking was due to either unsealed crack widths that exceeded 1/4 inch, unsatisfactory crack sealant, or the development of secondary cracking. In Section 03, low- and medium-severity alligator cracking and L&T cracking, low-severity patching and raveling, and medium-severity weathering were identified.

Taxiway

The taxiway contained three sections in *Poor* condition. Substantial amounts of medium-severity alligator cracking were observed in all three sections in addition to low- and medium-severity L&T cracking, low-severity raveling, and medium-severity weathering.

PAVEMENT MAINTENANCE AND REHABILITATION PROGRAM

Using the information collected during the pavement inspection, the PAVER pavement management software was used to develop a 5-year M&R program for Paullina Municipal Airport. In addition, a 1-year plan for localized preventive maintenance (such as crack sealing and patching) was prepared.

Analysis Parameters

Critical PCIs

PAVER uses critical PCIs to determine whether localized preventive maintenance or major rehabilitation is the appropriate repair action. Above the critical PCI, localized preventive maintenance activities are recommended. Below the critical PCI, major rehabilitation actions, such as an overlay or reconstruction, are recommended. The Iowa DOT set the critical PCIs at 65 for runways, 60 for taxiways, and 55 for aprons and T-hangars.

Localized Preventive Maintenance Policies and Unit Costs

Localized preventive maintenance policies were developed for asphalt-surfaced and PCC pavements. These policies, shown in Appendix E, identify the localized preventive maintenance actions that the Iowa DOT considered appropriate to correct the different distress types and severities. The Iowa DOT provided unit costs for each of the localized preventive maintenance actions included in these policies, and these costs are detailed in Appendix E. Please note that this information is of a general nature for the entire State. The localized preventive maintenance policies and unit costs may require adjustments to reflect specific conditions at Paullina Municipal Airport.

Major Rehabilitation Unit Costs

PAVER estimates the cost of major rehabilitation based on the predicted PCI of the pavement section. The Iowa DOT provided the costs for major rehabilitation, and they are presented in Appendix E. If major rehabilitation is recommended in the 5-year program, further engineering investigation will be needed to identify the most appropriate rehabilitation action and to estimate the cost of such work more accurately.

Budget and Inflation Rate

An unlimited budget with a start date of July 1, 2025, and an inflation rate of 2.3 percent was used during the analysis.

Analysis Approach

The 5-year M&R program was prepared with the goal of maintaining the pavements above established critical PCIs. During this analysis, major rehabilitation was recommended for pavements in the year they dropped below their critical PCI. For the first year (2025) of the analysis only, a localized preventive maintenance plan was developed for those pavement sections that were above their critical PCI. If major rehabilitation was triggered for a section in 2026 or 2027, then localized preventive maintenance was not recommended for 2025. While localized preventive maintenance should be an annual undertaking at Paullina Municipal Airport, it is not possible to accurately predict the propagation of cracking and other distress types. Therefore, the airport should budget for maintenance every year and can use the 2025 localized preventive maintenance plan as a baseline for that work. As the pavements age, it can be assumed that the amount of localized preventive maintenance required will increase.

Analysis Results

A summary of the M&R program for Paullina Municipal Airport is presented in Table 2. Detailed information on the recommended localized preventive maintenance plan for 2025 is provided in Appendix F.

Table 2. 5-year M&R program under an unlimited funding analysis scenario.

Year	Branch	Section	Surface Type	Type of Repair	Estimated Cost
2025	R171Y	01	AAC	Major Rehabilitation	$132,980
2025	R171Y	02	AAC	Major Rehabilitation	$527,268
2025	R171Y	03	AAC	Major Rehabilitation	$281,901
2025	T011Y	01	AAC	Major Rehabilitation	$45,158
2025	T011Y	02	AAC	Major Rehabilitation	$22,579
2025	T011Y	03	AAC	Major Rehabilitation	$22,579
				Total Estimated Cost:	**$1,032,000**

Table Notes:

1. See Figure 3 for the location of the branch and section.
2. Surface Type: AC = asphalt cement concrete; AAC = asphalt overlay on AC; PCC = portland cement concrete; APC = asphalt overlay on PCC.
3. Type of Repair: Major Rehabilitation, such as pavement reconstruction or an overlay; Localized Preventive Maintenance, such as crack sealing or patching.
4. The estimated costs provided are of a general nature for the entire State and may require adjustments to reflect specific conditions at Paullina Municipal Airport.

