2023 ODAV Pavement Evaluation Program Mulino State Airport

Mulino, Oregon

December 29, 2023

Prepared for

State of Oregon Department of Aviation
3040 25th Street SE
Salem, OR 97303-1125

Prepared by

16520 SW Upper Boones Ferry Road, Suite 100
Tigard, OR 97224-7661
(503) 641-3478 | www.gri.com

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1 OVERVIEW

GRI assisted with updating the Oregon Department of Aviation (ODAV) airport pavement management system and developing a five-year plan comprised of maintenance, surface treatment, rehabilitation, and reconstruction projects for the Mulino State Airport in Mulino, Oregon. This project was implemented as part of the ODAV and Federal Aviation Administration (FAA) *Oregon Continuous Aviation System Plan*. The information provided in this report ensures compliance with FAA Grant Assurance Number 11, which outlines that an airport shall have an effective airport pavement maintenance-management program in place to receive federal financial assistance for the construction, reconstruction, or repair of airport pavements.

GRI conducted surveys of the airside pavement at Mulino State Airport in 2023 in accordance with the procedures of Advisory Circular 150/5380-7B and ASTM International (ASTM) D5340. We uploaded the survey data into the PAVER database and used the software to provide a rapid calculation of the pavement condition index (PCI) rating. The PCI is a numerical indicator that defines the functional condition of the pavement based on visual inspection. The scale ranges from zero to 100, where zero represents a pavement in the worst possible condition with no remaining functional life and 100 represents a pavement in the best possible condition with no defects.

2 PAVEMENT INVENTORY

Mulino State Airport is located in Portland-Mulino, Oregon, and is owned and operated by the ODAV. The airport consists of a single runway, a primary taxiway, a helipad, and multiple connector taxiways and aprons that serve a variety of general aviation aircraft. The general location of the airport is shown below on the Mulino State Airport Location Map, Figure 2.1.

Figure 2.1: MULINO STATE AIRPORT LOCATION MAP

The airside pavements at Mulino State Airport are comprised of asphalt concrete (AC) and portland cement concrete (PCC). The airport pavements, delineated by surface type and branch use, are shown on the Mulino State Airport Percent of Pavement Area by Surface Type, Figure 2.2, and on the Mulino State Airport Pavement Area by Branch Use, Figure 2.3, shown below. The pavement inventory, including work history for each pavement section, is displayed spatially on the Mulino State Airport Pavement Inventory, Figure 2.4. The pavement facilities summarized by branch and section are listed in Tables 1A and 2A, respectively, in Appendix A. The sample unit layout for each section is shown on Figure 1A in Appendix A. We used the sampling rates outlined in Table 3A of Appendix A in our survey. The pavement inventory, including work history for individual airport pavement sections, is provided in the work history report, Table 1F.

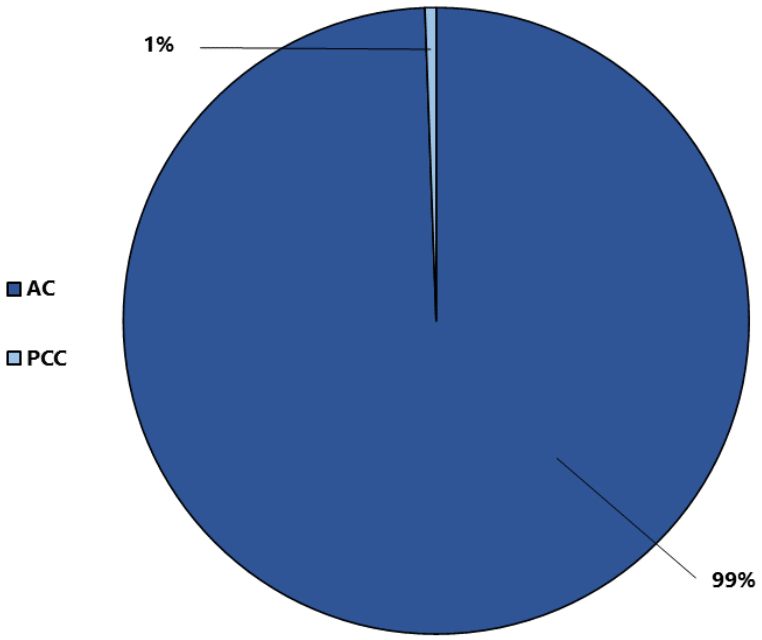


Figure 2.2: MULINO STATE AIRPORT PERCENT OF PAVEMENT AREA BY SURFACE TYPE

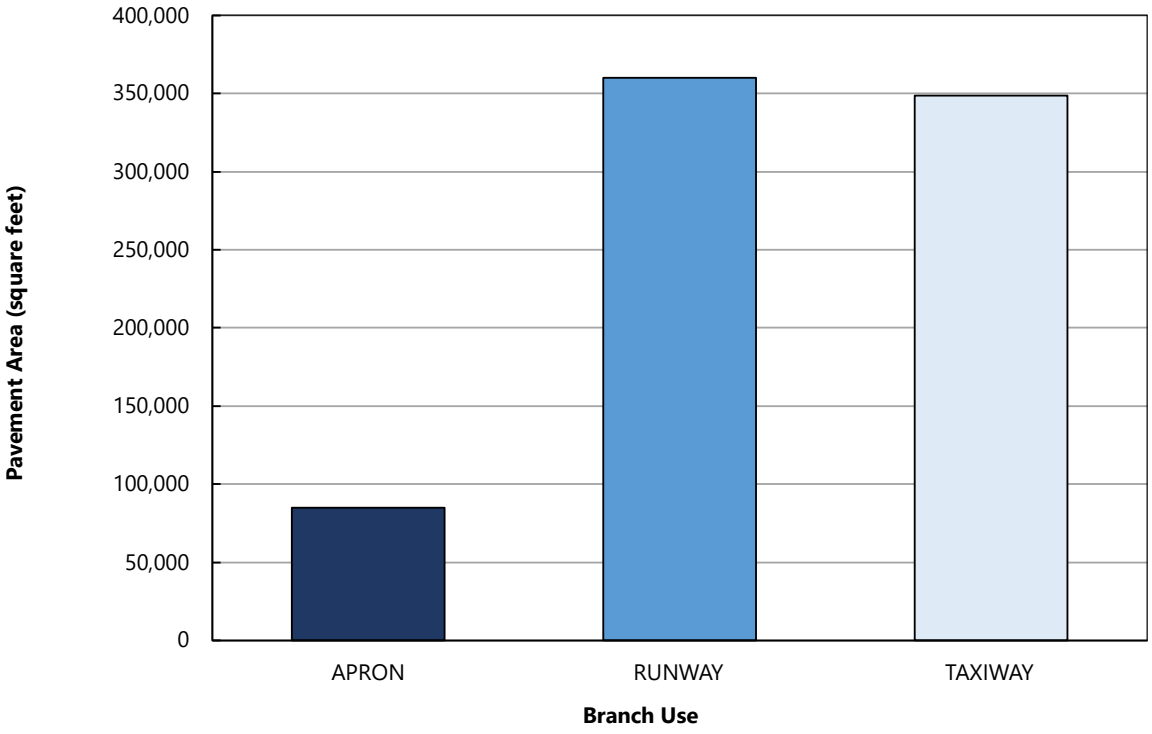
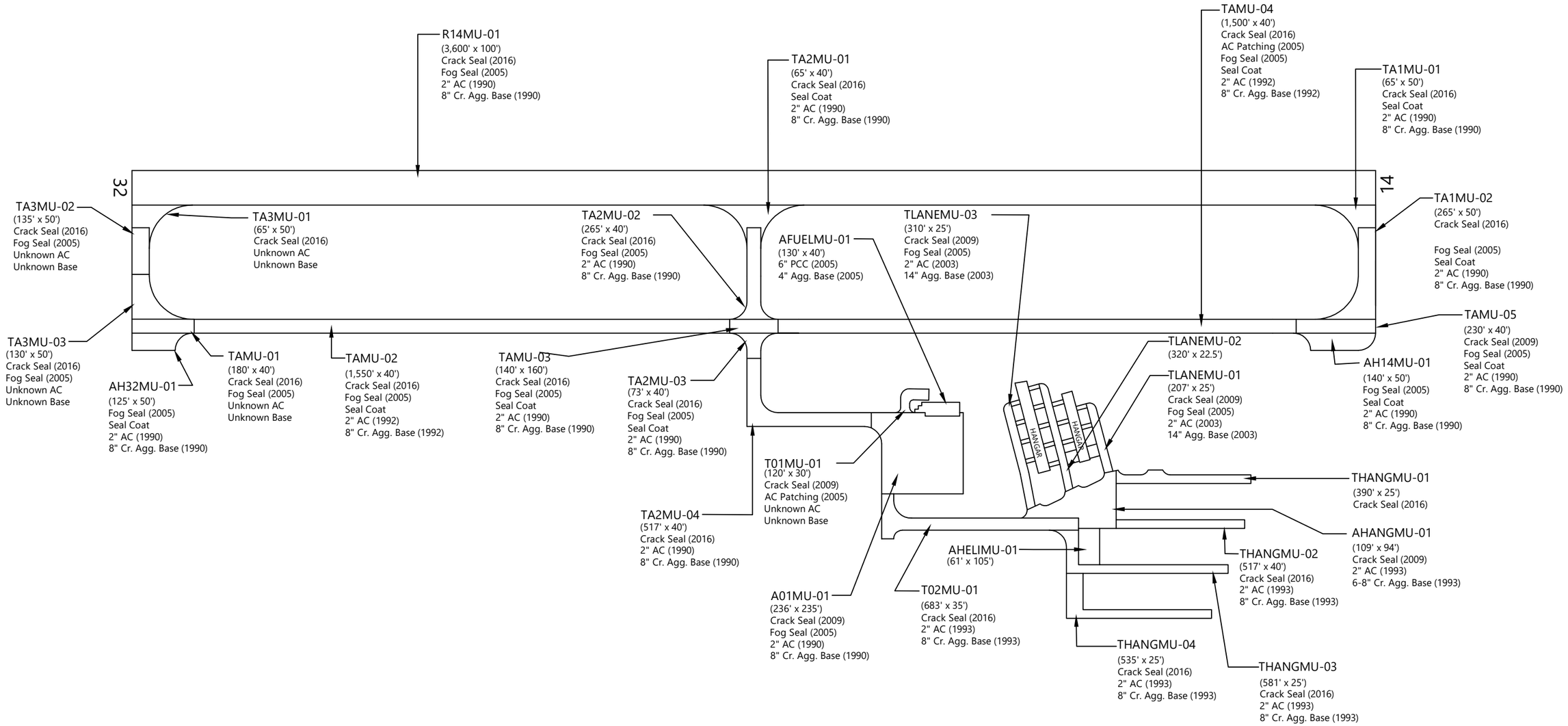
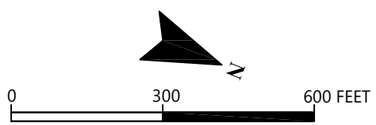


Figure 2.3: MULINO STATE AIRPORT PAVEMENT AREA BY BRANCH USE



ABBREVIATIONS: AC = ASPHALT CONCRETE; Cr. = CRUSHED; Agg. = AGGREGATE



GRI OREGON DEPARTMENT OF AVIATION
STATEWIDE PAVEMENT EVALUATION PROGRAM

MULINO STATE AIRPORT PAVEMENT INVENTORY

DEC. 2023 JOB NO. 6593-F FIG. 2.4

3 PAVEMENT CONDITION INSPECTION RESULTS

3.1 Introduction

GRI conducted a visual PCI survey of the airside pavements at Mulino State Airport in July 2023. The 2023 survey work was performed on sections last inspected in 2018 in order to update the Mulino State Airport inspection data. GRI performed the 2023 PCI survey in accordance with the methods described in FAA Advisory Circular 150/5380-6C and ASTM D5340 and further discussed in Appendix B of this report.

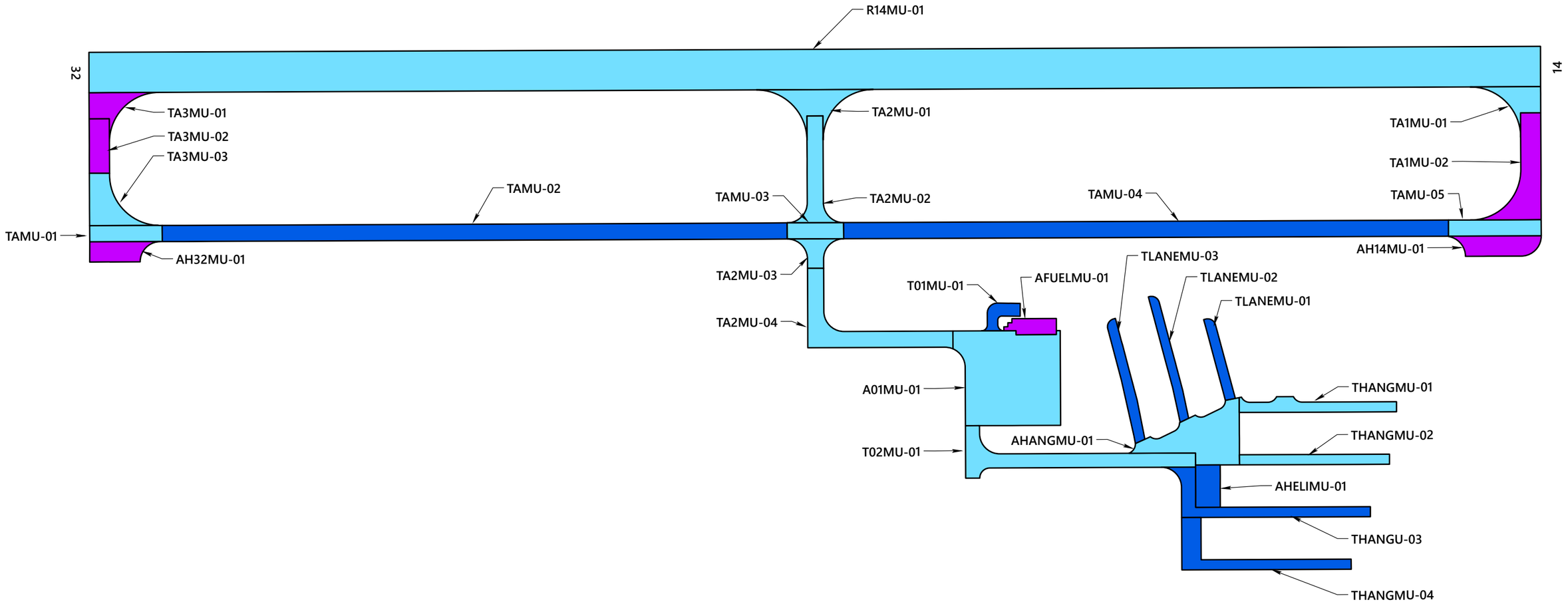
The PCI is based on the type, severity, and quantity of each distress found in an inspected sample unit. Further discussion of distress types for flexible and rigid pavement is provided in Appendix B and summarized in Table 1B in Appendix B. The results of the PCI survey are displayed using a seven-category rating scale in accordance with ASTM D5340. Details of the ASTM PCI rating scale are provided in Table 3-1 below.

Table 3-1: ASTM PCI RATING SCALE

PCI Color Legend	PCI Range	PCI Rating and Definition
	86 – 100	GOOD: Pavement has minor or no distresses and should require only routine maintenance.
	71 – 85	SATISFACTORY: Pavement has scattered low-severity distresses that should require only routine maintenance.
	56 – 70	FAIR: Pavement has a combination of generally low- and medium-severity distresses. Maintenance and repair needs may range from routine to major.
	41 – 55	POOR: Pavement has low-, medium-, and high-severity distresses that probably cause some operational problems. M&R needs will be major.
	26 – 40	VERY POOR: Pavement has predominantly medium- and high-severity distresses that cause considerable maintenance and operational problems. M&R needs will be major.
	11 – 25	SERIOUS: Pavement has mainly high-severity distresses that may affect operational safety; immediate repairs are needed.
	0 – 10	FAILED: Pavement deterioration has progressed to the point that safe aircraft operations are no longer possible; complete reconstruction is required.

3.2 Pavement Condition Index Survey Results

The area-weighted average PCI for all airport pavements at Mulino State Airport is approximately 77. The section PCIs ranged from a low of 62 to a high of 100. The primary distresses observed during the inspection were weathering, longitudinal and transverse, and alligator (fatigue) cracking on AC-surfaced pavements. Section PCIs following our pavement survey are displayed below spatially on the Mulino State Airport 2023 PCI Survey Results, Figure 3.1.



SECTION PCI

- (86 - 100) GOOD
- (71 - 85) SATISFACTORY
- (56 - 70) FAIR
- (41 - 55) POOR
- (26 - 40) VERY POOR
- (11 - 25) SERIOUS
- (0 - 10) FAILED

N

0 250 500 Feet

GRI OREGON DEPARTMENT OF AVIATION
STATEWIDE PAVEMENT EVALUATION PROGRAM

MULINO STATE AIRPORT
2023 PCI SURVEY RESULTS

DEC. 2023 JOB NO. 6593-F FIG. 3.1

The condition distribution of the network by percent of total pavement area is provided on the Mulino State Airport Pavement Condition Rating by Percent of Area, Figure 3.2. A summary of the pavement condition results by branch and section is included in Tables 2B and 3B of Appendix B, respectively. A comparison between the previous inspection and the 2023 inspection is provided in Table 4B in Appendix B. The re-inspection report that includes inspection details for individual sample units is provided in Table 1E in Appendix E.

