Alabama Statewide Airport Pavement Management Program Update

Auburn University Regional Airport (AUO)

Final Report

February 2022

Submitted to

Alabama Aeronautics Bureau

Submitted by

JVIATION

All About Pavements, Inc (API)
www.allaboutpavements.com
Pavement Management – Evaluation – Testing - Design

ALABAMA STATEWIDE AIRPORT PAVEMENT MANAGEMENT PROGRAM UPDATE

Auburn University Regional Airport, Auburn (AUO)

Executive Summary

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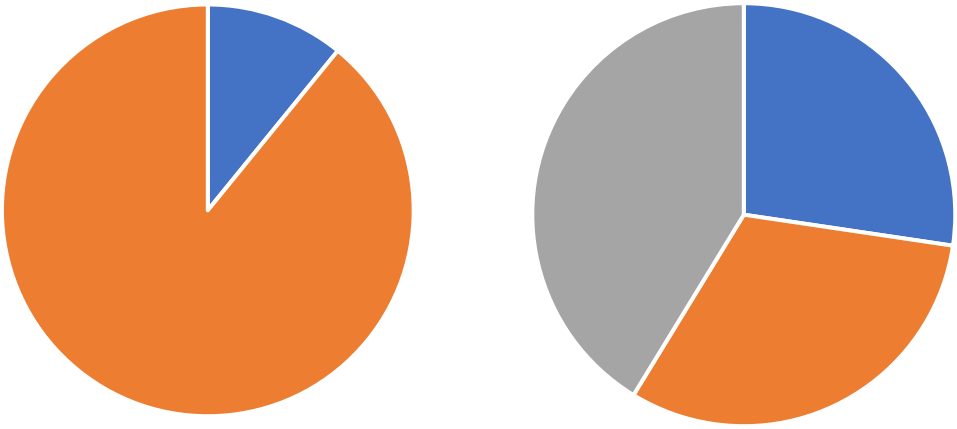
ES.1 Pavement Inventory

Figure ES-1: Pavement Area (sf) by Surface Type and Branch Use.

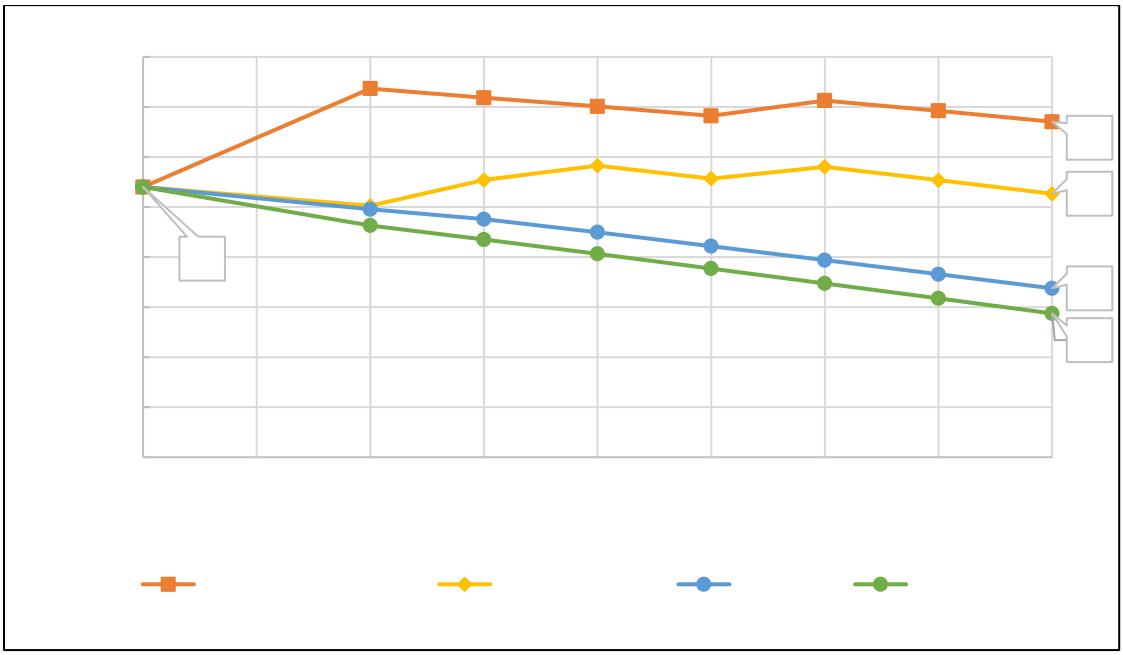


ES.2 Pavement Condition

Table ES-1: AUO Section PCI Values and Ratings.

ES.3 Pavement Maintenance and Repair Funding Levels

Figure ES-2: M&R Funding Levels.



ES.4 Pavement Capital Improvement Program (PCIP)

Table ES-2: Summary of Pavement Capital Improvement Program.

	Total	**$10,675,666**			

Table ES-3: Summary of Localized Maintenance Plan.

			Total	**$190,285**

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

Appendix A

Appendix B

Appendix C

Appendix D

Appendix E

Appendix F

Appendix G

Appendix H

Appendix I

Appendix J

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1 Introduction

1.1. Overview

1.2. Work Scope

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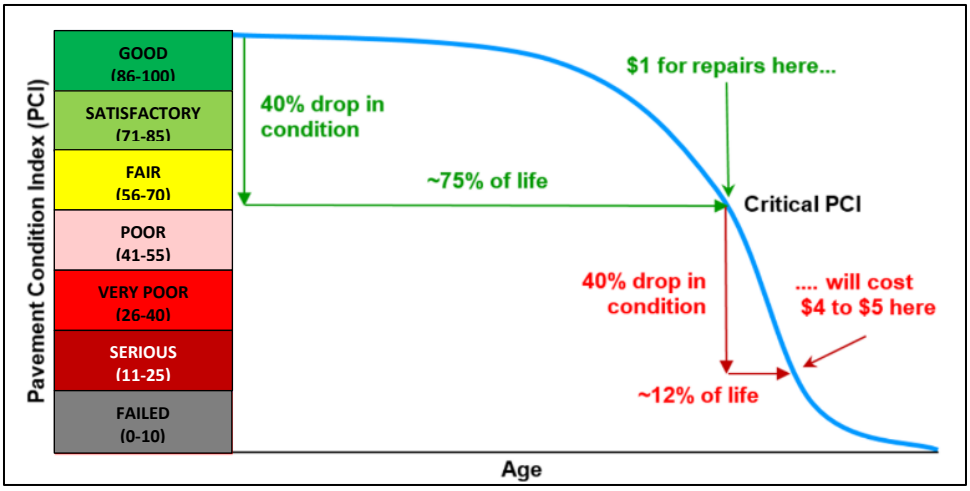
1.3. Pavement Management Concept

Figure 1.1: Pavement Management Concept.



2 Airfield Pavement Inventory

2.1. Introduction

Figure 2.1: Auburn University Regional Airport.

2.2. Pavement Inventory

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2.3. Climatic Conditions

Table 2.1: Average Annual Temperatures and Rainfall for AUO.

2.4. Pavement Network Definition

"a contiguous pavement area having uniform construction, maintenance, usage history, and condition. A section should also have the same traffic volume and load intensity."

Table 2.2: PCI Sampling Rate for AC Surfaces.

2.5. Inventory Summary

Table 2.3: AUO Pavement Branches.

		Total	**2,619,991**	**31**

Table 2.4: AUO Pavement Age.

Figure 2.2: AUO Pavement Area by Surface Type.

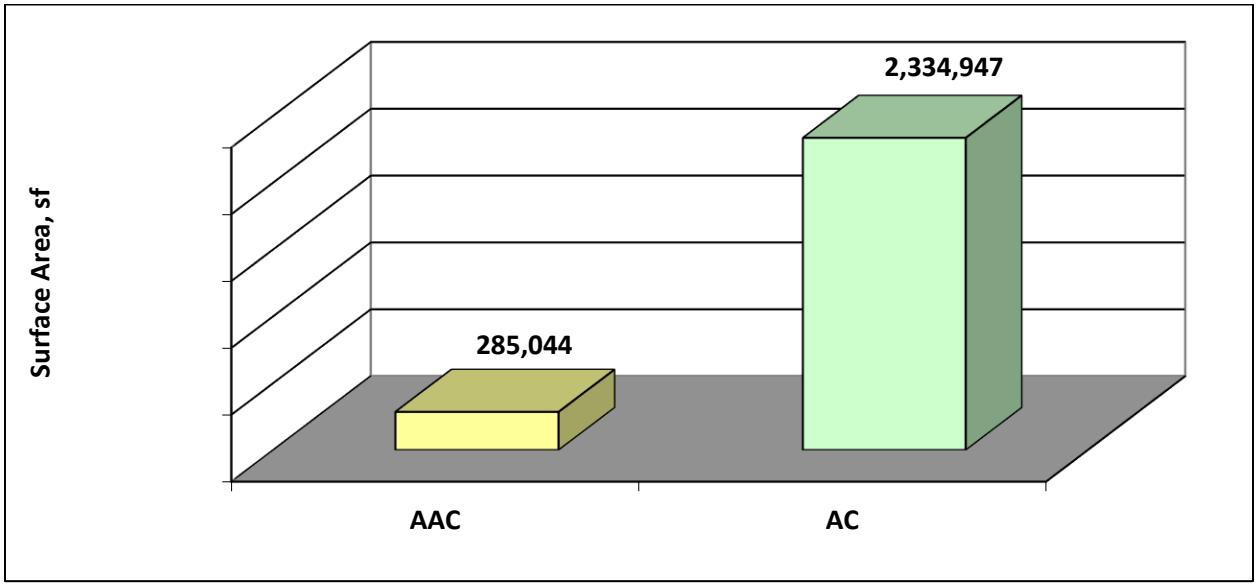
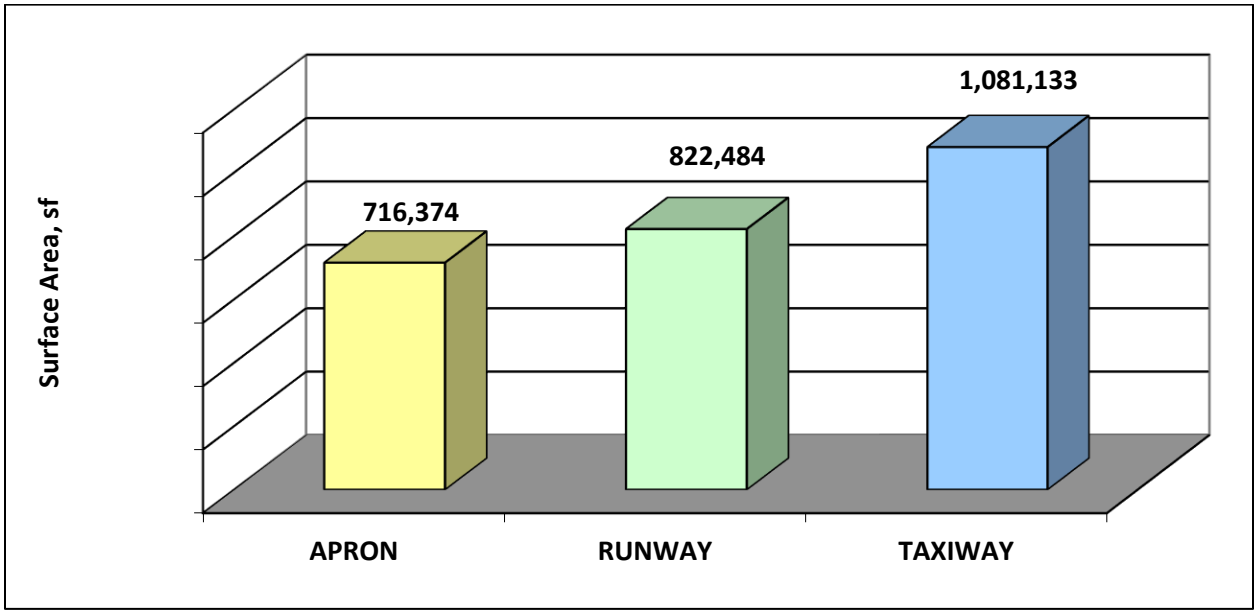


Figure 2.3: AUO Pavement Area by Branch Use.



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3 Pavement Condition

3.1. Introduction

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3.2. Pavement Condition Rating Methodology

Table 3.1: Pavement Condition Index Rating Scale.

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				_____
				____
				_____
				_____
				_____
				_____

3.3. Distress Types

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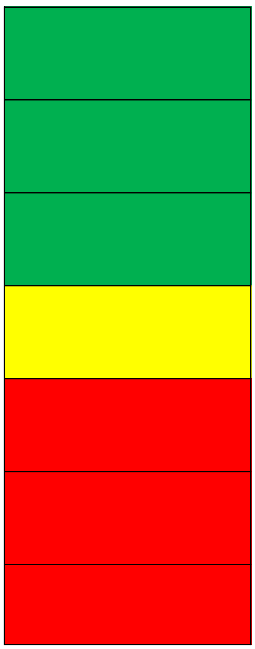
ü _____

ü _____

ü _____

3.4. Additional PCI-based Indices

Figure 3.1: FOD Potential Rating Scale.



3.5. PCI Survey Results

Figure 3.2: Pavement Condition by Branch Use.

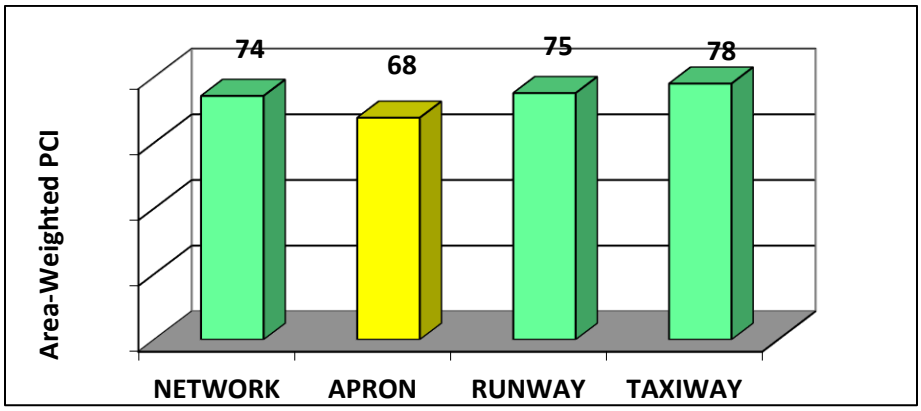


Figure 3.3: Pavement Condition by Percent of Area.

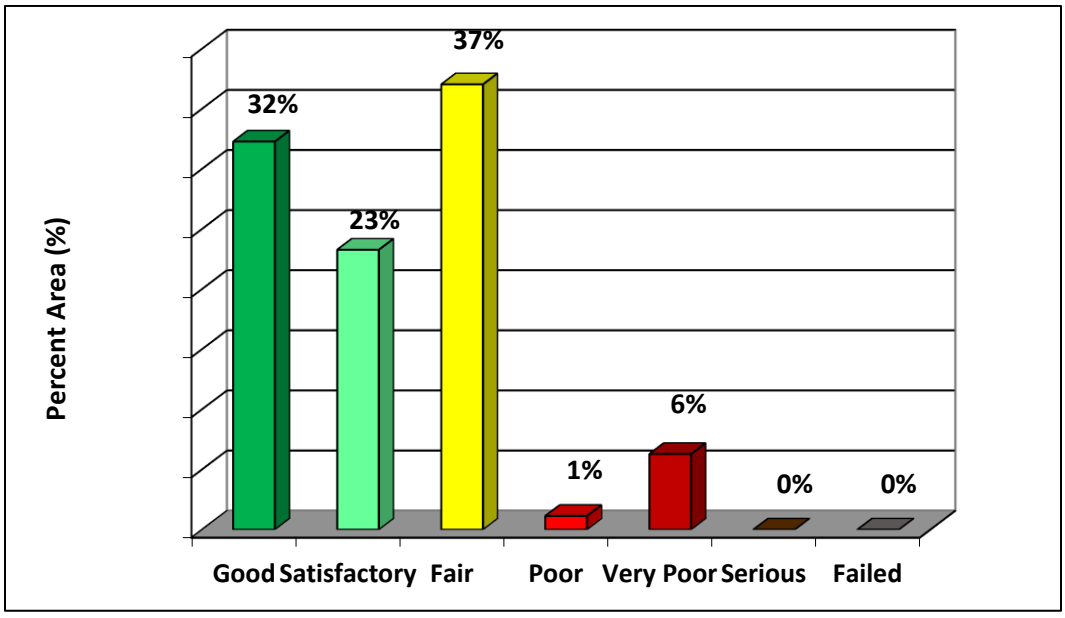


Table 3.2: Section PCI.