The recommendations made in this report are based on a broad network-level analysis and meant to provide Paullina Municipal Airport with an indication of the type of pavement-related work required during the next 5 years. Further engineering investigation may be necessary to identify which repair action is most appropriate. In addition, the cost estimates provided are based on overall unit costs for the entire State, and Paullina Municipal Airport should adjust the plan to reflect local costs.

Because an unlimited budget was used in the analysis, it is possible that the pavement repair program may need to be adjusted to consider economic or operational constraints. The identification of a project need does not necessarily mean that State or Federal funding will be available in the year it is indicated. It is important to remember that regardless of the recommendations presented within this report, Paullina Municipal Airport is responsible for repairing pavements where existing conditions pose a hazard to safe operations.

General Maintenance Recommendations

In addition to the specific maintenance actions presented in Appendix F, it is recommended that the following strategies be considered for prolonging pavement life:

1. Regularly inspect all safety areas of the airport and document all inspection activity.
2. Conduct an aggressive campaign against weed growth through timely herbicide applications and mowing programs of the safety areas. Vegetation growth in pavement cracks is destructive and significantly increases the rate of pavement deterioration.
3. Implement a periodic crack and joint sealing program. Keeping water and debris out of the pavement system by sealing cracks and joints is a proven and cost-effective method for extending the life of the pavement system.

4. Ensure all edges of pavement maintain the required 1.5-inch lip. This enables the water to drain away from the pavement system.
5. Closely monitor the movement of heavy equipment (particularly farming, construction, mowing, and fueling equipment) to make sure it is only operating on pavements that are designed to accommodate heavy loads. Failure to restrict heavy equipment to appropriate areas may result in the premature failure of airport pavements.

SUMMARY

This report documents the results of the pavement evaluation conducted at Paullina Municipal Airport. A visual inspection of the pavements in 2025 found that the overall condition of the pavement network is a PCI of 27. A 5-year pavement repair program, shown in Table 2, was generated for Paullina Municipal Airport, which revealed that approximately $1,032,000 needs to be expended on M&R. Paullina Municipal Airport should utilize these study results to assist in planning for future maintenance needs as part of the airport CIP planning process.

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APPENDIX A

CAUSE OF DISTRESS TABLES

Table A-1. Cause of pavement distress, asphalt-surfaced pavements (USACE 2009a).

Distress Type	Probable Cause of Distress
Alligator Cracking	Fatigue failure of the asphalt surface under repeated traffic loading.
Bleeding	Excessive amounts of asphalt cement or tars in the mix or low air void content, or both.
Block Cracking	Shrinkage of the asphalt and daily temperature cycling; it is not load associated.
Corrugation	Traffic action combined with an unstable pavement layer.
Depression	Settlement of the foundation soil or can be “built up” during construction.
Jet-Blast Erosion	Bituminous binder has been burned or carbonized.
Joint Reflection Cracking	Movement of the concrete slab beneath the asphalt surface due to thermal and moisture changes.
L&T Cracking	Cracks may be caused by (1) a poorly constructed paving lane joint, (2) shrinkage of the asphalt surface due to low temperatures or hardening of the asphalt, or (3) reflective cracking caused by cracks in an underlying PCC slab.
Oil Spillage	Deterioration or softening of the pavement surface caused by the spilling of oil, fuel, or other solvents.
Patching	N/A
Polished Aggregate	Repeated traffic applications.
Raveling	Asphalt binder may have hardened significantly, causing coarse aggregate pieces to dislodge.
Rutting	Usually caused by consolidation or lateral movement of the materials due to traffic loads.
Shoving	Where PCC pavements adjoin flexible pavements, PCC “growth” may shove the asphalt pavement.
Slippage Cracking	Low-strength surface mix or poor bond between the surface and the next layer of the pavement structure.
Swelling	Usually caused by frost action or by swelling soil.
Weathering	Asphalt binder and/or fine aggregate may wear away as the pavement ages and hardens.

