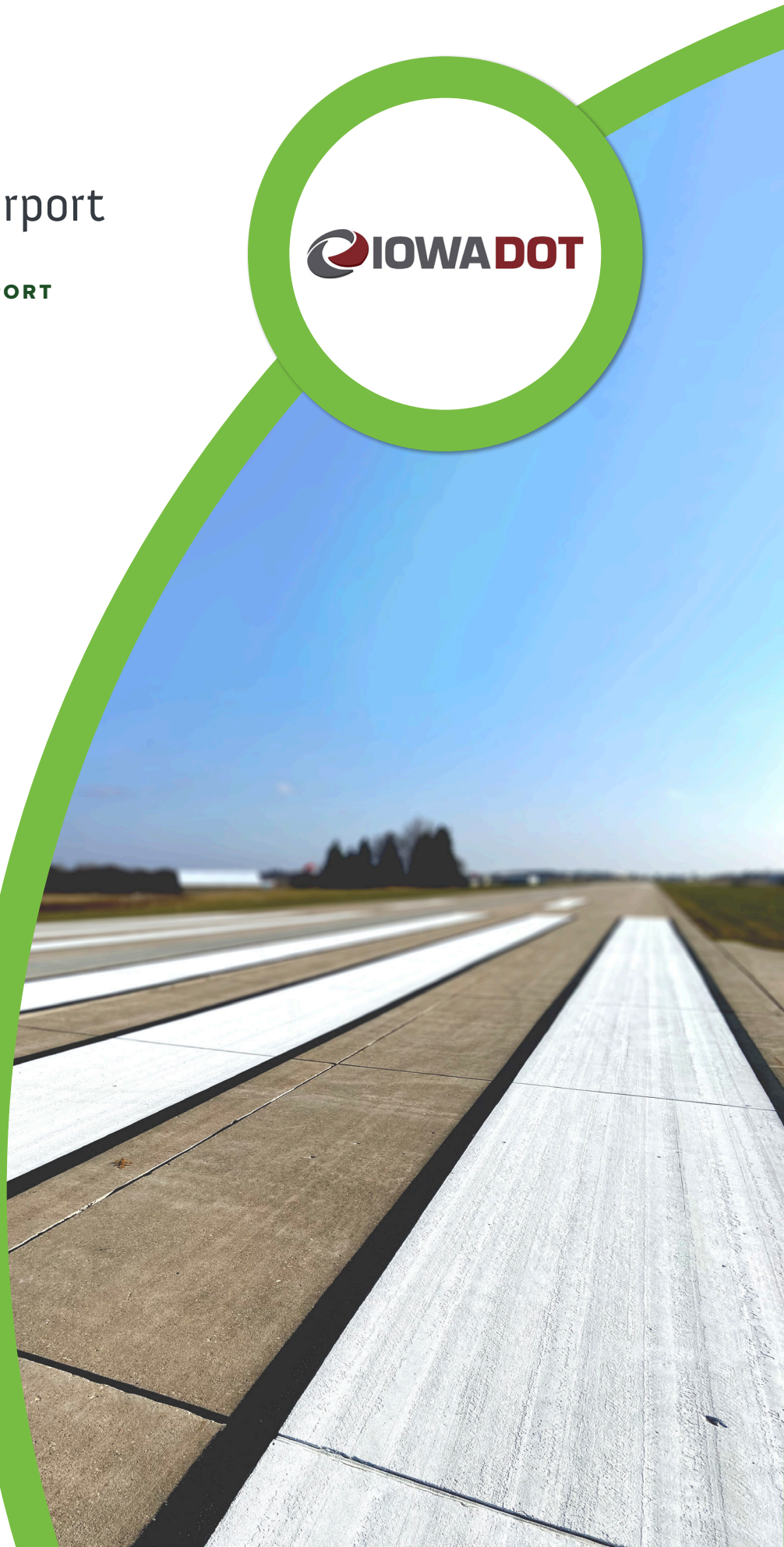
# West Union – George L. Scott Airport

**PAVEMENT MANAGEMENT REPORT**



**PREPARED BY**

Applied Pavement Technology, Inc.
115 West Main Street, Suite 400
Urbana, Illinois 61801
(217) 398-3977
www.appliedpavement.com

**JULY 2021**

applied pavement TECHNOLOGY

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# WEST UNION - GEORGE L. SCOTT AIRPORT
# PAVEMENT MANAGEMENT REPORT

**Prepared For:**

Iowa Department of Transportation
Aviation Bureau
800 Lincoln Way
Ames, Iowa 50010
515-239-1691
https://iowadot.gov/aviation/

**Prepared By:**

Applied Pavement Technology, Inc.
115 West Main Street, Suite 400
Urbana, Illinois 61801
217-398-3977
https://www.appliedpavement.com

**In Association With:**

Robinson Engineering Company
Consulting Engineers
819 Second Street NE
Independence, Iowa 50644
319-334-7211

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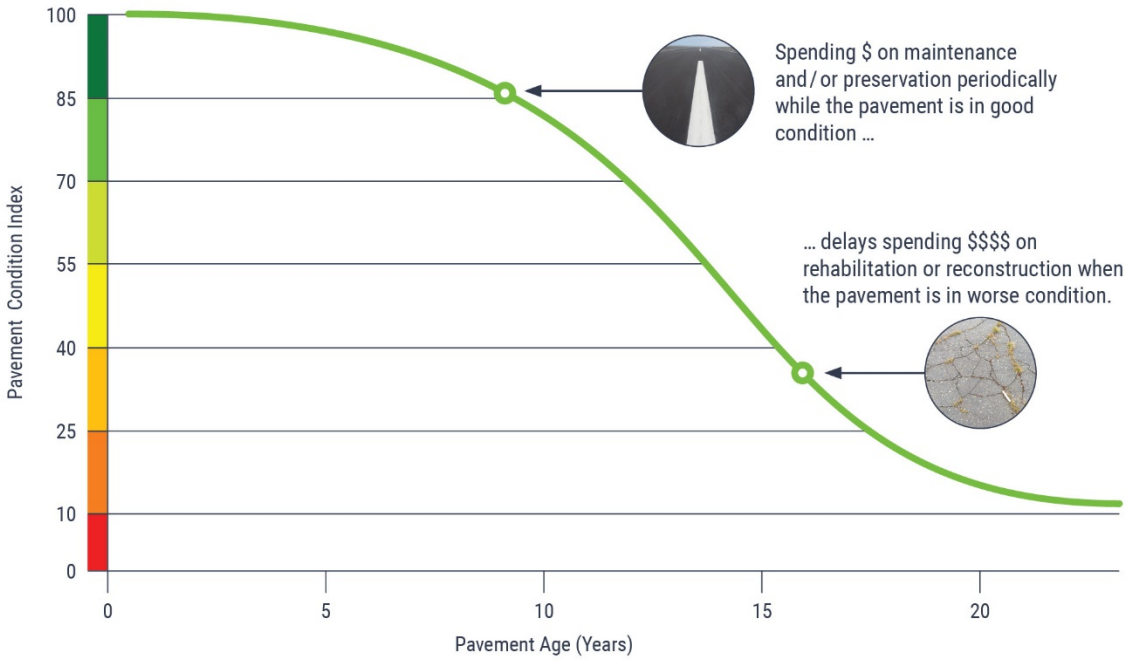
# INTRODUCTION

Applied Pavement Technology, Inc. (APTech), with assistance from Robinson Engineering Company, updated the Airport Pavement Management System (APMS) for the Iowa Department of Transportation, Aviation 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 West Union - George L. Scott Airport were assessed in November 2020 using the Pavement Condition Index (PCI) procedure. During a PCI inspection, the types, severities, and amounts of distress present in a pavement 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 information is 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 West Union - George L. Scott Airport are presented within this report and can be used by West Union - George L. Scott 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 interactive pavement management data visualization tool IDEA, containing the pavement management information collected during this project, was updated and may be accessed from the Iowa DOT's website (https://iowadot.gov/aviation).

# PAVEMENT INVENTORY

The project began with a review of the existing inventory information pertaining to the pavements at West Union - George L. Scott 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 2017.

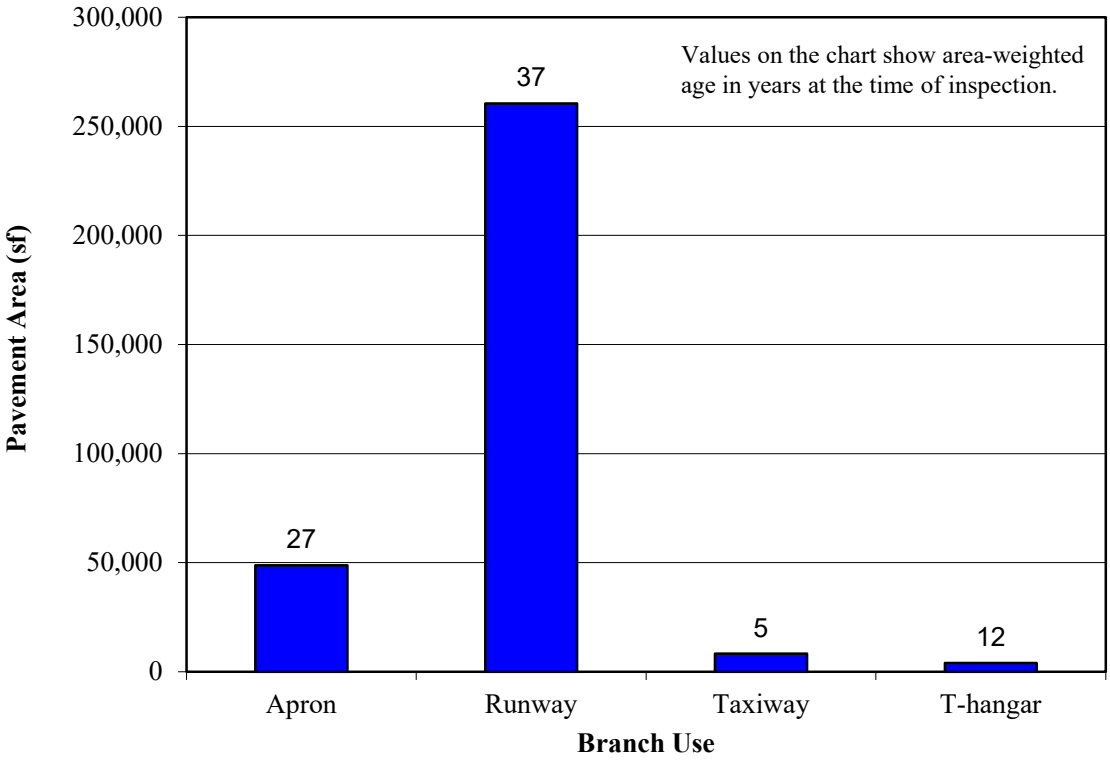
The pavement network at West Union - George L. Scott Airport was then divided into branches, sections, and sample units. A branch is a single entity that serves a distinct function. For example, a runway is considered a branch because it serves a single function (allowing aircraft to take off and land). 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.