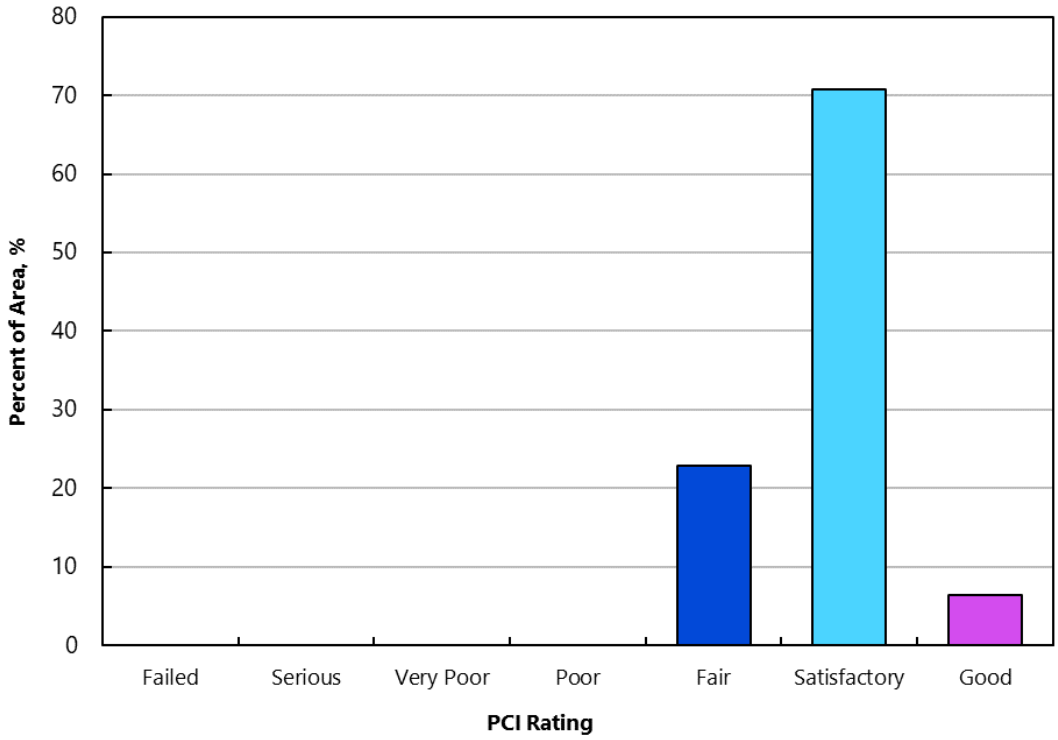


Figure 3.2 – MULINO STATE AIRPORT PAVEMENT CONDITION RATING BY PERCENT OF AREA

4 FUTURE PAVEMENT CONDITION ANALYSIS

4.1 Introduction

In addition to assessing the current condition of a pavement, it is very important from a planning standpoint to be able to predict with reasonable accuracy the future condition. Additional details regarding our future pavement condition analysis, including pavement condition prediction models, are provided in Appendix C. PCI performance curves developed for Mulino State Airport are displayed on Figures 1C through 4C in Appendix C.

4.2 Future Condition Analysis

Using the condition prediction models discussed above, the projected condition of each pavement section was determined for 5- and 10-year periods. Based on this analysis, we project the PCI to decrease from a current value of 77 to a value of 71 in 2028 and 65 in 2033 if no maintenance or rehabilitation work is performed. The projected pavement condition in 5 years and 10 years for each pavement section at Mulino State Airport is displayed spatially on the Mulino State Airport Future Pavement Condition , Figure 4.1, and listed in Table 1C in Appendix C, along with the past and present PCI values for the pavement network.

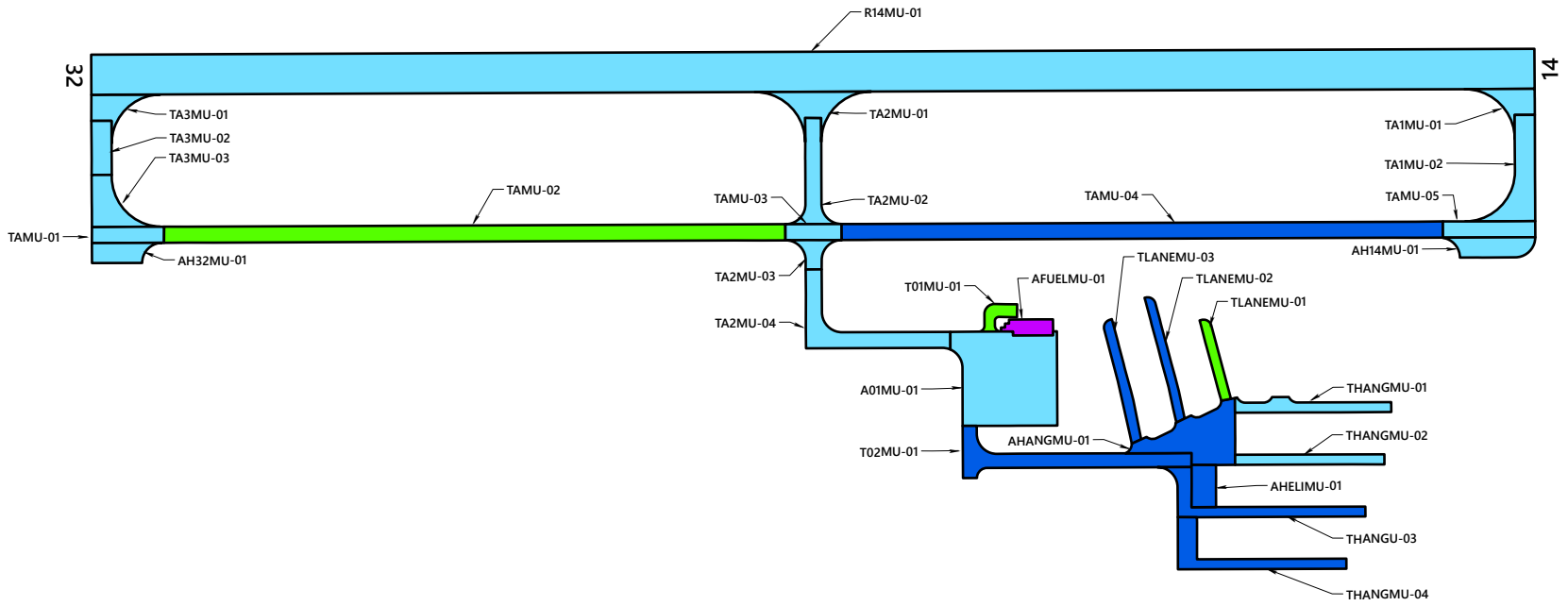
4.3 Functional Remaining Life

Functional remaining life is the practical amount of time a pavement is in service before requiring rehabilitation, as estimated solely based on visual condition. This is not to be confused with structural remaining life, which requires analysis of the structural capacity of a pavement and typically a field exploration and testing program that includes core explorations and falling weight deflectometer (FWD) deflection tests.

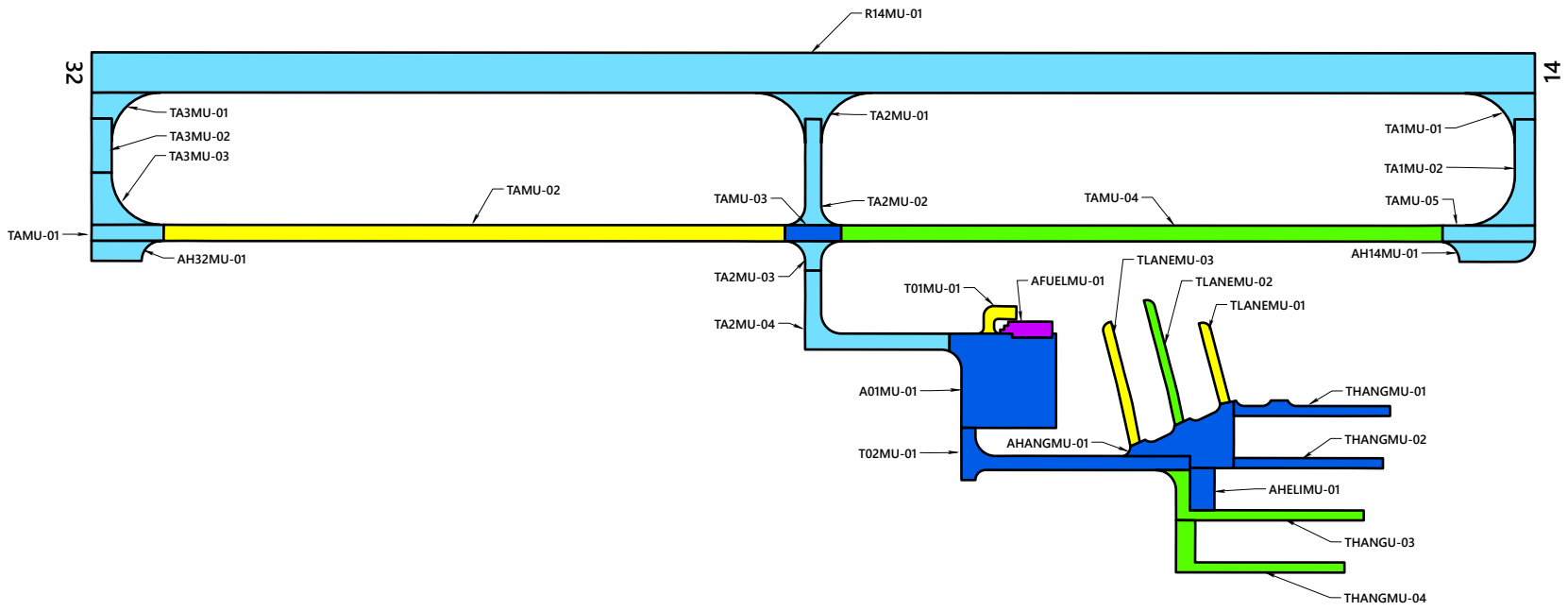
We calculated two forms of functional remaining life based on the current visual condition surveys of the pavement at Mulino State Airport. The first type of functional remaining life is the time until rehabilitation, such as an overlay, is needed. The critical PCI, further discussed in Section C.3 of Appendix C, is the threshold used for this type of functional remaining-life analysis. The second type of functional remaining life is the time until the pavement is no longer operational due to high foreign object debris (FOD) potential and increased safety concerns for trafficking aircraft. A PCI of 40 was set as the trigger point for the end of the pavement's functional service life with regard to FOD potential.

The two types of functional remaining life for each section at Mulino State Airport are summarized in Table 2C in Appendix C.

PREDICTED CONDITION IN 2028



PREDICTED CONDITION IN 2033



SECTION PCI

- (86 - 100) GOOD
- (71 - 85) SATISFACTORY
- (56 - 70) FAIR
- (41 - 55) POOR
- (26 - 40) VERY POOR
- (11 - 25) SERIOUS
- (0 - 10) FAILED

N

0 450 900 Feet

GRI

OREGON DEPARTMENT OF AVIATION
STATEWIDE PAVEMENT EVALUATION PROGRAM

MULINO STATE AIRPORT
FUTURE PAVEMENT CONDITION

DEC. 2023 JOB NO. 6593-F FIG. 4.1

5 MAINTENANCE AND REHABILITATION PROJECT RECOMMENDATIONS

5.1 Introduction

We evaluated M&R needs, as determined from the PAVER analysis results, in order to develop localized maintenance, surface treatment, rehabilitation, and reconstruction needs. Details of our M&R work priorities and unit costs for work activities are provided in Tables 1D and 2D, respectively, in Appendix D.

5.2 Recommended Localized Maintenance

Localized maintenance refers to activities such as crack sealing and patching, which should be performed annually in order to properly maintain aging pavements. Using the PAVER Localized Distress Maintenance Analysis tool, we developed a list of recommended localized maintenance. This list is shown in Table 3D in Appendix D and is independent of the surface treatments, rehabilitation, and reconstruction projects associated with the five-year surface treatment and rehabilitation work plan. A summary of total localized maintenance quantities is provided in Table 5-1 below.

Table 5-1: LOCALIZED MAINTENANCE QUANTITIES

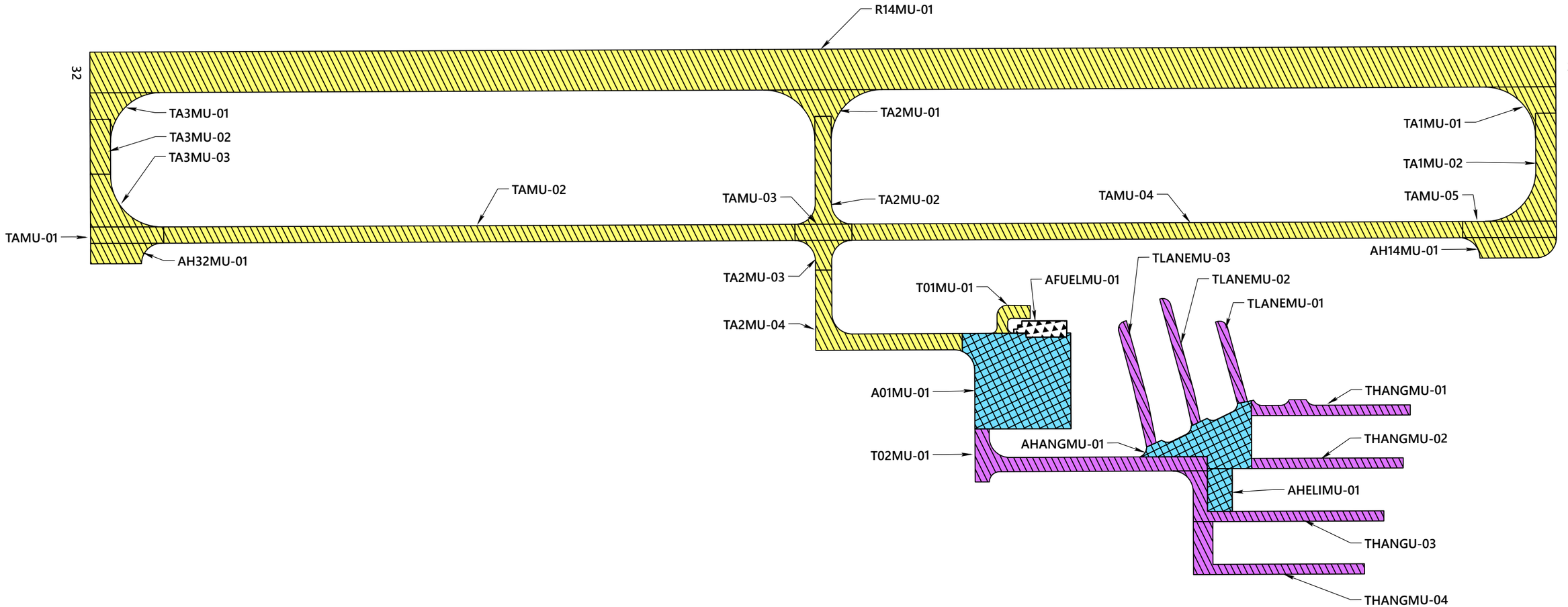
Localized Maintenance Operation	Quantity
Asphalt Concrete Crack Sealing	45,528 linear feet
Asphalt Concrete Wide Crack Sealing	8 linear feet
Asphalt Concrete Full-Depth Patching	20 square feet

5.3 Surface Treatment, Rehabilitation, and Reconstruction Plan

To develop the five-year work plan, we first ran the eliminate backlog scenario with the PAVER M&R Work Planning Module in order to generate a list, organized by year, of surface treatment, rehabilitation, and reconstruction projects. We then reviewed the project list and refined it into practical construction projects for each year. A summary of surface treatment, rehabilitation, and reconstruction quantities is provided in Table 5-2 below, and maps of the project locations by year are shown on the Mulino State Airport 5-Year Pavement Management Plan, Figure 5.1. The complete list of recommended surface treatment, rehabilitation, and reconstruction projects is presented in Table 4D in Appendix D.

Table 5-2: SURFACE TREATMENT, REHABILITATION, AND RECONSTRUCTION QUANTITIES

Treatment Type	Quantity, square feet
Reconstruction	0
Overlay	0
Fog Seal	86,805
Slurry Seal	708,400



ACTION TIMING

- 2024
- 2025
- 2026
- 2027
- 2028

ACTION

- FOG SEAL
- SLURRY SEAL
- OVERLAY
- RECONSTRUCTION
- ROUTINE MAINTENANCE

N

0 250 500 Feet

GRI OREGON DEPARTMENT OF AVIATION
STATEWIDE PAVEMENT EVALUATION PROGRAM

MULINO STATE AIRPORT

5-YEAR PAVEMENT MANAGEMENT PLAN

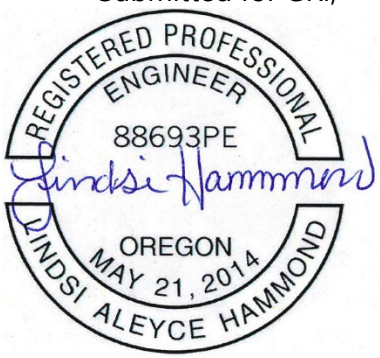
DEC. 2023 JOB NO. 6593-F FIG. 5.1

6 LIMITATIONS

This report has been prepared to assist the ODAV with pavement-related project planning for the Mulino State Airport. The scope is limited to the specific pavement areas described within this report. The conclusions and recommendations provided in this report are based on information provided by ODAV, estimated costs, and an understanding of the pavement conditions based solely on visual assessment. The surface treatment, rehabilitation, and reconstruction recommendations and project selections provided in this report, as well as their corresponding cost estimates, are based on a practical grouping of projects and an estimate of the structural requirements. It is possible that recommendations based on a structural evaluation would differ materially from the recommendations given within this report. Therefore, the information included in this report should be used solely for project planning purposes, and it should be understood that rehabilitation costs may vary from the cost estimates given within this report.

Because the condition of the airport pavement network is dynamic, an effective maintenance and rehabilitation program should be reviewed and updated on a regular basis. In addition to regularly surveying and updating the pavement condition, completed construction activities should be tracked in the PAVER database. If Mulino State Airport would like to know more about the results presented in this report, please contact the undersigned.

Submitted for GRI,



RENEWS: 06/2025

Lindsi A. Hammond, PE
Principal

Matthew A. Haynes, PE
Project Engineer

Ana-Maria Coca, PhD
Engineering Staff

This document has been submitted electronically.