3.6. PCC Pavements

4 Pavement Capital Improvement Program

4.1. Introduction

4.2. Performance Modeling

Figure 4.1: PCI Forecasting.

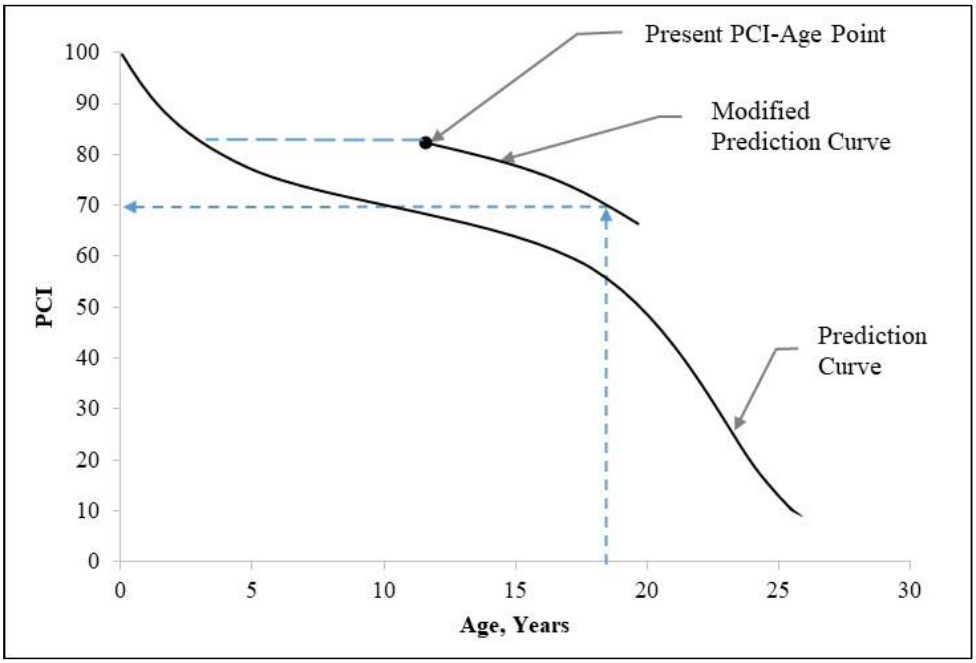
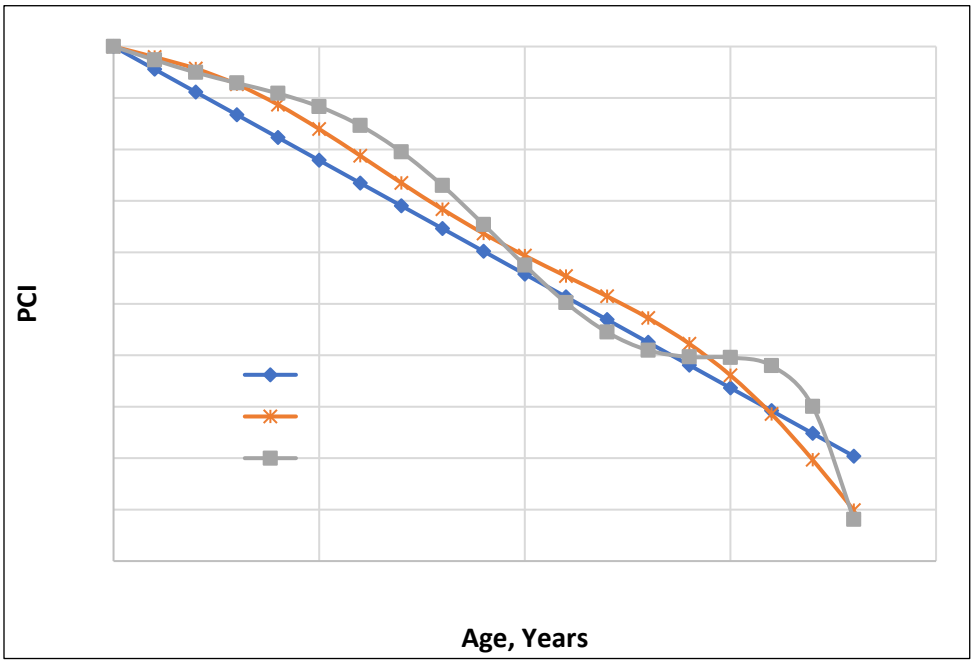


Figure 4.2: Family Curves.



4.3. Critical PCI Values

the PCI value at which the rate of PCI loss increases with time, or the cost of applying localized preventive maintenance increases significantly

4.4. M&R Policies and Unit Costs

Table 4.1: M&R Activities and Unit Costs.

4.5. Pavement CIP Development

- ü _____
- ü _____
- ü _____
- ü _____

Figure 4.3: Budget Analysis Process.

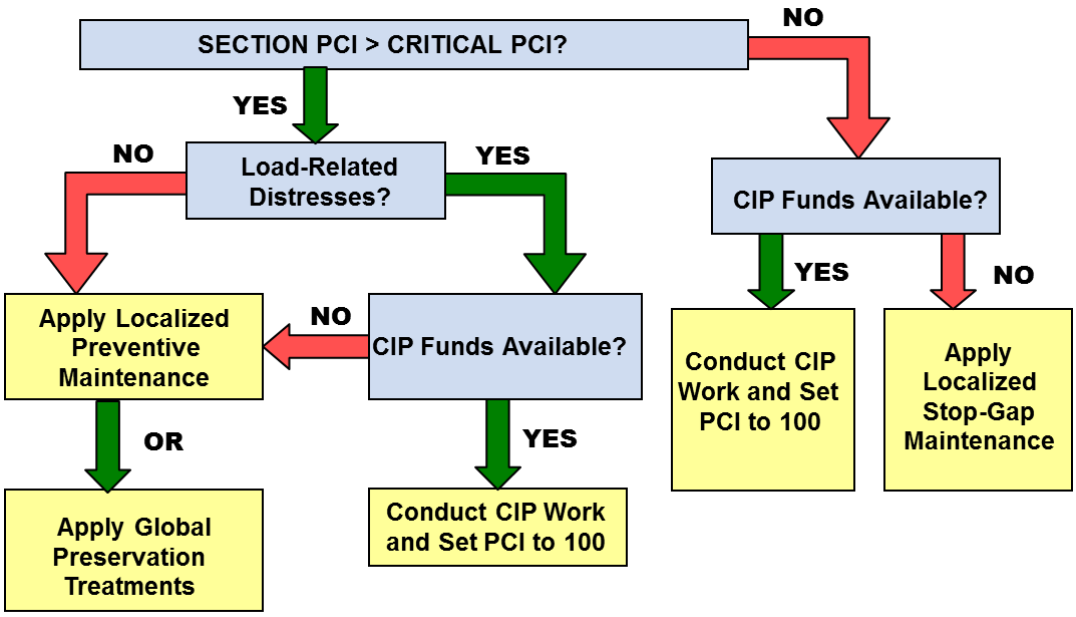


Figure 4.4: M&R Funding Levels.

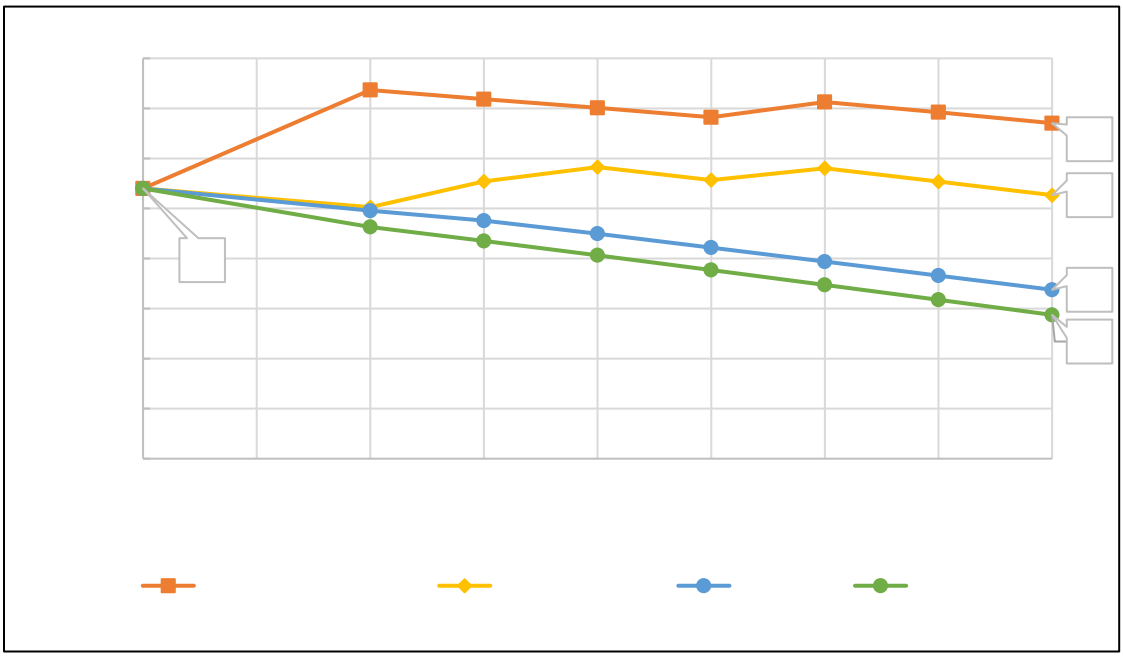


Table 4.2: Summary of M&R Funding Level Analyses.

Total	**$8,994,000**	**$7,021,000**	**$2,320,000**	**$0**
2027 Backlog	**-**	**$6,204,000**	**$13,552,000**	**$17,045,000**

4.6. Pavement Capital Improvement Program

Table 4.3: Summary of 7-Year PCIP by Project.

	Total	**$10,675,666**			

Table 4.4: Summary of 7-Year PCIP by Project and Section.

AUO_21-01_Taxiway B Preservation						**$62,421**
AUO_21-02_Taxiway C Preservation						**$259,227**
AUO_21-03_Taxiway Hangar 02 Preservation						**$93,361**

AUO_21-04_Runway 18-36 Rehabilitation						**$3,304,298**
AUO_21-05_RW 11-29 Turnaround Rehabilitation						
AUO_22-01_Taxiway A Rehabilitation						**$427,900**
AUO_22-02_Apron 02 Rehabilitation						**$1,817,482**
AUO_23-01_Taxiway Hangar 01 Reconstruction						**$1,770,264**
AUO_24-01_Runway 18-36 Surface Treatment						**$367,381**
AUO_24-02_RW 11-29 Turnaround Surface Treatment						**$20,496**
AUO_25-01_Apron 01 Rehabilitation						**$1,819,737**
AUO_25-02_Taxiway A Surface Treatment						**$61,940**
AUO_25-03_Apron 02 Surface Treatment						**$263,086**
AUO_27-01_Runway 11-29 Preservation						**$207,301**

AUO_27-02_Taxiway A Preservation						**$200,774**
					Total	**$10,675,666**

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Table 4.5: Summary of Year-1 Maintenance Plan.

			Total	**$190,285**

APPENDIX A

INVENTORY

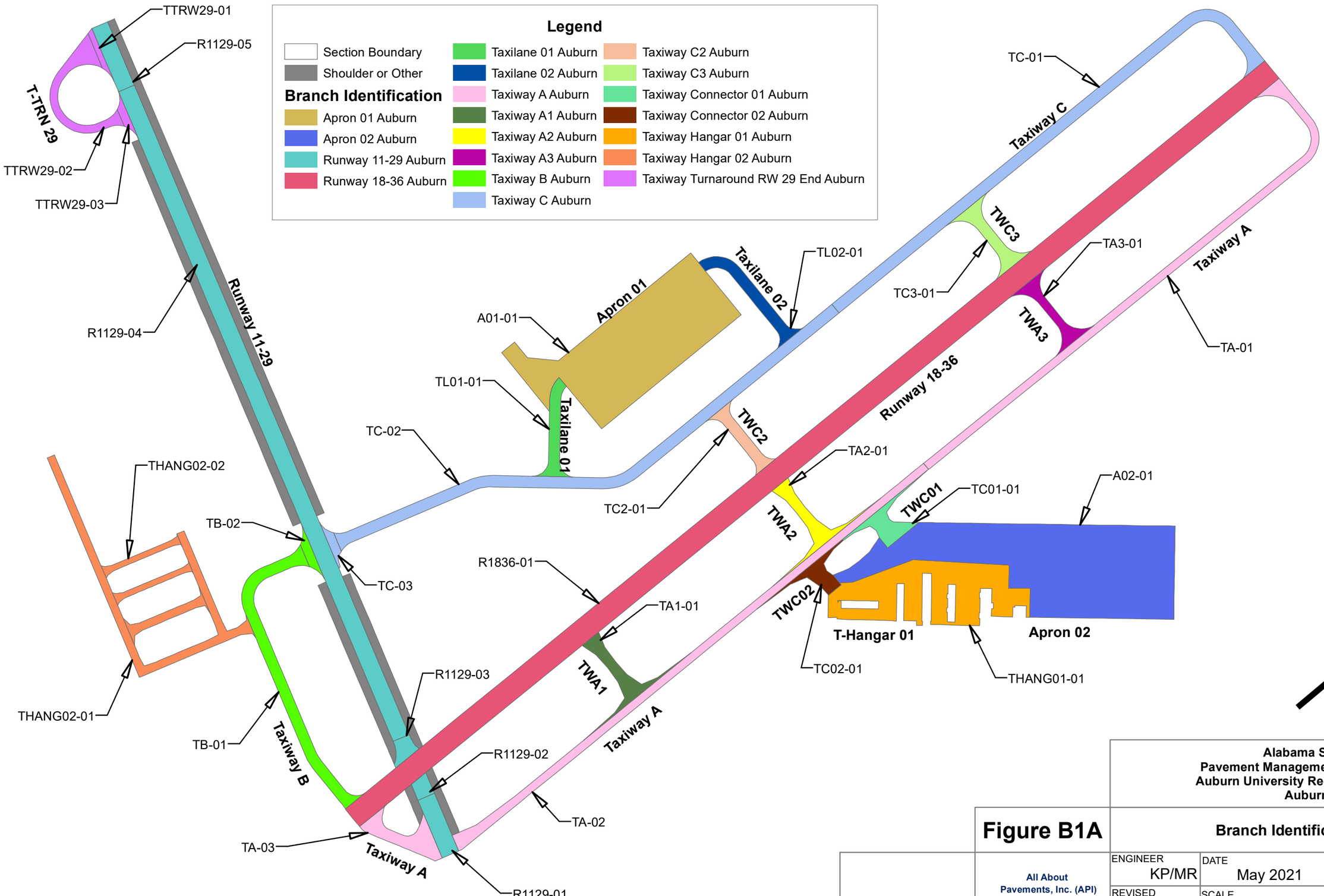
APPENDIX B

PMP Maps

B1: Inventory Maps
- B1A: Branch Identification
- B1B: Section Identification
- B1C: Sample Unit Layout
- B1D: Pavement Type
- B1E: Branch Use
- B1F: Pavement Age