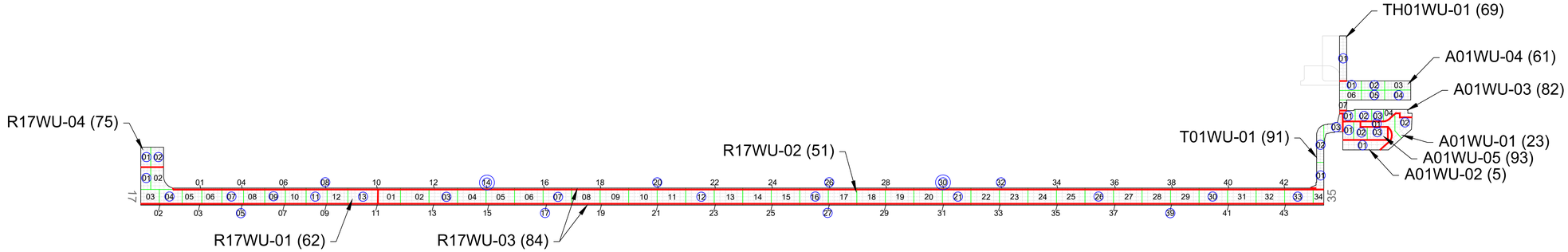
To estimate the overall condition of a pavement section, each section was subdivided into sample units. Portions of these sample units were evaluated during the pavement inspection, and the collected information was extrapolated to predict the overall section condition and quantities of distress.

Approximately 321,600 square feet of pavement were evaluated at West Union - George L. Scott 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 West Union - George L. Scott Airport.

Figure 2. Pavement area by branch use at West Union - George L. Scott Airport.



# FIGURE 3. NETWORK DEFINITION MAP.




NETWORK DEFINITION LEGEND

- R17WU-01 (71): BRANCH IDENTIFIER / SECTION IDENTIFIER / PCI VALUE
- SECTION BREAK LINE
- SAMPLE UNIT BREAK LINE
- SLAB JOINT
- 03: SAMPLE UNIT NUMBER
- (03): SAMPLE UNIT INSPECTED
- (03): ADDITIONAL SAMPLE UNIT


applied pavement TECHNOLOGY
115 W. Main Street, Suite 400
Urbana, IL 61801
Tel: (217) 398-3977
Fax: (217) 398-4027


| | |
|---|---|
| AGENCY: | Iowa Department of Transportation<br>Aviation Bureau |
| LOCATION: | West Union - George L. Scott Airport<br>West Union, Iowa |
| PAGE TITLE: | Network Definition Map |

| PROJECT DATE: | CREATION DATE: | PROJECT MANAGER: | JOB NUMBER: |
|---|---|---|---|
| SEP. 2020 | SEP. 2020 | LJR | 2017-020-AM04 |
| DRAWING SCALE: | LAST MODIFIED DATE: | REVISED BY: | DRAWN BY: |
| 1"=200' | MAR. 2021 | ABF | DSP |
| FILENAME: | | LAYOUT NAME/NUMBER: | PAGE NUMBER: |
| West Union.dwg | | NET. DEF. | 5 |

# PAVEMENT EVALUATION

## Pavement Evaluation Procedure

APTech inspected the pavements at West Union - George L. Scott Airport using the PCI procedure described in:

- FAA Advisory Circular 150/5380-6C, *Guidelines and Procedures for Maintenance of Airport Pavements* (https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5380-6C.pdf).
- FAA Advisory Circular 150/5380-7B, *Airport Pavement Management Program (PMP)* (https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5380-7B.pdf).
- ASTM D5340-20, *Standard Test Method for Airport Pavement Condition Index Surveys*.

The PCI provides a numerical indication of overall pavement condition, as illustrated in Figure 4. The types and amounts of deterioration are used to calculate the PCI of the section. 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. 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.

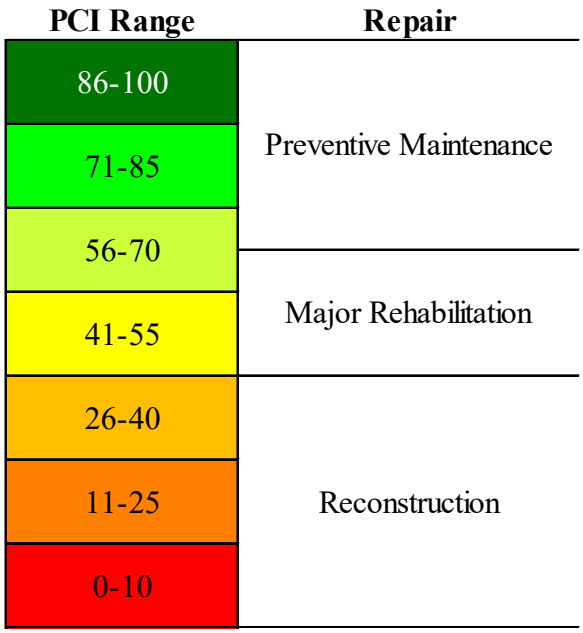
Figure 4. Visual representation of PCI scale on typical pavement surfaces.

PCI = 100 PCI = 60 PCI = 35

Note: Photographs shown are not specific to West Union - George L. Scott 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 in turn 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 (such as alligator cracking on asphalt-surfaced pavements or shattered slabs on portland cement concrete [PCC] pavements), climate/durability-related (such as weathering [a climate-related distress type on asphalt-surfaced pavements] and durability cracking [a durability-related distress type on PCC pavements]), and other (distress types that cannot be attributed solely to load or climate/durability).

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 West Union - George L. Scott Airport were inspected in November 2020. The 2020 area-weighted condition of West Union - George L. Scott Airport is 59, with conditions ranging from 5 to 93 (on a scale of 0 [failed] to 100 [excellent]). During the previous pavement inspection in 2017, the area-weighted PCI of the airport was 67.

Figure 6 summarizes the overall condition of the pavements at West Union - George L. Scott 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 distresses 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 West Union - George L. Scott Airport.

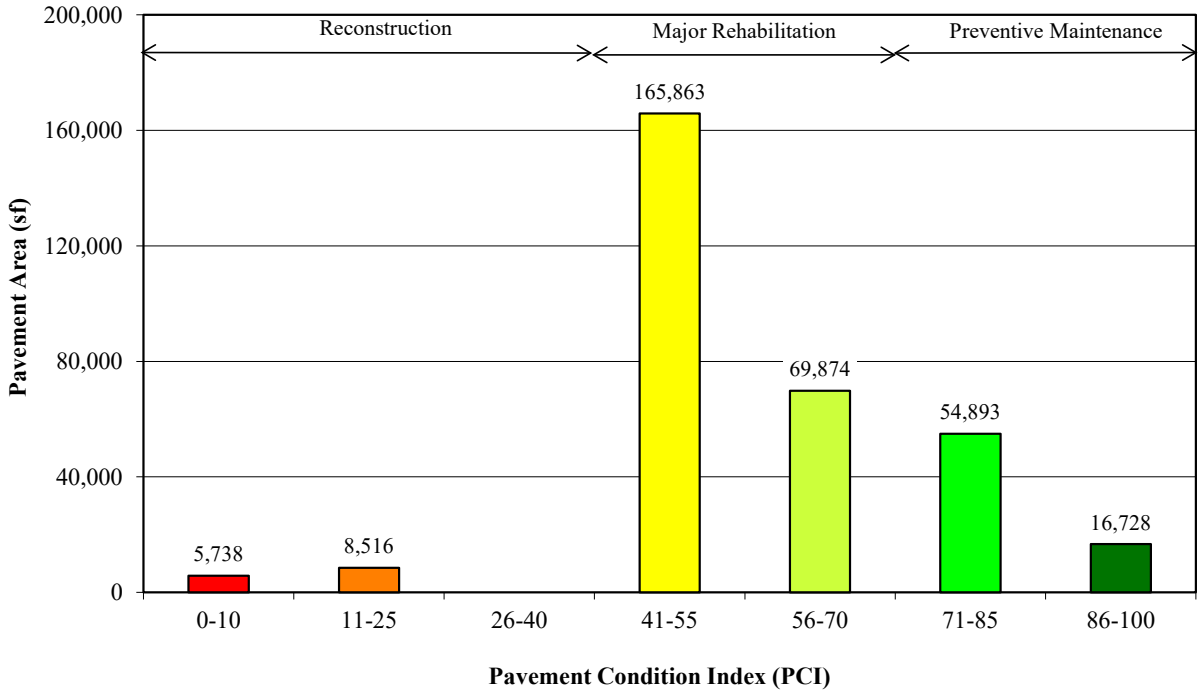



Figure 7. Area-weighted PCI by branch use at West Union - George L. Scott Airport. (Values on chart are area-weighted)