Table A-2. Cause of pavement distress, PCC pavements (USACE 2009b).

Distress Type	Probable Cause of Distress
ASR	Chemical reaction of alkalis in the cement with certain reactive silica minerals. ASR may be accelerated by the use of chemical pavement deicers.
Blowup	Incompressible materials in the joints.
Corner Break	Load repetition combined with loss of support and curling stresses.
Durability Cracking	Concrete's inability to withstand environmental factors, such as freeze-thaw cycles.
Faulting	Upheaval or consolidation.
Joint Seal Damage	Stripping of joint sealant, extrusion of joint sealant, weed growth, hardening of the filler (oxidation), loss of bond to the slab edges, or absence of sealant in the joint.
LTD Cracking	Combination of load repetition, curling stresses, and shrinkage stresses.
Patching (Small and Large)	N/A
Popouts	Freeze-thaw action in combination with expansive aggregates.
Pumping	Poor drainage, poor joint sealant.
Scaling	Over finishing of concrete, deicing salts, improper construction, freeze-thaw cycles, and poor aggregate.
Shattered Slab	Load repetition.
Shrinkage Cracking	Setting and curing of the concrete.
Spalling (Joint and Corner)	Excessive stresses at the joint caused by infiltration of incompressible materials or traffic loads; weak concrete at the joint combined with traffic loads.

APPENDIX B

INSPECTION PHOTOGRAPHS

R171Y-01. Overview.

R171Y-01. Alligator Cracking (Sample Unit No. 01).

R171Y-01. Patching (Sample Unit No. 01).

R171Y-02. Overview.

R171Y-02. Alligator Cracking (Sample Unit No. 06) (1).

R171Y-02. Alligator Cracking (Sample Unit No. 06) (2).

R171Y-02. Patching (Sample Unit No. 04).

R171Y-02. Patching (Sample Unit No. 06).

R171Y-02. Raveling (Sample Unit No. 04).

R171Y-03. Overview.

R171Y-03. Alligator Cracking (Sample Unit No. 01).

R171Y-03. Alligator Cracking (Sample Unit No. 02).

R171Y-03. Patching (Sample Unit No. 02).

R171Y-03. Raveling (Sample Unit No. 03) (1).

R171Y-03. Raveling (Sample Unit No. 03) (2).

T011Y-01. Overview.

T011Y-01. Alligator Cracking (Sample Unit No. 01).

T011Y-01. Raveling (Sample Unit No. 01).

T011Y-02. Overview.

T011Y-02. Alligator Cracking (Sample Unit No. 01).

T011Y-02. Raveling (Sample Unit No. 01).

T011Y-03. Overview.

T011Y-03. Alligator Cracking (Sample Unit No. 01).

T011Y-03. Raveling (Sample Unit No. 01).

APPENDIX C

INSPECTION REPORT

RE-INSPECTION REPORT
PAULLINA MUNICIPAL AIRPORT

Pavement Database: IA 2024 | Generate Date: 8/11/2025

Network ID: 1Y9 |

Branch - Section ID: R171Y - 001

Branch Name: RUNWAY 17/35 | Use: RUNWAY

LCD: 6/2/2009
Surface Type: AAC
Rank: P
Section Area (sf): 11,779.00
Length (ft): 330.00
Width (ft): 28.00
From: RUNWAY END 17
To: START OF SECTION 002

PCI Family: IowaAACRW_NCW

Slabs:
Slab Length (ft):
Slab Width (ft):
Joint Length (ft):