B2: Surface Condition Maps
- B2A: 7-Color PCI
- B2B: 3-Color PCI
- B2C: FOD Rating
- B2D: Survey Photo Locations

B3: Pavement Capital Improvement Plan (PCIP) Maps
- B3A: 2027 Forecasted PCI without PCIP
- B3B: M&R Needs
- B3C: PCIP Recommendations



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Auburn University Regional (AUO) Airport
Auburn, AL

Figure B1A

Branch Identification

All About Pavements, Inc. (API)
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Telephone: 217-586-2765 FAX: 217 586-1967

ENGINEER	DATE	MAP NUMBER
KP/MR	May 2021	Page 1
REVISED	SCALE	
JMA	1 in = 400 ft	**FINAL**

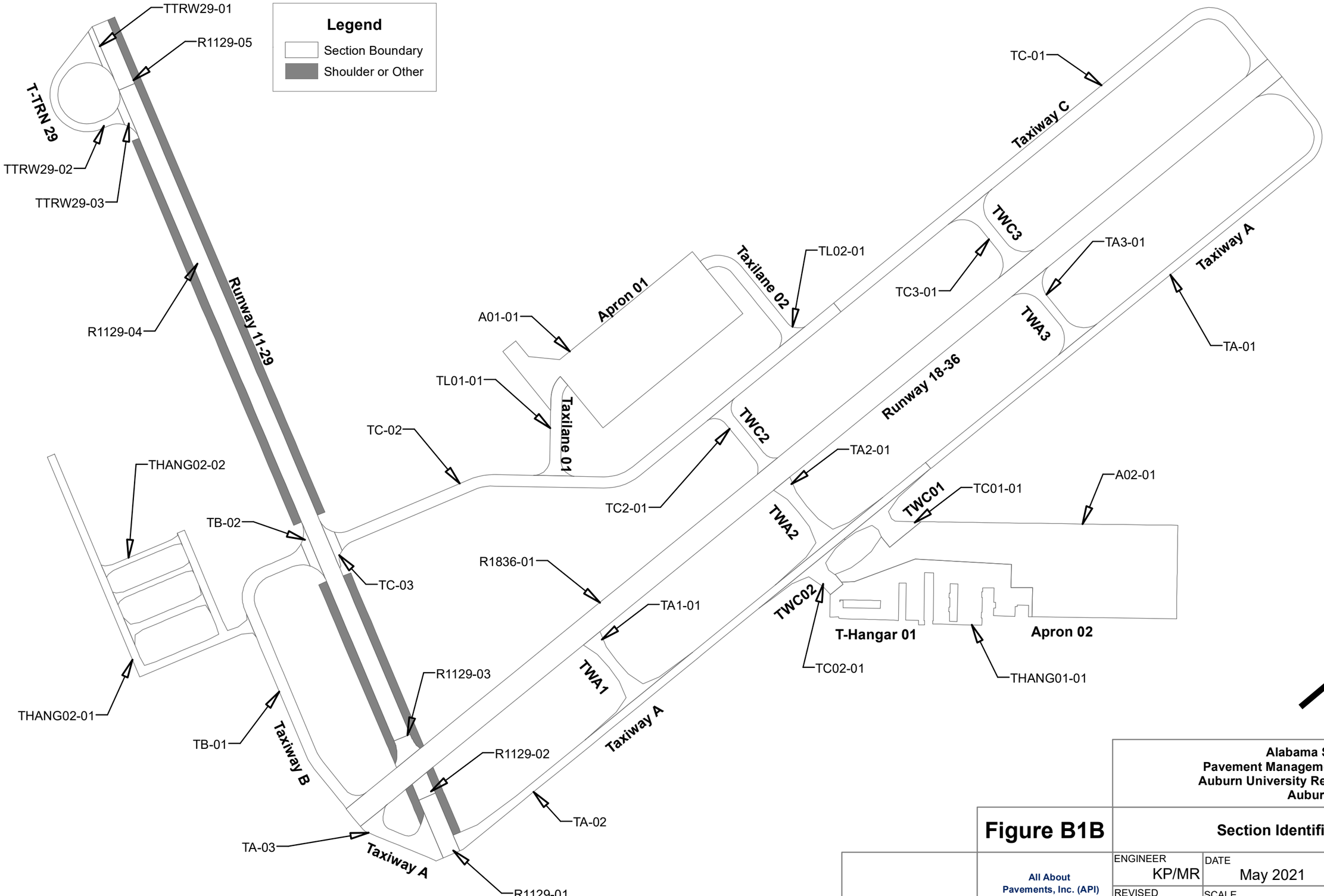

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Figure B1B

Section Identification

All About
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ENGINEER	DATE	MAP NUMBER
KP/MR	May 2021	Page 2
REVISED	SCALE	
JMA	1 in = 400 ft	**FINAL**

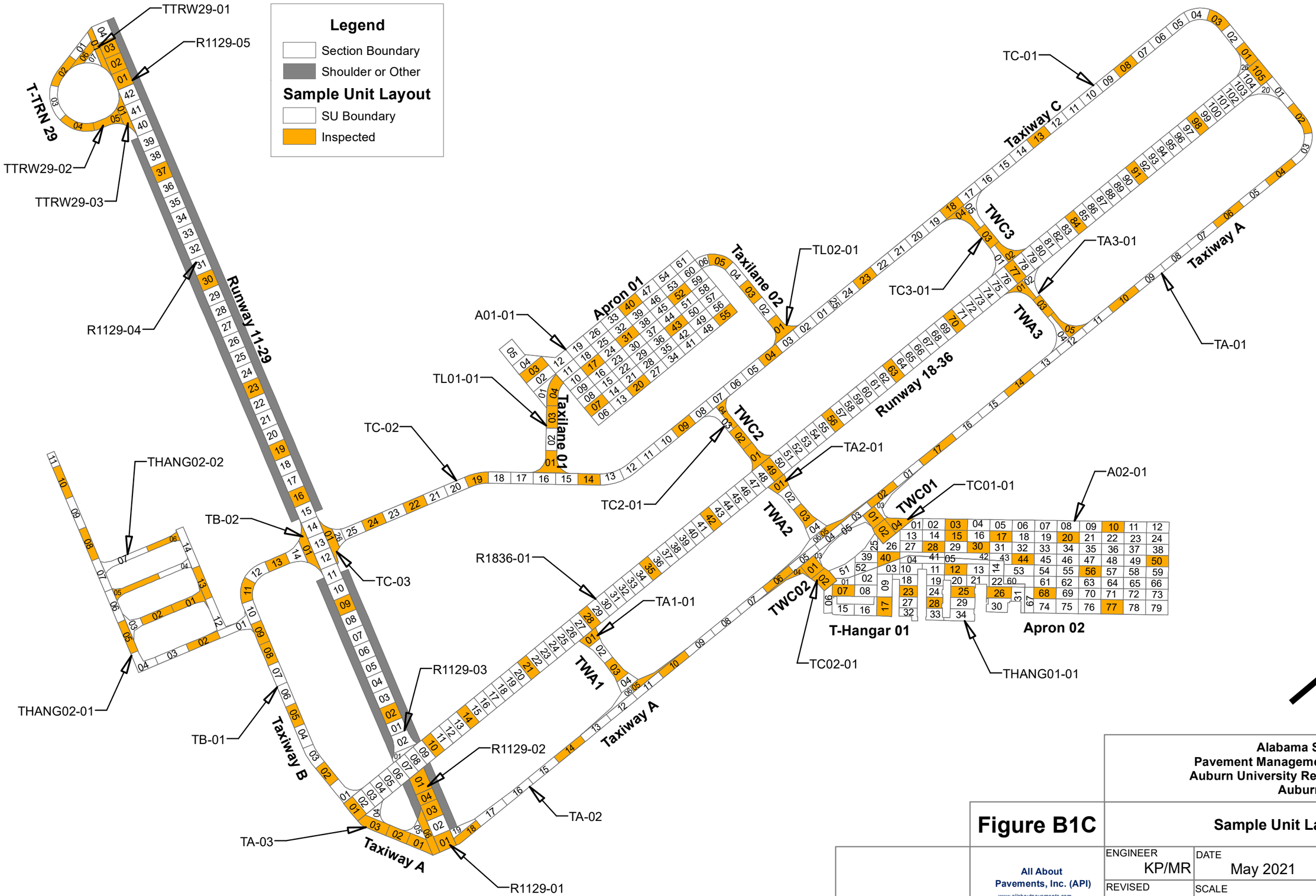

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Figure B1C

Sample Unit Layout

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ENGINEER	DATE	MAP NUMBER
KP/MR	May 2021	Page 3
REVISED	SCALE	
JMA	1 in = 400 ft	FINAL

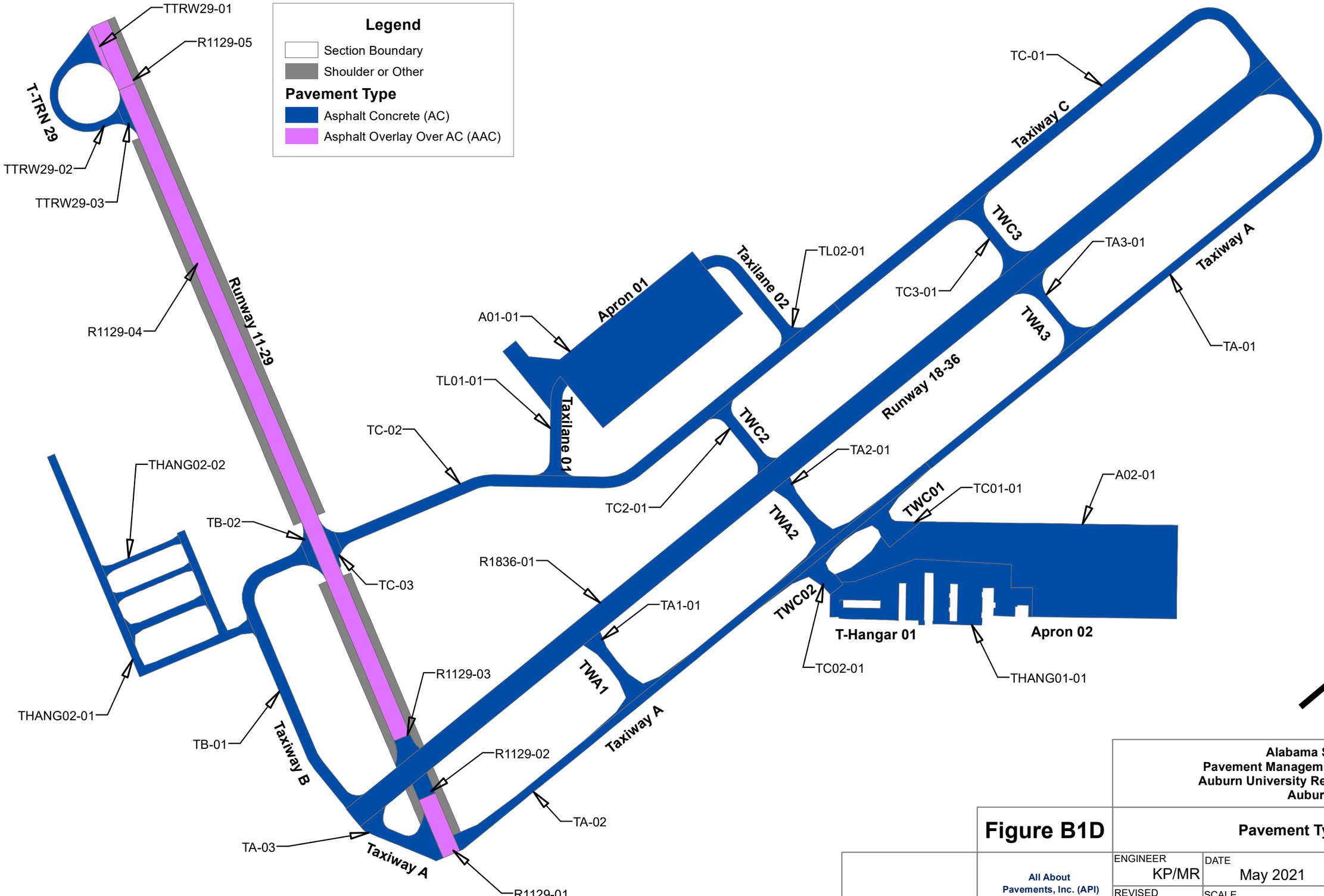

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Figure B1D

Pavement Type

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ENGINEER	DATE	MAP NUMBER
KP/MR	May 2021	Page 4
REVISED	SCALE	
JMA	1 in = 400 ft	**FINAL**

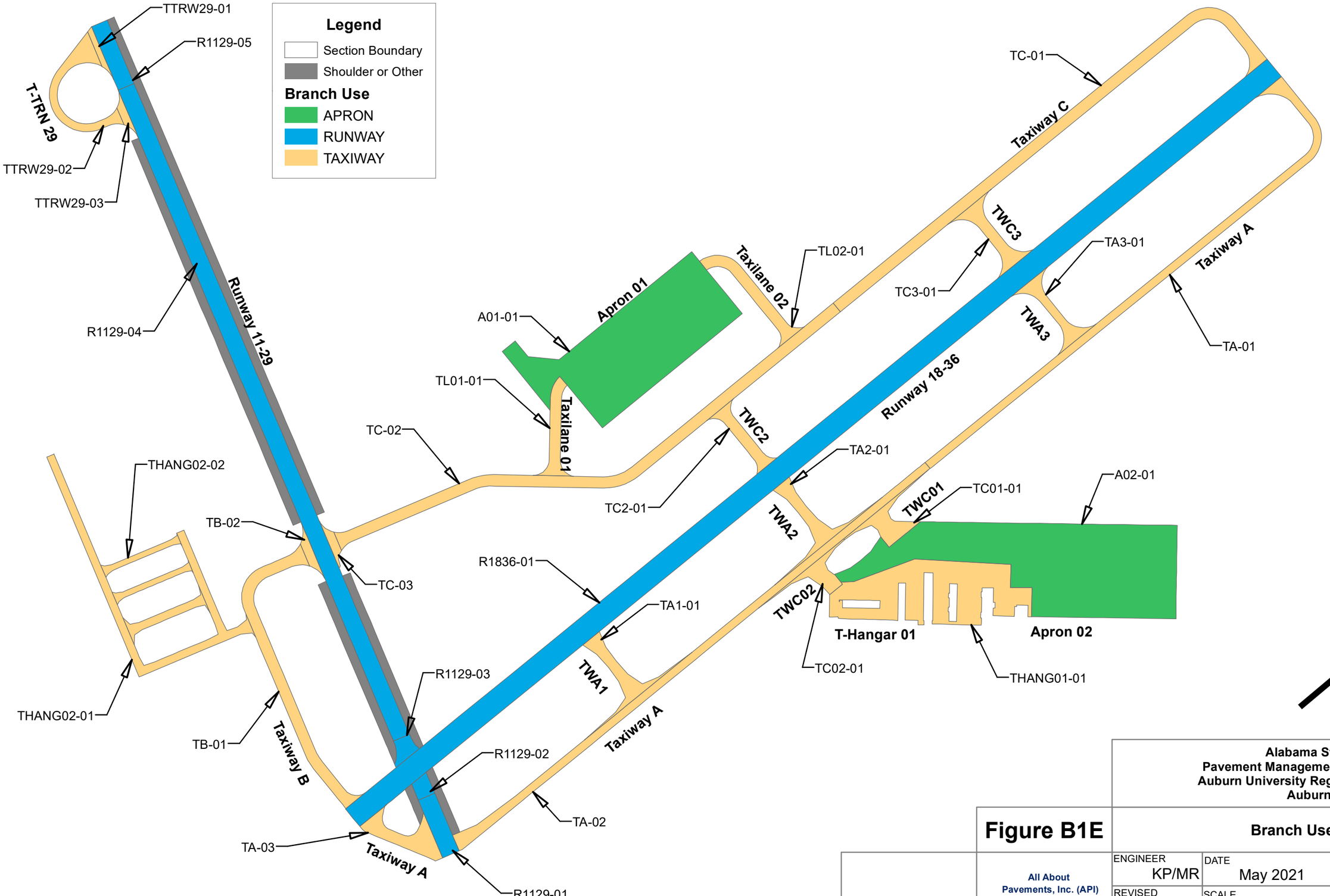

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Figure B1E

Branch Use

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ENGINEER	DATE	MAP NUMBER
KP/MR	May 2021	Page 5
REVISED	SCALE	
JMA	1 in = 400 ft	**FINAL**