APPENDIX A

Pavement Inventory Reports and Maps

APPENDIX A

PAVEMENT INVENTORY REPORTS AND MAPS

A.1 PAVEMENT NETWORK

Mulino State Airport is located in Portland-Mulino, Oregon, and is owned and operated by the Oregon Department of Aviation (ODAV). The pavement network/facilities at Mulino State Airport serve a variety of general aviation aircraft. Mulino State Airport consists of a single runway, a primary taxiway, a helipad, and multiple connector taxiways and aprons. The types of airside pavements include asphalt concrete (AC) and portland cement concrete (PCC).

The current airport pavement management system (APMS) network at Mulino State Airport has an approximate area of 799,805 square feet of paved airside facilities. The pavement network has previously been divided (by others) into a hierarchical order of branches, sections, and sample units that facilitate inspection and maintenance planning. The pavement facilities summarized by branch and section are listed in Tables 1A and 2A, respectively. Pavement sections and the sample unit layout for each section are shown on Figure 1A in this appendix.

A.2 BRANCHES

A branch, as defined in the PAVER system, is a facility that is a readily identifiable part of the pavement system and has a distinct function. For airports, branches typically consist of individual runways, taxiways, and aprons. The current pavement network for Mulino State Airport contains 15 branches, tabulated in Table 1A and shown on Figure 1A.

A.3 SECTIONS AND SAMPLE UNITS

A pavement section is the smallest management unit used when considering the application and selection of maintenance and rehabilitation (M&R) repairs and treatments and is defined by Section 2.1.8 of ASTM International (ASTM) D5340 as *"a contiguous pavement area having uniform construction, maintenance, usage history, and condition."* All sections should also have the same traffic volume and load intensity. The current pavement network included in the PAVER database for Mulino State Airport contains 30 sections that are managed by the Oregon Department of Aviation (ODAV), which are tabulated in Table 2A and shown spatially on Figure 1A.

PAVER assigns a rank, which designates that pavement's prioritization in receiving maintenance and repair. The highest use or priority pavements, such as runways, taxiways, and terminal aprons, are ranked *Primary*, while the surrounding aprons and shoulders are ranked *Secondary* and low-use areas are ranked *Tertiary*. The ranks for all sections are shown on Table 2A.

To facilitate the visual survey of the airport pavement, each section is further subdivided into smaller areas called sample units. Similar sizing of these units is critical, and studies have found that maintaining the size of the sample units to within 40% of the established normal distribution reduces the standard error of the average pavement condition index (PCI) values. To meet this criterion, the ASTM method recommends sample units for flexible pavements be 5,000 ± 2,000 square feet and 20 slabs ± 8 slabs for rigid pavements. The delineation of sample units for each section is displayed on Figure 1A.

A.4 SAMPLE UNIT DELINEATION

For an APMS survey, a PCI confidence level of 92% and an allowable error (e) of eight PCI points are used for all airport pavements. To determine the number of sample units that need to be inspected to achieve the required confidence level and allowable error, the following equation is used:

$$n = \frac{N \times s^2}{\left(e^2/_4\right)(N-1)+s^2} \qquad \text{(Equation 1)}$$

where:

n = number of sample units to be inspected
N = total number of samples in the pavement sections
e = allowable error
s = section standard deviation

For the 2023 Mulino State Airport PCI survey, Table 3A was used as a guideline in developing sampling rates for flexible and rigid pavement that reflect similar rates used for other large airport pavement networks. In general, this sampling rate distribution provides a 92% confidence level with a standard error of eight PCI points.

Sample unit locations at Mulino State Airport were selected using a systematic random sampling model method. This technique is implemented by first determining the number of sample units needed based on the confidence interval calculated using Equation 1. The first sample unit is randomly placed in the section, and then the remaining sample units are systematically spaced throughout the section at an equal distance apart.

Table 1A: MULINO STATE AIRPORT PAVEMENT BRANCHES

Facility Designation (Branch ID)	Branch Name	Number of Sections	Approximate Area, square feet
A01MU	Apron 01 Mulino	1	57,169
AFUELMU	Fuel Apron Mulino	1	4,600
AH14MU	Taxiway A 14 End Hold Apron Mulino	1	9,405
AH32MU	Taxiway A 32 End Hold Apron Mulino	1	6,787
AHANGMU	Hangar Apron Mulino	1	23,231
AHELIMU	Helipad Mulino	1	6,405
R14MU	Runway 14/32 Mulino	1	360,000
T01MU	Taxiway 01 Mulino	1	3,555
T02MU	Taxiway 02 Mulino	1	23,936
TA1MU	Taxiway A1 Mulino	2	23,206
TA2MU	Taxiway A2 Mulino	4	43,263
TA3MU	Taxiway A3 Mulino	3	23,135
TAMU	Taxiway A Mulino	5	144,000
THANGMU	Parking Twys Mulino	4	51,213
TLANEMU	Taxilane Mulino	3	19,900

Table 2A: MULINO STATE AIRPORT CURRENT PAVEMENT INVENTORY

BranchID	Branch Name	Branch Use	SectionID	From	To	Rank	Length, feet	Width, feet	Approximate Area, square feet	LCD	Surface Type	Approximate Slab Length, feet	Approximate Slab Width, feet	Number of Slabs
A01MU	Apron 01 Mulino	APRON	01	Taxiway A2	Taxiway 06	P	236	235	57,169	8/2/1990	AC	0	0	0
AFUELMU	Fuel Apron Mulino	APRON	01	Apron 01	Hangar	S	130	40	4,600	8/2/2005	PCC	10	10	46
AH14MU	Taxiway A 14 End Hold Apron Mulino	APRON	01	Taxiway A	-	P	140	50	9,405	8/2/1990	AC	0	0	0
AH32MU	Taxiway A 32 End Hold Apron Mulino	APRON	01	Taxiway A	-	P	125	50	6,787	8/2/1990	AC	0	0	0
AHANGMU	Hangar Apron Mulino	APRON	01	Taxiway 06	Parking Taxiway	S	109	94	23,231	8/2/1993	AC	0	0	0
AHELIMU	Helipad Mulino	HELIPAD	01	Hangar Apron	Parking Taxiway	S	61	105	6,405	8/2/1993	AC	0	0	0
R14MU	Runway 14/32 Mulino	RUNWAY	01	Runway 32 End	14 End	P	3,600	100	360,000	8/2/1990	AC	0	0	0
T01MU	Taxiway 01 Mulino	TAXIWAY	01	Apron 01	Hangar	P	120	30	3,555	8/1/1991	AC	0	0	0
T02MU	Taxiway 02 Mulino	TAXIWAY	01	Apron 01	Hangar Apron	P	683	35	23,936	8/2/1993	AC	0	0	0
TA1MU	Taxiway A1 Mulino	TAXIWAY	01	Runway 14/32	Section 02	P	65	50	6,603	8/2/1990	AC	0	0	0
TA1MU	Taxiway A1 Mulino	TAXIWAY	02	Section 01	Taxiway A	P	265	50	16,603	8/2/1990	AC	0	0	0
TA2MU	Taxiway A2 Mulino	TAXIWAY	01	Runway 14/32	Section 02	P	65	40	9,306	8/2/1990	AC	0	0	0
TA2MU	Taxiway A2 Mulino	TAXIWAY	02	Section 01	Taxiway A	P	218	40	8,720	8/2/1990	AC	0	0	0
TA2MU	Taxiway A2 Mulino	TAXIWAY	03	Taxiway A	Section 04	P	73	40	3,993	8/2/1990	AC	0	0	0
TA2MU	Taxiway A2 Mulino	TAXIWAY	04	Section 03	Apron 01	P	517	40	21,244	8/2/1990	AC	0	0	0
TA3MU	Taxiway A3 Mulino	TAXIWAY	01	Runway 32 End	Section 02	P	65	50	6,517	8/1/1991	AC	0	0	0
TA3MU	Taxiway A3 Mulino	TAXIWAY	02	Section 01	Section 03	P	135	50	6,750	8/1/1991	AC	0	0	0
TA3MU	Taxiway A3 Mulino	TAXIWAY	03	Taxiway A	Section 02	P	130	50	9,868	8/1/1991	AC	0	0	0
TAMU	Taxiway A Mulino	TAXIWAY	01	Taxiway A3	Section 02	P	180	40	7,200	8/1/1991	AC	0	0	0
TAMU	Taxiway A Mulino	TAXIWAY	02	Section 01	Section 03	P	1,550	40	62,000	8/2/1992	AC	0	0	0
TAMU	Taxiway A Mulino	TAXIWAY	03	Taxiway A2	Intersection	P	140	40	5,600	8/2/1990	AC	0	0	0
TAMU	Taxiway A Mulino	TAXIWAY	04	Section 03	Section 05	P	1,500	40	60,000	8/2/1992	AC	0	0	0
TAMU	Taxiway A Mulino	TAXIWAY	05	Section 04	Taxiway A1	P	230	40	9,200	8/2/1990	AC	0	0	0
THANGMU	Parking Twys Mulino	TAXIWAY	01	Hangar Apron	Parking	S	390	25	10,638	8/2/1993	AC	0	0	0
THANGMU	Parking Twys Mulino	TAXIWAY	02	Hangar Apron	Parking	S	372	25	9,300	8/2/1993	AC	0	0	0
THANGMU	Parking Twys Mulino	TAXIWAY	03	Taxiway 06	Parking	S	581	25	15,735	8/2/1993	AC	0	0	0
THANGMU	Parking Twys Mulino	TAXIWAY	04	Section 03	Parking	S	535	25	15,540	8/2/1993	AC	0	0	0
TLANEMU	Taxilane Mulino	TAXIWAY	01	Hangar Apron	Section 02	S	207	25	5,117	8/2/2003	AC	0	0	0
TLANEMU	Taxilane Mulino	TAXIWAY	02	Hangar Apron	Section 04	S	320	23	7,100	8/2/2003	AC	0	0	0
TLANEMU	Taxilane Mulino	TAXIWAY	03	Hangar Apron	Section 06	S	310	25	7,683	8/2/2003	AC	0	0	0

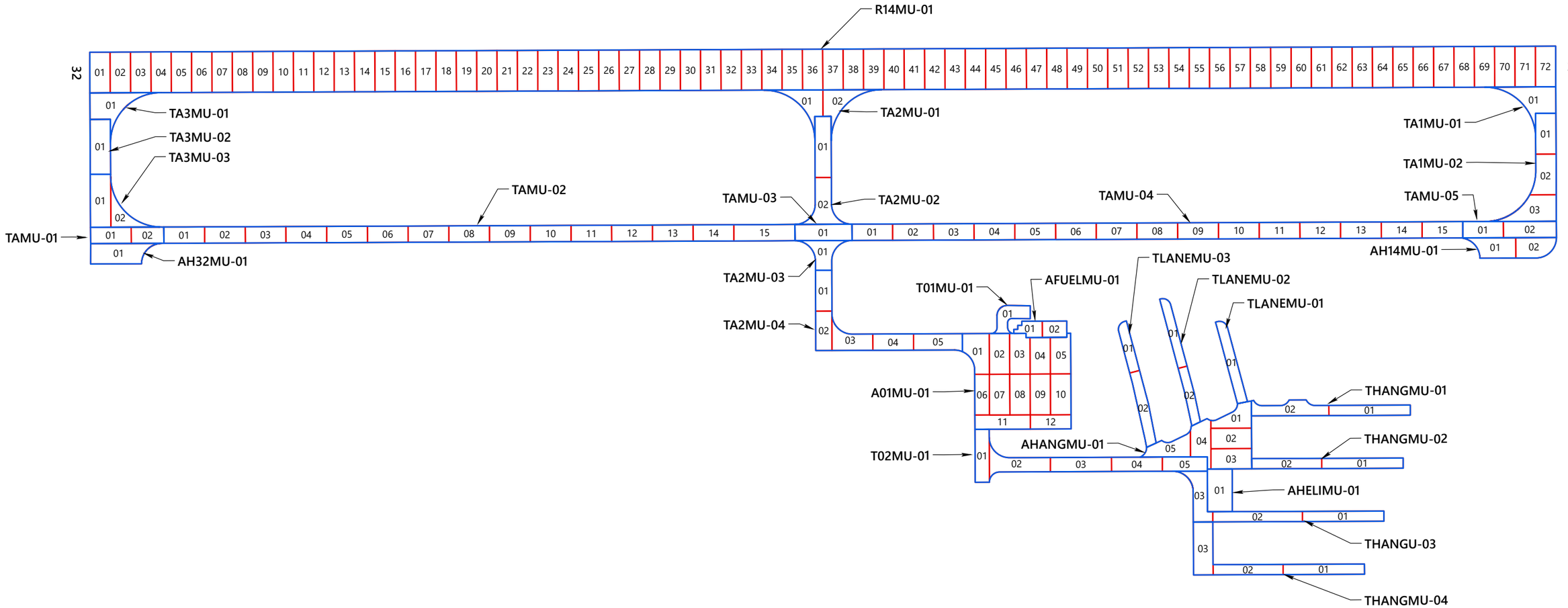
Abbreviations:
P = Primary pavement, S = Secondary pavement
LCD = Last Construction Date. The date of the last major rehabilitation (e.g. overlay)
AC = Asphalt Concrete, PCC = Portland Cement Concrete

Table 3A: EXAMPLE SAMPLE RATES FOR AC AND PCC PAVEMENTS

AC Sampling Rate	
Total Number of Sample Units, N	Sample Units to Survey, n
1	1
2-3	2
4-6	3
7-13	4
14-38	5
39+	6

PCC Sampling Rate	
Total Number of Sample Units, N	Sample Units to Survey, n
1	1
2	2
3-4	3
5-6	4
7-8	5
9-11	6
12-14	7
15-19	8
20-27	9
28-38	10
39-58	11
59-104	12
105-313	13
314+	14

Note: AC = Asphalt Concrete
PCC = Portland Cement Concrete



LEGEND

- SECTIONS
- SAMPLE UNITS

N

0 250 500 Feet

GRI

MULINO STATE AIRPORT
SAMPLE UNIT LAYOUT

DEC. 2023 JOB NO. 6593-F FIG. 1A

APPENDIX B

Pavement Condition Index Survey Results

APPENDIX B

PAVEMENT CONDITION INDEX SURVEY RESULTS

B.1 METHODOLOGY

As previously discussed, the PCI is a measure of the pavement's functional surface condition and provides a methodology for assessing the causes of distress and whether the distress is related to a load or climatic conditions. Although the PCI is not a direct measure of structural capacity, it provides a suggestion of the structural needs of the pavement.

The PCI is based on the type, severity, and quantity of each distress found in an inspected sample unit. The results are displayed using a seven-category rating scale in accordance with ASTM D5340. Flexible pavement (e.g., AC and AAC) and rigid pavement (e.g., PCC) distress types are presented in Table 1B. A summary of the pavement condition results by branch and section is included in Tables 2B and 3B of Appendix B, respectively.

Table 1B: PAVER DISTRESS CODES FOR FLEXIBLE AND RIGID PAVEMENT

Flexible Pavement			Rigid Pavement		
PAVER Code	Pavement Distress	Related Cause	PAVER Code	Pavement Distress	Related Cause
41	Alligator Cracking	Load	61	Blow-Up	Load
42	Bleeding	Other	62	Corner Break	Load
43	Block Cracking	Climate/ Durability	63	Longitudinal, Transverse, & Diagonal Cracks	Climate/ Durability
44	Corrugation	Other	64	Durability Cracking	Climate/ Durability
45	Depression	Other	65	Joint Seal Damage	Other
46	Jet Blast	Other	66	Small Patch	Other
47	Joint Reflection Cracking	Climate/ Durability	67	Large Patch	Other
48	Longitudinal & Transverse Cracking	Climate/ Durability	68	Pop Outs	Other
49	Oil Spillage	Other	69	Pumping	Other
50	Patching	Climate/ Durability	70	Scaling	Other
51	Polished Aggregate	Other	71	Faulting	Other
52	Raveling	Climate/ Durability	72	Shattered Slab	Load

Flexible Pavement		
PAVER Code	Pavement Distress	Related Cause
53	Rutting	Load
54	Shoving	Other
55	Slippage Cracking	Other
56	Swelling	Other
57	Weathering	Climate/ Durability

Rigid Pavement		
PAVER Code	Pavement Distress	Related Cause
73	Shrinkage Cracking	Other
74	Joint Spalls	Other
75	Corner Spalls	Other
76	Alkali-Silica Reactivity (ASR)	Other

To obtain the section PCI, we extrapolated the PCI of each selected sample unit over the entire section area. Distresses found in sample units classified as "additional"– defined as nonrepresentative instead of random- are not extrapolated over the entire section but merely added to the extrapolated quantity. The PCI rating scale presented previously in Table 3-1 of Section 3.1 is based on ASTM D5340.

Section 4.1 of ASTM D5340, governing PCI surveys, offers this caution:

"The PCI is a numerical indicator that rates the surface condition of the pavement. The PCI provides a measure of the **present condition** of the pavement based on the distress observed on the surface of the pavement, which also indicates the structural integrity and surface operational condition (localized roughness and safety). The PCI **cannot** measure structural capacity, nor does it provide a direct measurement of skid resistance or roughness. It provides an objective and rational basis for determining maintenance and repair needs and priorities. Continuous monitoring of the PCI is used to establish the rate of pavement deterioration, which permits early identification of major rehabilitation needs. The PCI provides feedback on pavement performance for validation or improvement of current pavement design and maintenance procedures."

Based on the limitations of the PCI method, it is imperative that engineers and planners treat the PCI as a tool that will assist them during the M&R planning process. Any major project should always be preceded by an up-to-date, detailed, 100% project-level inspection of the pavement in order to reevaluate maintenance needs prior to the project design process.

B.2 DISTRESS TYPES

Distress tends to fall into one of the following four cause categories:

- **Load-related:** Flexible pavement distresses include alligator/fatigue cracking, corrugation, depression, polished aggregate, rutting, and slippage cracking. Rigid

pavement distresses include corner breaks, longitudinal cracking, divided slabs, polished aggregate, pumping, and joint spalling.