Section Comments:

Last Insp Date: 3/15/2025
PCI: 24
Total Samples: 2
Surveyed: 2

Inspection Comments:

Sample Number: 01

Sample Type: R
Sample PCI: 25
Sample Area (SF): 6,180.00

Sample Comments:

41 ALLIGATOR CR	M	580.00	SF	
48 L & T CR	M	207.00	FT	
50 PATCHING	L	465.00	SF	
53 RUTTING	M	65.00	SF	
57 WEATHERING	M	5,715.00	SF	

Sample Number: 02

Sample Type: R
Sample PCI: 24
Sample Area (SF): 5,599.00

Sample Comments:

41 ALLIGATOR CR	M	720.00	SF	
41 ALLIGATOR CR	M	110.00	SF	Edge
48 L & T CR	M	85.00	FT	Fs 2ndy
50 PATCHING	L	423.00	SF	Skin
57 WEATHERING	M	5,176.00	SF	

RE-INSPECTION REPORT
PAULLINA MUNICIPAL AIRPORT

Branch - Section ID: R171Y - 002

Branch Name: RUNWAY 17/35 Use: RUNWAY

LCD: 6/2/2009
Surface Type: AAC
Rank: P
Section Area (sf): 46,704.00
Length (ft): 1,668.00
Width (ft): 28.00
From: END OF SECTION 001
To: START OF SECTION 003

PCI Family: IowaAACRW_NCW

Slabs:
Slab Length (ft):
Slab Width (ft):
Joint Length (ft):

Section Comments:

Last Insp Date: 3/15/2025
PCI: 31
Total Samples: 8
Surveyed: 4

Inspection Comments:

Sample Number: 02

Sample Type: R
Sample PCI: 28
Sample Area (SF): 5,600.00

Sample Comments:

41 ALLIGATOR CR	M	160.00	SF	Edge
41 ALLIGATOR CR	M	420.00	SF	
48 L & T CR	L	40.00	FT	lu
48 L & T CR	M	175.00	FT	Fs w 2ndy
50 PATCHING	L	490.00	SF	Skin
57 WEATHERING	M	5,110.00	SF	

Sample Number: 04

Sample Type: R
Sample PCI: 22
Sample Area (SF): 5,600.00

Sample Comments:

41 ALLIGATOR CR	L	55.00	SF	Edge
41 ALLIGATOR CR	M	195.00	SF	Edge
41 ALLIGATOR CR	M	375.00	SF	
48 L & T CR	M	390.00	FT	Fs 2ndy w
50 PATCHING	L	450.00	SF	Skin
52 RAVELING	H	15.00	SF	Edge
57 WEATHERING	M	5,135.00	SF	

Sample Number: 06

Sample Type: R
Sample PCI: 33
Sample Area (SF): 5,600.00

Sample Comments:

41 ALLIGATOR CR	M	144.00	SF	Edge
41 ALLIGATOR CR	M	249.00	SF	
48 L & T CR	M	195.00	FT	Fs w 2ndy
50 PATCHING	L	475.00	SF	Skin
57 WEATHERING	M	5,125.00	SF	

RE-INSPECTION REPORT
PAULLINA MUNICIPAL AIRPORT

Sample Number: 08

Sample Type: R
Sample PCI: 36
Sample Area (SF): 7,504.00

Sample Comments:

41 ALLIGATOR CR	L	120.00	SF	Edge
41 ALLIGATOR CR	M	156.00	SF	
41 ALLIGATOR CR	M	143.00	SF	Edge
48 L & T CR	M	330.00	FT	Fs w 2ndy
50 PATCHING	L	380.00	SF	
57 WEATHERING	M	7,124.00	SF	

RE-INSPECTION REPORT
PAULLINA MUNICIPAL AIRPORT

Branch - Section ID: R171Y - 003

Branch Name: RUNWAY 17/35 Use: RUNWAY

LCD: 6/2/2009
Surface Type: AAC
Rank: P
Section Area (sf): 24,970.00
Length (ft): 800.00
Width (ft): 28.00
From: END OF SECTION 002
To: RUNWAY END 35