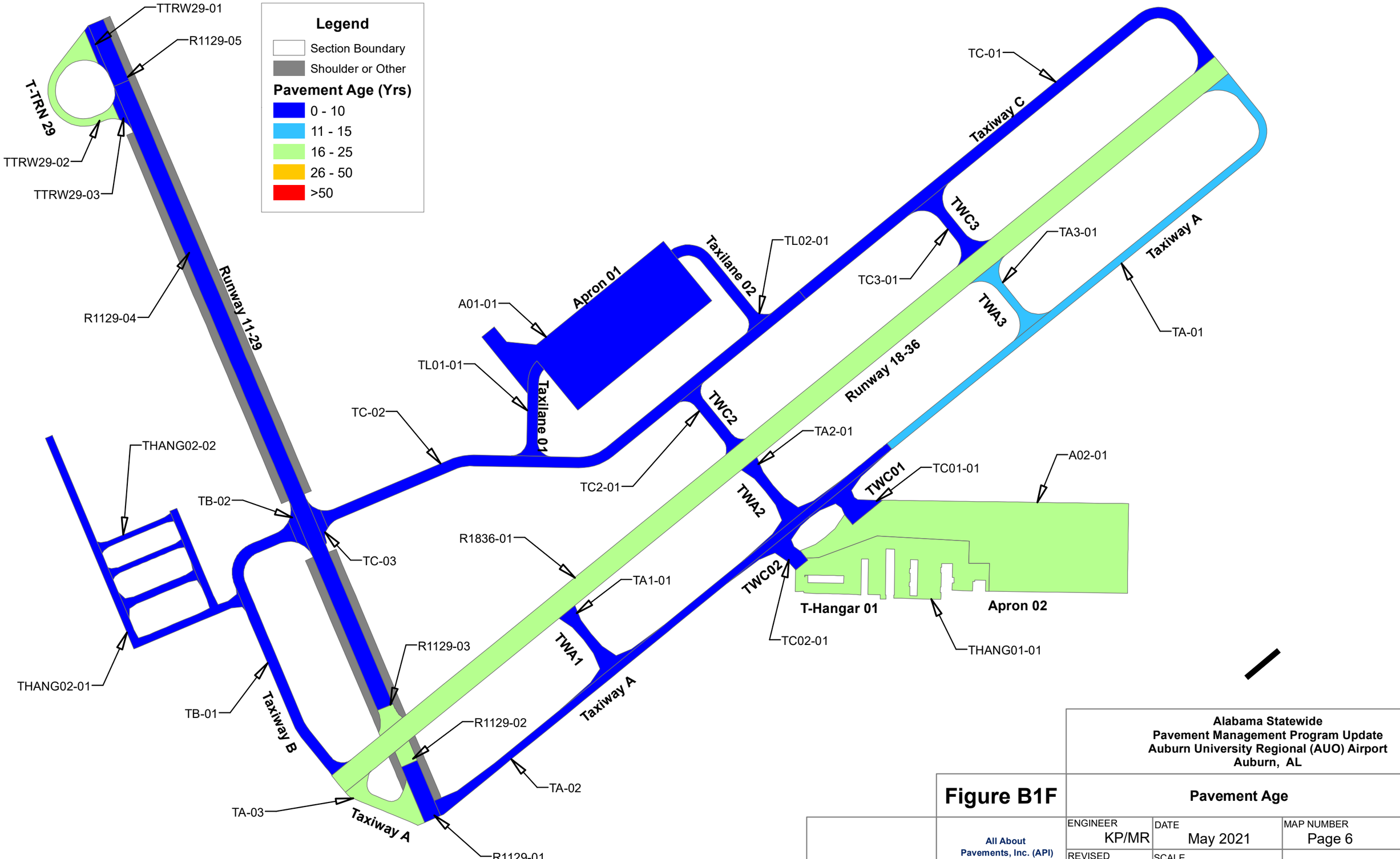

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Figure B1F

Pavement Age

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ENGINEER	DATE	MAP NUMBER
KP/MR	May 2021	Page 6
REVISED	SCALE	
JMA	1 in = 400 ft	**FINAL**

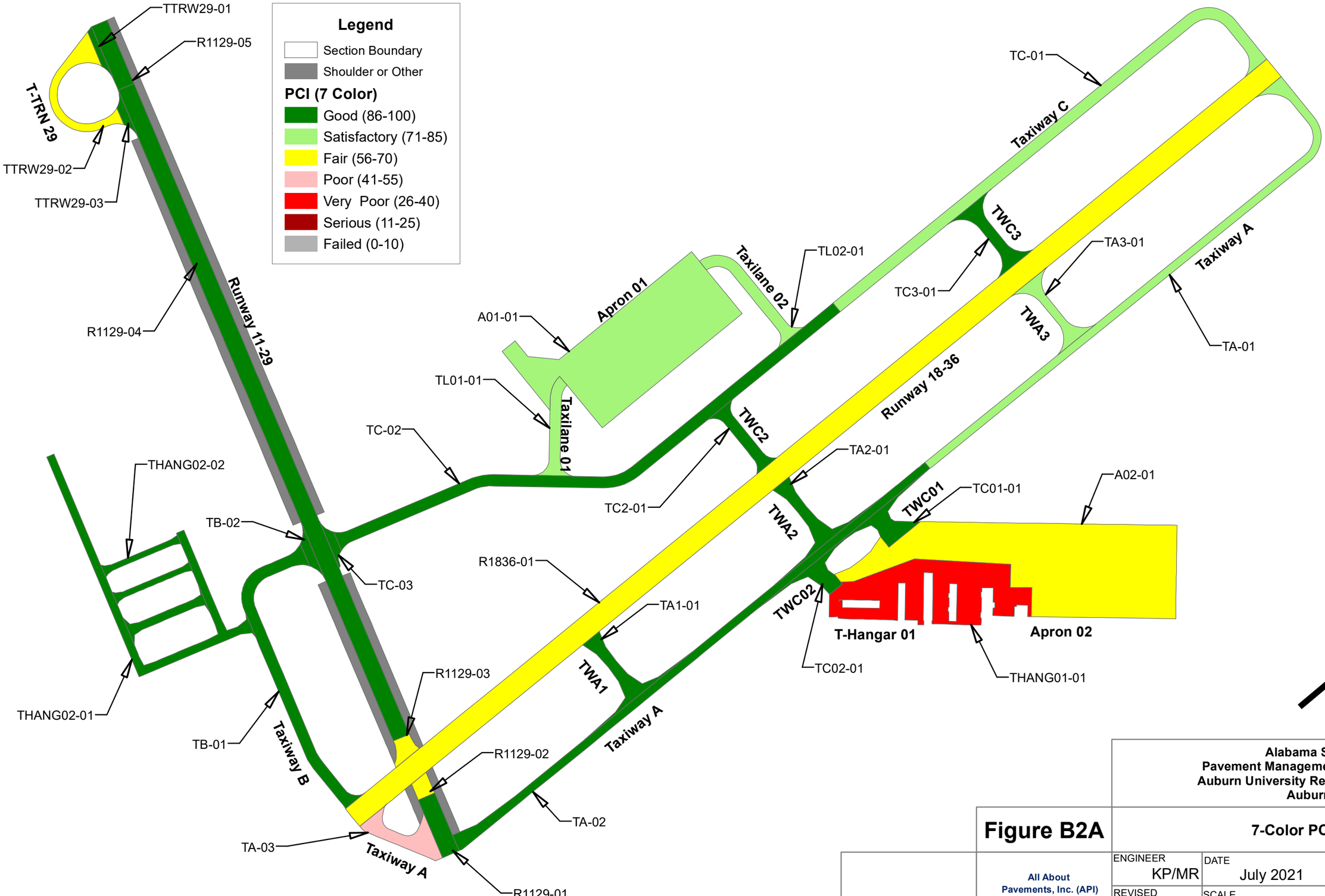

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Figure B2A

7-Color PCI

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ENGINEER	DATE	MAP NUMBER
KP/MR	July 2021	Page 7
REVISED	SCALE	
JMA	1 in = 400 ft	**FINAL**

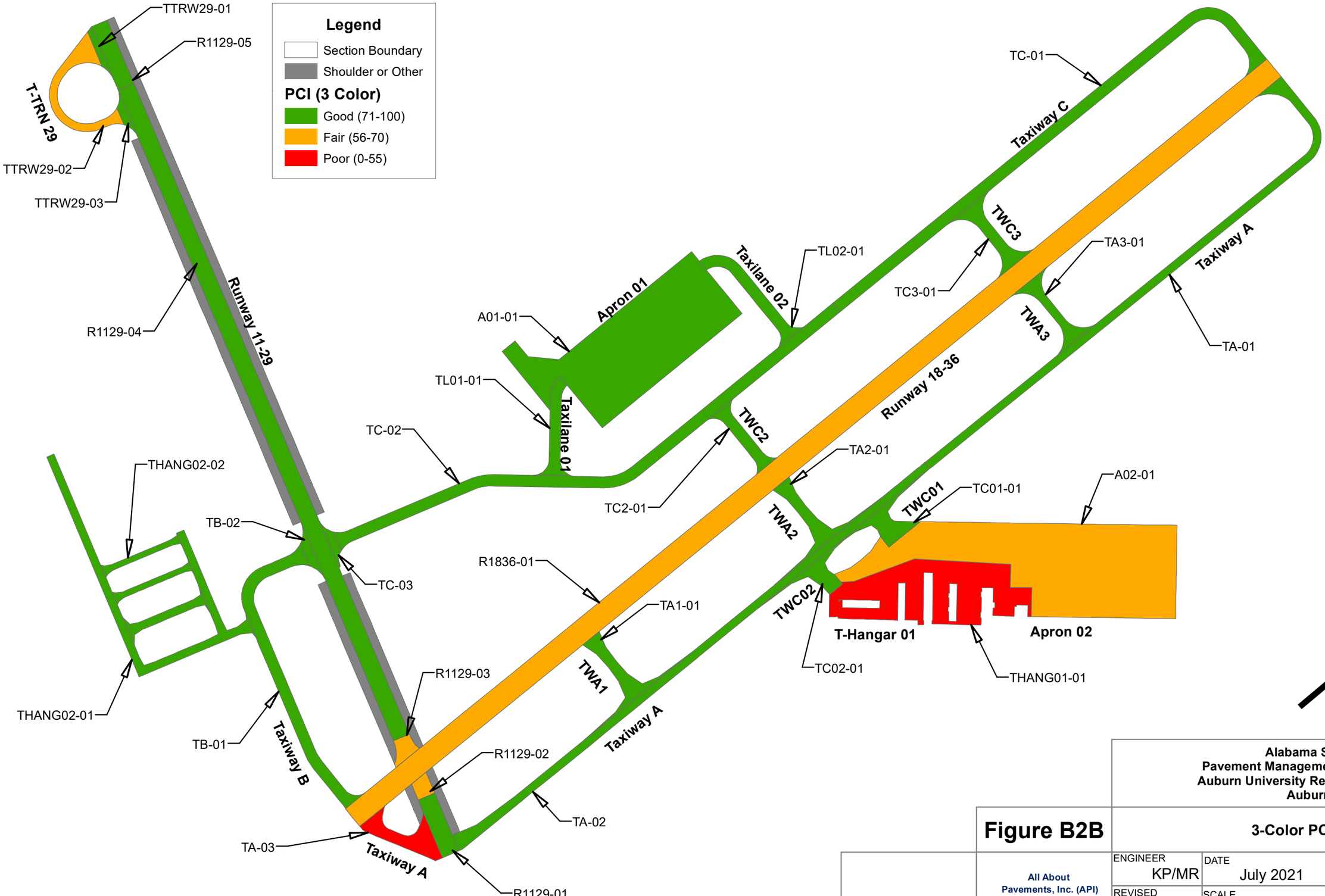

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Figure B2B

3-Color PCI

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ENGINEER	DATE	MAP NUMBER
KP/MR	July 2021	Page 8
REVISED	SCALE	
JMA	1 in = 400 ft	**FINAL**