- **Climate- and durability-related:** Flexible pavement distresses include bleeding, block cracking, joint reflection cracking, longitudinal and transverse (L&T) cracking, swelling, and raveling/weathering. Rigid pavement distresses include blow-ups, durability cracking, longitudinal cracking, pop-outs, pumping, scaling, shrinkage cracks, and joint and corner spalling.

- **Moisture- and drainage-related:** Flexible pavement distresses include alligator/fatigue cracking, depressions, potholes, and swelling. Rigid pavement distresses include corner breaks, divided slabs, and pumping.

- **Other factors:** Oil spillage, jet blast erosion, bleeding, patching, and concrete slab joint faulting.

As described above, distress may be the result of more than one cause. For example, depressions may be caused by incorrect compaction during construction or by subgrade softening due to environmental factors. In addition, distress may be initiated by one cause but may progress to a distress of higher severity by another cause. Therefore, engineering judgment is critical in analyzing the actual cause or causes of the distress.

B.3 PAVEMENT CONDITION INDEX SURVEY RESULTS

The evaluated Mulino State Airport pavement network consists of 15 branches and 30 sections. A total of 67 sample units were visually inspected in the field. Data from the inspected sample units was input into the PAVER database, and a resultant PCI for each section was computed. Additional details regarding the PCI and distress types observed for each surveyed sample unit are provided in the re-inspection report, Table 1E, in Appendix E. Based on the 2023 PCI survey, the area-weighted average PCI for the entire pavement network at Mulino State Airport is approximately 77, which corresponds to a PCI rating of Satisfactory.

To investigate the rate of deterioration of each pavement section, we compared the PCI results from the 2023 survey to the PCI results from the previous inspection. The variation in PCI between inspections for Mulino State Airport pavement sections is outlined in Table 4B in this appendix.

Table 2B: MULINO STATE AIRPORT CURRENT BRANCH CONDITION REPORT

Branch ID	Number of Sections	Approximate Area, square feet	Use	Area Weighted Average Branch PCI	PCI Category
A01MU	1	57,169	APRON	79	Satisfactory
AFUELMU	1	4,600	APRON	100	Good
AH14MU	1	9,405	APRON	87	Good
AH32MU	1	6,787	APRON	87	Good
AHANGMU	1	23,231	APRON	71	Satisfactory
AHELIMU	1	6,405	HELIPAD	70	Fair
R14MU	1	360,000	RUNWAY	79	Satisfactory
T01MU	1	3,555	TAXIWAY	63	Fair
T02MU	1	23,936	TAXIWAY	72	Satisfactory
TA1MU	2	23,206	TAXIWAY	85	Satisfactory
TA2MU	4	43,263	TAXIWAY	84	Satisfactory
TA3MU	3	23,135	TAXIWAY	86	Satisfactory
TAMU	5	144,000	TAXIWAY	68	Fair
THANGMU	4	51,213	TAXIWAY	71	Satisfactory
TLANEMU	3	19,900	TAXIWAY	67	Fair

Use Category	Number of Sections	Total Area, square feet	Area Weighted Average PCI
APRON/HELIPAD	6	107,597	79
RUNWAY	1	360,000	79
TAXIWAY	23	332,208	73
ALL	**30**	**799,805**	**77**

Abbreviation: PCI = Pavement Condition Index

Table 3B: MULINO STATE AIRPORT 2023 PAVEMENT CONDITION INDEX SURVEY RESULTS

BranchID	SectionID	Last Construction Date	Surface Type	Use	Last Inspection Date	Age at Inspection	PCI	PCI Category	PCI % Climate	PCI % Load	PCI % Other
A01MU	01	8/2/1990	AC	APRON	7/1/2023	33	79	Satisfactory	100	0	0
AFUELMU	01	8/2/2005	PCC	APRON	7/1/2023	18	100	Good	0	0	0
AH14MU	01	8/2/1990	AC	APRON	7/1/2023	33	87	Good	100	0	0
AH32MU	01	8/2/1990	AC	APRON	7/1/2023	33	87	Good	100	0	0
AHANGMU	01	8/2/1993	AC	APRON	7/1/2023	30	71	Satisfactory	100	0	0
AHELIMU	01	8/2/1993	AC	HELIPAD	7/1/2023	30	70	Fair	100	0	0
R14MU	01	8/2/1990	AC	RUNWAY	7/1/2023	33	79	Satisfactory	100	0	0
T01MU	01	8/1/1991	AC	TAXIWAY	7/1/2023	32	63	Fair	100	0	0
T02MU	01	8/2/1993	AC	TAXIWAY	7/1/2023	30	72	Satisfactory	100	0	0
TA1MU	01	8/2/1990	AC	TAXIWAY	7/1/2023	33	84	Satisfactory	100	0	0
TA1MU	02	8/2/1990	AC	TAXIWAY	7/1/2023	33	86	Good	100	0	0
TA2MU	01	8/2/1990	AC	TAXIWAY	7/1/2023	33	85	Satisfactory	100	0	0
TA2MU	02	8/2/1990	AC	TAXIWAY	7/1/2023	33	82	Satisfactory	100	0	0
TA2MU	03	8/2/1990	AC	TAXIWAY	7/1/2023	33	79	Satisfactory	100	0	0
TA2MU	04	8/2/1990	AC	TAXIWAY	7/1/2023	33	85	Satisfactory	100	0	0
TA3MU	01	8/1/1991	AC	TAXIWAY	7/1/2023	32	87	Good	100	0	0
TA3MU	02	8/1/1991	AC	TAXIWAY	7/1/2023	32	87	Good	100	0	0
TA3MU	03	8/1/1991	AC	TAXIWAY	7/1/2023	32	84	Satisfactory	100	0	0
TAMU	01	8/1/1991	AC	TAXIWAY	7/1/2023	32	83	Satisfactory	100	0	0
TAMU	02	8/2/1992	AC	TAXIWAY	7/1/2023	31	62	Fair	82	18	0
TAMU	03	8/2/1990	AC	TAXIWAY	7/1/2023	33	74	Satisfactory	100	0	0
TAMU	04	8/2/1992	AC	TAXIWAY	7/1/2023	31	69	Fair	100	0	0
TAMU	05	8/2/1990	AC	TAXIWAY	7/1/2023	33	84	Satisfactory	100	0	0
THANGMU	01	8/2/1993	AC	TAXIWAY	7/1/2023	30	75	Satisfactory	100	0	0
THANGMU	02	8/2/1993	AC	TAXIWAY	7/1/2023	30	75	Satisfactory	100	0	0
THANGMU	03	8/2/1993	AC	TAXIWAY	7/1/2023	30	69	Fair	100	0	0
THANGMU	04	8/2/1993	AC	TAXIWAY	7/1/2023	30	68	Fair	100	0	0
TLANEMU	01	8/2/2003	AC	TAXIWAY	7/1/2023	20	65	Fair	100	0	0
TLANEMU	02	8/2/2003	AC	TAXIWAY	7/1/2023	20	69	Fair	100	0	0
TLANEMU	03	8/2/2003	AC	TAXIWAY	7/1/2023	20	66	Fair	100	0	0

Abbreviations:
PCI = Pavement Condition Index, AC = Asphalt Concrete, PCC = Portland Cement Concrete

Table 4B: MULINO STATE AIRPORT COMPARISON OF PREVIOUS INSPECTION AND 2023 RESULTS

					2018 Survey			2023 Survey				
Branch ID	Section ID	Surface Type[1]	Approximate Area, square feet	LCD[2]	PCI[3]	PCI Category	Inspection Date	PCI	PCI Category	Age[4]	Δ PCI/yr[5]	Rate of Deterioration
A01MU	01	AC	57,169	8/2/90	67	Fair	5/10/2018	79	Satisfactory	28	2.33	NONE
AFUELMU	01	PCC	4,600	8/2/05	100	Good	5/10/2018	100	Good	13	0	NONE
AH14MU	01	AC	9,405	8/2/90	98	Good	5/10/2018	87	Good	28	-2.14	NORMAL
AH32MU	01	AC	6,787	8/2/90	100	Good	5/10/2018	87	Good	28	-3	NORMAL
AHANGMU	01	AC	23,231	8/2/93	76	Satisfactory	5/10/2018	71	Satisfactory	25	-0.97	NORMAL
AHELIMU	01	AC	6,405	8/2/93	78	Satisfactory	5/10/2018	70	Fair	25	-2	NORMAL
R14MU	01	AC	360,000	8/2/90	84	Satisfactory	5/10/2018	79	Satisfactory	28	-0.97	NORMAL
T01MU	01	AC	3,555	8/1/91	66	Fair	5/10/2018	63	Fair	27	-1	NORMAL
T02MU	01	AC	23,936	8/2/93	87	Good	5/10/2018	72	Satisfactory	25	-2.92	NORMAL
TA1MU	01	AC	6,603	8/2/90	94	Good	5/10/2018	84	Satisfactory	28	-2	NORMAL
TA1MU	02	AC	16,603	8/2/90	84	Satisfactory	5/10/2018	86	Good	28	0.39	NONE
TA2MU	01	AC	9,306	8/2/90	90	Good	5/10/2018	85	Satisfactory	28	-1	NORMAL
TA2MU	02	AC	8,720	8/2/90	95	Good	5/10/2018	82	Satisfactory	28	-2.53	NORMAL
TA2MU	03	AC	3,993	8/2/90	89	Good	5/10/2018	79	Satisfactory	28	-2	NORMAL
TA2MU	04	AC	21,244	8/2/90	84	Satisfactory	5/10/2018	85	Satisfactory	28	0.19	NONE
TA3MU	01	AC	6,517	8/1/91	95	Good	5/10/2018	87	Good	27	-2	NORMAL
TA3MU	02	AC	6,750	8/1/91	92	Good	5/10/2018	87	Good	27	-0.97	NORMAL
TA3MU	03	AC	9,868	8/1/91	95	Good	5/10/2018	84	Satisfactory	27	-2	NORMAL
TAMU	01	AC	7,200	8/1/91	91	Good	5/10/2018	83	Satisfactory	27	-1.55	NORMAL
TAMU	02	AC	62,000	8/2/92	74	Satisfactory	5/10/2018	62	Fair	26	-2	NORMAL
TAMU	03	AC	5,600	8/2/90	90	Good	5/10/2018	74	Satisfactory	28	-3.11	NORMAL
TAMU	04	AC	60,000	8/2/92	73	Satisfactory	5/10/2018	69	Fair	26	-1	NORMAL
TAMU	05	AC	9,200	8/2/90	82	Satisfactory	5/10/2018	84	Satisfactory	28	0.39	NONE
THANGMU	01	AC	10,638	8/2/93	80	Satisfactory	5/10/2018	75	Satisfactory	25	-1	NORMAL
THANGMU	02	AC	9,300	8/2/93	74	Satisfactory	5/10/2018	75	Satisfactory	25	0.19	NONE
THANGMU	03	AC	15,735	8/2/93	78	Satisfactory	5/10/2018	69	Fair	25	-2	NORMAL
THANGMU	04	AC	15,540	8/2/93	79	Satisfactory	5/10/2018	68	Fair	25	-2.14	NORMAL
TLANEMU	01	AC	5,117	8/2/03	75	Satisfactory	5/10/2018	65	Fair	15	-2	NORMAL
TLANEMU	02	AC	7,100	8/2/03	75	Satisfactory	5/10/2018	69	Fair	15	-1.17	NORMAL
TLANEMU	03	AC	7,683	8/2/03	79	Satisfactory	5/10/2018	66	Fair	15	-3	NORMAL

Abbreviations:

[1] AC = Asphalt Concrete, PCC = Portland Cement Concrete

[2] LCD = Last construction date. The date of the last major pavement rehabilitation (e.g. AC overlay)

[3] PCI = Pavement Condition Index

[4] Age = Pavement age in years at the time of the PCI survey in 2018

[5] Δ PCI/yr = Change in PCI points per year between 2018 survey and 2023 survey

APPENDIX C

Future Pavement Condition Analysis

APPENDIX C

PAVEMENT CONDITION ANALYSIS

C.1 METHODOLOGY

In addition to assessing the current condition of a pavement, it is very important from a planning standpoint to be able to predict with reasonable accuracy its future condition. In a pavement management plan (PMP), this is done with the aid of a prediction model. When an APMS is initially implemented, the default models are typically used to predict the future condition of a pavement. However, after PCI surveys are completed, the historical data are then used to refine the models, so they better represent the deterioration of a particular class of pavement based on local climatic conditions, loading, material sources, construction procedures, etc. The importance of accurate prediction models is part of the reason it is essential to conduct periodic, routine surveys in order to track the rate of deterioration.

In PAVER, the pavement deterioration curves are developed based on the "family" model procedure. A pavement "family" is defined as a group of pavements with similar deterioration characteristics. The procedure for developing the prediction models is:

1) Define the pavement families.
2) Review the data.
3) Conduct a data-outlier analysis.
4) Model the data.

C.2 PREDICTION MODELS

We developed separate condition prediction models for each pavement "family" at Mulino State Airport. The delineation is based on branch use, surface type, section rank, and structural design life. We use four distinct models for the following "families" of pavements at Mulino State Airport. For each model, we reviewed the data in order to filter out any inconsistent or inaccurate data or any data that fall outside boundary values set by PAVER. After outliers are removed and the data are checked for accuracy and reasonableness, the PAVER program calculates a best-fit curve using a polynomial-constrained, least-squares analysis procedure. This best-fit curve for each family is used in the analysis to predict the average behavior of all sections within each "family." Our condition prediction models for each "family" are provided on Figures 1C through 4C below.