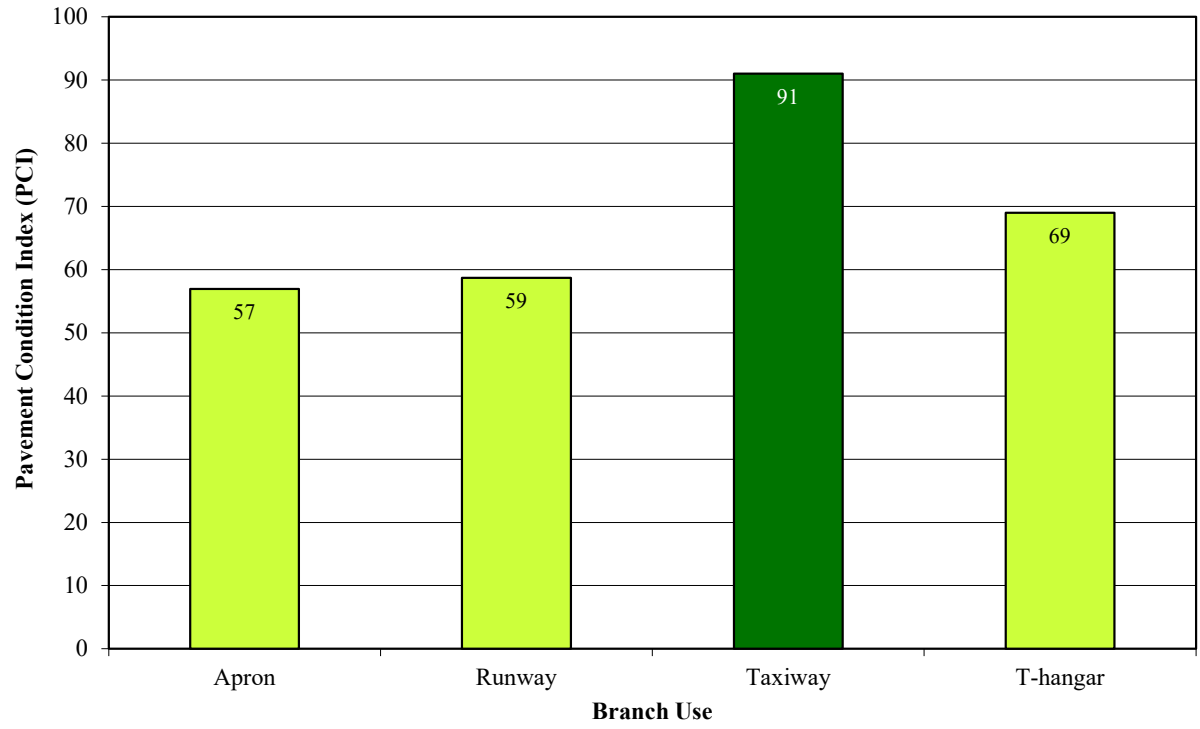
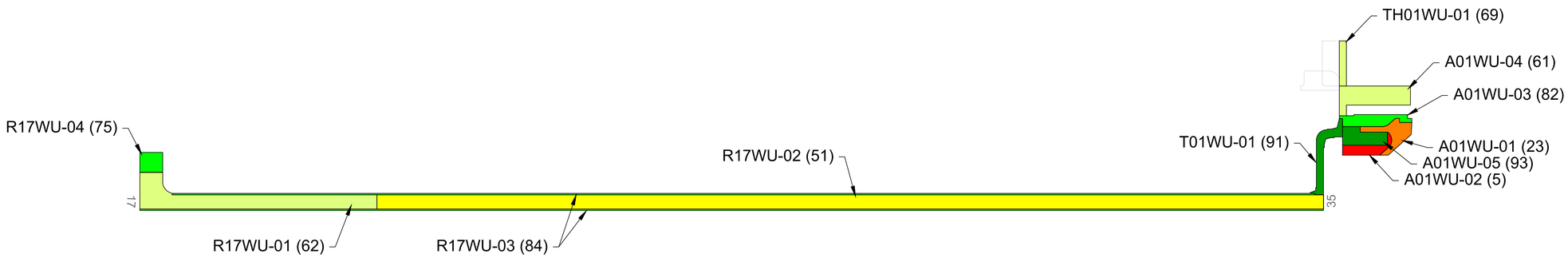


FIGURE 8. PCI MAP.




LEGEND

BRANCH IDENTIFIER
SECTION IDENTIFIER
PCI VALUE
R17WU-01 (71)

SECTION BREAK LINE

PAVEMENT CONDITION INDEX

PCI

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


applied pavement TECHNOLOGY
115 W. Main Street, Suite 400
Urbana, IL 61801
Tel: (217) 398-3977
Fax: (217) 398-4027

Robinson Engineering Company
Consulting Engineers
322 1st Street East
Independence, IA 50644
Tel: (319) 334-7211


AGENCY: Iowa Department of Transportation
Aviation Bureau

LOCATION: West Union - George L. Scott Airport
West Union, Iowa

PAGE TITLE: 2020 Pavement Condition Index Map

| PROJECT DATE: | CREATION DATE: | PROJECT MANAGER: | JOB NUMBER: |
|---|---|---|---|
| SEP. 2020 | SEP. 2020 | LJR | 2017-020-AM04 |
| DRAWING SCALE: | LAST MODIFIED DATE: | REVISED BY: | DRAWN BY: |
| 1"=200' | MAR. 2021 | ABF | DSP |
| FILENAME: | | LAYOUT NAME/NUMBER: | PAGE NUMBER: |
| West Union.dwg | | PCI | 9 |

Table 1. 2020 pavement evaluation results.

| Branch | Section | Surface Type | Section Area (sf) | LCD | 2020 PCI | % Distress Due to Load | % Distress Due to Climate/ Durability | % Distress Due to Other | Type of Distresses |
|---|---|---|---|---|---|---|---|---|---|
| A01WU | 01 | PCC | 8,516 | 6/1/1975 | 23 | 53 | 9 | 38 | Corner Break, Corner Spalling, Faulting, Joint Seal Damage, Joint Spalling, LTD Cracking, Shattered Slab |
| A01WU | 02 | PCC | 5,738 | 6/1/1977 | 5 | 91 | 9 | 0 | Corner Break, Joint Seal Damage, LTD Cracking, Shattered Slab |
| A01WU | 03 | PCC | 8,527 | 7/1/1991 | 82 | 36 | 54 | 10 | Corner Break, Joint Seal Damage, Joint Spalling, LTD Cracking |
| A01WU | 04 | PCC | 17,637 | 1/1/1996 | 61 | 62 | 23 | 15 | Corner Spalling, Joint Seal Damage, Joint Spalling, LTD Cracking, Scaling |
| A01WU | 05 | PCC | 8,395 | 6/3/2017 | 93 | 0 | 100 | 0 | Joint Seal Damage |
| R17WU | 01 | PCC | 48,287 | 6/1/1988 | 62 | 30 | 17 | 53 | ASR, Corner Break, Corner Spalling, Faulting, Joint Seal Damage, Joint Spalling, Large Patch, LTD Cracking, Popouts, Shattered Slab, Small Patch |
| R17WU | 02 | PCC | 165,863 | 6/1/1975 | 51 | 61 | 14 | 25 | ASR, Corner Spalling, Faulting, Joint Seal Damage, Joint Spalling, Large Patch, LTD Cracking, Shattered Slab, Small Patch |
| R17WU | 03 | PCC | 40,766 | 6/3/2007 | 84 | 4 | 8 | 88 | ASR, Joint Seal Damage, Joint Spalling, LTD Cracking |
| R17WU | 04 | PCC | 5,600 | 6/3/2007 | 75 | 18 | 39 | 43 | Faulting, Joint Seal Damage, Joint Spalling, LTD Cracking |
| T01WU | 01 | PCC | 8,333 | 6/3/2015 | 91 | 28 | 72 | 0 | Corner Break, Joint Seal Damage |
| TH01WU | 01 | PCC | 3,950 | 10/1/2008 | 69 | 66 | 31 | 3 | Joint Seal Damage, LTD Cracking, Scaling |

Table 1. 2020 pavement evaluation results (continued).

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 D5340-20. L&T Cracking = Longitudinal and Transverse Cracking; LTD Cracking = Longitudinal, Transverse, and Diagonal Cracking; ASR = Alkali-Silica Reaction.

## Inspection Comments

West Union – George L. Scott Airport was inspected on November 22, 2020. There were eleven pavement sections defined during the inspection. Suspected alkali-silica reaction (ASR) was recorded in accordance with ASTM D5340-20 at this airport where evidence of a precipitate was observed within some of the cracking on the PCC surface. It should be noted that laboratory testing in the form of petrographic analysis is the only definitive way to validate the presence of ASR; however, the formation of a precipitate is evidence of a reaction consistent with this type of materials-related distress.

### *Runway*

Runway 17/35 consisted of four sections. Section 01, which was located at the Runway 17 Approach, had areas of low-severity large patching; low- and medium-severity ASR, faulting, and joint spalling; medium-severity corner break, corner spalling, shattered slab, small patching, and longitudinal, transverse, and diagonal (LTD) cracking; high-severity joint seal damage; and popouts identified during the inspection. Section 02, the majority of the runway, was recorded with low-severity ASR and faulting; low- and medium-severity joint spalling and large patching; medium-severity corner spalling and shattered slab; high-severity joint seal damage and small patching; and all severities of LTD cracking. Low-severity joint seal damage and LTD cracking; low- and medium-severity ASR; and medium-severity joint spalling were recorded in Section 03. Two atypical areas of high-severity ASR were also identified and recorded as additional sample units according to ASTM D5340-20. In Section 04, low-severity faulting; low- and medium-severity joint spalling; medium-severity LTD cracking; and high-severity joint seal damage were identified during the inspection.

### *Taxiway*

Taxiway 01 was defined by one section that connected the Runway 35 Approach to the apron area. Medium-severity corner break and joint seal damage were recorded in Section 01 at the time of the inspection.

### *Apron*

The apron area contained five sections. Section 01 was in poor condition with low- and medium-severity corner break, faulting, and LTD cracking; medium-severity corner spalling and shattered slab; high-severity joint seal damage; and all severities of joint spalling observed throughout. Section 02 was also in poor condition with high-severity joint seal damage and medium-severity corner break, LTD cracking, and shattered slab recorded at the time of inspection. In Section 03, low- and medium-severity joint spalling; medium-severity corner break and LTD cracking; and high-severity joint seal damage were identified. Low-severity scaling; low- and medium-severity LTD cracking; high-severity corner spalling and joint seal damage; and all severities of joint spalling were observed in Section 04. Section 05 had medium-severity joint seal damage recorded throughout.

### *T-Hangar*

The T-Hangar area was defined by one section. Low-severity scaling; low- and medium-severity LTD cracking; and high-severity joint seal damage were identified in Section 01.

# 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 West Union - George L. Scott 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 for 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 adjustment to reflect specific conditions at West Union - George L. Scott 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 more accurately estimate the cost of such work.