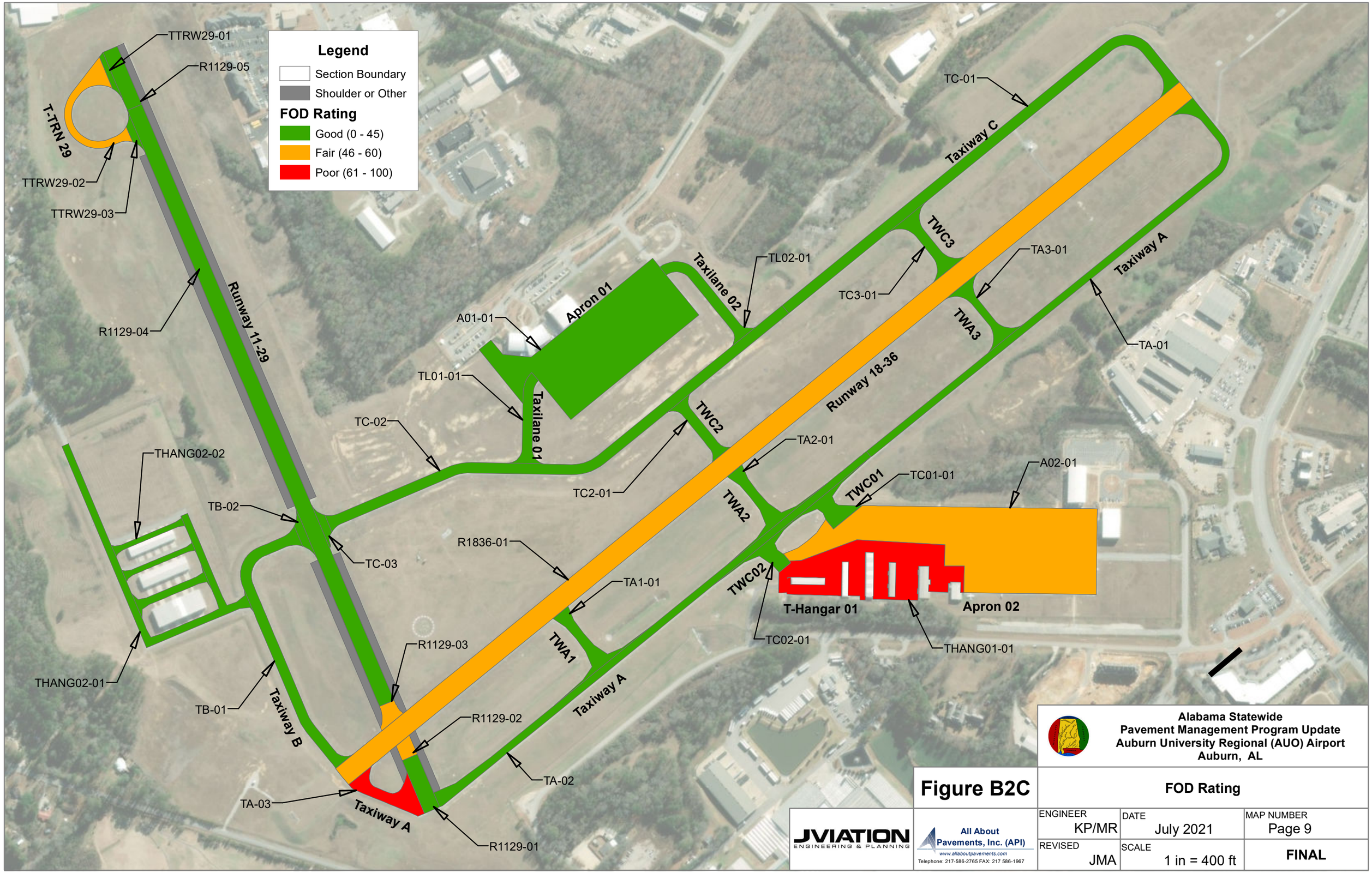

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Figure B2C

FOD Rating

JVIATION ENGINEERING & PLANNING

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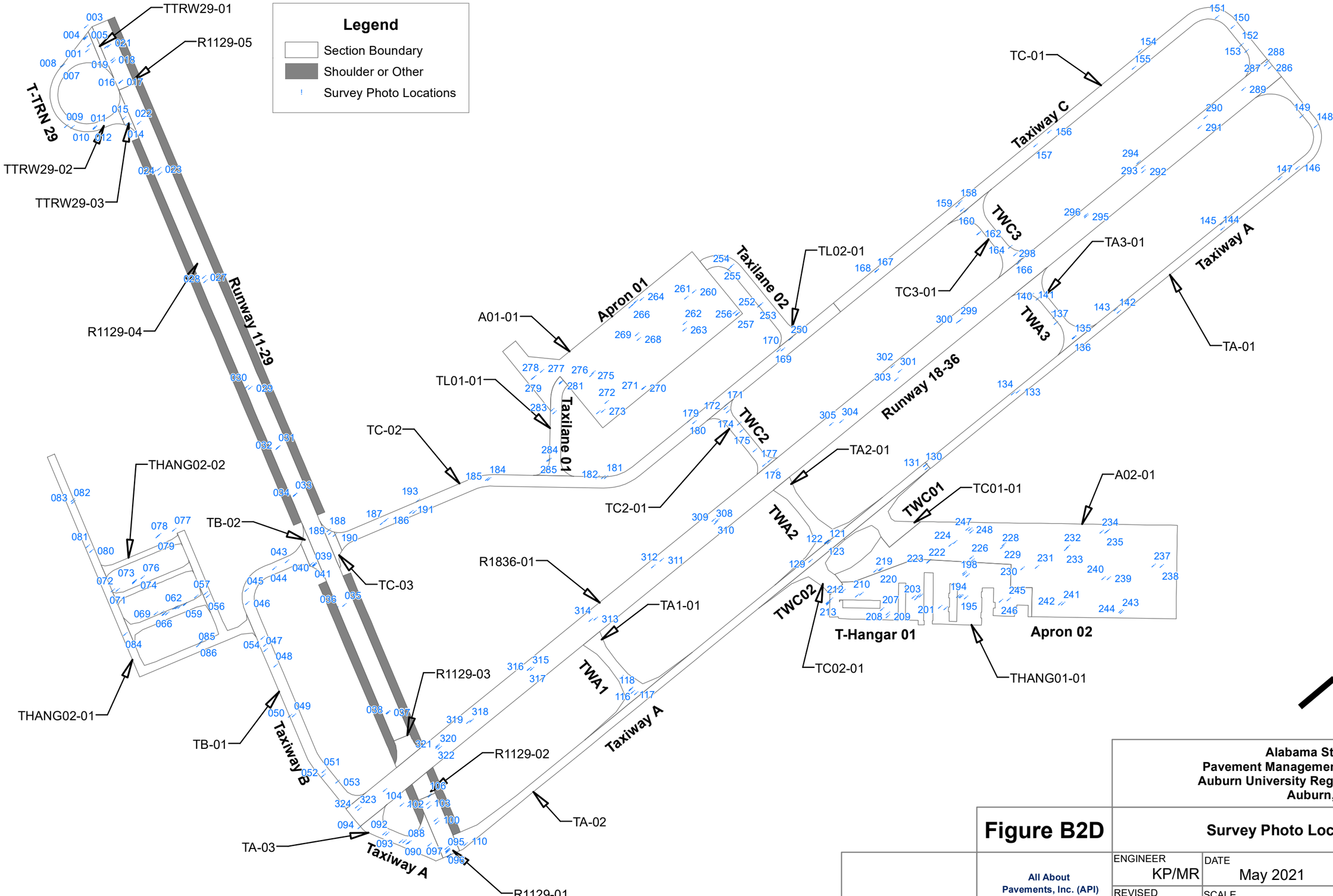
ENGINEER	DATE	MAP NUMBER
KP/MR	July 2021	Page 9
REVISED	SCALE	
JMA	1 in = 400 ft	FINAL



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Auburn, AL

Figure B2D

Survey Photo Locations

All About Pavements, Inc. (API)
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ENGINEER	DATE	MAP NUMBER
KP/MR	May 2021	Page 10
REVISED	SCALE	
JMA	1 in = 400 ft	**FINAL**

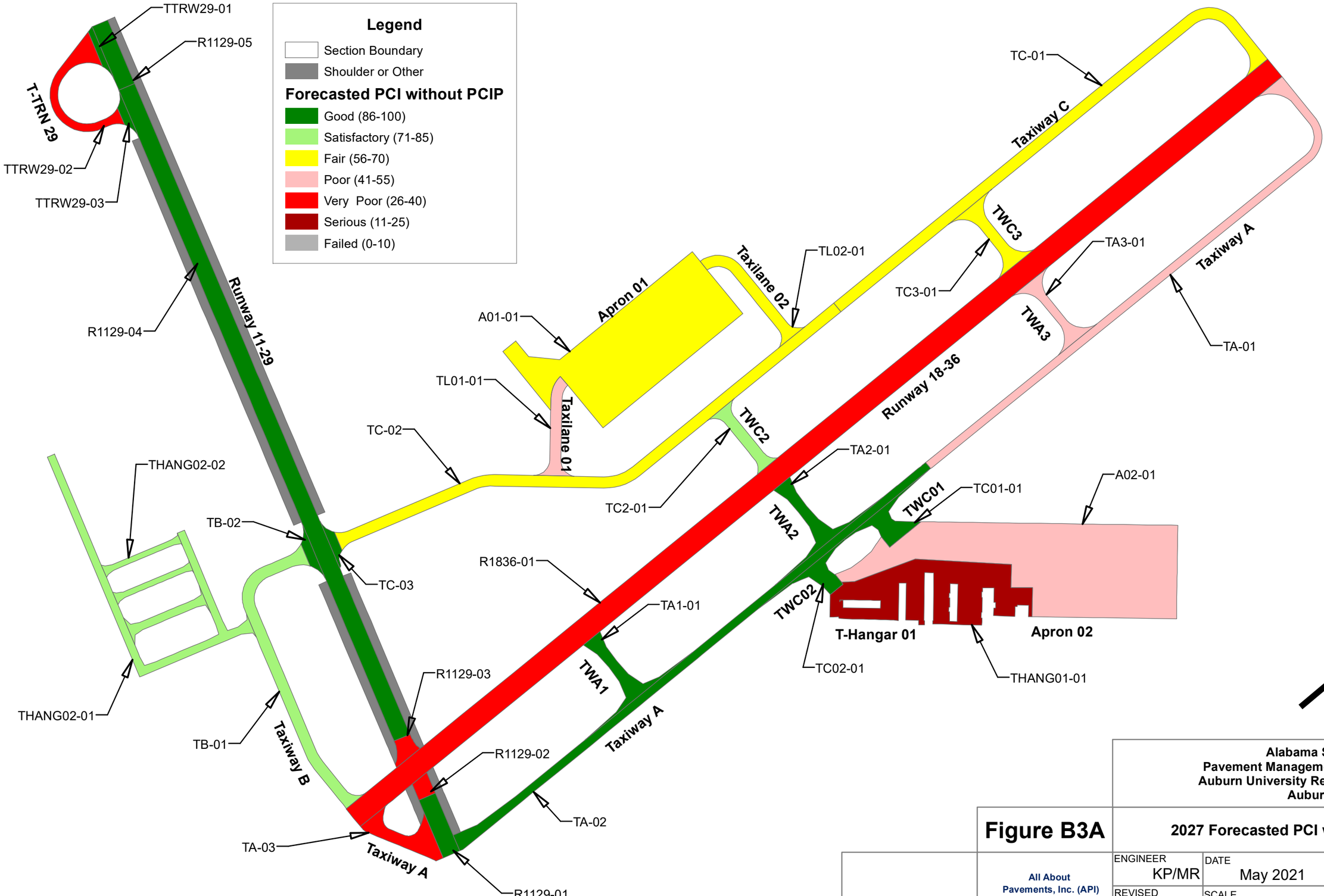

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Figure B3A

2027 Forecasted PCI without PCIP

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ENGINEER	DATE	MAP NUMBER
KP/MR	May 2021	Page 11
REVISED	SCALE	
JMA	1 in = 400 ft	**FINAL**

All sections recommended for Rehabilitation or Reconstruction between 2021 and 2024 also receive Surface Treatment in the 3rd year of paving.

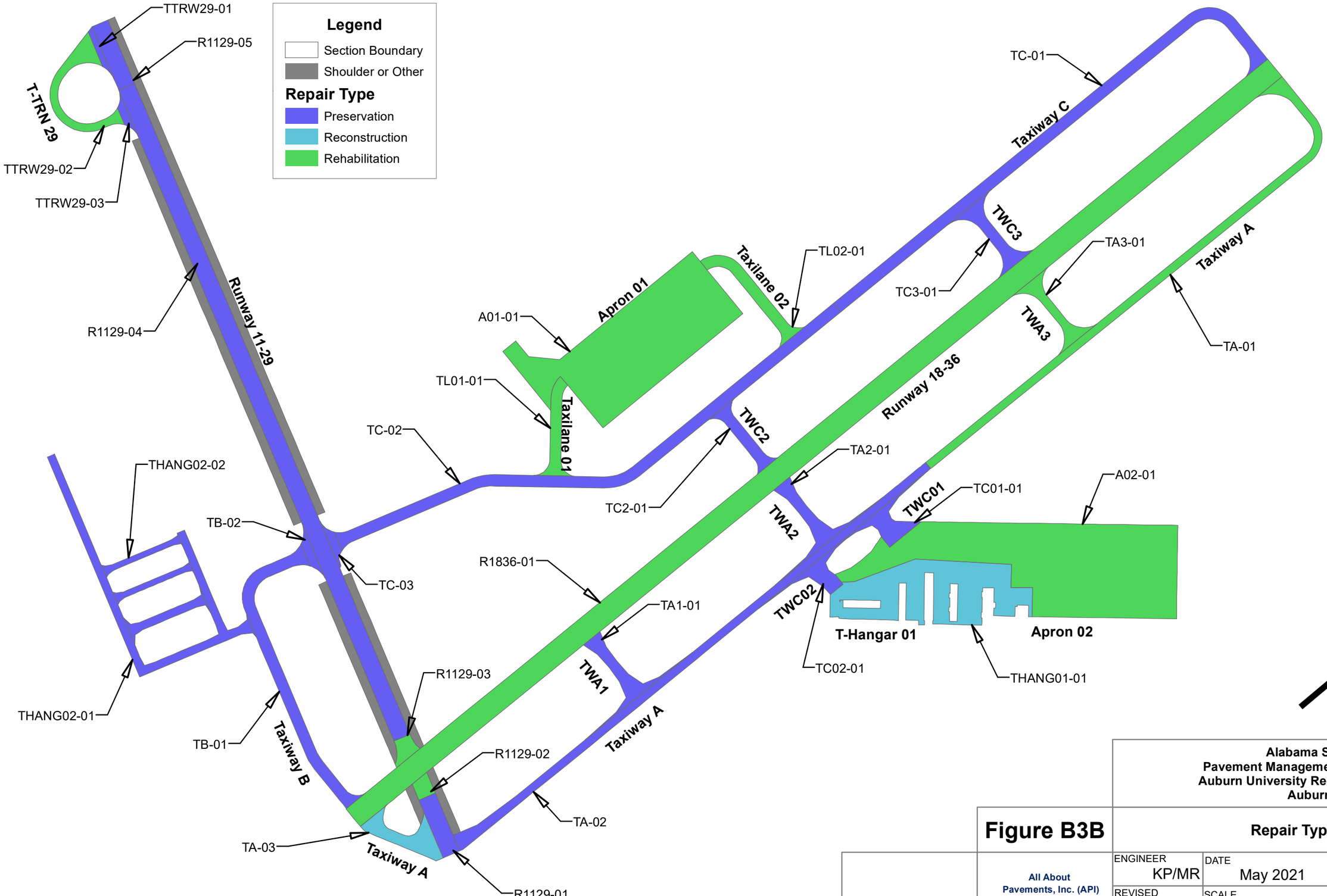

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Figure B3B

Repair Type

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KP/MR	May 2021	Page 12
REVISED	SCALE	
JMA	1 in = 400 ft	**FINAL**

All sections recommended for Mill & AC Overlay or AC Reconstruction between 2021 and 2024 also receive Surface Treatment in the 3rd year of paving

Legend

Project Name

- AUO_21-01_Taxiway B Preservation
- AUO_21-02_Taxiway C Preservation
- AUO_21-03_Taxiway Hangar 02 Preservation
- AUO_21-04_Runway 18-36 Rehabilitation
- AUO_21-05_RW 11-29 Turnaround Rehabilitation
- AUO_22-01_Taxiway A Rehabilitation
- AUO_22-02_Apron 02 Rehabilitation
- AUO_23-01_Taxiway Hangar 01 Reconstruction
- AUO_25-01_Apron 01 Rehabilitation
- AUO_27-01_Runway 11-29 Preservation
- AUO_27-02_Taxiway A Preservation

M&R Activity

- AC Reconstruction
- Mill 2" & 2" AC OL
- Mill 2" & 2" AC OLP
- Runway Surface Treatment
- Taxiway & Apron Surface Treatment