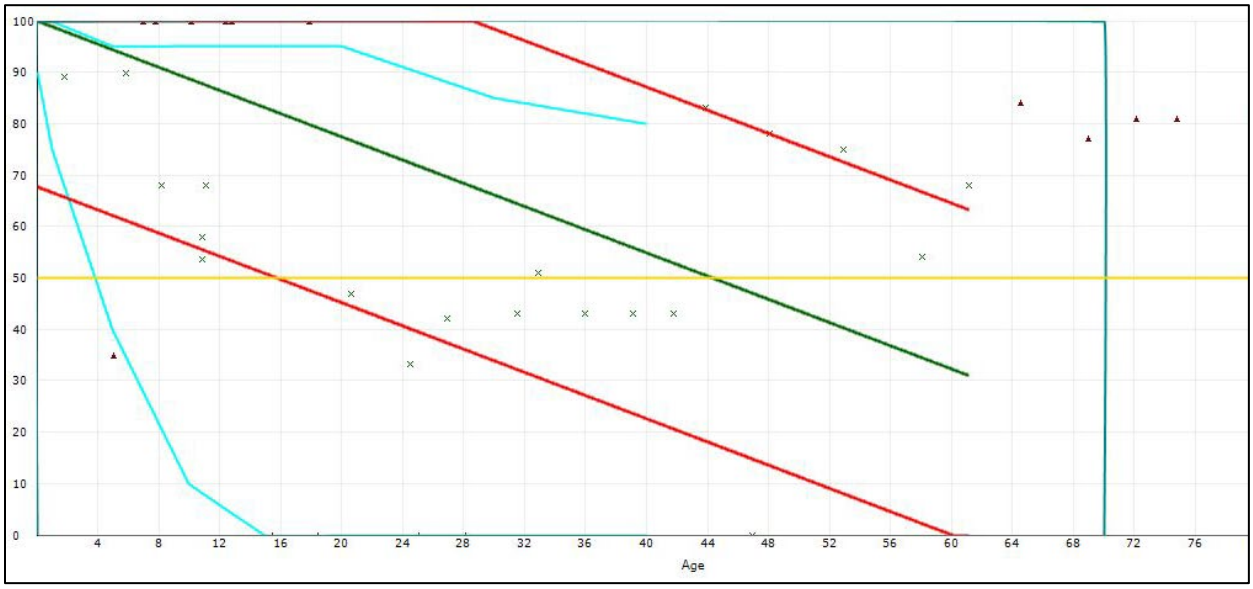


Figure 1C: CONDITION PREDICTION MODEL FOR NORTHWESTERN CATEGORY 4 PCC RUNWAYS, TAXIWAYS, AND APRONS

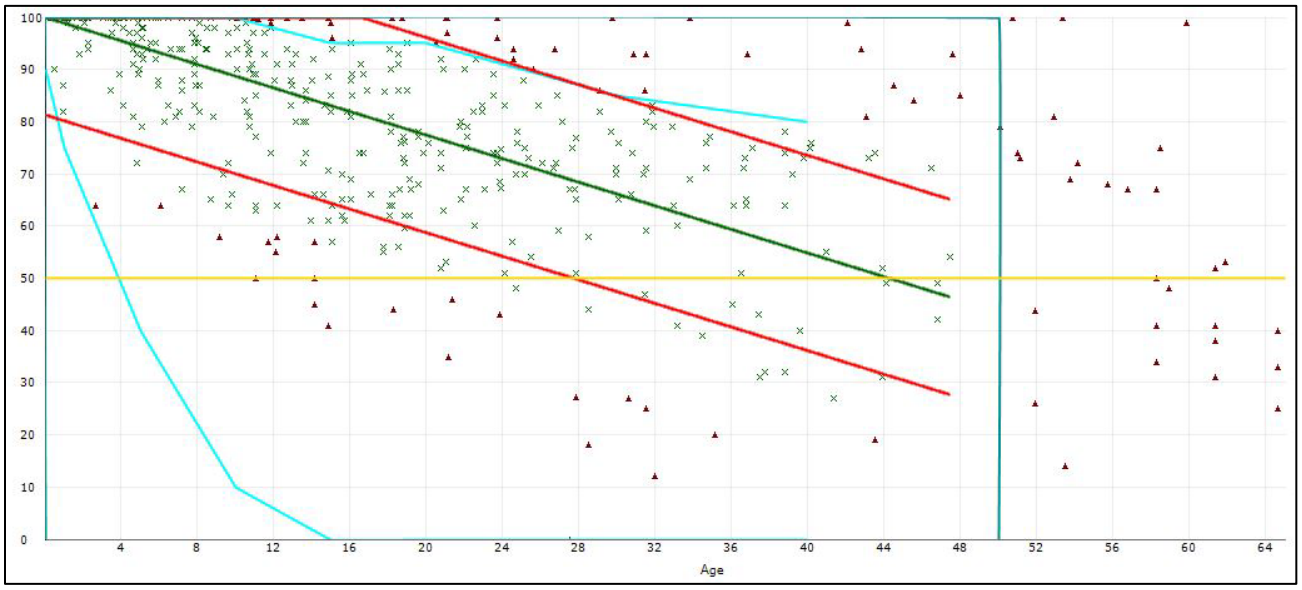


Figure 2C: CONDITION PREDICTION MODEL FOR NORTHWESTERN CATEGORY 4 AC APRONS

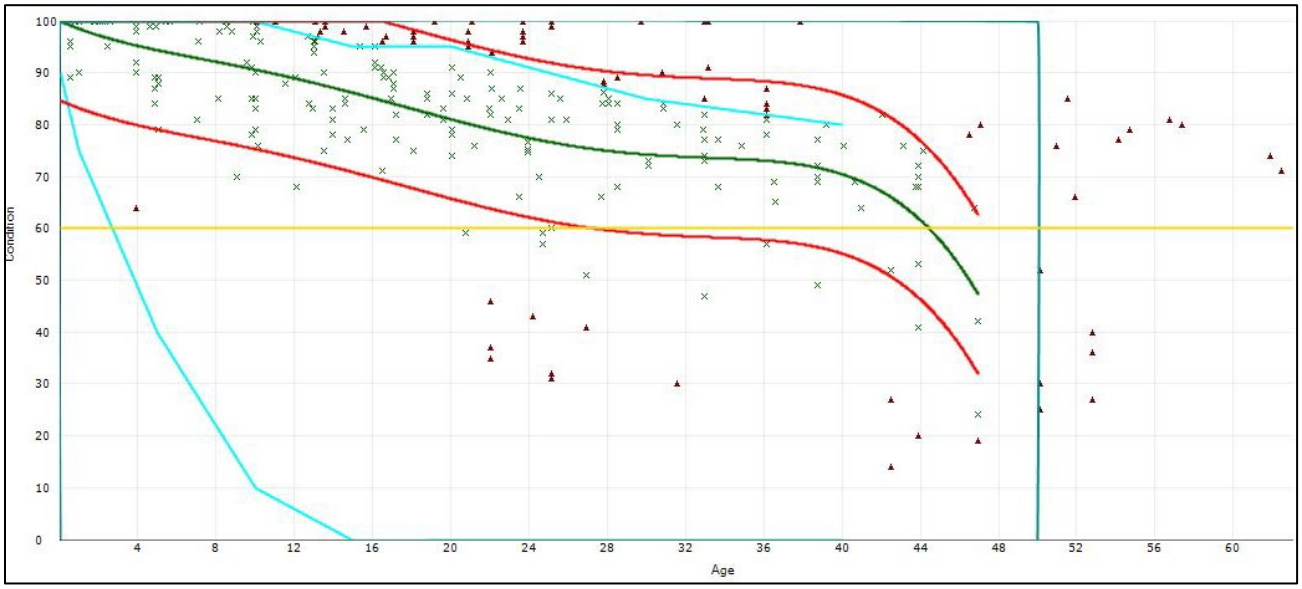


Figure 3C: CONDITION PREDICTION MODEL FOR NORTHWESTERN CATEGORY 4 AC RUNWAYS

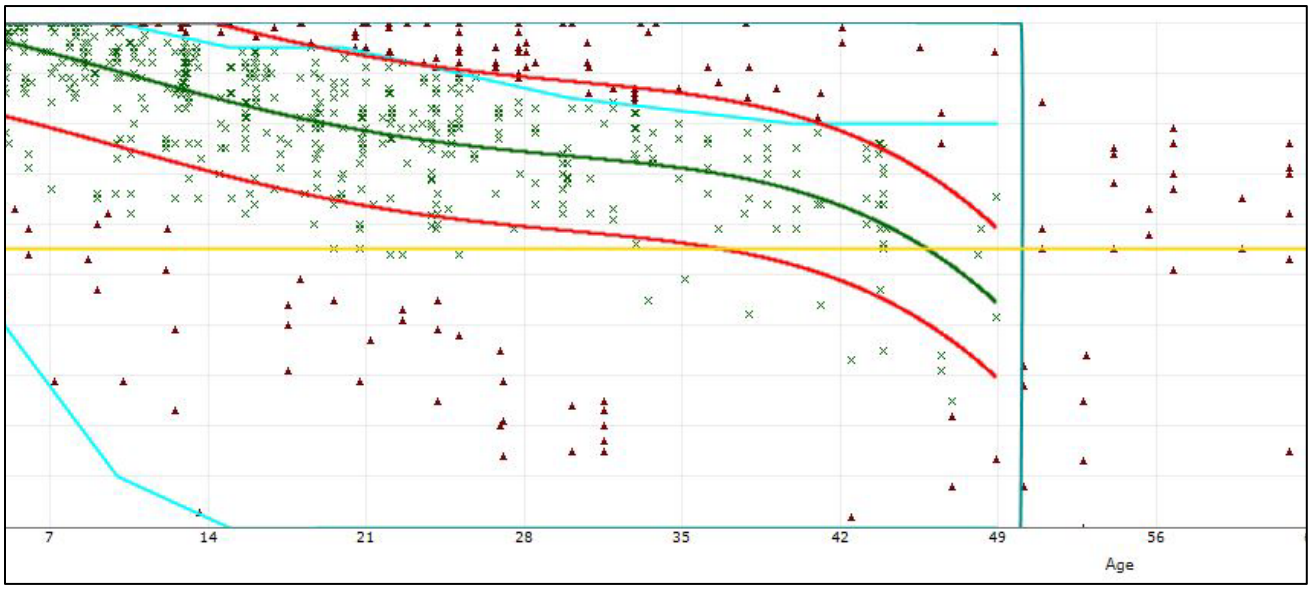


Figure 4C: CONDITION PREDICTION MODEL FOR NORTHWESTERN CATEGORY 4 AC TAXIWAYS

C.3 CRITICAL PCI

Each of the condition-prediction models has an assigned critical PCI. The critical PCI is the point at which the pavement condition begins to deteriorate more quickly over time. As the condition deteriorates to a worse state, major M&R (rehabilitation/reconstruction) is triggered because the cost to apply localized M&R increases significantly. Pavement sections with PCI above the critical value are given a higher priority for funding during budget analysis in order to prevent them from deteriorating to the point where more costly rehabilitation is necessary. We used the following critical PCI values at Mulino State Airport:

- Runways – 60
- Taxiways/Taxilanes – 55
- Aprons – 50

C.4 FUTURE CONDITION ANALYSIS

As previously discussed, the projected condition of each pavement section was determined for 5- and 10-year periods. The projected pavement conditions in 5 years and 10 years for each pavement section at Mulino State Airport, along with the conditions at the previous inspection, are listed in Table 1C.

C.5 FUNCTIONAL REMAINING LIFE

As mentioned above, functional remaining life is the practical amount of time a pavement is in service before requiring rehabilitation, as estimated based solely on visual condition. This is not to be confused with structural remaining life, which requires analysis of the structural capacity of a pavement.

We calculated two forms of functional remaining life based on the current visual condition surveys of the pavement at Mulino State Airport: the time until rehabilitation and the time until the pavement is no longer operational due to high foreign object debris potential and increased safety concerns for trafficking aircraft (PCI less than 40). The results of the functional life analysis are provided in Table 2C.

Table 1C: PAST, PRESENT AND FUTURE PCI

		Past Inspection PCI	Current PCI	Predicted Future PCI	
BranchID	SectionID	2018	2023	2028	2033
A01MU	01	67	79	73	68
AFUELMU	01	100	100	94	89
AH14MU	01	98	87	81	77
AH32MU	01	100	87	81	77
AHANGMU	01	76	71	65	60
AHELIMU	01	78	70	64	59
R14MU	01	84	79	75	74
T01MU	01	66	63	50	32
T02MU	01	87	72	68	61
TA1MU	01	94	84	79	76
TA1MU	02	84	86	81	77
TA2MU	01	90	85	80	76
TA2MU	02	95	82	78	75
TA2MU	03	89	79	76	73
TA2MU	04	84	85	80	76
TA3MU	01	95	87	81	77
TA3MU	02	92	87	81	77
TA3MU	03	95	84	79	76
TAMU	01	91	83	78	75
TAMU	02	74	62	48	31
TAMU	03	90	74	72	68
TAMU	04	73	69	62	49
TAMU	05	82	84	79	76
THANGMU	01	80	75	73	70
THANGMU	02	74	75	73	70
THANGMU	03	78	69	62	49
THANGMU	04	79	68	60	45
TLANEMU	01	75	65	54	37
TLANEMU	02	75	69	62	49
TLANEMU	03	79	66	56	39

Abbreviation: PCI = Pavement Condition Index

Table 2C: MULINO STATE AIRPORT FUNCTIONAL REMAINING LIFE ANALYSIS

Branch ID	Section ID	Surface Type	Current PCI	Years to Major M&R	Major M&R Trigger PCI[1]	Years to End of Functional Service Life
A01MU	01	AC	79	> 20	50	> 20
AFUELMU	01	PCC	100	> 20	50	> 20
AH14MU	01	AC	87	> 20	50	> 20
AH32MU	01	AC	87	> 20	50	> 20
AHANGMU	01	AC	71	16 - 20	50	> 20
AHELIMU	01	AC	70	16 - 20	50	> 20
R14MU	01	AC	79	> 20	60	> 20
T01MU	01	AC	63	0 - 5	55	6 - 10
T02MU	01	AC	72	11 - 15	55	16 - 20
TA1MU	01	AC	84	> 20	55	> 20
TA1MU	02	AC	86	> 20	55	> 20
TA2MU	01	AC	85	> 20	55	> 20
TA2MU	02	AC	82	> 20	55	> 20
TA2MU	03	AC	79	> 20	55	> 20
TA2MU	04	AC	85	> 20	55	> 20
TA3MU	01	AC	87	> 20	55	> 20
TA3MU	02	AC	87	> 20	55	> 20
TA3MU	03	AC	84	> 20	55	> 20
TAMU	01	AC	83	> 20	55	> 20
TAMU	02	AC	62	0 - 5	55	6 - 10
TAMU	03	AC	74	16 - 20	55	> 20
TAMU	04	AC	69	6 - 10	55	11 - 15
TAMU	05	AC	84	> 20	55	> 20
THANGMU	01	AC	75	> 20	55	> 20
THANGMU	02	AC	75	> 20	55	> 20
THANGMU	03	AC	69	6 - 10	55	11 - 15
THANGMU	04	AC	68	6 - 10	55	11 - 15
TLANEMU	01	AC	65	0 - 5	55	6 - 10
TLANEMU	02	AC	69	6 - 10	55	11 - 15
TLANEMU	03	AC	66	0 - 5	55	6 - 10

Abbreviations:
PCI = Pavement Condition Index, AC = Asphalt Concrete, PCC = Portland Cement Concrete
[1] Major M&R (Maintenance and Rehabilitation) Trigger PCI = Critical PCI

APPENDIX D

Unit Cost Data and Maintenance and Rehabilitation Plan

APPENDIX D

UNIT COST DATA AND MAINTENANCE AND REHABILITATION PLAN

D.1 ANALYSIS METHODOLOGY

We evaluated the M&R needs, as determined from the PAVER analysis results, in order to develop project recommendations for the next five years. The purpose of this analysis is to determine the M&R needs of the Mulino State Airport pavement network condition over time. We used PAVER v7.1.1 software to develop network-level project recommendations for the next five years.

The PAVER M&R Work Planning Module identifies when and where M&R is required and how much it will cost. M&R plans can be developed either by assuming an annual budget or by identifying specific constraints, such as a condition goal, to determine the budget required to meet the goal. The M&R work planning analysis was based on a five-year period beginning on August 1, 2024. A backlog elimination analysis scenario was selected to generate a list of surface treatment, rehabilitation, and reconstruction projects in order to optimize the allocation of capital and establish preservation-based project recommendations. The repair strategies considered for pavement sections in our analysis are as follows:

- Reconstruction – Considered for pavements with a PCI less than 40.
- Rehabilitation (AC Overlay) – Considered for pavements between 40 PCI and the critical PCI and for pavements exhibiting significant load-related distresses.
- Surface Treatment – Treatments (fog seal, slurry seal, thin AC overlay) are applied to an entire pavement section with the intent of slowing the rate of deterioration.
- Localized Maintenance – Maintenance performed on a routine basis, such as crack sealing, wide crack repair, and patching.

It should be noted that the five-year list of recommended projects only includes the highest-cost maintenance items and does not include routine localized maintenance (e.g., crack sealing) work that should also be conducted in addition to and concurrently with the five-year work plan.

D.1.1 Pavement Rank and Use Prioritization

Pavement sections are assigned a rank to establish their relative importance in the overall pavement network, which is most commonly defined by their use (e.g., Taxiway, Apron, Runway). The PAVER analysis uses the combination of the section rank and the branch use

to define the priority of each section during the M&R analysis. Table 1D displays the branch use and section rank prioritization schema we used for analysis.

Table 1D: M&R WORK PRIORITY BY BRANCH USE AND SECTION RANK

Branch Use	Section Rank		
	Primary	Secondary	Tertiary
RUNWAY	1	3	6
TAXIWAY	2	5	8
APRON	4	7	9

D.2 MAINTENANCE POLICIES AND UNIT COSTS

Distress-maintenance policies are policies that determine what type of work should be applied to a specific distress type and severity. For example, on an AC pavement, a medium-severity longitudinal/transverse crack would be repaired by crack sealing. Policies for all the distress types and severities are established by ASTM D5340.

Although our work scope does not include budget analysis, we did assign construction costs to the maintenance work so that PAVER would allocate M&R projects that were approximately equal in costs for each year of the five-year period. The anticipated cost of performing M&R is based on cost tables that relate M&R work type costs to PCI. We reviewed the unit costs from the 2018 report and updated them by reviewing the bid tabulations for recent projects within the vicinity of Mulino State Airport and information provided by the ODAV Pavement Maintenance Program (PMP) project team. The costs for reconstruction are based on the existing pavement sections present within each branch use at Mulino State Airport. The costs represent the fully-loaded costs and include aspects of the project such as administration, contingencies, mobilization, and striping. The cost tables used in the analysis are presented in Table 2D below.

Table 2D: REGION 1 UNIT COST DATA

Type of M&R	Work Type	Unit Cost	Work Unit
Major M&R	Complete Reconstruction with AC	$17.32	Sq Ft
	Cold Mill and Overlay – 2 Inches Thick	$7.64	Sq Ft
Surface Treatment (Global) M&R	Surface Treatment - Slurry Seal	$0.52	Sq Ft
	Surface Treatment - Fog Seal	$0.31	Sq Ft
Localized Preventive M&R	Crack Sealing - AC	$3.12	Ft
	Crack Sealing - PCC	$23.4	Ft
	Crack Sealing – Wide Cracks	$51.48	Ft
	Joint Sealing – PCC	$7.80	Ft
	AC Patching – Full Depth	$78.00	Sq Ft
	PCC Patching – Full Depth	$156.00	Sq Ft

D.3 RECOMMENDED LOCALIZED MAINTENANCE

In order to properly maintain aging pavements, localized M&R activities such as crack sealing and patching should be performed on a routine basis. A list of recommended localized maintenance activities is provided in Table 3D of this appendix.

D.4 RECOMMENDED SURFACE TREATMENT, REHABILITATION, AND RECONSTRUCTION PROJECTS

Surface treatment, rehabilitation, and reconstruction projects refer to activities such as slurry seal/fog seals, AC overlays, and reconstruction. A list of recommended projects is provided in Table 4D of this appendix.