PCI Family: IowaAACRW_NCW

Slabs:
Slab Length (ft):
Slab Width (ft):
Joint Length (ft):

Section Comments:

Last Insp Date: 3/15/2025
PCI: 26
Total Samples: 5
Surveyed: 4

Inspection Comments:

Sample Number: 01

Sample Type: R
Sample PCI: 22
Sample Area (SF): 5,600.00

Sample Comments:

41 ALLIGATOR CR	L	143.00	SF	Edge
41 ALLIGATOR CR	M	55.00	SF	Edge
41 ALLIGATOR CR	M	460.00	SF	
48 L & T CR	M	145.00	FT	fs 2ndy w
50 PATCHING	L	370.00	SF	
52 RAVELING	L	5,230.00	SF	
57 WEATHERING	M	5,230.00	SF	

Sample Number: 02

Sample Type: R
Sample PCI: 22
Sample Area (SF): 5,600.00

Sample Comments:

41 ALLIGATOR CR	M	64.00	SF	Edge
41 ALLIGATOR CR	M	560.00	SF	
48 L & T CR	M	170.00	FT	Fs w 2ndy
50 PATCHING	L	294.00	SF	
52 RAVELING	L	5,306.00	SF	
57 WEATHERING	M	5,306.00	SF	

Sample Number: 03

Sample Type: R
Sample PCI: 36
Sample Area (SF): 5,600.00

Sample Comments:

41 ALLIGATOR CR	L	55.00	SF	Edge
41 ALLIGATOR CR	M	30.00	SF	Edge
41 ALLIGATOR CR	M	105.00	SF	
48 L & T CR	L	55.00	FT	Lu
48 L & T CR	M	195.00	FT	Fs w 2ndy
50 PATCHING	L	300.00	SF	
52 RAVELING	L	5,300.00	SF	
57 WEATHERING	M	5,300.00	SF	

RE-INSPECTION REPORT
PAULLINA MUNICIPAL AIRPORT

Sample Number: 04

Sample Type: R
Sample PCI: 21
Sample Area (SF): 4,200.00

Sample Comments:

41 ALLIGATOR CR	M	420.00	SF	
41 ALLIGATOR CR	M	88.00	SF	Edge
48 L & T CR	M	35.00	FT	Fs w 2ndy
50 PATCHING	L	298.00	SF	
52 RAVELING	L	3,902.00	SF	
57 WEATHERING	M	3,902.00	SF	

RE-INSPECTION REPORT
PAULLINA MUNICIPAL AIRPORT

Branch - Section ID: T011Y - 001

Branch Name: TAXIWAY 01 Use: TAXIWAY

LCD: 6/2/2009
Surface Type: AAC
Rank: P
Section Area (sf): 4,000.00
Length (ft): 200.00
Width (ft): 20.00
From: RUNWAY END 35 - CENTER
To: HANGARS - CENTER

PCI Family: IowaAACTW_NC&NCW_<>Enhanced

Slabs:
Slab Length (ft):
Slab Width (ft):
Joint Length (ft):

Section Comments:

Last Insp Date: 3/15/2025
PCI: 11
Total Samples: 1
Surveyed: 1

Inspection Comments:

Sample Number: 01

Sample Type: R
Sample PCI: 11
Sample Area (SF): 4,000.00

Sample Comments:

41 ALLIGATOR CR	M	1,700.00	SF	
48 L & T CR	L	65.00	FT	Lu
48 L & T CR	M	40.00	FT	Fs 2ndy
52 RAVELING	L	4,000.00	SF	
57 WEATHERING	M	4,000.00	SF	