### *Budget and Inflation Rate*

An unlimited budget with a start date of July 1, 2021 and an inflation rate of 1.4 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 (2021) 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 2022 or 2023, then localized preventive maintenance was not recommended for 2021. While localized preventive maintenance should be an annual undertaking at West Union - George L. Scott 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

2021 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 West Union - George L. Scott Airport is presented in Table 2. Detailed information on the recommended localized preventive maintenance plan for 2021 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 |
|---|---|---|---|---|---|
| 2021 | A01WU | 01 | PCC | Major Rehabilitation | $142,296 |
| 2021 | A01WU | 02 | PCC | Major Rehabilitation | $95,882 |
| 2021 | A01WU | 03 | PCC | Localized Maintenance | $4,309 |
| 2021 | A01WU | 04 | PCC | Localized Maintenance | $10,791 |
| 2024 | A01WU | 04 | PCC | Major Rehabilitation | $145,263 |
| 2021 | A01WU | 05 | PCC | Localized Maintenance | $3,127 |
| 2021 | R17WU | 01 | PCC | Major Rehabilitation | $381,467 |
| 2021 | R17WU | 02 | PCC | Major Rehabilitation | $1,310,319 |
| 2021 | R17WU | 03 | PCC | Localized Maintenance | $10,549 |
| 2021 | R17WU | 04 | PCC | Localized Maintenance | $3,078 |
| 2021 | T01WU | 01 | PCC | Localized Maintenance | $2,786 |
| 2021 | TH01WU | 01 | PCC | Localized Maintenance | $1,486 |

**Total Estimated Cost: $2,111,000**

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 adjustment to reflect specific conditions at West Union - George L. Scott Airport.

The recommendations made in this report are based on a broad network-level analysis and meant to provide West Union - George L. Scott 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 West Union - George L. Scott 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, West Union - George L. Scott 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. A sample form that can be used to perform these inspections is provided in Table 3 of this report.
2. Provide a method of tracking all maintenance activities that occur as a result of inspections. These need to be reported to the FAA and the Iowa DOT. This information is used to update the APMS records and is required to remain in compliance with Public Law 103-305 (see the next section of this report for further information on this law).
3. 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.
4. 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 of extending the life of the pavement system.
5. Ensure that dirt does not build up along the edges of the pavements. This can create a "bathtub" effect, reducing the ability of water to drain away from the pavement system.
6. Closely monitor the movement of heavy equipment (particularly farming, construction, 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.

## FAA Requirements (Public Law 103-305)

Because West Union - George L. Scott Airport is in the National Plan of Integrated Airport Systems (NPIAS), the airport sponsor is required to keep the airport in a viable operating condition. This includes maintaining airport pavements in accordance with Public Law 103-305. Public Law 103-305 states that after January 1, 1995, NPIAS airport sponsors must provide assurances or certifications that an airport has implemented an effective airport pavement maintenance management system (PMMS) before the airport will be considered for federal funding of pavement replacement or reconstruction projects. To be in full compliance with the federal law, the PMMS must include the following components at minimum: pavement inventory, pavement inspections, record keeping, information retrieval, and program funding.

This report serves as a complete pavement inventory and detailed inspection. To remain in compliance with the law, West Union - George L. Scott Airport will also need to undertake monthly drive-by inspections of pavement conditions and track pavement-related maintenance activities.

FAA Advisory Circular 150/5380-7B provides detailed guidance pertaining to the requirements for an acceptable pavement management program (PMP). Appendix A of the FAA Advisory Circular 150/5380-7B outlines what needs to be included in a PMP to remain in compliance with this law and Grant Assurance #11. Following is a copy of this Appendix, along with instructions

for supplementing this report so that all requirements are met. Note that the italicized words are direct quotations from the FAA Advisory Circular.

### *FAA Advisory Circular 150/5830-7B, Appendix A. Pavement Management Program (PMP)*

***A-1.0.*** *An effective PMP specifies the procedures to follow to assure that proper preventative and remedial pavement maintenance is performed. The program should identify funding or anticipated funding and other resources available to provide remedial and preventive maintenance activities. An airport sponsor may use any format deemed appropriate, but the program needs to, as a minimum, include the following:*

***A-1.1. Pavement Inventory.*** *The following must be depicted:*

*a. Identification of all runways, taxiways, and aprons with pavement broken down into sections each having similar properties.*

The network definition map provided in Figure 3 of this report shows the location of all runways, taxiways, aprons, and T-hangars at *West Union - George L. Scott Airport*. If any new pavements are constructed or any pavement areas are permanently closed, this map must be updated. Project plans should be submitted to the Iowa DOT after project completion.

*b. Dimensions of pavement sections.*

The dimensions of all runways, taxiways, aprons, and T-hangars are stored in the PAVER database. Appendix C provides information on length, width, and area. In addition, the network definition map (Figure 3) is drawn to scale. Any changes to pavement dimensions must be recorded.

*c. Type of pavement surface.*

The type of pavement for each section at *West Union - George L. Scott Airport* is listed in Table 1 of this report and is also stored in the PAVER database. Any changes to pavement type (through an overlay or reconstruction) must be recorded.

*d. Year of construction and/or most recent major rehabilitation.*

Dates for pavement construction, rehabilitation, or reconstruction must be recorded. The current pavement history for *West Union - George L. Scott Airport* is provided in Appendix D of this report.

*e. Whether AIP [Airport Improvement Program] or PFC [Passenger Facility Charge] funds were used to construct, reconstruct, or repair the pavement.*

Funding sources for all pavement projects should be recorded.

***A-1.2. PMP Pavement Inspection Schedule.*** *Airports must perform a detailed inspection of airfield pavements at least once a year for the PMP. If a pavement condition index (PCI) survey is performed, as set forth in ASTM D5340, Standard Test Method for Airport Pavement Condition Index Surveys, the frequency of the detailed inspection by PCI surveys may be*

*extended to three years. Less comprehensive routine daily, weekly, and monthly maintenance inspections required for operations should be addressed.*

This report consists of a detailed inspection that will extend the inspection period to 3 years. It is the airport sponsor's responsibility to perform monthly drive-by inspections. A sample pavement inspection report form is provided in Table 3 of this report.

***A-1.3. Record Keeping.*** *The airport must record and keep on file complete information about all detailed inspections and maintenance performed until the pavement system is replaced. The types of distress, their locations, and remedial action, scheduled or performed, must be documented. The minimum information recorded includes:*

a. *Inspection date*

*b. Location*

*c. Distress types*

*d. Maintenance scheduled or performed*

Items a through c are satisfied by this inspection report. Item d is the responsibility of the airport, as is record keeping of the monthly drive-by inspections.

***A-1.4. Information Retrieval.*** *An airport sponsor may use any form of record keeping it deems appropriate so long as the information and records from the pavement survey can generate required reports, as necessary.*

Keep this report, monthly drive-by inspection reports, construction updates, and all records of maintenance activities in a readily accessible location so that they can be easily retrieved as requested by the FAA.

Table 3. Pavement inspection report.

Inspected By: _____

Date Inspected: _____

| Branch | Section | Distress Description/Dimensions/Severity/ Recommended Action | Description of Repair | Date Performed | Cost | Funding Source |
|---|---|---|---|---|---|---|
| A01WU | 01 | | | | | |
| A01WU | 02 | | | | | |
| A01WU | 03 | | | | | |
| A01WU | 04 | | | | | |
| A01WU | 05 | | | | | |
| R17WU | 01 | | | | | |

Table 3. Pavement inspection report (continued).

Inspected By: _____

Date Inspected: _____

| Branch | Section | Distress Description/Dimensions/Severity/ Recommended Action | Description of Repair | Date Performed | Cost | Funding Source |
|---|---|---|---|---|---|---|
| R17WU | 02 | | | | | |
| R17WU | 03 | | | | | |
| R17WU | 04 | | | | | |
| T01WU | 01 | | | | | |
| TH01WU | 01 | | | | | |

Table Notes:

1. See Figure 3 for the location of the branch and section.

# SUMMARY

This report documents the results of the pavement evaluation conducted at West Union - George L. Scott Airport. A visual inspection of the pavements in 2020 found that the overall condition of the pavement network is a PCI of 59. A 5-year pavement repair program, shown in Table 2, was generated for West Union - George L. Scott Airport, which revealed that approximately $2,111,000 needs to be expended on M&R. West Union - George L. Scott Airport should utilize these study results to assist in planning for future maintenance needs as part of the airport CIP planning process.

# APPENDIX A

# CAUSE OF DISTRESS TABLES

Table A-1. Cause of pavement distress, asphalt-surfaced pavements.

| 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.

| Distress Type | Probable Cause of Distress |
|---|---|
| ASR | Chemical reaction of alkalis in the portland 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

A01WU-01. Overview.

A01WU-01. Faulting (Sample Unit No. 02).

A01WU-01. Joint Spalling (Sample Unit No. 01).

A01WU-01. Joint Spalling (Sample Unit No. 02) (1).

A01WU-01. Joint Spalling (Sample Unit No. 02) (2).

A01WU-01. Shattered Slab (Sample Unit No. 02).

A01WU-02. Overview.

A01WU-02. Shattered Slab (Sample Unit No. 01).

A01WU-03. Overview.

A01WU-03. Corner Break (Sample Unit No. 01).

A01WU-04. Overview.

A01WU-04. Corner Spalling (Sample Unit No. 05).

A01WU-04. LTD Cracking (Sample Unit No. 01).

A01WU-05. Overview.

A01WU-05. Joint Seal Damage (Sample Unit No. 01).

R17WU-01. Overview.

R17WU-01. ASR (Sample Unit No. 09).

R17WU-01. Joint Spalling (Sample Unit No. 04).

R17WU-01. LTD Cracking (Sample Unit No. 09).

R17WU-01. Large Patching (Sample Unit No. 04).

R17WU-01. Shattered Slab (Sample Unit No. 13).

R17WU-02. Overview.

R17WU-02. LTD Cracking (Sample Unit No. 03).

R17WU-02. LTD Cracking (Sample Unit No. 16).

R17WU-02. Shattered Slab (Sample Unit No. 03).