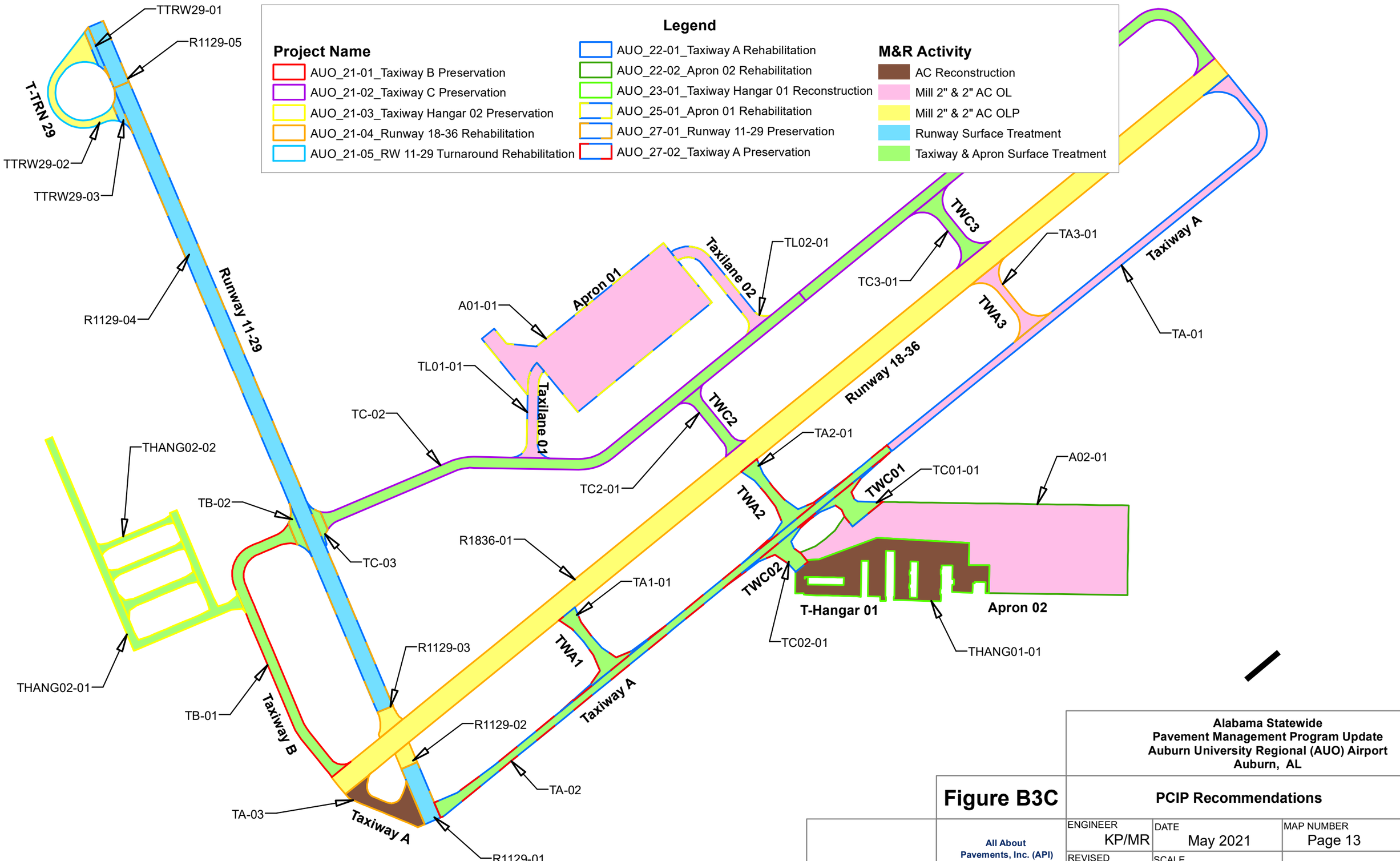

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Figure B3C

PCIP Recommendations

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ENGINEER	DATE	MAP NUMBER
KP/MR	May 2021	Page 13
REVISED	SCALE	
JMA	1 in = 400 ft	**FINAL**

APPENDIX C

OVERVIEW OF PAVEMENT DISTRESSES

1. Alligator Cracking (AC)

2. Bleeding (AC)

3. Block Cracking (AC)

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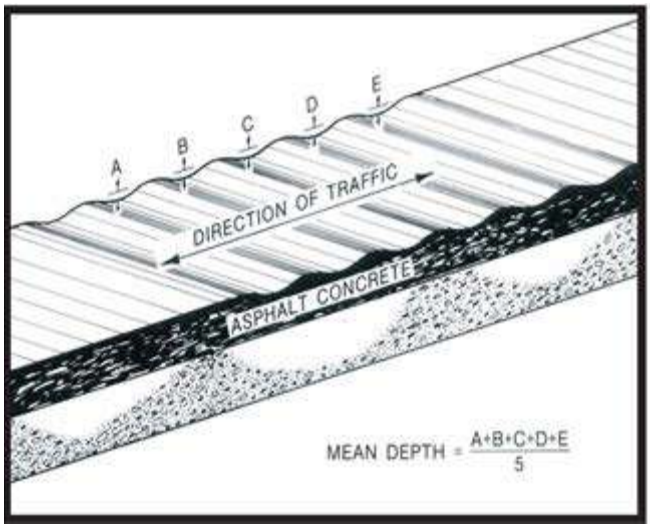
4. Corrugation (AC)

Description

Corrugation is a series of closely spaced ridges and valleys (ripples) occurring at fairly regular intervals, usually less than 5 feet (1.5 meters) along the pavement. The ridges are perpendicular to the traffic direction. Traffic action combined with an unstable pavement surface or base usually causes this type of distress.

Severity Levels



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CAP

7. Joint Reflection Cracking (AC)

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48 M

9. Oil Spillage (AC)

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10. Patching

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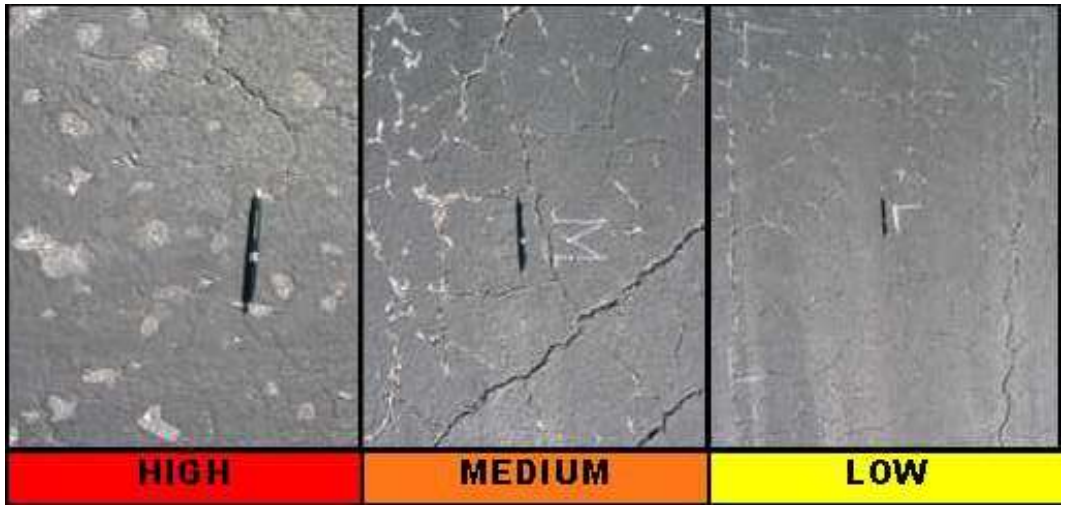
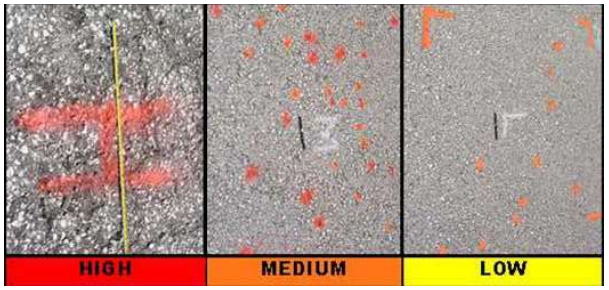
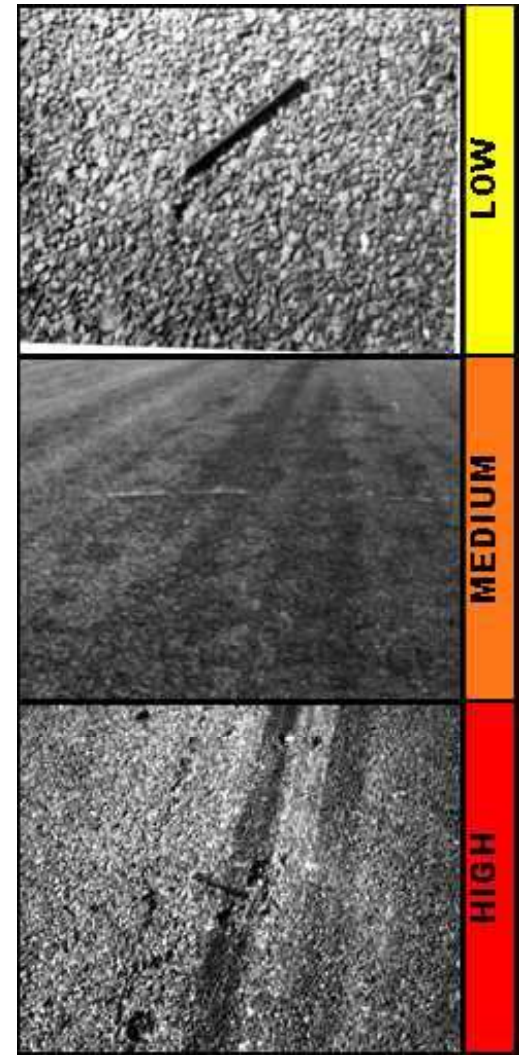
11. Polished Aggregate (AC)

12. Raveling (AC)


HIGH
MEDIUM
LOW


HIGH
MEDIUM
LOW


LOW
MEDIUM
HIGH

13. Rutting (AC)

from the direction of traffic. They are produced when braking or turning wheels cause the

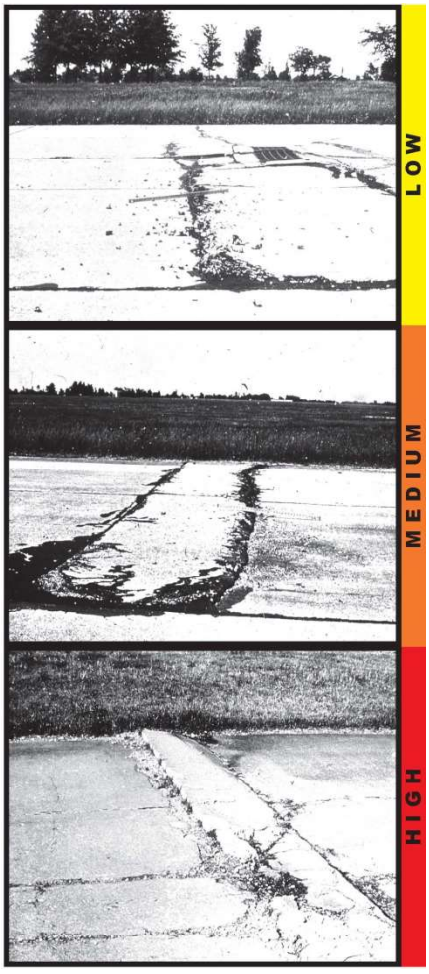
_____ No degrees of severity are defined. It is sufficient to indicate that a slippage

_____

- ♦
- ♦

15. Swelling (AC)

16. Weathering (AC)

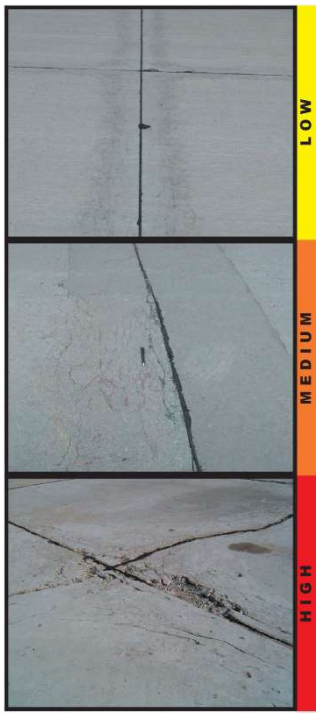

LOW
MEDIUM
HIGH

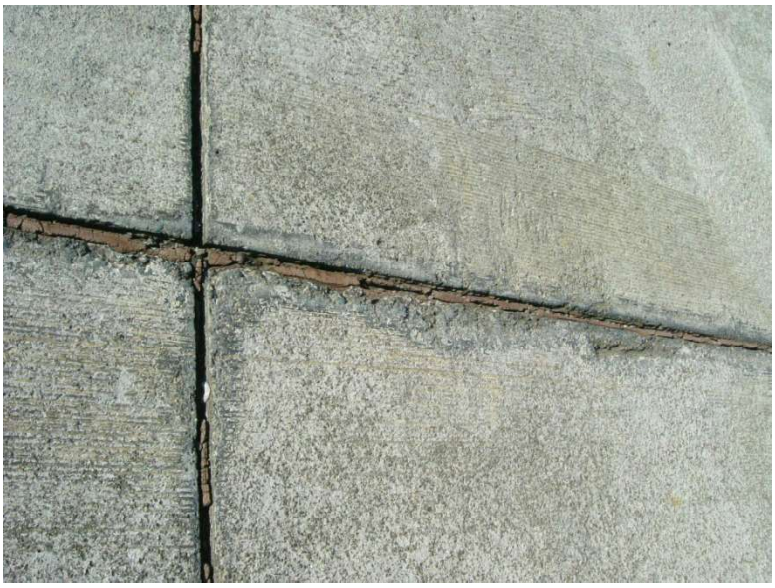
- filled, it has a mean width less than approximately 1 inch (3 millimeters); a filled crack can be of any width, but the filler material

- One of the following conditions exists: (1) filled or non filled c filled crack has a mean width between 1/8 inch (3 millimeters) and 1 inch (25 millimeters); (3) a filled crack is not spalled or only lightly spalled, but the filler is in unsatisfactory

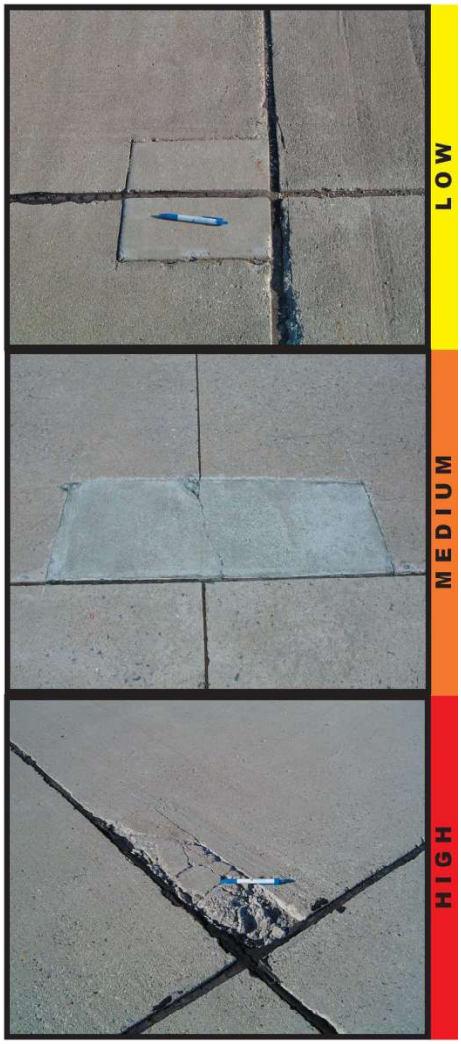
- One of the following conditions exists: (1) filled or non filled crack is severely spalled, causing definite FOD potential; (2) a non filled crack ha

parallel to a joint or linear crack. A dark coloring can usually be seen around the fine





has been removed and replaced by a filler



Patching is the same as defined

No degrees of severity are defined for popouts.

of approximately 1⁄4 to 1⁄2 in

Severity levels are defined by the difference in elevation across the fault and the