Table 3D: MULINO STATE AIRPORT NETWORK MAINTENANCE REPORT

Branch ID	Section ID	Distress	Severity	Action	Work Quantity	Unit	Unit Cost	Work Cost	Section Total
A01MU	01	Long. & Trans. Cracking	Low	Crack Sealing - AC	2,436	Ft	$3.12	$7,599	$7,599
AH14MU	01	Long. & Trans. Cracking	Low	Crack Sealing - AC	192	Ft	$3.12	$599	$599
AH32MU	01	Long. & Trans. Cracking	Low	Crack Sealing - AC	163	Ft	$3.12	$509	$509
AHANGMU	01	Long. & Trans. Cracking	Low	Crack Sealing - AC	1,380	Ft	$3.12	$4,306	$6,031
AHANGMU	01	Long. & Trans. Cracking	Medium	Crack Sealing - AC	553	Ft	$3.12	$1,725	
AHELIMU	01	Long. & Trans. Cracking	Medium	Crack Sealing - AC	196	Ft	$3.12	$612	$1,610
AHELIMU	01	Long. & Trans. Cracking	Low	Crack Sealing - AC	320	Ft	$3.12	$998	
R14MU	01	Long. & Trans. Cracking	Low	Crack Sealing - AC	17,708	Ft	$3.12	$55,249	$55,249
T01MU	01	Long. & Trans. Cracking	Low	Crack Sealing - AC	460	Ft	$3.12	$1,435	$1,853
T01MU	01	Long. & Trans. Cracking	Medium	Crack Sealing - AC	134	Ft	$3.12	$418	
T02MU	01	Long. & Trans. Cracking	Low	Crack Sealing - AC	1,316	Ft	$3.12	$4,106	$5,693
T02MU	01	Long. & Trans. Cracking	Medium	Crack Sealing - AC	509	Ft	$3.12	$1,587	
TA1MU	01	Long. & Trans. Cracking	Low	Crack Sealing - AC	235	Ft	$3.12	$733	$2,121
TA1MU	02	Long. & Trans. Cracking	Low	Crack Sealing - AC	445	Ft	$3.12	$1,388	
TA2MU	01	Long. & Trans. Cracking	Low	Crack Sealing - AC	197	Ft	$3.12	$615	$665
TA2MU	01	Long. & Trans. Cracking	Medium	Crack Sealing - AC	16	Ft	$3.12	$50	
TA2MU	02	Long. & Trans. Cracking	Low	Crack Sealing - AC	269	Ft	$3.12	$839	$839
TA2MU	03	Long. & Trans. Cracking	Medium	Crack Sealing - AC	10	Ft	$3.12	$31	$462
TA2MU	03	Long. & Trans. Cracking	Low	Crack Sealing - AC	138	Ft	$3.12	$431	
TA2MU	04	Long. & Trans. Cracking	Low	Crack Sealing - AC	441	Ft	$3.12	$1,377	$1,473
TA2MU	04	Long. & Trans. Cracking	Medium	Crack Sealing - AC	31	Ft	$3.12	$96	
TA3MU	01	Long. & Trans. Cracking	Low	Crack Sealing - AC	135	Ft	$3.12	$421	$421
TA3MU	02	Long. & Trans. Cracking	Low	Crack Sealing - AC	156	Ft	$3.12	$487	$487
TA3MU	03	Long. & Trans. Cracking	Low	Crack Sealing - AC	335	Ft	$3.12	$1,045	$1,045
TAMU	01	Long. & Trans. Cracking	Low	Crack Sealing - AC	279	Ft	$3.12	$870	$870
TAMU	02	Long. & Trans. Cracking	Medium	Crack Sealing - AC	3,299	Ft	$3.12	$10,291	$21,386
TAMU	02	Long. & Trans. Cracking	Low	Crack Sealing - AC	3,051	Ft	$3.12	$9,517	
TAMU	02	Alligator Cracking	Medium	Patching - AC Deep	20	SqFt	$78.00	$1,577	
TAMU	03	Long. & Trans. Cracking	Medium	Crack Sealing - AC	40	Ft	$3.12	$125	$749
TAMU	03	Long. & Trans. Cracking	Low	Crack Sealing - AC	200	Ft	$3.12	$624	
TAMU	04	Long. & Trans. Cracking	Medium	Crack Sealing - AC	2,115	Ft	$3.12	$6,599	$15,612
TAMU	04	Long. & Trans. Cracking	Low	Crack Sealing - AC	2,889	Ft	$3.12	$9,014	
TAMU	05	Long. & Trans. Cracking	Low	Crack Sealing - AC	294	Ft	$3.12	$917	$917
THANGMU	01	Long. & Trans. Cracking	Low	Crack Sealing - AC	462	Ft	$3.12	$1,441	$2,131
THANGMU	01	Long. & Trans. Cracking	Medium	Crack Sealing - AC	221	Ft	$3.12	$690	
THANGMU	02	Long. & Trans. Cracking	Low	Crack Sealing - AC	445	Ft	$3.12	$1,388	$1,881
THANGMU	02	Long. & Trans. Cracking	Medium	Crack Sealing - AC	158	Ft	$3.12	$493	
THANGMU	03	Long. & Trans. Cracking	Medium	Crack Sealing - AC	138	Ft	$3.12	$430	$4,456
THANGMU	03	Long. & Trans. Cracking	Low	Crack Sealing - AC	1,290	Ft	$3.12	$4,026	
THANGMU	04	Long. & Trans. Cracking	Low	Crack Sealing - AC	986	Ft	$3.12	$3,076	$4,353
THANGMU	04	Long. & Trans. Cracking	Medium	Crack Sealing - AC	409	Ft	$3.12	$1,277	
TLANEMU	01	Long. & Trans. Cracking	Medium	Crack Sealing - AC	239	Ft	$3.12	$746	$746

Table 3D: MULINO STATE AIRPORT NETWORK MAINTENANCE REPORT

Branch ID	Section ID	Distress	Severity	Action	Work Quantity	Unit	Unit Cost	Work Cost	Section Total
TLANEMU	01	Long. & Trans. Cracking	Low	Crack Sealing - AC	205	Ft	$3.12	$640	$640
TLANEMU	02	Long. & Trans. Cracking	High	Crack Seal - Wide Cracks	8	Ft	$51.48	$412	
TLANEMU	02	Long. & Trans. Cracking	Medium	Crack Sealing - AC	204	Ft	$3.12	$636	$2,262
TLANEMU	02	Long. & Trans. Cracking	Low	Crack Sealing - AC	389	Ft	$3.12	$1,214	
TLANEMU	03	Long. & Trans. Cracking	Medium	Crack Sealing - AC	441	Ft	$3.12	$1,376	$1,376

Abbreviations:

Long. = Longitudinal; Trans. = Transverse; AC = Asphalt Concrete; Ft = Feet; SqFt = Square Feet

Table 4D: FIVE-YEAR GLOBAL MAINTENANCE AND REHABILITATION PLAN

Action Year	Branch ID	Section ID	Branch Use	Surface Type	Current PCI	Action	Area, square feet	Unit Cost per square foot	Total Cost
2025	AH14MU	01	APRON	AC	88	Slurry Seal	9,405	$0.52	$4,891
	AH32MU	01	APRON	AC	87	Slurry Seal	6,787	$0.52	$3,529
	R14MU	01	RUNWAY	AC	79	Slurry Seal	360,000	$0.52	$187,200
	T01MU	01	TAXIWAY	AC	63	Slurry Seal	3,555	$0.52	$1,849
	TA1MU	01	TAXIWAY	AC	84	Slurry Seal	6,603	$0.52	$3,434
	TA1MU	02	TAXIWAY	AC	86	Slurry Seal	16,603	$0.52	$8,634
	TA2MU	01	TAXIWAY	AC	85	Slurry Seal	9,306	$0.52	$4,839
	TA2MU	02	TAXIWAY	AC	83	Slurry Seal	8,720	$0.52	$4,534
	TA2MU	03	TAXIWAY	AC	79	Slurry Seal	3,993	$0.52	$2,076
	TA2MU	04	TAXIWAY	AC	85	Slurry Seal	21,244	$0.52	$11,047
	TA3MU	01	TAXIWAY	AC	87	Slurry Seal	6,517	$0.52	$3,389
	TA3MU	02	TAXIWAY	AC	87	Slurry Seal	6,750	$0.52	$3,510
	TA3MU	03	TAXIWAY	AC	84	Slurry Seal	9,868	$0.52	$5,131
	TAMU	01	TAXIWAY	AC	83	Slurry Seal	7,200	$0.52	$3,744
	TAMU	02	TAXIWAY	AC	62	Slurry Seal	62,000	$0.52	$32,240
	TAMU	03	TAXIWAY	AC	74	Slurry Seal	5,600	$0.52	$2,912
	TAMU	04	TAXIWAY	AC	69	Slurry Seal	60,000	$0.52	$31,200
	TAMU	05	TAXIWAY	AC	85	Slurry Seal	9,200	$0.52	$4,784
2027	A01MU	01	APRON	AC	79	Fog Seal	57,169	$0.31	$17,722
	AHANGMU	01	APRON	AC	71	Fog Seal	23,231	$0.31	$7,202
	AHELIMU	01	HELIPAD	AC	70	Fog Seal	6,405	$0.31	$1,986
2028	T02MU	01	TAXIWAY	AC	72	Slurry Seal	23,936	$0.52	$12,447
	THANGMU	01	TAXIWAY	AC	75	Slurry Seal	10,638	$0.52	$5,532
	THANGMU	02	TAXIWAY	AC	75	Slurry Seal	9,300	$0.52	$4,836
	THANGMU	03	TAXIWAY	AC	69	Slurry Seal	15,735	$0.52	$8,182
	THANGMU	04	TAXIWAY	AC	68	Slurry Seal	15,540	$0.52	$8,081
	TLANEMU	01	TAXIWAY	AC	65	Slurry Seal	5,117	$0.52	$2,661
	TLANEMU	02	TAXIWAY	AC	69	Slurry Seal	7,100	$0.52	$3,692
	TLANEMU	03	TAXIWAY	AC	66	Slurry Seal	7,683	$0.52	$3,995

Abbreviations:
PCI = Pavement Condition Index, AC = Asphalt Concrete

Cost Summary	
2024 Total Project Cost	$0
2025 Total Project Cost	$318,942
2026 Total Project Cost	$0
2027 Total Project Cost	$26,909
2028 Total Project Cost	$49,425
Total 5-Year Project Cost	**$395,276**

APPENDIX E

Reinspection Report

Re-Inspection Report

ODA_2023Survey_11-21-23
Generated Date 12/5/2023

Network: Mulino **Name:** Mulino State

Branch: A01MU **Name:** Apron 01 Mulino **Use:** APRON **Area:** 57,169 SqFt

Section: 01 of 1 **From:** Taxiway A2 **To:** Taxiway 06 **Last Const.:** 8/2/1990

Surface: AC **Family:** 2023_Region1_Cat4_Apron_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 57,169 SqFt **Length:** 236 Ft **Width:** 235 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1990	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1990	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 12 **Surveyed:** 5

Conditions: **PCI:** 79

Inspection Comments:

Sample Number: 02 **Type:** R **Area:** 5000.00 SqFt **PCI:** 79

Sample Comments:

48	L & T CR	L	178.00	Ft
57	WEATHERING	L	4000.00	SqFt
57	WEATHERING	M	1000.00	SqFt

Sample Number: 03 **Type:** R **Area:** 5000.00 SqFt **PCI:** 80

Sample Comments:

48	L & T CR	L	192.00	Ft
50	PATCHING	L	24.00	SqFt
57	WEATHERING	L	5000.00	SqFt

Sample Number: 05 **Type:** R **Area:** 4598.00 SqFt **PCI:** 75

Sample Comments:

48	L & T CR	L	231.00	Ft
57	WEATHERING	L	3698.00	SqFt
57	WEATHERING	M	900.00	SqFt

Sample Number: 08 **Type:** R **Area:** 5000.00 SqFt **PCI:** 78

Sample Comments:

48	L & T CR	L	86.00	Ft
48	L & T CR	L	137.00	Ft
57	WEATHERING	L	4800.00	SqFt
57	WEATHERING	M	200.00	SqFt

Sample Number: 09 **Type:** R **Area:** 5000.00 SqFt **PCI:** 81

Sample Comments:

48	L & T CR	L	224.00	Ft
57	WEATHERING	L	5000.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: AFUELMU **Name:** Fuel Apron Mulino **Use:** APRON **Area:** 4,600 SqFt

Section: 01 of 1 **From:** Apron 01 **To:** Hangar **Last Const.:** 8/2/2005

Surface: PCC **Family:** 2023_Region1_Cat3/4/5_AllPCC **Zone:** 4S9 **Category:** F **Rank:** S

Area: 4,600 SqFt **Length:** 130 Ft **Width:** 40 Ft

Slabs: 46 **Slab Length:** 10 Ft **Slab Width:** 10 Ft **Joint Length:** 870 Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/2005 **Work Type:** Base Course - Aggregate **Code:** BA-AG **Is Major M&R:** False

Work Date: 8/2/2005 **Work Type:** New Construction - PCC **Code:** NC-PC **Is Major M&R:** True

Last Insp. Date: 7/1/2023 **TotalSamples:** 2 **Surveyed:** 2

Conditions: **PCI:** 100

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 24.00 Slabs **PCI:** 100

Sample Comments:

<No Distress>

Sample Number: 02 **Type:** R **Area:** 22.00 Slabs **PCI:** 100

Sample Comments:

<No Distress>

Network: Mulino **Name:** Mulino State

Branch: AH14MU **Name:** 14 End Hold Apron Mulino **Use:** TAXIWAY **Area:** 9,405 SqFt

Section: 01 of 1 **From:** Taxiway A **To:** - **Last Const.:** 8/2/1990

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 9,405 SqFt **Length:** 140 Ft **Width:** 50 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1990	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1990	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2003	**Work Type:** Surface Treatment - Seal Coat	**Code:** ST-SC	**Is Major M&R:** False
Work Date: 8/1/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 2 **Surveyed:** 2

Conditions: **PCI:** 87

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 4942.00 SqFt **PCI:** 88

Sample Comments:

48	L & T CR	L	19.00	Ft
48	L & T CR	L	78.00	Ft
57	WEATHERING	L	4942.00	SqFt

Sample Number: 02 **Type:** R **Area:** 4463.00 SqFt **PCI:** 87

Sample Comments:

48	L & T CR	L	95.00	Ft
57	WEATHERING	L	4463.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: AH32MU **Name:** 32 End Hold Apron Mulino **Use:** TAXIWAY **Area:** 6,787 SqFt

Section: 01 of 1 **From:** Taxiway A **To:** - **Last Const.:** 8/2/1990

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 6,787 SqFt **Length:** 125 Ft **Width:** 50 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1990	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1990	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2003	**Work Type:** Surface Treatment - Seal Coat	**Code:** ST-SC	**Is Major M&R:** False
Work Date: 8/1/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 87

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 6787.00 SqFt **PCI:** 87

Sample Comments:

48	L & T CR	L	142.00	Ft
48	L & T CR	L	21.00	Ft
57	WEATHERING	L	6787.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: AHANGMU **Name:** Hangar Apron Mulino **Use:** APRON **Area:** 23,231 SqFt

Section: 01 of 1 **From:** Taxiway 06 **To:** Parking Taxiway **Last Const.:** 8/2/1993

Surface: AC **Family:** 2023_Region1_Cat4_Apron_AC **Zone:** 4S9 **Category:** F **Rank:** S

Area: 23,231 SqFt **Length:** 109 Ft **Width:** 94 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1993	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1993	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2005	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 5 **Surveyed:** 3

Conditions: **PCI:** 71

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 4205.00 SqFt **PCI:** 71

Sample Comments:

48	L & T CR	L	306.00	Ft
48	L & T CR	M	63.00	Ft
57	WEATHERING	L	4205.00	SqFt

Sample Number: 02 **Type:** R **Area:** 5000.00 SqFt **PCI:** 75

Sample Comments:

48	L & T CR	L	62.00	Ft
48	L & T CR	L	152.00	Ft
48	L & T CR	M	95.00	Ft
57	WEATHERING	L	5000.00	SqFt

Sample Number: 03 **Type:** R **Area:** 5000.00 SqFt **PCI:** 68

Sample Comments:

48	L & T CR	L	162.00	Ft
48	L & T CR	L	162.00	Ft
48	L & T CR	M	180.00	Ft
57	WEATHERING	L	5000.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: AHELIMU **Name:** Helipad Mulino **Use:** HELIPAD **Area:** 6,405 SqFt

Section: 01 of 1 **From:** Hangar Apron **To:** Parking Taxiway **Last Const.:** 8/2/1993

Surface: AC **Family:** 2023_Region1_Cat4_Apron_AC **Zone:** 4S9 **Category:** F **Rank:** S

Area: 6,405 SqFt **Length:** 61 Ft **Width:** 105 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1993	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1993	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2005	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 70

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 6405.00 SqFt **PCI:** 70

Sample Comments:

48	L & T CR	L	237.00	Ft
48	L & T CR	L	83.00	Ft
48	L & T CR	M	130.00	Ft
48	L & T CR	M	66.00	Ft
57	WEATHERING	L	6405.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: R14MU **Name:** Runway 14/32 Mulino **Use:** RUNWAY **Area:** 360,000 SqFt

Section: 01 of 1 **From:** Runway 32 End, STA 0+00 **To:** 14 End, STA 36+00 **Last Const.:** 8/2/1990

Surface: AC **Family:** 2023_Region1_Cat4_Runway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 360,000 SqFt **Length:** 3,600 Ft **Width:** 100 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1990	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1990	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False
Work Date: 8/2/2005	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 72 **Surveyed:** 6

Conditions: **PCI:** 79

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 5000.00 SqFt **PCI:** 72

Sample Comments:

48	L & T CR	L	246.00	Ft
48	L & T CR	L	74.00	Ft
57	WEATHERING	L	4500.00	SqFt
57	WEATHERING	M	500.00	SqFt

Sample Number: 14 **Type:** R **Area:** 5000.00 SqFt **PCI:** 82

Sample Comments:

48	L & T CR	L	150.00	Ft
48	L & T CR	L	45.00	Ft
48	L & T CR	L	16.00	Ft
57	WEATHERING	L	5000.00	SqFt

Sample Number: 28 **Type:** R **Area:** 5000.00 SqFt **PCI:** 80

Sample Comments:

48	L & T CR	L	228.00	Ft
48	L & T CR	L	16.00	Ft
57	WEATHERING	L	5000.00	SqFt

Sample Number: 41 **Type:** R **Area:** 5000.00 SqFt **PCI:** 82

Sample Comments:

48	L & T CR	L	205.00	Ft
57	WEATHERING	L	5000.00	SqFt

Sample Number: 54 **Type:** A **Area:** 5000.00 SqFt **PCI:** 78

Sample Comments:

48	L & T CR	L	89.00	Ft
48	L & T CR	L	210.00	Ft
57	WEATHERING	L	5000.00	SqFt

Sample Number: 72 **Type:** R **Area:** 5000.00 SqFt **PCI:** 80

Sample Comments:

48	L & T CR	L	175.00	Ft
48	L & T CR	L	39.00	Ft
48	L & T CR	L	32.00	Ft
57	WEATHERING	L	5000.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: T01MU **Name:** Taxiway 01 Mulino **Use:** TAXIWAY **Area:** 3,555 SqFt

Section: 01 of 1 **From:** Apron 01 **To:** Hangar **Last Const.:** 8/1/1991

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 3,555 SqFt **Length:** 120 Ft **Width:** 30 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1991	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/3/2005	**Work Type:** Patching - AC Deep	**Code:** PA-AD	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 63

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 3555.00 SqFt **PCI:** 63

Sample Comments:

48	L & T CR	L	212.00	Ft
48	L & T CR	L	248.00	Ft
48	L & T CR	M	64.00	Ft
48	L & T CR	M	70.00	Ft
57	WEATHERING	L	3555.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: T02MU **Name:** Taxiway 02 Mulino **Use:** TAXIWAY **Area:** 23,936 SqFt