RE-INSPECTION REPORT
PAULLINA MUNICIPAL AIRPORT

Branch - Section ID: T011Y - 002

Branch Name: TAXIWAY 01 Use: TAXIWAY

LCD: 6/2/2009
Surface Type: AAC
Rank: P
Section Area (sf): 2,000.00
Length (ft): 200.00
Width (ft): 10.00
From: RUNWAY END 3 - N EDGE
To: HANGARS - N EDGE

PCI Family: IowaAACTW_NC&NCW_<>Enhanced

Slabs:
Slab Length (ft):
Slab Width (ft):
Joint Length (ft):

Section Comments:

Last Insp Date: 3/15/2025
PCI: 21
Total Samples: 1
Surveyed: 1

Inspection Comments:

Sample Number: 01

Sample Type: R
Sample PCI: 21
Sample Area (SF): 2,000.00

Sample Comments:

41 ALLIGATOR CR	M	355.00	SF	
48 L & T CR	M	164.00	FT	Fs 2ndy
52 RAVELING	L	2,000.00	SF	
57 WEATHERING	M	2,000.00	SF	

RE-INSPECTION REPORT
PAULLINA MUNICIPAL AIRPORT

Branch - Section ID: T011Y - 003

Branch Name: TAXIWAY 01 Use: TAXIWAY

LCD: 6/2/2009
Surface Type: AAC
Rank: P
Section Area (sf): 2,000.00
Length (ft): 200.00
Width (ft): 10.00
From: RUNWAY END 35 - S EDGE
To: HANGARS - S EDGE

PCI Family: IowaAACTW_NC&NCW_<>Enhanced

Slabs:
Slab Length (ft):
Slab Width (ft):
Joint Length (ft):

Section Comments:

Last Insp Date: 3/15/2025
PCI: 19
Total Samples: 1
Surveyed: 1

Inspection Comments:

Sample Number: 01

Sample Type: R
Sample PCI: 19
Sample Area (SF): 2,000.00

Sample Comments:

41 ALLIGATOR CR	M	420.00	SF	
48 L & T CR	L	30.00	FT	Lu
48 L & T CR	M	55.00	FT	Fs 2ndy w
52 RAVELING	L	2,000.00	SF	
57 WEATHERING	M	2,000.00	SF	

APPENDIX D

WORK HISTORY REPORT

WORK HISTORY

Pavement Database: IA 2024
Network ID: 1Y9

Generate Date: 6/30/2025

Network: PAULLINA MUNICIPAL AIRPORT

Branch - Section ID: R171Y - 001

LCD: 6/2/2009
Use: RUNWAY
Rank: P
Surface: AAC

Length (ft): 330.00
Width (ft): 28.00
True Area (sf): 11,779.00

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major MR	Comments
05-02-2023	PA-AL	Patching - AC Leveling	$0.00	0.00	False	Skin patch
05-01-2023	CS-AC	Crack Sealing - AC	$0.00	0.00	False	-
06-02-2009	OL-AS	Overlay - AC Structural	$0.00	2.00	True	-
06-01-2009	CS-AC	Crack Sealing - AC	$0.00	0.00	False	CRACK SEAL
06-30-1991	NC-AC	New Construction - AC	$0.00	0.00	True	-

Branch - Section ID: R171Y - 002

LCD: 6/2/2009
Use: RUNWAY
Rank: P
Surface: AAC

Length (ft): 1,668.00
Width (ft): 28.00
True Area (sf): 46,704.00

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major MR	Comments
05-02-2023	PA-AL	Patching - AC Leveling	$0.00	0.00	False	Skin patch
05-01-2023	CS-AC	Crack Sealing - AC	$0.00	0.00	False	-
06-02-2009	OL-AS	Overlay - AC Structural	$0.00	2.00	True	-
06-01-2009	CS-AC	Crack Sealing - AC	$0.00	0.00	False	CRACK SEAL
06-30-1993	NC-AC	New Construction - AC	$0.00	0.00	True	-