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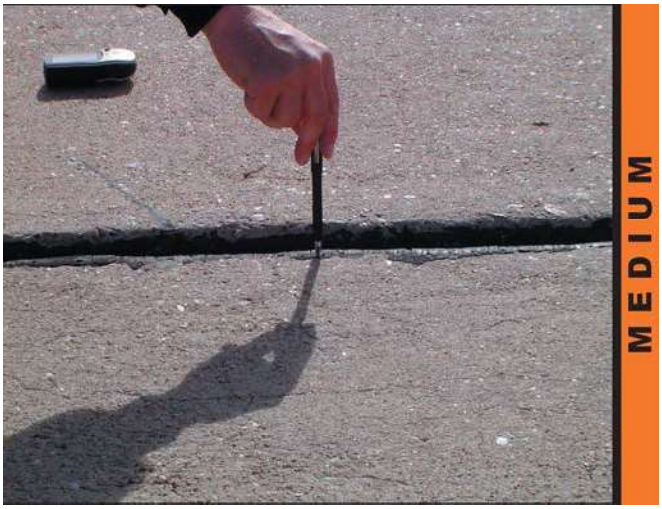

severity level of this distress type, as defined below,

- Slab is broken into four or five pieces with the vast majority of the cracks
- (1) Slab is broken into four or five pieces with over 15 percent of the
- four or five pieces with some or all of the cracks of high severity; (2) slab is

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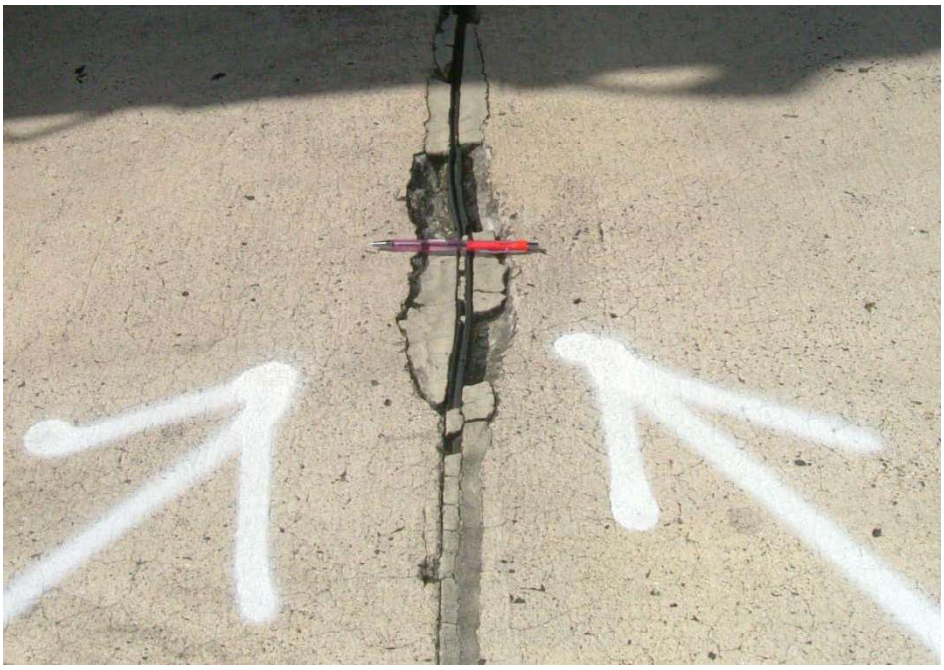
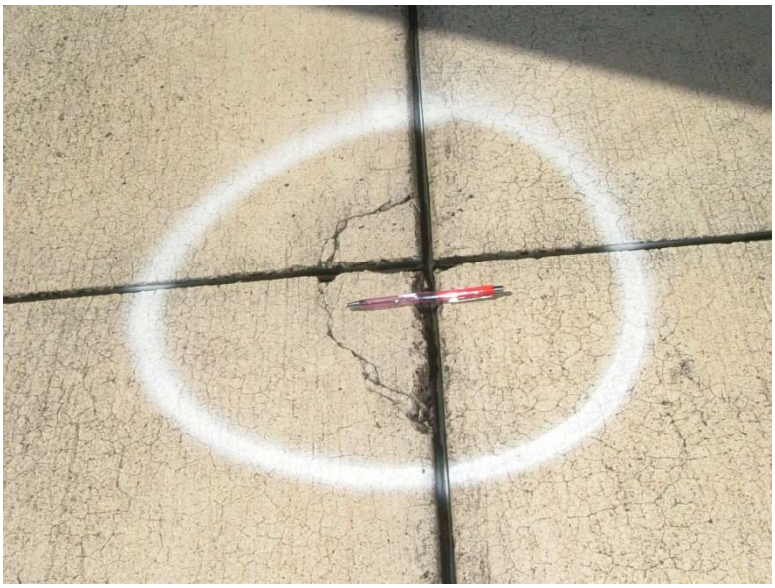
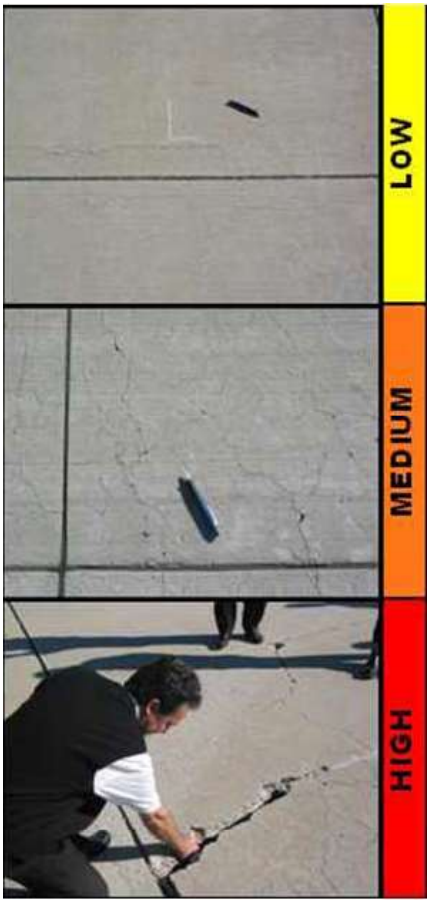
No degrees of severity are defined. It is sufficient to indicate that shrinkage cracks exist.






LOW
MEDIUM
HIGH

APPENDIX D

DETAILED PAVEMENT CONDITION DATA

APPENDIX E

DISTRESS SUMMARY REPORT

Appendix E
Distress Summary Report
Auburn University Regional Airport (AUO)

Branch ID	Section ID	Surface	Area (sf)	Distress Number	Description	Distress Mechanism	Severity	Quantity	Quantity Units	Distress Density
A01	01	AC	315,037	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Low	2,483	Ft	0.8%
A01	01	AC	315,037	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Medium	5,938	Ft	1.9%
A01	01	AC	315,037	49	OIL SPILLAGE	Other	N/A	1,221	SqFt	0.4%
A01	01	AC	315,037	52	RAVELING	Climate/Durability	Low	7,213	SqFt	2.3%
A01	01	AC	315,037	57	WEATHERING	Climate/Durability	Low	307,824	SqFt	97.7%
A02	01	AC	401,337	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Low	10,988	Ft	2.7%
A02	01	AC	401,337	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Medium	27,404	Ft	6.8%
A02	01	AC	401,337	49	OIL SPILLAGE	Other	N/A	181	SqFt	0.0%
A02	01	AC	401,337	52	RAVELING	Climate/Durability	Low	12,075	SqFt	3.0%
A02	01	AC	401,337	57	WEATHERING	Climate/Durability	Medium	389,262	SqFt	97.0%
R1129	01	AAC	22,240					0		0.0%
R1129	02	AC	7,040	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Medium	345	Ft	4.9%
R1129	02	AC	7,040	50	PATCHING	Climate/Durability	Low	260	SqFt	3.7%
R1129	02	AC	7,040	57	WEATHERING	Climate/Durability	Medium	7,040	SqFt	100.0%
R1129	04	AAC	234,975					0		0.0%
R1129	05	AAC	22,875					0		0.0%
R1836	01	AC	526,400	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Low	11,516	Ft	2.2%
R1836	01	AC	526,400	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Medium	23,020	Ft	4.4%
R1836	01	AC	526,400	50	PATCHING	Climate/Durability	Low	1,292	SqFt	0.2%
R1836	01	AC	526,400	52	RAVELING	Climate/Durability	Medium	323	SqFt	0.1%
R1836	01	AC	526,400	57	WEATHERING	Climate/Durability	Low	230,260	SqFt	43.7%

Appendix E
Distress Summary Report
Auburn University Regional Airport (AUO)

Branch ID	Section ID	Surface	Area (sf)	Distress Number	Description	Distress Mechanism	Severity	Quantity	Quantity Units	Distress Density
TC	01	AC	124,170	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Medium	207	Ft	0.2%
TC	01	AC	124,170	50	PATCHING	Climate/Durability	Low	4,139	SqFt	3.3%
TC	01	AC	124,170	57	WEATHERING	Climate/Durability	Low	120,031	SqFt	96.7%
TC	02	AC	127,987	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Low	3,076	Ft	2.4%
TC	02	AC	127,987	57	WEATHERING	Climate/Durability	Low	127,987	SqFt	100.0%
TC	03	AC	5,535					0		0.0%
TC01	01	AC	21,264					0		0.0%
TC02	01	AC	16,602					0		0.0%
TC2	01	AC	19,088	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Low	39	Ft	0.2%
TC2	01	AC	19,088	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Medium	133	Ft	0.7%
TC2	01	AC	19,088	57	WEATHERING	Climate/Durability	Low	19,088	SqFt	100.0%
TC3	01	AC	24,480	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Low	226	Ft	0.9%
TC3	01	AC	24,480	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Medium	83	Ft	0.3%
TC3	01	AC	24,480	57	WEATHERING	Climate/Durability	Low	24,480	SqFt	100.0%
THANG01	01	AC	164,069	41	ALLIGATOR CRACKING	Load	High	3,961	SqFt	2.4%
THANG01	01	AC	164,069	41	ALLIGATOR CRACKING	Load	Medium	4,634	SqFt	2.8%
THANG01	01	AC	164,069	43	BLOCK CRACKING	Climate/Durability	Medium	5,762	SqFt	3.5%
THANG01	01	AC	164,069	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	High	72	Ft	0.0%
THANG01	01	AC	164,069	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Low	480	Ft	0.3%

Appendix E
Distress Summary Report
Auburn University Regional Airport (AUO)

Branch ID	Section ID	Surface	Area (sf)	Distress Number	Description	Distress Mechanism	Severity	Quantity	Quantity Units	Distress Density
THANG01	01	AC	164,069	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Medium	11,236	Ft	6.8%
THANG01	01	AC	164,069	50	PATCHING	Climate/Durability	High	720	SqFt	0.4%
THANG01	01	AC	164,069	50	PATCHING	Climate/Durability	Low	4,581	SqFt	2.8%
THANG01	01	AC	164,069	52	RAVELING	Climate/Durability	Low	24,008	SqFt	14.6%
THANG01	01	AC	164,069	52	RAVELING	Climate/Durability	Medium	96	SqFt	0.1%
THANG02	01	AC	71,750	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Low	465	Ft	0.6%
THANG02	01	AC	71,750	57	WEATHERING	Climate/Durability	Low	71,750	SqFt	100.0%
THANG02	02	AC	34,756	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Low	289	Ft	0.8%
THANG02	02	AC	34,756	49	OIL SPILLAGE	Other	N/A	10	SqFt	0.0%
THANG02	02	AC	34,756	52	RAVELING	Climate/Durability	Low	48	SqFt	0.1%
TL01	01	AC	23,609	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Low	310	Ft	1.3%
TL01	01	AC	23,609	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Medium	330	Ft	1.4%
TL01	01	AC	23,609	57	WEATHERING	Climate/Durability	Low	23,609	SqFt	100.0%
TL02	01	AC	29,090	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Low	862	Ft	3.0%
TL02	01	AC	29,090	57	WEATHERING	Climate/Durability	Low	29,090	SqFt	100.0%
TTRW29	01	AAC	4,954					0		0.0%
TTRW29	02	AC	32,204	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Low	421	Ft	1.3%
TTRW29	02	AC	32,204	48	LONGITUDINAL/TRANSVERSE CRACKING	Climate/Durability	Medium	2,832	Ft	8.8%
TTRW29	02	AC	32,204	57	WEATHERING	Climate/Durability	Low	8,148	SqFt	25.3%
TTRW29	02	AC	32,204	57	WEATHERING	Climate/Durability	Medium	24,056	SqFt	74.7%

APPENDIX F

PAVEMENT CONDITION REPORTS

F1: Section Forecasted Pavement Condition Rating
F2: Branch PCI Rating
F3: Branch FOD Rating

Appendix F1

Forecasted Section PCI

Auburn University Regional Airport (AUO)

Branch ID	Section ID	Forecasted PCI						
		2021	2022	2023	2024	2025	2026	2027
A01	01	73	71	69	67	65	62	60
A02	01	58	56	54	52	50	47	45
R1129	01	98	97	96	95	94	92	89
R1129	02	55	51	47	43	38	34	30
R1129	03	55	51	47	43	38	34	30
R1129	04	98	97	96	95	94	92	89
R1129	05	98	97	96	95	94	92	89
R1836	01	54	50	45	41	37	33	28
TA	01	69	65	61	56	51	47	45
TA	02	99	98	96	94	92	89	86
TA	03	45	43	39	36	32	29	25
TA1	01	99	98	96	94	92	89	86
TA2	01	99	98	96	94	92	89	86
TA3	01	69	65	61	56	51	47	45
TB	01	86	83	81	79	77	75	73
TB	02	99	98	96	94	92	89	86
TC	01	80	78	76	73	71	68	64
TC	02	83	81	79	77	75	73	70
TC	03	99	98	96	94	92	89	86
TC01	01	99	98	96	94	92	89	86
TC02	01	99	98	96	94	92	89	86
TC2	01	84	82	80	78	76	73	71
TC3	01	83	81	79	77	75	73	70
THANG01	01	32	28	25	21	18	14	11
THANG02	01	88	85	83	81	79	77	75
THANG02	02	91	89	86	83	81	79	77
TL01	01	76	74	71	68	64	60	55
TL02	01	82	80	78	76	74	72	69
TTRW29	01	99	98	96	94	92	89	86
TTRW29	02	53	49	46	43	40	36	33
TTRW29	03	99	98	96	94	92	89	86

Branch Condition Report

Pavement Database: ALDOT_210119

Branch ID	Number of Sections	Sum Section Length (Ft)	Avg Section Width (Ft)	True Area (SqFt)	Use	Average PCI	Standard Deviation PCI	Weighted Average PCI
A01	1	800.00	355.00	315,037.00	APRON	76.00	0.00	76.00
A02	1	1,500.00	285.00	401,337.00	APRON	61.00	0.00	61.00
R1129	5	3,896.00	77.00	296,084.00	RUNWAY	93.00	14.00	99.17
R1836	1	5,264.00	100.00	526,400.00	RUNWAY	62.00	0.00	62.00
TA	3	5,639.00	41.67	226,889.00	TAXIWAY	73.67	20.85	81.68
TA1	1	331.00	45.00	25,629.00	TAXIWAY	100.00	0.00	100.00
TA2	1	178.00	40.00	25,560.00	TAXIWAY	100.00	0.00	100.00
TA3	1	331.00	35.00	21,216.00	TAXIWAY	72.00	0.00	72.00
TB	2	1,415.00	92.50	77,630.00	TAXIWAY	94.50	5.50	89.91
TC	3	5,075.00	77.33	257,692.00	TAXIWAY	89.33	7.72	84.37
TC01	1	152.00	80.00	21,264.00	TAXIWAY	100.00	0.00	100.00
TC02	1	144.00	74.00	16,602.00	TAXIWAY	100.00	0.00	100.00
TC2	1	325.00	50.00	19,088.00	TAXIWAY	87.00	0.00	87.00
TC3	1	365.00	50.00	24,480.00	TAXIWAY	86.00	0.00	86.00
THANG01	1	900.00	250.00	164,069.00	TAXIWAY	36.00	0.00	36.00
THANG02	2	3,150.00	30.00	106,506.00	TAXIWAY	92.50	1.50	91.98
TL01	1	425.00	50.00	23,609.00	TAXIWAY	78.00	0.00	78.00
TL02	1	550.00	50.00	29,090.00	TAXIWAY	85.00	0.00	85.00
TTRW29	3	1,006.00	32.00	41,809.00	TAXIWAY	86.33	19.33	68.42