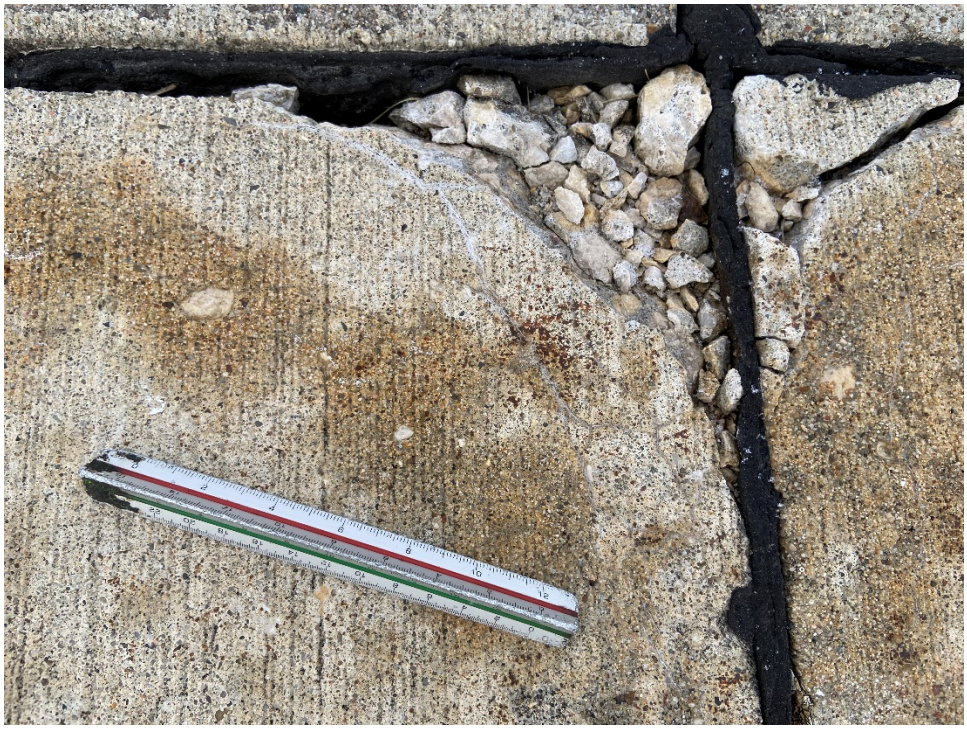
R17WU-02. Small Patching (Sample Unit No. 12).

R17WU-03. Overview.

R17WU-03. ASR (Additional Sample Unit No. 14).

R17WU-03. ASR (Additional Sample Unit No. 30).

R17WU-03. ASR (Sample Unit No. 17).



R17WU-03. Joint Seal Damage (Sample Unit No. 39).

R17WU-04. Overview.

R17WU-04. Joint Seal Damage (Sample Unit No. 01).

R17WU-04. Joint Spalling (Sample Unit No. 02).

T01WU-01. Overview.

T01WU-01. Corner Break (Sample Unit No. 01).

T01WU-01. Joint Seal Damage (Sample Unit No. 01).

TH01WU-01. Overview.

TH01WU-01. LTD Cracking (Sample Unit No. 01).

# APPENDIX C

# INSPECTION REPORT

# Re-inspection Report

IA 2020
Report Generated Date: April 08, 2021

Network: 3Y2 Name: WEST UNION - GEORGE L. SCOTT AIRPORT

Branch: A01WU Name: APRON Use: APRON Area: 38,252.22SqFt

Section: 01 of 5 From: SEE MAP To: SEE MAP Last Const.: 06/01/1975
Surface: PCC Family: IowaPCCAPNE_BasicLocal Zone: Category: Rank: P
Area: 8,515.60SqFt Length: 171.00Ft Width: 57.00Ft
Slabs: 41 Slab Width: 15.00Ft Slab Length: 20.00Ft Joint Length: 909.15Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 11/22/2020 Total Samples: 2 Surveyed: 2
Conditions: PCI : 23
Inspection Comments:

Sample Number: 01 Type: R Area: 26.00Slabs PCI = 30
Sample Comments:

| | | | |
|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 26.00 Slabs | Comments: |
| 63 LINEAR CRACKING | M | 8.00 Slabs | Comments: |
| 74 JOINT SPALLING | M | 4.00 Slabs | Comments: |
| 74 JOINT SPALLING | L | 1.00 Slabs | Comments: |
| 71 FAULTING | M | 1.00 Slabs | Comments: |
| 74 JOINT SPALLING | H | 3.00 Slabs | Comments: |
| 75 CORNER SPALLING | M | 1.00 Slabs | Comments: |
| 71 FAULTING | L | 1.00 Slabs | Comments: |
| 63 LINEAR CRACKING | L | 1.00 Slabs | Comments: |
| 62 CORNER BREAK | M | 1.00 Slabs | Comments: |

Sample Number: 02 Type: R Area: 15.00Slabs PCI = 11
Sample Comments:

| | | | |
|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 15.00 Slabs | Comments: |
| 74 JOINT SPALLING | H | 2.00 Slabs | Comments: |
| 63 LINEAR CRACKING | M | 5.00 Slabs | Comments: |
| 63 LINEAR CRACKING | L | 1.00 Slabs | Comments: |
| 74 JOINT SPALLING | L | 1.00 Slabs | Comments: |
| 71 FAULTING | M | 1.00 Slabs | Comments: |
| 62 CORNER BREAK | L | 1.00 Slabs | Comments: |
| 74 JOINT SPALLING | M | 2.00 Slabs | Comments: |
| 75 CORNER SPALLING | M | 1.00 Slabs | Comments: |
| 72 SHATTERED SLAB | M | 3.00 Slabs | Comments: |

# Re-inspection Report

IA 2020
Report Generated Date: April 08, 2021

Network: 3Y2 Name: WEST UNION - GEORGE L. SCOTT AIRPORT

Branch: A01WU Name: APRON Use: APRON Area: 38,252.22SqFt

Section: 02 of 5 From: SEE MAP To: SEE MAP Last Const.: 06/01/1977
Surface: PCC Family: IowaPCCAPNE_BasicLocal Zone: Category: Rank: P
Area: 5,738.00SqFt Length: 131.00Ft Width: 101.00Ft
Slabs: 18 Slab Width: 16.00Ft Slab Length: 20.00Ft Joint Length: 1,256.49Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments: avg slab width

Last Insp. Date: 11/22/2020 Total Samples: 1 Surveyed: 1
Conditions: PCI : 5
Inspection Comments:

Sample Number: 01 Type: R Area: 18.00Slabs PCI = 5
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 | JOINT SEAL DAMAGE | H | 18.00 Slabs | Comments: |
| 72 | SHATTERED SLAB | M | 12.00 Slabs | Comments: |
| 63 | LINEAR CRACKING | M | 5.00 Slabs | Comments: |
| 62 | CORNER BREAK | M | 4.00 Slabs | Comments: |

# Re-inspection Report

IA 2020
Report Generated Date: April 08, 2021

Network: 3Y2 Name: WEST UNION - GEORGE L. SCOTT AIRPORT

Branch: A01WU Name: APRON Use: APRON Area: 38,252.22SqFt

Section: 03 of 5 From: SEE MAP To: SEE MAP Last Const.: 07/01/1991
Surface: PCC Family: IowaPCCAPNE_BasicLocal Zone: Category: Rank: P
Area: 8,527.00SqFt Length: 200.00Ft Width: 37.00Ft
Slabs: 72 Slab Width: 10.00Ft Slab Length: 11.90Ft Joint Length: 1,124.85Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 11/22/2020 Total Samples: 4 Surveyed: 3
Conditions: PCI : 82
Inspection Comments:

Sample Number: 01 Type: R Area: 18.00Slabs PCI = 75
Sample Comments:

| | | | |
|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 18.00 Slabs | Comments: |
| 63 LINEAR CRACKING | M | 1.00 Slabs | Comments: |
| 62 CORNER BREAK | M | 1.00 Slabs | Comments: |

Sample Number: 02 Type: R Area: 20.00Slabs PCI = 84
Sample Comments:

| | | | |
|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 20.00 Slabs | Comments: |
| 74 JOINT SPALLING | M | 1.00 Slabs | Comments: |

Sample Number: 03 Type: R Area: 16.00Slabs PCI = 86
Sample Comments:

| | | | |
|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 16.00 Slabs | Comments: |
| 74 JOINT SPALLING | L | 1.00 Slabs | Comments: |

# Re-inspection Report

IA 2020
Report Generated Date: April 08, 2021

Network: 3Y2 Name: WEST UNION - GEORGE L. SCOTT AIRPORT

Branch: A01WU Name: APRON Use: APRON Area: 38,252.22SqFt

Section: 04 of 5 From: A01WU-03 To: SEE MAP Last Const.: 01/01/1996
Surface: PCC Family: IowaPCCAPNE_BasicLocal Zone: Category: Rank: P
Area: 17,636.62SqFt Length: 250.00Ft Width: 70.00Ft
Slabs: 139 Slab Width: 11.60Ft Slab Length: 11.30Ft Joint Length: 2,737.29Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 11/22/2020 Total Samples: 7 Surveyed: 4
Conditions: PCI : 61
Inspection Comments:

Sample Number: 01 Type: R Area: 21.00Slabs PCI = 48
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 21.00 Slabs | Comments: | |
| 63 LINEAR CRACKING | M | 10.00 Slabs | Comments: | |
| 74 JOINT SPALLING | M | 1.00 Slabs | Comments: | |

Sample Number: 02 Type: R Area: 21.00Slabs PCI = 49
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 21.00 Slabs | Comments: | |
| 63 LINEAR CRACKING | M | 9.00 Slabs | Comments: | |
| 63 LINEAR CRACKING | L | 1.00 Slabs | Comments: | |

Sample Number: 04 Type: R Area: 24.00Slabs PCI = 77
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 70 SCALING/CRAZING | L | 1.00 Slabs | Comments: | |
| 65 JOINT SEAL DAMAGE | H | 24.00 Slabs | Comments: | |
| 63 LINEAR CRACKING | M | 1.00 Slabs | Comments: | |
| 74 JOINT SPALLING | L | 1.00 Slabs | Comments: | |
| 74 JOINT SPALLING | M | 1.00 Slabs | Comments: | |

Sample Number: 05 Type: R Area: 21.00Slabs PCI = 68
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 21.00 Slabs | Comments: | |
| 74 JOINT SPALLING | M | 1.00 Slabs | Comments: | |
| 74 JOINT SPALLING | H | 1.00 Slabs | Comments: | |
| 75 CORNER SPALLING | H | 1.00 Slabs | Comments: | |
| 63 LINEAR CRACKING | M | 1.00 Slabs | Comments: | |