Branch - Section ID: R171Y - 003

LCD: 6/2/2009
Use: RUNWAY
Rank: P
Surface: AAC

Length (ft): 800.00
Width (ft): 28.00
True Area (sf): 24,970.00

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major MR	Comments
05-01-2023	CS-AC	Crack Sealing - AC	$0.00	0.00	False	-
06-02-2009	OL-AS	Overlay - AC Structural	$0.00	2.00	True	-
06-01-2009	CS-AC	Crack Sealing - AC	$0.00	0.00	False	CRACK SEAL
06-30-1991	NC-AC	New Construction - AC	$0.00	0.00	True	-

Branch - Section ID: T011Y - 001

LCD: 6/2/2009
Use: TAXIWAY
Rank: P
Surface: AAC

Length (ft): 200.00
Width (ft): 20.00
True Area (sf): 4,000.00

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major MR	Comments
06-02-2009	OL-AS	Overlay - AC Structural	$0.00	2.00	True	-
06-01-2009	CS-AC	Crack Sealing - AC	$0.00	0.00	False	CRACK SEAL
06-30-1991	NC-AC	New Construction - AC	$0.00	0.00	True	-

WORK HISTORY

Branch - Section ID: T011Y - 002

LCD: 6/2/2009
Use: TAXIWAY
Rank: P
Surface: AAC

Length (ft): 200.00
Width (ft): 10.00
True Area (sf): 2,000.00

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major MR	Comments
06-02-2009	OL-AS	Overlay - AC Structural	$0.00	2.00	True	-
06-01-2009	CS-AC	Crack Sealing - AC	$0.00	0.00	False	CRACK SEAL
06-30-1993	NC-AC	New Construction - AC	$0.00	0.00	True	-

Branch - Section ID: T011Y - 003

LCD: 6/2/2009
Use: TAXIWAY
Rank: P
Surface: AAC

Length (ft): 200.00
Width (ft): 10.00
True Area (sf): 2,000.00

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major MR	Comments
06-02-2009	OL-AS	Overlay - AC Structural	$0.00	2.00	True	-
06-01-2009	CS-AC	Crack Sealing - AC	$0.00	0.00	False	CRACK SEAL
06-30-1993	NC-AC	New Construction - AC	$0.00	0.00	True	-

APPENDIX E

LOCALIZED PREVENTIVE MAINTENANCE POLICIES AND UNIT COST TABLES

Table E-1. Localized preventive maintenance policy, asphalt-surfaced pavements.

Distress Type	Severity Level	Maintenance Action
Alligator Cracking	Low	Monitor
Alligator Cracking	Medium	Asphalt Patch
Alligator Cracking	High	Asphalt Patch
Bleeding	N/A	Monitor
Block Cracking	Low	Monitor
Block Cracking	Medium	Crack Seal—Asphalt
Block Cracking	High	Crack Seal—Asphalt
Corrugation	Low	Monitor
Corrugation	Medium	Asphalt Patch
Corrugation	High	Asphalt Patch
Depression	Low	Monitor
Depression	Medium	Monitor
Depression	High	Asphalt Patch
Jet-Blast Erosion	N/A	Asphalt Patch
Joint Reflection Cracking	Low	Monitor
Joint Reflection Cracking	Medium	Crack Seal—Asphalt
Joint Reflection Cracking	High	Crack Seal—Asphalt
L&T Cracking	Low	Monitor
L&T Cracking	Medium	Crack Seal—Asphalt
L&T Cracking	High	Crack Seal—Asphalt
Oil Spillage	N/A	Asphalt Patch
Patching	Low	Monitor
Patching	Medium	Asphalt Patch
Patching	High	Asphalt Patch
Polished Aggregate	N/A	Monitor
Raveling	Low	Monitor
Raveling	Medium	Asphalt Patch
Raveling	High	Asphalt Patch
Rutting	Low	Monitor
Rutting	Medium	Monitor
Rutting	High	Asphalt Patch
Shoving	Low	Monitor
Shoving	Medium	Asphalt Patch
Shoving	High	Asphalt Patch
Slippage Cracking	N/A	Asphalt Patch
Swelling	Low	Monitor
Swelling	Medium	Monitor
Swelling	High	Asphalt Patch
Weathering	Low	Monitor
Weathering	Medium	Monitor
Weathering	High	Asphalt Patch

Table E-2. Localized preventive maintenance policy, PCC pavements.