Section: 01 of 1 **From:** Apron 01 **To:** Hangar Apron **Last Const.:** 8/2/1993

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 23,936 SqFt **Length:** 683 Ft **Width:** 35 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1993	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1993	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2005	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 5 **Surveyed:** 3

Conditions: **PCI:** 72

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 4550.00 SqFt **PCI:** 68

Sample Comments:

48	L & T CR	L	400.00	Ft
48	L & T CR	M	95.00	Ft
57	WEATHERING	L	4550.00	SqFt

Sample Number: 02 **Type:** R **Area:** 5919.00 SqFt **PCI:** 73

Sample Comments:

48	L & T CR	L	162.00	Ft
48	L & T CR	M	141.00	Ft
57	WEATHERING	L	5919.00	SqFt

Sample Number: 03 **Type:** R **Area:** 5245.00 SqFt **PCI:** 74

Sample Comments:

48	L & T CR	L	35.00	Ft
48	L & T CR	L	267.00	Ft
48	L & T CR	M	98.00	Ft
57	WEATHERING	L	5245.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TA1MU **Name:** Taxiway A1 Mulino **Use:** TAXIWAY **Area:** 23,206 SqFt

Section: 02 of 2 **From:** Section 01 **To:** Taxiway A **Last Const.:** 8/2/1990

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 16,603 SqFt **Length:** 265 Ft **Width:** 50 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1990	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1990	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2003	**Work Type:** Surface Treatment - Seal Coat	**Code:** ST-SC	**Is Major M&R:** False
Work Date: 8/1/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 3 **Surveyed:** 2

Conditions: **PCI:** 86

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 5000.00 SqFt **PCI:** 88

Sample Comments:

48	L & T CR	L	94.00	Ft
57	WEATHERING	L	5000.00	SqFt

Sample Number: 02 **Type:** R **Area:** 5299.00 SqFt **PCI:** 84

Sample Comments:

48	L & T CR	L	182.00	Ft
57	WEATHERING	L	5299.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TA1MU **Name:** Taxiway A1 Mulino **Use:** TAXIWAY **Area:** 23,206 SqFt

Section: 01 of 2 **From:** Runway 14/32 **To:** Section 02 **Last Const.:** 8/2/1990

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 6,603 SqFt **Length:** 65 Ft **Width:** 50 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1990	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1990	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2003	**Work Type:** Surface Treatment - Seal Coat	**Code:** ST-SC	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 84

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 6603.00 SqFt **PCI:** 84

Sample Comments:

48	L & T CR	L	133.00	Ft
48	L & T CR	L	102.00	Ft
57	WEATHERING	L	6603.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TA2MU **Name:** Taxiway A2 Mulino **Use:** TAXIWAY **Area:** 43,263 SqFt

Section: 03 of 4 **From:** Taxiway A **To:** Section 04 **Last Const.:** 8/2/1990

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 3,993 SqFt **Length:** 73 Ft **Width:** 40 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1990	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1990	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2003	**Work Type:** Surface Treatment - Seal Coat	**Code:** ST-SC	**Is Major M&R:** False
Work Date: 8/1/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 79

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 3993.00 SqFt **PCI:** 79

Sample Comments:

48	L & T CR	L	138.00	Ft
48	L & T CR	M	10.00	Ft
57	WEATHERING	L	3993.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TA2MU **Name:** Taxiway A2 Mulino **Use:** TAXIWAY **Area:** 43,263 SqFt

Section: 04 of 4 **From:** Section 03 **To:** Apron 01 **Last Const.:** 8/2/1990

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 21,244 SqFt **Length:** 517 Ft **Width:** 40 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1990	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1990	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 5 **Surveyed:** 3

Conditions: **PCI:** 85

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 4000.00 SqFt **PCI:** 89

Sample Comments:

48	L & T CR	L	45.00	Ft
57	WEATHERING	L	4000.00	SqFt

Sample Number: 02 **Type:** R **Area:** 3880.00 SqFt **PCI:** 83

Sample Comments:

48	L & T CR	L	41.00	Ft
48	L & T CR	L	99.00	Ft
57	WEATHERING	L	3880.00	SqFt

Sample Number: 03 **Type:** R **Area:** 4537.00 SqFt **PCI:** 83

Sample Comments:

48	L & T CR	L	40.00	Ft
48	L & T CR	L	33.00	Ft
48	L & T CR	M	18.00	Ft
57	WEATHERING	L	4537.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TA2MU **Name:** Taxiway A2 Mulino **Use:** TAXIWAY **Area:** 43,263 SqFt

Section: 01 of 4 **From:** Runway 14/32 **To:** Section 02 **Last Const.:** 8/2/1990

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 9,306 SqFt **Length:** 65 Ft **Width:** 40 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1990	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1990	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2003	**Work Type:** Surface Treatment - Seal Coat	**Code:** ST-SC	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 2 **Surveyed:** 2

Conditions: **PCI:** 85

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 3353.00 SqFt **PCI:** 82

Sample Comments:

48	L & T CR	L	73.00	Ft
48	L & T CR	M	16.00	Ft
57	WEATHERING	L	3353.00	SqFt

Sample Number: 02 **Type:** R **Area:** 5953.00 SqFt **PCI:** 87

Sample Comments:

48	L & T CR	L	47.00	Ft
48	L & T CR	L	77.00	Ft
57	WEATHERING	L	5953.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TA2MU **Name:** Taxiway A2 Mulino **Use:** TAXIWAY **Area:** 43,263 SqFt

Section: 02 of 4 **From:** Section 01 **To:** Taxiway A **Last Const.:** 8/2/1990

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 8,720 SqFt **Length:** 218 Ft **Width:** 40 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1990	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1990	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2003	**Work Type:** Surface Treatment - Seal Coat	**Code:** ST-SC	**Is Major M&R:** False
Work Date: 8/1/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 2 **Surveyed:** 2

Conditions: **PCI:** 82

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 4720.00 SqFt **PCI:** 86

Sample Comments:

48	L & T CR	L	127.00	Ft
57	WEATHERING	L	4720.00	SqFt

Sample Number: 02 **Type:** R **Area:** 4000.00 SqFt **PCI:** 79

Sample Comments:

48	L & T CR	L	142.00	Ft
57	WEATHERING	L	3600.00	SqFt
57	WEATHERING	M	400.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TA3MU **Name:** Taxiway A3 Mulino **Use:** TAXIWAY **Area:** 23,135 SqFt

Section: 03 of 3 **From:** Taxiway A **To:** Section 02 **Last Const.:** 8/1/1991

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 9,868 SqFt **Length:** 130 Ft **Width:** 50 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1991	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2005	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 8/2/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 2 **Surveyed:** 2

Conditions: **PCI:** 84

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 6500.00 SqFt **PCI:** 83

Sample Comments:

48	L & T CR	L	254.00	Ft
57	WEATHERING	L	6500.00	SqFt

Sample Number: 02 **Type:** R **Area:** 3368.00 SqFt **PCI:** 87

Sample Comments:

48	L & T CR	L	81.00	Ft
57	WEATHERING	L	3368.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TA3MU **Name:** Taxiway A3 Mulino **Use:** TAXIWAY **Area:** 23,135 SqFt

Section: 02 of 3 **From:** Section 01 **To:** Section 03 **Last Const.:** 8/1/1991

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 6,750 SqFt **Length:** 135 Ft **Width:** 50 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1991	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2005	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 8/2/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 87

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 6750.00 SqFt **PCI:** 87

Sample Comments:

48	L & T CR	L	156.00	Ft
57	WEATHERING	L	6750.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TA3MU **Name:** Taxiway A3 Mulino **Use:** TAXIWAY **Area:** 23,135 SqFt

Section: 01 of 3 **From:** Runway 32 End **To:** Section 02 **Last Const.:** 8/1/1991

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 6,517 SqFt **Length:** 65 Ft **Width:** 50 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1991	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/2/2005	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 87

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 6517.00 SqFt **PCI:** 87

Sample Comments:

48	L & T CR	L	135.00	Ft
57	WEATHERING	L	6517.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TAMU **Name:** Taxiway A Mulino **Use:** TAXIWAY **Area:** 144,000 SqFt

Section: 05 of 5 **From:** Section 04 **To:** Taxiway A1 **Last Const.:** 8/2/1990

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 9,200 SqFt **Length:** 230 Ft **Width:** 40 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1990	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1990	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2003	**Work Type:** Surface Treatment - Seal Coat	**Code:** ST-SC	**Is Major M&R:** False
Work Date: 8/1/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 2 **Surveyed:** 2

Conditions: **PCI:** 84

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 4000.00 SqFt **PCI:** 85

Sample Comments:

48	L & T CR	L	116.00	Ft
57	WEATHERING	L	4000.00	SqFt

Sample Number: 02 **Type:** R **Area:** 5200.00 SqFt **PCI:** 84

Sample Comments:

48	L & T CR	L	178.00	Ft
57	WEATHERING	L	5200.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TAMU **Name:** Taxiway A Mulino **Use:** TAXIWAY **Area:** 144,000 SqFt

Section: 03 of 5 **From:** Taxiway A2 **To:** Intersection **Last Const.:** 8/2/1990

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 5,600 SqFt **Length:** 140 Ft **Width:** 40 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1990	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1990	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2003	**Work Type:** Surface Treatment - Seal Coat	**Code:** ST-SC	**Is Major M&R:** False
Work Date: 8/1/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 74

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 5600.00 SqFt **PCI:** 74

Sample Comments:

48	L & T CR	L	200.00	Ft
48	L & T CR	M	40.00	Ft
57	WEATHERING	L	5040.00	SqFt
57	WEATHERING	M	560.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TAMU **Name:** Taxiway A Mulino **Use:** TAXIWAY **Area:** 144,000 SqFt

Section: 02 of 5 **From:** Section 01 **To:** Section 03 **Last Const.:** 8/2/1992

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 62,000 SqFt **Length:** 1,550 Ft **Width:** 40 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1992	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1992	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2003	**Work Type:** Surface Treatment - Seal Coat	**Code:** ST-SC	**Is Major M&R:** False
Work Date: 8/1/2005	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 8/2/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 15 **Surveyed:** 5

Conditions: **PCI:** 62

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 4000.00 SqFt **PCI:** 71

Sample Comments:

48	L & T CR	L	297.00	Ft
48	L & T CR	M	80.00	Ft
57	WEATHERING	L	4000.00	SqFt

Sample Number: 03 **Type:** R **Area:** 4000.00 SqFt **PCI:** 61

Sample Comments:

48	L & T CR	L	77.00	Ft
48	L & T CR	L	37.00	Ft
48	L & T CR	M	245.00	Ft
57	WEATHERING	L	4000.00	SqFt

Sample Number: 07 **Type:** R **Area:** 4000.00 SqFt **PCI:** 60

Sample Comments:

48	L & T CR	L	38.00	Ft
48	L & T CR	L	139.00	Ft
48	L & T CR	M	28.00	Ft
48	L & T CR	M	58.00	Ft
48	L & T CR	M	177.00	Ft
57	WEATHERING	L	4000.00	SqFt

Sample Number: 11 **Type:** R **Area:** 4000.00 SqFt **PCI:** 60

Sample Comments:

41	ALLIGATOR CR	M	2.00	SqFt
48	L & T CR	L	56.00	Ft
48	L & T CR	L	140.00	Ft
48	L & T CR	M	188.00	Ft
57	WEATHERING	L	4000.00	SqFt

Sample Number: 13 **Type:** R **Area:** 4000.00 SqFt **PCI:** 59

Sample Comments:

48	L & T CR	L	132.00	Ft
48	L & T CR	L	26.00	Ft
48	L & T CR	L	42.00	Ft
48	L & T CR	M	32.00	Ft
48	L & T CR	M	44.00	Ft

48	L & T CR	M	170.00	Ft
48	L & T CR	M	42.00	Ft
57	WEATHERING	L	4000.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TAMU **Name:** Taxiway A Mulino **Use:** TAXIWAY **Area:** 144,000 SqFt

Section: 04 of 5 **From:** Section 03 **To:** Section 05 **Last Const.:** 8/2/1992

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 60,000 SqFt **Length:** 1,500 Ft **Width:** 40 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1992	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1992	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2003	**Work Type:** Surface Treatment - Seal Coat	**Code:** ST-SC	**Is Major M&R:** False
Work Date: 8/1/2005	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 8/2/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False
Work Date: 8/3/2005	**Work Type:** Patching - AC Deep	**Code:** PA-AD	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 15 **Surveyed:** 5

Conditions: **PCI:** 69

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 4000.00 SqFt **PCI:** 68

Sample Comments:

48	L & T CR	L	153.00	Ft
48	L & T CR	M	150.00	Ft
57	WEATHERING	L	4000.00	SqFt

Sample Number: 04 **Type:** R **Area:** 4000.00 SqFt **PCI:** 65

Sample Comments:

48	L & T CR	L	247.00	Ft
48	L & T CR	M	195.00	Ft
57	WEATHERING	L	4000.00	SqFt

Sample Number: 07 **Type:** R **Area:** 4000.00 SqFt **PCI:** 66

Sample Comments:

48	L & T CR	L	180.00	Ft
48	L & T CR	M	175.00	Ft
57	WEATHERING	L	4000.00	SqFt

Sample Number: 11 **Type:** R **Area:** 4000.00 SqFt **PCI:** 65

Sample Comments:

48	L & T CR	L	211.00	Ft
48	L & T CR	M	185.00	Ft
57	WEATHERING	L	4000.00	SqFt

Sample Number: 15 **Type:** R **Area:** 4000.00 SqFt **PCI:** 82

Sample Comments:

48	L & T CR	L	172.00	Ft
57	WEATHERING	L	4000.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TAMU **Name:** Taxiway A Mulino **Use:** TAXIWAY **Area:** 144,000 SqFt

Section: 01 of 5 **From:** Taxiway A3 **To:** Section 02 **Last Const.:** 8/1/1991

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** P

Area: 7,200 SqFt **Length:** 180 Ft **Width:** 40 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1991	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2005	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 8/2/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 2 **Surveyed:** 2

Conditions: **PCI:** 83

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 4000.00 SqFt **PCI:** 85

Sample Comments:

48	L & T CR	L	123.00	Ft
57	WEATHERING	L	4000.00	SqFt

Sample Number: 02 **Type:** R **Area:** 3200.00 SqFt **PCI:** 81

Sample Comments:

48	L & T CR	L	49.00	Ft
48	L & T CR	L	86.00	Ft
48	L & T CR	L	21.00	Ft
57	WEATHERING	L	3200.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: THANGMU **Name:** Parking Twys Mulino **Use:** TAXIWAY **Area:** 51,213 SqFt

Section: 01 of 4 **From:** Hangar Apron **To:** Parking **Last Const.:** 8/2/1993

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** S

Area: 10,638 SqFt **Length:** 390 Ft **Width:** 25 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1993	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1993	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2005	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 2 **Surveyed:** 2

Conditions: **PCI:** 75

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 5000.00 SqFt **PCI:** 80

Sample Comments:

48	L & T CR	L	138.00	Ft
48	L & T CR	M	35.00	Ft
57	WEATHERING	L	5000.00	SqFt

Sample Number: 02 **Type:** R **Area:** 5638.00 SqFt **PCI:** 69

Sample Comments:

48	L & T CR	L	324.00	Ft
48	L & T CR	M	186.00	Ft
57	WEATHERING	L	5638.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: THANGMU **Name:** Parking Twys Mulino **Use:** TAXIWAY **Area:** 51,213 SqFt

Section: 04 of 4 **From:** Section 03 **To:** Parking **Last Const.:** 8/2/1993

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** S

Area: 15,540 SqFt **Length:** 535 Ft **Width:** 25 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1993 **Work Type:** Base Course - Crushed Aggregate **Code:** BA-CA **Is Major M&R:** False

Work Date: 8/2/1993 **Work Type:** New Construction - AC **Code:** NC-AC **Is Major M&R:** True

Work Date: 9/1/2016 **Work Type:** Crack Sealing - AC **Code:** CS-AC **Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 3 **Surveyed:** 2

Conditions: **PCI:** 68

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 5000.00 SqFt **PCI:** 69

Sample Comments:

48	L & T CR	L	120.00	Ft
48	L & T CR	L	85.00	Ft
48	L & T CR	M	60.00	Ft
48	L & T CR	M	85.00	Ft
50	PATCHING	L	20.00	SqFt
57	WEATHERING	L	5000.00	SqFt

Sample Number: 02 **Type:** R **Area:** 4300.00 SqFt **PCI:** 68

Sample Comments:

48	L & T CR	L	210.00	Ft
48	L & T CR	L	175.00	Ft
48	L & T CR	M	100.00	Ft
57	WEATHERING	L	4300.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: THANGMU **Name:** Parking Twys Mulino **Use:** TAXIWAY **Area:** 51,213 SqFt

Section: 03 of 4 **From:** Taxiway 06 **To:** Parking **Last Const.:** 8/2/1993

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** S

Area: 15,735 SqFt **Length:** 581 Ft **Width:** 25 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1993	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1993	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 3 **Surveyed:** 2

Conditions: **PCI:** 69

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 5000.00 SqFt **PCI:** 71

Sample Comments:

48	L & T CR	L	195.00	Ft
48	L & T CR	L	107.00	Ft
48	L & T CR	L	48.00	Ft
48	L & T CR	M	48.00	Ft
57	WEATHERING	L	5000.00	SqFt

Sample Number: 02 **Type:** R **Area:** 5500.00 SqFt **PCI:** 68

Sample Comments:

48	L & T CR	L	48.00	Ft
48	L & T CR	L	180.00	Ft
48	L & T CR	L	283.00	Ft
48	L & T CR	M	44.00	Ft
57	WEATHERING	L	5500.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: THANGMU **Name:** Parking Twys Mulino **Use:** TAXIWAY **Area:** 51,213 SqFt

Section: 02 of 4 **From:** Hangar Apron **To:** Parking **Last Const.:** 8/2/1993