# Re-inspection Report

IA 2020
Report Generated Date: April 08, 2021

Network: 3Y2 Name: WEST UNION - GEORGE L. SCOTT AIRPORT

Branch: A01WU Name: APRON Use: APRON Area: 38,252.22SqFt

Section: 05 of 5 From: SEE MAP To: SEE MAP Last Const.: 06/03/2017
Surface: PCC Family: IowaPCCAPNE_BasicLocal Zone: Category: Rank: P
Area: 8,395.00SqFt Length: 158.00Ft Width: 45.00Ft
Slabs: 68 Slab Width: 11.20Ft Slab Length: 11.00Ft Joint Length: 1,078.19Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 11/22/2020 Total Samples: 3 Surveyed: 3
Conditions: PCI : 93
Inspection Comments:

Sample Number: 01 Type: R Area: 24.00Slabs PCI = 93
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | M | 24.00 Slabs | Comments: | |

Sample Number: 02 Type: R Area: 20.00Slabs PCI = 93
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | M | 20.00 Slabs | Comments: | |

Sample Number: 03 Type: R Area: 24.00Slabs PCI = 93
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | M | 24.00 Slabs | Comments: | |

# Re-inspection Report

IA 2020
Report Generated Date: April 08, 2021

Network: 3Y2 Name: WEST UNION - GEORGE L. SCOTT AIRPORT

Branch: R17WU Name: RUNWAY 17/35 Use: RUNWAY Area: 260,516.07SqFt

Section: 01 of 4 From: RUNWAY END 17 To: RUNWAY SECT 02 Last Const.: 06/01/1988
Surface: PCC Family: IowaPCCRWNE Zone: Category: Rank: P
Area: 48,286.91SqFt Length: 830.00Ft Width: 50.00Ft
Slabs: 264 Slab Width: 12.50Ft Slab Length: 14.79Ft Joint Length: 5,245.95Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 11/22/2020 Total Samples: 13 Surveyed: 6
Conditions: PCI : 62
Inspection Comments:

Sample Number: 01 Type: R Area: 18.00Slabs PCI = 78
Sample Comments:

| | | | |
|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 18.00 Slabs | Comments: |
| 76 ASR | M | 1.00 Slabs | Comments: |

Sample Number: 04 Type: R Area: 20.00Slabs PCI = 72
Sample Comments:

| | | | |
|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 20.00 Slabs | Comments: |
| 74 JOINT SPALLING | M | 1.00 Slabs | Comments: |
| 67 LARGE PATCH/UTILITY | L | 1.00 Slabs | Comments: |
| 66 SMALL PATCH | M | 1.00 Slabs | Comments: |
| 68 POPOUTS | N | 4.00 Slabs | Comments: |

Sample Number: 07 Type: R Area: 20.00Slabs PCI = 79
Sample Comments:

| | | | |
|---|---|---|---|
| 76 ASR | L | 2.00 Slabs | Comments: |
| 74 JOINT SPALLING | M | 1.00 Slabs | Comments: |
| 65 JOINT SEAL DAMAGE | H | 20.00 Slabs | Comments: |

Sample Number: 09 Type: R Area: 20.00Slabs PCI = 66
Sample Comments:

| | | | |
|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 20.00 Slabs | Comments: |
| 76 ASR | L | 8.00 Slabs | Comments: |
| 63 LINEAR CRACKING | M | 2.00 Slabs | Comments: |

Sample Number: 11 Type: R Area: 20.00Slabs PCI = 70
Sample Comments:

| | | | |
|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 20.00 Slabs | Comments: |
| 76 ASR | L | 9.00 Slabs | Comments: |
| 75 CORNER SPALLING | M | 1.00 Slabs | Comments: |
| 74 JOINT SPALLING | M | 1.00 Slabs | Comments: |

Sample Number: 13 Type: R Area: 24.00Slabs PCI = 20
Sample Comments:

| | | | |
|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 24.00 Slabs | Comments: |
| 72 SHATTERED SLAB | M | 2.00 Slabs | Comments: |
| 63 LINEAR CRACKING | M | 4.00 Slabs | Comments: |
| 76 ASR | M | 5.00 Slabs | Comments: |
| 71 FAULTING | M | 1.00 Slabs | Comments: |
| 76 ASR | L | 3.00 Slabs | Comments: |
| 74 JOINT SPALLING | L | 1.00 Slabs | Comments: |
| 74 JOINT SPALLING | M | 3.00 Slabs | Comments: |

# Re-inspection Report

IA 2020
Report Generated Date: April 08, 2021

| | | | | |
|---|---|---|---|---|
| 71 FAULTING | L | 2.00 | Slabs | Comments: |
| 62 CORNER BREAK | M | 1.00 | Slabs | Comments: |

# Re-inspection Report

IA 2020
Report Generated Date: April 08, 2021

Network: 3Y2 Name: WEST UNION - GEORGE L. SCOTT AIRPORT

Branch: R17WU Name: RUNWAY 17/35 Use: RUNWAY Area: 260,516.07SqFt

Section: 02 of 4 From: RUNWAY SECT 01 To: RUNWAY END 35 Last Const.: 06/01/1975
Surface: PCC Family: IowaPCCRWNE Zone: Category: Rank: P
Area: 165,863.16SqFt Length: 3,420.00Ft Width: 50.00Ft
Slabs: 712 Slab Width: 12.50Ft Slab Length: 20.00Ft Joint Length: 18,760.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 11/22/2020 Total Samples: 34 Surveyed: 8
Conditions: PCI : 51
Inspection Comments:

Sample Number: 03 Type: R Area: 20.00Slabs PCI = 14
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 20.00 | Slabs | Comments: |
| 72 SHATTERED SLAB | M | 5.00 | Slabs | Comments: |
| 63 LINEAR CRACKING | M | 8.00 | Slabs | Comments: |
| 74 JOINT SPALLING | M | 2.00 | Slabs | Comments: |
| 63 LINEAR CRACKING | L | 1.00 | Slabs | Comments: |
| 71 FAULTING | L | 1.00 | Slabs | Comments: |

Sample Number: 07 Type: R Area: 20.00Slabs PCI = 88
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 20.00 | Slabs | Comments: |

Sample Number: 12 Type: R Area: 20.00Slabs PCI = 49
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 20.00 | Slabs | Comments: |
| 75 CORNER SPALLING | M | 1.00 | Slabs | Comments: |
| 63 LINEAR CRACKING | M | 5.00 | Slabs | Comments: |
| 76 ASR | L | 3.00 | Slabs | Comments: |
| 66 SMALL PATCH | H | 1.00 | Slabs | Comments: |

Sample Number: 16 Type: R Area: 20.00Slabs PCI = 61
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 20.00 | Slabs | Comments: |
| 74 JOINT SPALLING | M | 2.00 | Slabs | Comments: |
| 63 LINEAR CRACKING | H | 1.00 | Slabs | Comments: |
| 74 JOINT SPALLING | L | 1.00 | Slabs | Comments: |
| 75 CORNER SPALLING | M | 1.00 | Slabs | Comments: |
| 74 JOINT SPALLING | M | 2.00 | Slabs | Comments: |
| 76 ASR | L | 3.00 | Slabs | Comments: |

Sample Number: 21 Type: R Area: 20.00Slabs PCI = 46
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 20.00 | Slabs | Comments: |
| 63 LINEAR CRACKING | M | 4.00 | Slabs | Comments: |
| 67 LARGE PATCH/UTILITY | M | 1.00 | Slabs | Comments: |
| 67 LARGE PATCH/UTILITY | L | 3.00 | Slabs | Comments: |
| 63 LINEAR CRACKING | H | 1.00 | Slabs | Comments: |
| 71 FAULTING | L | 1.00 | Slabs | Comments: |

Sample Number: 26 Type: R Area: 20.00Slabs PCI = 29
Sample Comments:

# Re-inspection Report

IA 2020
Report Generated Date: April 08, 2021

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 20.00 | Slabs | Comments: |
| 67 LARGE PATCH/UTILITY | L | 3.00 | Slabs | Comments: |
| 74 JOINT SPALLING | M | 3.00 | Slabs | Comments: |
| 63 LINEAR CRACKING | L | 1.00 | Slabs | Comments: |
| 63 LINEAR CRACKING | M | 8.00 | Slabs | Comments: |
| 66 SMALL PATCH | H | 1.00 | Slabs | Comments: |
| 72 SHATTERED SLAB | M | 1.00 | Slabs | Comments: |
| 63 LINEAR CRACKING | H | 1.00 | Slabs | Comments: |

Sample Number: 30 Type: R Area: 20.00Slabs PCI = 82
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 20.00 | Slabs | Comments: |
| 74 JOINT SPALLING | L | 1.00 | Slabs | Comments: |
| 75 CORNER SPALLING | M | 1.00 | Slabs | Comments: |

Sample Number: 33 Type: R Area: 20.00Slabs PCI = 42
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 20.00 | Slabs | Comments: |
| 63 LINEAR CRACKING | L | 2.00 | Slabs | Comments: |
| 63 LINEAR CRACKING | M | 4.00 | Slabs | Comments: |
| 71 FAULTING | L | 3.00 | Slabs | Comments: |
| 74 JOINT SPALLING | M | 4.00 | Slabs | Comments: |
| 63 LINEAR CRACKING | H | 1.00 | Slabs | Comments: |

# Re-inspection Report

IA 2020
Report Generated Date: April 08, 2021

Network: 3Y2 Name: WEST UNION - GEORGE L. SCOTT AIRPORT

Branch: R17WU Name: RUNWAY 17/35 Use: RUNWAY Area: 260,516.07SqFt

Section: 03 of 4 From: SEE MAP To: SEE MAP Last Const.: 06/03/2007
Surface: PCC Family: IowaPCCRWNE Zone: Category: Rank: P
Area: 40,766.00SqFt Length: 4,248.00Ft Width: 10.00Ft
Slabs: 815 Slab Width: 5.00Ft Slab Length: 10.00Ft Joint Length: 8,486.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 11/22/2020 Total Samples: 43 Surveyed: 10
Conditions: PCI : 84
Inspection Comments:

Sample Number: 05 Type: R Area: 20.00Slabs PCI = 80
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | L | 20.00 Slabs | Comments: | |
| 76 ASR | L | 10.00 Slabs | Comments: | |