Distress Type	Severity Level	Maintenance Action
ASR	Low	Monitor
ASR	Medium	Slab Replacement
ASR	High	Slab Replacement
Blowup	Low	Slab Replacement
Blowup	Medium	Slab Replacement
Blowup	High	Slab Replacement
Corner Break	Low	Crack Seal—PCC
Corner Break	Medium	Full Depth PCC Patch
Corner Break	High	Full Depth PCC Patch
Durability Cracking	Low	Monitor
Durability Cracking	Medium	Full Depth Patch
Durability Cracking	High	Slab Replacement
Faulting	Low	Monitor
Faulting	Medium	Grinding
Faulting	High	Slab Replacement
Joint Seal Damage	Low	Monitor
Joint Seal Damage	Medium	Joint Seal
Joint Seal Damage	High	Joint Seal
LTD Cracking	Low	Monitor
LTD Cracking	Medium	Crack Seal—PCC
LTD Cracking	High	Slab Replacement
Patching (Small and Large)	Low	Monitor
Patching (Small and Large)	Medium	Full Depth PCC Patch
Patching (Small and Large)	High	Full Depth PCC Patch
Popouts	N/A	Monitor
Pumping	N/A	Monitor
Scaling	Low	Monitor
Scaling	Medium	Partial Depth PCC Patch
Scaling	High	Slab Replacement
Shattered Slab	Low	Crack Seal—PCC
Shattered Slab	Medium	Slab Replacement
Shattered Slab	High	Slab Replacement
Shrinkage Cracking	N/A	Monitor
Spalling (Joint and Corner)	Low	Monitor
Spalling (Joint and Corner)	Medium	Partial Depth PCC Patch
Spalling (Joint and Corner)	High	Partial Depth PCC Patch

Table E-3. 2025 unit costs for localized preventive maintenance actions.

Maintenance Action	Unit Cost
Asphalt Patch—Asphalt-Surfaced Pavement	$15.90/sf
Crack Sealing—Asphalt-Surfaced Pavement	$2.72/lf
Partial Depth PCC Patch—PCC Pavement	$40.74/sf
Full Depth PCC Patch—PCC Pavement	$18.19/sf
Crack Sealing—PCC Pavement	$3.27/lf
Joint Sealing—PCC Pavement	$3.27/lf
Grinding—PCC Pavement	$0.39/sf
Slab Replacement—PCC Pavement	$18.19/sf

Table Note: The unit cost estimates are based on broad statewide numbers and should be adjusted to reflect local costs.

Table E-4. 2025 unit costs (per square foot) based on pavement type and PCI ranges.

Pavement Type	PCI Range 0–40	PCI Range 40–50	PCI Range 50–60	PCI Range 60–70	PCI Range 70–80	PCI Range 80–90	PCI Range 90–100
Asphalt-surfaced	$11.29	$5.34	$5.34	$5.34	$0.00	$0.00	$0.00
PCC	$18.86	$8.92	$8.92	$8.92	$0.00	$0.00	$0.00

Table Notes:

- The unit cost estimates are based on broad statewide numbers and should be adjusted to reflect local costs.
- Pavement Type: Asphalt-surfaced = AC (asphalt cement concrete), AAC (asphalt overlay on AC), or APC (asphalt overlay on PCC); PCC = portland cement concrete

APPENDIX F

YEAR 2025 LOCALIZED PREVENTIVE MAINTENANCE DETAILS

Table F-1. Year 2025 localized preventive maintenance details.

No maintenance recommendations were identified from the 2025 PCI data. However, it is recommended that the airport continues to monitor pavement conditions should any unanticipated needs arise in the future.

PREPARED FOR

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AUGUST 2025