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** S

Area: 9,300 SqFt **Length:** 372 Ft **Width:** 25 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/1993	**Work Type:** Base Course - Crushed Aggregate	**Code:** BA-CA	**Is Major M&R:** False
Work Date: 8/2/1993	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2005	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False
Work Date: 9/1/2016	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 2 **Surveyed:** 2

Conditions: **PCI:** 75

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 5000.00 SqFt **PCI:** 77

Sample Comments:

48	L & T CR	L	202.00	Ft
48	L & T CR	M	56.00	Ft
57	WEATHERING	L	5000.00	SqFt

Sample Number: 02 **Type:** R **Area:** 4300.00 SqFt **PCI:** 73

Sample Comments:

48	L & T CR	L	24.00	Ft
48	L & T CR	L	64.00	Ft
48	L & T CR	L	155.00	Ft
48	L & T CR	M	102.00	Ft
57	WEATHERING	L	4198.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TLANEMU **Name:** Taxilane Mulino **Use:** TAXIWAY **Area:** 19,900 SqFt

Section: 02 of 3 **From:** Hangar Apron **To:** Section 04 **Last Const.:** 8/2/2003

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** S

Area: 7,100 SqFt **Length:** 320 Ft **Width:** 23 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/2003	**Work Type:** Base Course - Aggregate	**Code:** BA-AG	**Is Major M&R:** False
Work Date: 8/2/2003	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 2 **Surveyed:** 2

Conditions: **PCI:** 69

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 3871.00 SqFt **PCI:** 71

Sample Comments:

48	L & T CR	L	49.00	Ft
48	L & T CR	L	175.00	Ft
48	L & T CR	M	108.00	Ft
57	WEATHERING	L	3871.00	SqFt

Sample Number: 02 **Type:** R **Area:** 3229.00 SqFt **PCI:** 66

Sample Comments:

48	L & T CR	L	165.00	Ft
48	L & T CR	M	96.00	Ft
48	L & T CR	H	8.00	Ft
57	WEATHERING	L	3229.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TLANEMU **Name:** Taxilane Mulino **Use:** TAXIWAY **Area:** 19,900 SqFt

Section: 03 of 3 **From:** Hangar Apron **To:** Section 06 **Last Const.:** 8/2/2003

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** S

Area: 7,683 SqFt **Length:** 310 Ft **Width:** 25 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/2003	**Work Type:** Base Course - Aggregate	**Code:** BA-AG	**Is Major M&R:** False
Work Date: 8/2/2003	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 2 **Surveyed:** 2

Conditions: **PCI:** 66

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 3062.00 SqFt **PCI:** 65

Sample Comments:

48	L & T CR	M	210.00	Ft
57	WEATHERING	L	3062.00	SqFt

Sample Number: 02 **Type:** R **Area:** 4621.00 SqFt **PCI:** 67

Sample Comments:

48	L & T CR	L	43.00	Ft
48	L & T CR	M	231.00	Ft
57	WEATHERING	L	4621.00	SqFt

Network: Mulino **Name:** Mulino State

Branch: TLANEMU **Name:** Taxilane Mulino **Use:** TAXIWAY **Area:** 19,900 SqFt

Section: 01 of 3 **From:** Hangar Apron **To:** Section 02 **Last Const.:** 8/2/2003

Surface: AC **Family:** 2023_Region1_Cat4_Taxiway_AC **Zone:** 4S9 **Category:** F **Rank:** S

Area: 5,117 SqFt **Length:** 207 Ft **Width:** 25 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Work Date: 8/1/2003	**Work Type:** Base Course - Aggregate	**Code:** BA-AG	**Is Major M&R:** False
Work Date: 8/2/2003	**Work Type:** New Construction - AC	**Code:** NC-AC	**Is Major M&R:** True
Work Date: 8/1/2005	**Work Type:** Surface Seal - Fog Seal	**Code:** SS-FS	**Is Major M&R:** False
Work Date: 9/1/2009	**Work Type:** Crack Sealing - AC	**Code:** CS-AC	**Is Major M&R:** False

Last Insp. Date: 7/1/2023 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 65

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 5117.00 SqFt **PCI:** 65

Sample Comments:

48	L & T CR	L	51.00	Ft
48	L & T CR	L	154.00	Ft
48	L & T CR	M	182.00	Ft
48	L & T CR	M	57.00	Ft
57	WEATHERING	L	5117.00	SqFt

APPENDIX F

Work History Report

Pavement Database: ODA_2023Survey_MASTER DB-12-16-2023-7am

Network: Mulino State **Branch:** A01MU Apron 01 Mulino **Section:** 01 **Surface:**AC

L.C.D. 8/2/1990 **Use:** APRON **Rank:** P **Length:** 236.00 (Ft) **Width:** 235.00 (Ft) **True Area:** 57169 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/2/1990	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1990	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Network: Mulino State **Branch:** AFUELMU Fuel Apron Mulino **Section:** 01 **Surface:**PCC

L.C.D. 8/2/2005 **Use:** APRON **Rank:** S **Length:** 130.00 (Ft) **Width:** 40.00 (Ft) **True Area:** 4600 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
8/2/2005	NC-PC	New Construction - PCC	0.00	6.00	☑	
8/1/2005	BA-AG	Base Course - Aggregate	0.00	4.00	☐	

Network: Mulino State **Branch:** AH14MU Taxiway A 14 End **Section:** 01 **Surface:**AC

L.C.D. 8/2/1990 **Use:** APRON **Rank:** P **Length:** 140.00 (Ft) **Width:** 50.00 (Ft) **True Area:** 9405 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
8/1/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/1/2003	ST-SC	Surface Treatment - Seal Coat	0.00	0.00	☐	Assumed date
8/2/1990	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1990	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Network: Mulino State **Branch:** AH32MU Taxiway A 32 End **Section:** 01 **Surface:**AC

L.C.D. 8/2/1990 **Use:** APRON **Rank:** P **Length:** 125.00 (Ft) **Width:** 50.00 (Ft) **True Area:** 6787 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
8/1/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/1/2003	ST-SC	Surface Treatment - Seal Coat	0.00	0.00	☐	Assumed date
8/2/1990	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1990	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Network: Mulino State **Branch:** AHANGMU Hangar Apron Mul **Section:** 01 **Surface:**AC

L.C.D. 8/2/1993 **Use:** APRON **Rank:** S **Length:** 109.00 (Ft) **Width:** 94.00 (Ft) **True Area:** 23231 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2005	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/2/1993	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1993	BA-CA	Base Course - Crushed Aggregate	0.00	7.00	☐	6" - 8" thickness

Network: Mulino State **Branch:** AHELIMU Helipad Mulino **Section:** 01 **Surface:** AC
L.C.D. 8/2/1993 **Use:** HELIPAD **Rank:** S **Length:** 61.00 (Ft) **Width:** 105.00 (Ft) **True Area:** 6405 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2005	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/2/1993	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1993	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Network: Mulino State **Branch:** R14MU Runway 14/32 Mul **Section:** 01 **Surface:** AC
L.C.D. 8/2/1990 **Use:** RUNWAY **Rank:** P **Length:** 3,600.00 (Ft) **Width:** 100.00 (Ft) **True Area:** 360000 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/2/2005	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/2/1990	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1990	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Network: Mulino State **Branch:** T01MU Taxiway 01 Mulin **Section:** 01 **Surface:** AC
L.C.D. 8/1/1991 **Use:** TAXIWAY **Rank:** P **Length:** 120.00 (Ft) **Width:** 30.00 (Ft) **True Area:** 3555 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/3/2005	PA-AD	Patching - AC Deep	0.00	0.00	☐	
8/1/1991	NC-AC	New Construction - AC	0.00	0.00	☑	Unknown date and thickness

Network: Mulino State **Branch:** T02MU Taxiway 02 Mulin **Section:** 01 **Surface:** AC
L.C.D. 8/2/1993 **Use:** TAXIWAY **Rank:** P **Length:** 683.00 (Ft) **Width:** 35.00 (Ft) **True Area:** 23936 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2005	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/2/1993	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1993	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Pavement Database: ODA_2023Survey_MASTER DB-12-16-2023-7am

Network: Mulino State **Branch:** TA1MU Taxiway A1 Mulin **Section:** 01 **Surface:** AC
L.C.D. 8/2/1990 **Use:** TAXIWAY **Rank:** P **Length:** 65.00 (Ft) **Width:** 50.00 (Ft) **True Area:** 6603 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2003	ST-SC	Surface Treatment - Seal Coat	0.00	0.00	☐	Assumed date
8/2/1990	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1990	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Network: Mulino State **Branch:** TA1MU Taxiway A1 Mulin **Section:** 02 **Surface:** AC
L.C.D. 8/2/1990 **Use:** TAXIWAY **Rank:** P **Length:** 265.00 (Ft) **Width:** 50.00 (Ft) **True Area:** 16603 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
8/1/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/1/2003	ST-SC	Surface Treatment - Seal Coat	0.00	0.00	☐	Assumed date
8/2/1990	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1990	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Network: Mulino State **Branch:** TA2MU Taxiway A2 Mulin **Section:** 01 **Surface:** AC
L.C.D. 8/2/1990 **Use:** TAXIWAY **Rank:** P **Length:** 65.00 (Ft) **Width:** 40.00 (Ft) **True Area:** 9306 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2003	ST-SC	Surface Treatment - Seal Coat	0.00	0.00	☐	Assumed date
8/2/1990	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1990	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Network: Mulino State **Branch:** TA2MU Taxiway A2 Mulin **Section:** 02 **Surface:** AC
L.C.D. 8/2/1990 **Use:** TAXIWAY **Rank:** P **Length:** 218.00 (Ft) **Width:** 40.00 (Ft) **True Area:** 8720 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
8/1/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/1/2003	ST-SC	Surface Treatment - Seal Coat	0.00	0.00	☐	Assumed date
8/2/1990	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1990	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Network: Mulino State **Branch:** TA2MU Taxiway A2 Mulin **Section:** 03 **Surface:** AC
L.C.D. 8/2/1990 **Use:** TAXIWAY **Rank:** P **Length:** 73.00 (Ft) **Width:** 40.00 (Ft) **True Area:** 3993 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
8/1/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/1/2003	ST-SC	Surface Treatment - Seal Coat	0.00	0.00	☐	Assumed date
8/2/1990	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1990	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Network: Mulino State **Branch:** TA2MU Taxiway A2 Mulin **Section:** 04 **Surface:** AC
L.C.D. 8/2/1990 **Use:** TAXIWAY **Rank:** P **Length:** 517.00 (Ft) **Width:** 40.00 (Ft) **True Area:** 21244 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
8/2/1990	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1990	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Network: Mulino State **Branch:** TA3MU Taxiway A3 Mulin **Section:** 01 **Surface:** AC
L.C.D. 8/1/1991 **Use:** TAXIWAY **Rank:** P **Length:** 65.00 (Ft) **Width:** 50.00 (Ft) **True Area:** 6517 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/2/2005	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/1991	NC-AC	New Construction - AC	0.00	0.00	☑	Unknown date and thickness

Network: Mulino State **Branch:** TA3MU Taxiway A3 Mulin **Section:** 02 **Surface:** AC
L.C.D. 8/1/1991 **Use:** TAXIWAY **Rank:** P **Length:** 135.00 (Ft) **Width:** 50.00 (Ft) **True Area:** 6750 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
8/2/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/1/2005	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/1991	NC-AC	New Construction - AC	0.00	0.00	☑	Unknown date and thickness

Network: Mulino State **Branch:** TA3MU Taxiway A3 Mulin **Section:** 03 **Surface:** AC
L.C.D. 8/1/1991 **Use:** TAXIWAY **Rank:** P **Length:** 130.00 (Ft) **Width:** 50.00 (Ft) **True Area:** 9868 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/2/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/1/2005	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/1991	NC-AC	New Construction - AC	0.00	0.00	☑	Unknown date and thickness

Network: Mulino State **Branch:** TAMU Taxiway A Mulino **Section:** 01 **Surface:** AC
L.C.D. 8/1/1991 **Use:** TAXIWAY **Rank:** P **Length:** 180.00 (Ft) **Width:** 40.00 (Ft) **True Area:** 7200 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/2/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/1/2005	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/1991	NC-AC	New Construction - AC	0.00	0.00	☑	Unknown date and thickness

Network: Mulino State **Branch:** TAMU Taxiway A Mulino **Section:** 02 **Surface:** AC
L.C.D. 8/2/1992 **Use:** TAXIWAY **Rank:** P **Length:** 1,550.00 (Ft) **Width:** 40.00 (Ft) **True Area:** 62000 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/2/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/1/2005	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2003	ST-SC	Surface Treatment - Seal Coat	0.00	0.00	☐	Assumed date
8/2/1992	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1992	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Network: Mulino State **Branch:** TAMU Taxiway A Mulino **Section:** 03 **Surface:** AC
L.C.D. 8/2/1990 **Use:** TAXIWAY **Rank:** P **Length:** 140.00 (Ft) **Width:** 40.00 (Ft) **True Area:** 5600 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/1/2003	ST-SC	Surface Treatment - Seal Coat	0.00	0.00	☐	Assumed date
8/2/1990	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1990	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Network: Mulino State **Branch:** TAMU Taxiway A Mulino **Section:** 04 **Surface:** AC
L.C.D. 8/2/1992 **Use:** TAXIWAY **Rank:** P **Length:** 1,500.00 (Ft) **Width:** 40.00 (Ft) **True Area:** 60000 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/3/2005	PA-AD	Patching - AC Deep	0.00	0.00	☐	
8/2/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/1/2005	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2003	ST-SC	Surface Treatment - Seal Coat	0.00	0.00	☐	Assumed date
8/2/1992	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1992	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Network: Mulino State **Branch:** TAMU Taxiway A Mulino **Section:** 05 **Surface:** AC
L.C.D. 8/2/1990 **Use:** TAXIWAY **Rank:** P **Length:** 230.00 (Ft) **Width:** 40.00 (Ft) **True Area:** 9200 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/1/2003	ST-SC	Surface Treatment - Seal Coat	0.00	0.00	☐	Assumed date
8/2/1990	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1990	BA-CA	Base Course - Crushed Aggregate	0.00	8.00	☐	

Network: Mulino State **Branch:** THANGMU Parking Twys Muli **Section:** 01 **Surface:** AC
L.C.D. 8/2/1993 **Use:** TAXIWAY **Rank:** S **Length:** 390.00 (Ft) **Width:** 25.00 (Ft) **True Area:** 10638 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2005	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/2/1993	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1993	BA-CA	Base Course - Crushed Aggregate	0.00	7.00	☐	6" - 8" thickness

Network: Mulino State **Branch:** THANGMU Parking Twys Muli **Section:** 02 **Surface:** AC
L.C.D. 8/2/1993 **Use:** TAXIWAY **Rank:** S **Length:** 372.00 (Ft) **Width:** 25.00 (Ft) **True Area:** 9300 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2005	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/2/1993	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1993	BA-CA	Base Course - Crushed Aggregate	0.00	7.00	☐	6" - 8" thickness

Network: Mulino State **Branch:** THANGMU Parking Twys Muli **Section:** 03 **Surface:** AC
L.C.D. 8/2/1993 **Use:** TAXIWAY **Rank:** S **Length:** 581.00 (Ft) **Width:** 25.00 (Ft) **True Area:** 15735 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/2/1993	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1993	BA-CA	Base Course - Crushed Aggregate	0.00	7.00	☐	6" - 8" thickness

Network: Mulino State **Branch:** THANGMU Parking Twys Muli **Section:** 04 **Surface:** AC
L.C.D. 8/2/1993 **Use:** TAXIWAY **Rank:** S **Length:** 535.00 (Ft) **Width:** 25.00 (Ft) **True Area:** 15540 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2016	CS-AC	Crack Sealing - AC	0.00	0.00	☐	,
8/2/1993	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/1993	BA-CA	Base Course - Crushed Aggregate	0.00	7.00	☐	6" - 8" thickness

Network: Mulino State **Branch:** TLANEMU Taxilane Mulino **Section:** 01 **Surface:** AC
L.C.D. 8/2/2003 **Use:** TAXIWAY **Rank:** S **Length:** 207.00 (Ft) **Width:** 25.00 (Ft) **True Area:** 5117 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/2/2003	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/2003	BA-AG	Base Course - Aggregate	0.00	14.00	☐	

Network: Mulino State **Branch:** TLANEMU Taxilane Mulino **Section:** 02 **Surface:** AC
L.C.D. 8/2/2003 **Use:** TAXIWAY **Rank:** S **Length:** 320.00 (Ft) **Width:** 22.50 (Ft) **True Area:** 7100 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/2/2003	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/2003	BA-AG	Base Course - Aggregate	0.00	14.00	☐	

Network: Mulino State **Branch:** TLANEMU Taxilane Mulino **Section:** 03 **Surface:** AC
L.C.D. 8/2/2003 **Use:** TAXIWAY **Rank:** S **Length:** 310.00 (Ft) **Width:** 25.00 (Ft) **True Area:** 7683 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2009	CS-AC	Crack Sealing - AC	0.00	0.00	☐	
8/1/2005	SS-FS	Surface Seal - Fog Seal	0.00	0.00	☐	
8/2/2003	NC-AC	New Construction - AC	0.00	2.00	☑	
8/1/2003	BA-AG	Base Course - Aggregate	0.00	14.00	☐	

Summary:

Work Description	Section Count	Area Total (SqFt)	Thickness Avg (in)	Thickness STD (in)
Base Course - Aggregate	4	24,500.00	11.50	4.33
Base Course - Crushed Aggregate	21	741,415.00	7.76	0.43
Crack Sealing - AC	53	1,960,761.00	0.00	0.00
New Construction - AC	29	795,205.00	1.66	0.76
New Construction - PCC	1	4,600.00	6.00	0.00
Patching - AC Deep	2	63,555.00	0.00	0.00
Surface Seal - Fog Seal	17	643,195.00	0.00	0.00
Surface Treatment - Seal Coat	11	198,217.00	0.00	0.00