Sample Number: 08 Type: R Area: 20.00Slabs PCI = 83
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | L | 20.00 Slabs | Comments: | |
| 76 ASR | L | 3.00 Slabs | Comments: | |
| 63 LINEAR CRACKING | L | 1.00 Slabs | Comments: | |

Sample Number: 14 Type: A Area: 20.00Slabs PCI = 75
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | L | 20.00 Slabs | Comments: | |
| 76 ASR | H | 1.00 Slabs | Comments: | |

Sample Number: 17 Type: R Area: 20.00Slabs PCI = 65
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 76 ASR | L | 10.00 Slabs | Comments: | |
| 65 JOINT SEAL DAMAGE | L | 20.00 Slabs | Comments: | |
| 76 ASR | M | 2.00 Slabs | Comments: | |

Sample Number: 20 Type: R Area: 20.00Slabs PCI = 80
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | L | 20.00 Slabs | Comments: | |
| 76 ASR | L | 10.00 Slabs | Comments: | |

Sample Number: 26 Type: R Area: 20.00Slabs PCI = 84
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | L | 20.00 Slabs | Comments: | |
| 76 ASR | L | 6.00 Slabs | Comments: | |

Sample Number: 27 Type: R Area: 20.00Slabs PCI = 98
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | L | 20.00 Slabs | Comments: | |

Sample Number: 30 Type: A Area: 20.00Slabs PCI = 70
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | L | 20.00 Slabs | Comments: | |
| 76 ASR | L | 2.00 Slabs | Comments: | |
| 76 ASR | H | 1.00 Slabs | Comments: | |

# Re-inspection Report

IA 2020
Report Generated Date: April 08, 2021

Sample Number: 32 Type: R Area: 20.00Slabs PCI = 86
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | L | 20.00 | Slabs | Comments: |
| 76 ASR | L | 2.00 | Slabs | Comments: |
| 74 JOINT SPALLING | M | 1.00 | Slabs | Comments: |

Sample Number: 39 Type: R Area: 20.00Slabs PCI = 98
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 65 JOINT SEAL DAMAGE | L | 20.00 | Slabs | Comments: |

# Re-inspection Report

IA 2020
Report Generated Date: April 08, 2021

Network: 3Y2 Name: WEST UNION - GEORGE L. SCOTT AIRPORT

Branch: R17WU Name: RUNWAY 17/35 Use: RUNWAY Area: 260,516.07SqFt

Section: 04 of 4 From: SEE MAP To: SEE MAP Last Const.: 06/03/2007
Surface: PCC Family: IowaPCCRWNE Zone: Category: Rank: P
Area: 5,600.00SqFt Length: 70.00Ft Width: 80.00Ft
Slabs: 42 Slab Width: 10.00Ft Slab Length: 11.67Ft Joint Length: 889.86Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 11/22/2020 Total Samples: 2 Surveyed: 2
Conditions: PCI : 75
Inspection Comments:

Sample Number: 01 Type: R Area: 21.00Slabs PCI = 73
Sample Comments:

| | | | |
|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 21.00 Slabs | Comments: |
| 71 FAULTING | L | 1.00 Slabs | Comments: |
| 63 LINEAR CRACKING | M | 1.00 Slabs | Comments: |
| 74 JOINT SPALLING | L | 1.00 Slabs | Comments: |
| 74 JOINT SPALLING | M | 1.00 Slabs | Comments: |

Sample Number: 02 Type: R Area: 21.00Slabs PCI = 77
Sample Comments:

| | | | |
|---|---|---|---|
| 65 JOINT SEAL DAMAGE | H | 21.00 Slabs | Comments: |
| 71 FAULTING | L | 3.00 Slabs | Comments: |
| 74 JOINT SPALLING | M | 1.00 Slabs | Comments: |
| 74 JOINT SPALLING | L | 1.00 Slabs | Comments: |

# Re-inspection Report

IA 2020
Report Generated Date: April 08, 2021

Network: 3Y2 Name: WEST UNION - GEORGE L. SCOTT AIRPORT

Branch: T01WU Name: TAXIWAY 01 Use: TAXIWAY Area: 8,333.00SqFt

Section: 01 of 1 From: APRON 01 To: RUNWAY 17/35 Last Const.: 06/03/2015
Surface: PCC Family: IowaPCCTWNE Zone: Category: Rank: P
Area: 8,333.00SqFt Length: 225.00Ft Width: 25.00Ft
Slabs: 73 Slab Width: 10.00Ft Slab Length: 12.20Ft Joint Length: 773.57Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 11/22/2020 Total Samples: 3 Surveyed: 3
Conditions: PCI : 91
Inspection Comments:

Sample Number: 01 Type: R Area: 24.00Slabs PCI = 88
Sample Comments:

| | | | |
|---|---|---|---|
| 62 CORNER BREAK | M | 1.00 Slabs | Comments: |
| 65 JOINT SEAL DAMAGE | M | 24.00 Slabs | Comments: |

Sample Number: 02 Type: R Area: 20.00Slabs PCI = 93
Sample Comments:

| | | | |
|---|---|---|---|
| 65 JOINT SEAL DAMAGE | M | 20.00 Slabs | Comments: |

Sample Number: 03 Type: R Area: 26.00Slabs PCI = 93
Sample Comments:

| | | | |
|---|---|---|---|
| 65 JOINT SEAL DAMAGE | M | 26.00 Slabs | Comments: |

# Re-inspection Report

IA 2020
Report Generated Date: April 08, 2021

Network: 3Y2 Name: WEST UNION - GEORGE L. SCOTT AIRPORT

Branch: TH01WU Name: T-HANGAR 01 Use: T-HANGAR Area: 3,950.00SqFt

Section: 01 of 1 From: SEE MAP To: SEE MAP Last Const.: 10/01/2008
Surface: PCC Family: IowaPCCTHnorthern Zone: Category: Rank: P
Area: 3,950.00SqFt Length: 158.00Ft Width: 25.00Ft
Slabs: 28 Slab Width: 11.50Ft Slab Length: 12.50Ft Joint Length: 476.48Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 11/22/2020 Total Samples: 1 Surveyed: 1
Conditions: PCI : 69
Inspection Comments:

Sample Number: 01 Type: R Area: 28.00Slabs PCI = 69
Sample Comments:

| | | | | |
|---|---|---|---|---|
| 63 LINEAR CRACKING | L | 2.00 Slabs | Comments: | |
| 63 LINEAR CRACKING | M | 3.00 Slabs | Comments: | |
| 65 JOINT SEAL DAMAGE | H | 28.00 Slabs | Comments: | |
| 70 SCALING/CRAZING | L | 1.00 Slabs | Comments: | |

# APPENDIX D

# WORK HISTORY REPORT

# Work History Report

*Pavement Database:IA 2020*



**Network:** 3Y2 **Branch:** A01WU (APRON AT WEST UNION) **Section:** 01 **Surface:** PCC
**L.C.D.:** 06/01/1975 **Use:** APRON **Rank** P **Length:** 171.00 Ft **Width:** 57.00 Ft **True Area:** 8,515.60 SqF

| Work Date | Work Code | Work Description | Cost | Thickness (in) | Major M&R | Comments |
|---|---|---|---|---|---|---|
| 06/01/2007 | JS-LC | Joint Seal (Localized) | $0 | 0.00 | False | - |
| 06/01/1975 | NC-PC | New Construction - PCC | $0 | 0.00 | True | - |

**Network:** 3Y2 **Branch:** A01WU (APRON AT WEST UNION) **Section:** 02 **Surface:** PCC
**L.C.D.:** 06/01/1977 **Use:** APRON **Rank** P **Length:** 131.00 Ft **Width:** 101.00 Ft **True Area:** 5,738.00 SqF

| Work Date | Work Code | Work Description | Cost | Thickness (in) | Major M&R | Comments |
|---|---|---|---|---|---|---|
| 06/01/2007 | JS-LC | Joint Seal (Localized) | $0 | 0.00 | False | - |
| 06/01/1977 | NC-PC | New Construction - PCC | $0 | 0.00 | True | - |

**Network:** 3Y2 **Branch:** A01WU (APRON AT WEST UNION) **Section:** 03 **Surface:** PCC
**L.C.D.:** 07/01/1991 **Use:** APRON **Rank** P **Length:** 200.00 Ft **Width:** 37.00 Ft **True Area:** 8,527.00 SqF

| Work Date | Work Code | Work Description | Cost | Thickness (in) | Major M&R | Comments |
|---|---|---|---|---|---|---|
| 07/01/1991 | NC-PC | New Construction - PCC | $0 | 0.00 | True | - |

**Network:** 3Y2 **Branch:** A01WU (APRON AT WEST UNION) **Section:** 04 **Surface:** PCC
**L.C.D.:** 01/01/1996 **Use:** APRON **Rank** P **Length:** 250.00 Ft **Width:** 70.00 Ft **True Area:** 17,636.62 SqF

| Work Date | Work Code | Work Description | Cost | Thickness (in) | Major M&R | Comments |
|---|---|---|---|---|---|---|
| 01/01/1996 | INITIAL | Initial Construction | $0 | 0.00 | True | ESTIMATED DATE |

**Network:** 3Y2 **Branch:** A01WU (APRON AT WEST UNION) **Section:** 05 **Surface:** PCC
**L.C.D.:** 06/03/2017 **Use:** APRON **Rank** P **Length:** 158.00 Ft **Width:** 45.00 Ft **True Area:** 8,395.00 SqF

| Work Date | Work Code | Work Description | Cost | Thickness (in) | Major M&R | Comments |
|---|---|---|---|---|---|---|
| 06/03/2017 | CR-PC | Complete Reconstruction - PC | $0 | 6.00 | True | IDOT Section 7010 Class C |
| 06/02/2017 | BA-AG | Base Course - Aggregate | $0 | 4.00 | False | P-209 (Granular Subbase) |
| 06/01/2017 | SG-ST | Subgrade - Stabilized | $0 | 12.00 | False | P-158 (Fly Ash Treated SG) |
| 06/01/2007 | JS-LC | Joint Seal (Localized) | $0 | 0.00 | False | - |
| 06/01/1977 | NC-PC | New Construction - PCC | $0 | 0.00 | True | - |

**Network:** 3Y2 **Branch:** R17WU (RUNWAY 17/35 WEST UNION) **Section:** 01 **Surface:** PCC
**L.C.D.:** 06/01/1988 **Use:** RUNWAY **Rank** P **Length:** 830.00 Ft **Width:** 50.00 Ft **True Area:** 48,286.91 SqF

| Work Date | Work Code | Work Description | Cost | Thickness (in) | Major M&R | Comments |
|---|---|---|---|---|---|---|
| 06/01/2018 | PA-PF | Patching - PCC Full Depth | $0 | 0.00 | False | Field Est. |
| 06/01/2007 | JS-LC | Joint Seal (Localized) | $0 | 0.00 | False | - |
| 06/01/1988 | NC-PC | New Construction - PCC | $0 | 0.00 | True | - |

**Network:** 3Y2 **Branch:** R17WU (RUNWAY 17/35 WEST UNION) **Section:** 02 **Surface:** PCC
**L.C.D.:** 06/01/1975 **Use:** RUNWAY **Rank** P **Length:** 3,420.00 Ft **Width:** 50.00 Ft **True Area:** 165,863.16 SqF

| Work Date | Work Code | Work Description | Cost | Thickness (in) | Major M&R | Comments |
|---|---|---|---|---|---|---|
| 06/01/2007 | JS-LC | Joint Seal (Localized) | $0 | 0.00 | False | - |
| 06/01/1975 | NC-PC | New Construction - PCC | $0 | 0.00 | True | - |

**Network:** 3Y2 **Branch:** R17WU (RUNWAY 17/35 WEST UNION) **Section:** 03 **Surface:** PCC
**L.C.D.:** 06/03/2007 **Use:** RUNWAY **Rank** P **Length:** 4,248.00 Ft **Width:** 10.00 Ft **True Area:** 40,766.00 SqF

| Work Date | Work Code | Work Description | Cost | Thickness (in) | Major M&R | Comments |
|---|---|---|---|---|---|---|
| 06/03/2007 | NU-IN | New Construction - Initial | $0 | 6.00 | True | - |
| 06/02/2007 | BA-AG | Base Course - Aggregate | $0 | 4.00 | False | P-208 Agg Subbase |

| | | | | | | |
|---|---|---|---|---|---|---|
| 06/01/2007 | SG-CO | Subgrade - Compacted | $0 | 6.00 | False | P-152 Compacted Subgrade |

**Network:** 3Y2 **Branch:** R17WU (RUNWAY 17/35 WEST UNION) **Section:** 04 **Surface:** PCC
**L.C.D.:** 06/03/2007 **Use:** RUNWAY **Rank** P **Length:** 70.00 Ft **Width:** 80.00 Ft **True Area:** 5,600.00 SqF

| Work Date | Work Code | Work Description | Cost | Thickness (in) | Major M&R | Comments |
|---|---|---|---|---|---|---|
| 06/03/2007 | NU-IN | New Construction - Initial | $0 | 6.00 | True | - |
| 06/02/2007 | BA-AG | Base Course - Aggregate | $0 | 4.00 | False | P-208 Agg Subbase |
| 06/01/2007 | SG-CO | Subgrade - Compacted | $0 | 6.00 | False | P-152 Compacted Subgrade |

**Network:** 3Y2 **Branch:** T01WU (TAXIWAY 01 AT WEST UNION) **Section:** 01 **Surface:** PCC
**L.C.D.:** 06/03/2015 **Use:** TAXIWAY **Rank** P **Length:** 225.00 Ft **Width:** 25.00 Ft **True Area:** 8,333.00 SqF

| Work Date | Work Code | Work Description | Cost | Thickness (in) | Major M&R | Comments |
|---|---|---|---|---|---|---|
| 06/03/2015 | NC-PC | New Construction - PCC | $0 | 6.00 | True | P-501 PCC |
| 06/02/2015 | SB-AG | Subbase - Aggregate | $0 | 6.00 | False | P-154 Granular Subbase |
| 06/01/2015 | SG-CO | Subgrade - Compacted | $0 | 18.00 | False | P-152 Subgrade |

**Network:** 3Y2 **Branch:** TH01WU (T-HANGAR 01 AT WEST UNION) **Section:** 01 **Surface:** PCC
**L.C.D.:** 10/01/2008 **Use:** T-HANGAR **Rank** P **Length:** 158.00 Ft **Width:** 25.00 Ft **True Area:** 3,950.00 SqF

| Work Date | Work Code | Work Description | Cost | Thickness (in) | Major M&R | Comments |
|---|---|---|---|---|---|---|
| 10/01/2008 | NC-PC | New Construction - PCC | $0 | 0.00 | True | LCD VIA GOOGLE EARTH |

**Summary:**

| Work Description | Section Count | Area Total (SqFt) | Thickness Avg (in) | Thickness STD (in) |
|---|---|---|---|---|
| Base Course - Aggregate | 3 | 54,761.00 | 4.00 | .00 |
| Complete Reconstruction - PCC | 1 | 8,395.00 | 6.00 | - |
| Initial Construction | 1 | 17,636.62 | .00 | - |
| Joint Seal (Localized) | 5 | 236,798.67 | .00 | .00 |
| New Construction - Initial | 2 | 46,366.00 | 6.00 | .00 |
| New Construction - PCC | 8 | 257,608.67 | .75 | 2.12 |
| Patching - PCC Full Depth | 1 | 48,286.91 | .00 | - |
| Subbase - Aggregate | 1 | 8,333.00 | 6.00 | - |
| Subgrade - Compacted | 3 | 54,699.00 | 10.00 | 6.93 |
| Subgrade - Stabilized | 1 | 8,395.00 | 12.00 | - |

# 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. 2021 unit costs for preventive maintenance actions.

| Maintenance Action | Unit Cost |
|---|---|
| Asphalt Patch—Asphalt-Surfaced Pavement | $14.10/sf |
| Crack Sealing—Asphalt-Surfaced Pavement | $2.41/lf |
| Partial Depth PCC Patch—PCC Pavement | $36.10/sf |
| Full Depth PCC Patch—PCC Pavement | $16.12/sf |
| Crack Sealing—PCC Pavement | $2.90/lf |
| Joint Sealing—PCC Pavement | $2.90/lf |
| Grinding—PCC Pavement | $0.35/sf |
| Slab Replacement—PCC Pavement | $16.12/sf |

Table E-4. 2021 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 |
|---|---|---|---|---|---|---|---|
| AC | $10.01 | $4.74 | $4.74 | $4.74 | $0.00 | $0.00 | $0.00 |
| PCC | $16.71 | $7.90 | $7.90 | $7.90 | $0.00 | $0.00 | $0.00 |

# APPENDIX F

# YEAR 2021 LOCALIZED PREVENTIVE MAINTENANCE DETAILS

Table F-1. Year 2021 localized preventive maintenance details.

| Branch | Section | Distress Type | Severity | Distress Quantity | Distress Unit | Maintenance Action | Unit Cost | 2021 Estimated Cost |
|---|---|---|---|---|---|---|---|---|
| A01WU | 03 | Corner Break | Medium | 1 | Slabs | Patching - PCC Full Depth | $16.12 | $694 |
| A01WU | 03 | Joint Seal Damage | High | 72 | Slabs | Joint Seal (Localized) | $2.90 | $3,262 |
| A01WU | 03 | Joint Spalling | Medium | 1 | Slabs | Patching - PCC Partial Depth | $36.10 | $311 |
| A01WU | 03 | LTD Cracking | Medium | 1 | Slabs | Crack Sealing - PCC | $2.90 | $42 |
| A01WU | 04 | Corner Spalling | High | 2 | Slabs | Patching - PCC Partial Depth | $36.10 | $155 |
| A01WU | 04 | Joint Seal Damage | High | 139 | Slabs | Joint Seal (Localized) | $2.90 | $7,939 |
| A01WU | 04 | Joint Spalling | Medium | 5 | Slabs | Patching - PCC Partial Depth | $36.10 | $1,117 |
| A01WU | 04 | Joint Spalling | High | 2 | Slabs | Patching - PCC Partial Depth | $36.10 | $466 |
| A01WU | 04 | LTD Cracking | Medium | 34 | Slabs | Crack Sealing - PCC | $2.90 | $1,114 |
| A01WU | 05 | Joint Seal Damage | Medium | 68 | Slabs | Joint Seal (Localized) | $2.90 | $3,127 |
| R17WU | 03 | ASR | Medium | 10 | Slabs | Slab Replacement - PCC | $16.12 | $7,808 |
| R17WU | 03 | ASR | High | 2 | Slabs | Slab Replacement - PCC | $16.12 | $1,612 |
| R17WU | 03 | Joint Spalling | Medium | 5 | Slabs | Patching - PCC Partial Depth | $36.10 | $1,129 |
| R17WU | 04 | Joint Seal Damage | High | 42 | Slabs | Joint Seal (Localized) | $2.90 | $2,581 |
| R17WU | 04 | Joint Spalling | Medium | 2 | Slabs | Patching - PCC Partial Depth | $36.10 | $466 |
| R17WU | 04 | LTD Cracking | Medium | 1 | Slabs | Crack Sealing - PCC | $2.90 | $31 |
| T01WU | 01 | Corner Break | Medium | 1 | Slabs | Patching - PCC Full Depth | $16.12 | $543 |
| T01WU | 01 | Joint Seal Damage | Medium | 73 | Slabs | Joint Seal (Localized) | $2.90 | $2,243 |
| TH01WU | 01 | Joint Seal Damage | High | 28 | Slabs | Joint Seal (Localized) | $2.90 | $1,382 |
| TH01WU | 01 | LTD Cracking | Medium | 3 | Slabs | Crack Sealing - PCC | $2.90 | $104 |

Table F-1. Year 2021 localized preventive maintenance details (continued).

Table Notes:

1. See Figure 3 for the location of the branch and section.
2. Distress types are defined by ASTM D5340-20. L&T Cracking = Longitudinal and Transverse Cracking; LTD Cracking = Longitudinal, Transverse, and Diagonal Cracking; ASR = Alkali-Silica Reaction.
3. The costs provided are of a general nature for the entire state and may require adjustment to reflect specific conditions at West Union - George L. Scott Airport.

**PREPARED FOR**

Iowa Department of Transportation
Aviation Bureau
800 Lincoln Way
Ames, Iowa 50010
515-239-1691
https://iowadot.gov/aviation

**JULY 2021**