Pavement Database: ALDOT_210119

Use Category	Number of Sections	Total Area (SqFt)	Arithmetic Average PCI	Average STD PCI	Weighted Average PCI
APRON	2	716,374.00	68.50	7.50	67.60
RUNWAY	6	822,484.00	87.83	17.23	75.38
TAXIWAY	23	1,081,133.00	85.48	17.36	78.00
ALL	31	2,619,991.00	84.84	17.43	74.33

Branch Condition Report

Pavement Database: ALDOT_210119

Branch ID	Number of Sections	Sum Section Length (Ft)	Avg Section Width (Ft)	True Area (SqFt)	Use	Average FOD Index	Standard Deviation FOD Index	Weighted Average FOD Index
A01	1	800.00	355.00	315,037.00	APRON	24.00	0.00	24.00
A02	1	1,500.00	285.00	401,337.00	APRON	39.00	0.00	39.00
R1129	5	3,896.00	77.00	296,084.00	RUNWAY	7.00	14.00	0.83
R1836	1	5,264.00	100.00	526,400.00	RUNWAY	38.00	0.00	38.00
TA	3	5,639.00	41.67	226,889.00	TAXIWAY	26.33	20.85	18.32
TA1	1	331.00	45.00	25,629.00	TAXIWAY	0.00	0.00	0.00
TA2	1	178.00	40.00	25,560.00	TAXIWAY	0.00	0.00	0.00
TA3	1	331.00	35.00	21,216.00	TAXIWAY	28.00	0.00	28.00
TB	2	1,415.00	92.50	77,630.00	TAXIWAY	5.50	5.50	10.09
TC	3	5,075.00	77.33	257,692.00	TAXIWAY	10.67	7.72	15.63
TC01	1	152.00	80.00	21,264.00	TAXIWAY	0.00	0.00	0.00
TC02	1	144.00	74.00	16,602.00	TAXIWAY	0.00	0.00	0.00
TC2	1	325.00	50.00	19,088.00	TAXIWAY	13.00	0.00	13.00
TC3	1	365.00	50.00	24,480.00	TAXIWAY	14.00	0.00	14.00
THANG01	1	900.00	250.00	164,069.00	TAXIWAY	51.00	0.00	51.00
THANG02	2	3,150.00	30.00	106,506.00	TAXIWAY	7.50	1.50	8.02
TL01	1	425.00	50.00	23,609.00	TAXIWAY	22.00	0.00	22.00
TL02	1	550.00	50.00	29,090.00	TAXIWAY	15.00	0.00	15.00
TTRW29	3	1,006.00	32.00	41,809.00	TAXIWAY	13.67	19.33	31.58

Pavement Database: ALDOT_210119

Use Category	Number of Sections	Total Area (SqFt)	Arithmetic Average FOD	Average STD FOD Index	Weighted Average FOD In
APRON	2	716,374.00	31.50	7.50	32.40
RUNWAY	6	822,484.00	12.17	17.23	24.62
TAXIWAY	23	1,081,133.00	13.96	15.88	20.03
ALL	31	2,619,991.00	14.74	16.37	24.85

APPENDIX G

SAFETY AND PREVENTIVE MAINTENANCE POLICIES

Appendix G1
Localized Safety (Stopgap) Repair Policy

Distress	Distress Severity	Description	Code	Work Type	Work Unit
41	High	ALLIGATOR CR	PA-FD	Patching - AC Full-Depth	SqFt
43	High	BLOCK CR	CS-AC	Crack Sealing - AC	Ft
45	High	DEPRESSION	PA-FD	Patching - AC Full-Depth	SqFt
47	High	JT REF. CR	CS-AC	Crack Sealing - AC	Ft
48	High	L & T CR	CS-AC	Crack Sealing - AC	Ft
50	High	PATCHING	PA-FD	Patching - AC Full-Depth	SqFt
53	High	RUTTING	PA-FD	Patching - AC Full-Depth	SqFt
54	High	SHOVING	PA-PD	Patching - AC Partial-Depth	SqFt
55	NA	SLIPPAGE CR	PA-PD	Patching - AC Partial-Depth	SqFt
56	High	SWELLING	PA-FD	Patching - AC Full-Depth	SqFt
61	High	BLOW-UP	SL-PC	Slab Replacement - PCC	SqFt
61	Medium	BLOW-UP	PA-PF	Patching - PCC Full Depth	SqFt
62	High	CORNER BREAK	PA-PF	Patching - PCC Full Depth	SqFt
63	High	LINEAR CR	PA-PF	Patching - PCC Full Depth	SqFt
63	Medium	LINEAR CR	CS-PC	Crack Sealing - PCC	Ft
64	High	DURABIL. CR	SL-PC	Slab Replacement - PCC	SqFt
64	Medium	DURABIL. CR	PA-PF	Patching - PCC Full Depth	SqFt
66	High	SMALL PATCH	PA-PP	Patching - PCC Partial Depth	SqFt
67	High	LARGE PATCH	PA-PF	Patching - PCC Full Depth	SqFt
70	High	SCALING	SL-PC	Slab Replacement - PCC	SqFt
71	High	FAULTING	GR-PP	Grinding (Localized)	Ft
72	High	SHAT. SLAB	SL-PC	Slab Replacement - PCC	SqFt
74	High	JOINT SPALL	PA-PP	Patching - PCC Partial Depth	SqFt
75	High	CORNER SPALL	PA-PP	Patching - PCC Partial Depth	SqFt
76	High	ASR	SL-PC	Slab Replacement - PCC	SqFt

Appendix G2
Localized Preventive Repair Policy

Distress	Distress Severity	Description	Code	Work Type	Work Unit
41	Medium	ALLIGATOR CR	PA-AD	Patching - AC Full-Depth	SqFt
41	High	ALLIGATOR CR	PA-AD	Patching - AC Full-Depth	SqFt
42	N/A	BLEEDING	PA-AS	Patching - AC Partial-Depth	SqFt
43	High	BLOCK CR	PA-AD	Patching - AC Full-Depth	SqFt
43	Medium	BLOCK CR	CS-AC	Crack Sealing - AC	Ft
44	Low	CORRUGATION	PA-AS	Patching - AC Partial-Depth	SqFt
44	High	CORRUGATION	PA-AS	Patching - AC Partial-Depth	SqFt
44	Medium	CORRUGATION	PA-AS	Patching - AC Partial-Depth	SqFt
45	Medium	DEPRESSION	PA-AD	Patching - AC Full-Depth	SqFt
45	Low	DEPRESSION	PA-AD	Patching - AC Full-Depth	SqFt
45	High	DEPRESSION	PA-AD	Patching - AC Full-Depth	SqFt
47	High	JT REF. CR	CS-AC	Crack Sealing - AC	Ft
47	Medium	JT REF. CR	CS-AC	Crack Sealing - AC	Ft
48	High	L & T CR	CS-AC	Crack Sealing - AC	Ft
48	Medium	L & T CR	CS-AC	Crack Sealing - AC	Ft
49	N/A	OIL SPILLAGE	PA-AD	Patching - AC Full-Depth	SqFt
50	High	PATCHING	PA-AD	Patching - AC Full-Depth	SqFt
50	Medium	PATCHING	PA-AD	Patching - AC Full-Depth	SqFt
52	High	RAVELING	PA-AS	Patching - AC Partial-Depth	SqFt
53	High	RUTTING	PA-AD	Patching - AC Full-Depth	SqFt
53	Low	RUTTING	PA-AD	Patching - AC Full-Depth	SqFt
53	Medium	RUTTING	PA-AD	Patching - AC Full-Depth	SqFt
55	N/A	SLIPPAGE CR	PA-AD	Patching - AC Full-Depth	SqFt
56	Low	SWELLING	PA-AD	Patching - AC Full-Depth	SqFt
56	Medium	SWELLING	PA-AD	Patching - AC Full-Depth	SqFt
61	Low	BLOW-UP	PA-PF	Patching - PCC Full Depth	SqFt
61	Medium	BLOW-UP	PA-PF	Patching - PCC Full Depth	SqFt
61	High	BLOW-UP	PA-PF	Patching - PCC Full Depth	SqFt
62	Medium	CORNER BREAK	PA-PF	Patching - PCC Full Depth	SqFt
62	High	CORNER BREAK	PA-PF	Patching - PCC Full Depth	SqFt
62	Low	CORNER BREAK	CS-PC	Crack Sealing - PCC	Ft
63	Medium	LINEAR CR	CS-PC	Crack Sealing - PCC	Ft
63	High	LINEAR CR	PA-PP	Patching - PCC Partial Depth	SqFt
64	Medium	DURABIL. CR	PA-PF	Patching - PCC Full Depth	SqFt
64	High	DURABIL. CR	SL-PC	Slab Replacement - PCC	SqFt
65	High	JT SEAL DMG	JS-LC	Joint Seal (Localized)	Ft
65	Medium	JT SEAL DMG	JS-LC	Joint Seal (Localized)	Ft
66	High	SMALL PATCH	PA-PP	Patching - PCC Partial Depth	SqFt
66	Medium	SMALL PATCH	PA-PP	Patching - PCC Partial Depth	SqFt
67	Medium	LARGE PATCH	PA-PF	Patching - PCC Full Depth	SqFt

Appendix G2
Localized Preventive Repair Policy

Distress	Distress Severity	Description	Code	Work Type	Work Unit
67	High	LARGE PATCH	PA-PF	Patching - PCC Full Depth	SqFt
69	N/A	PUMPING	JS-LC	Joint Seal (Localized)	Ft
70	Medium	SCALING	PA-PP	Patching - PCC Partial Depth	SqFt
70	High	SCALING	SL-PC	Slab Replacement - PCC	SqFt
71	High	FAULTING	GR-PP	Grinding (Localized)	Ft
71	Medium	FAULTING	GR-PP	Grinding (Localized)	Ft
72	Medium	SHAT. SLAB	SL-PC	Slab Replacement - PCC	SqFt
72	High	SHAT. SLAB	SL-PC	Slab Replacement - PCC	SqFt
74	High	JOINT SPALL	PA-PP	Patching - PCC Partial Depth	SqFt
74	Medium	JOINT SPALL	PA-PP	Patching - PCC Partial Depth	SqFt
75	Medium	CORNER SPALL	PA-PP	Patching - PCC Partial Depth	SqFt
75	High	CORNER SPALL	PA-PP	Patching - PCC Partial Depth	SqFt
76	Medium	ASR	SL-PC	Slab Replacement - PCC	SqFt
76	High	ASR	SL-PC	Slab Replacement - PCC	SqFt

APPENDIX H

M&R UNIT COSTS

H1: M&R Unit Costs
H2: Component Costs for Repair
H3: Airport Category

Maintenance and Repair (M&R) Unit Costs

The M&R costs developed for the ALDOT PMP include costs for maintenance, preservation, and repair activities and are described below.

Unit Costs Source Data

The source for the M&R costs data is RSMeans, which has data for 14 locations throughout Alabama, as identified by the yellow highlighted boxes in Figure 1. The cost data is presented in terms of individual line items like asphalt wearing course, aggregate base etc., which were consolidated to develop the activity costs described below.

The cost data show a distinct difference in costs between locations north and south of Birmingham, especially for the higher value items like the asphalt layers. Therefore, the unit costs were developed accordingly for the airports north and south of Birmingham, as identified in Figure 1. Appendix H2 presents the component costs used in developing the M&R costs.

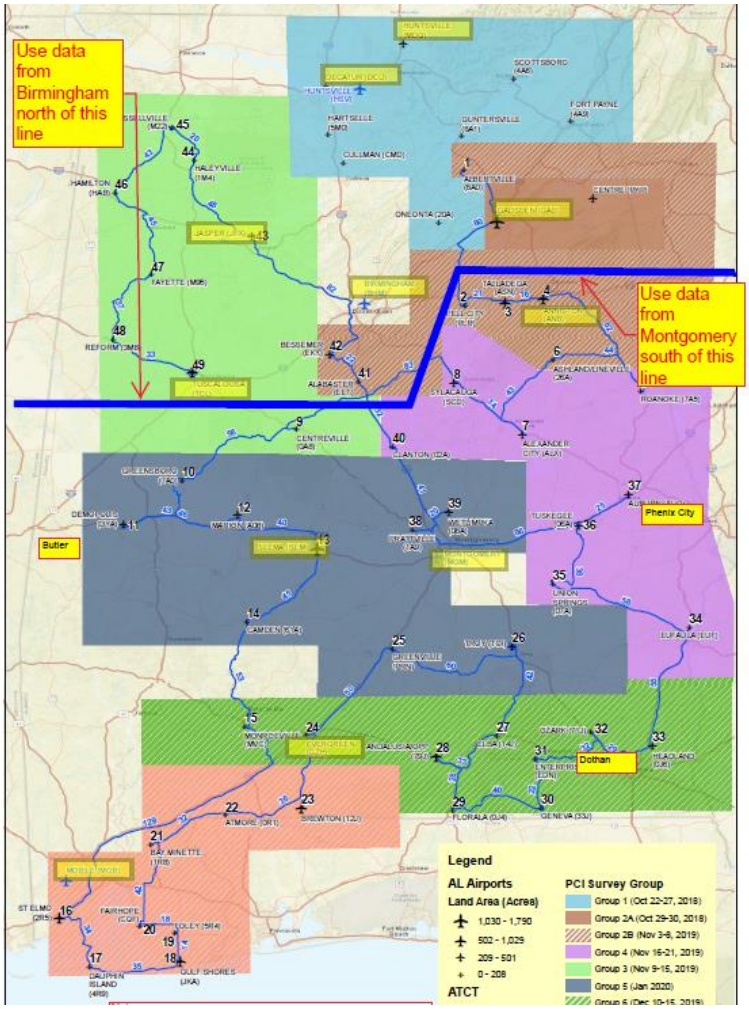


Figure 1: RSMeans Unit Costs Locations.

Maintenance & Repair (M&R) Activities

Maintenance activities are localized activities which are typically assigned in the first year of the M&R plan based on the observed distresses.

Repair activities are further subdivided into preservation, rehabilitation, and reconstruction. Repair activities are conducted for larger areas, typically at the section level and are assigned based on the Critical Pavement Condition Index, denoted as CP in Table 1. The CP is based on the section's rank or importance within the overall network and typically ranges from 55 to 70. The CP was set at 70 for the ALDOT runway pavements and 65 for the other pavements.

Table 1: Repair Activities.

Activity Type	PCI	Activity
Preservation	> CP	Runway Surface Treatment
		Taxiway and Apron Surface Treatment
Rehabilitation	> CP	2" AC OL[1]
	55 - CP	Mill 2" & 2" AC OL
	45 - 55	Mill 2" & 2" AC OLP (With Pre-Overlay Repairs)
Reconstruction	0 - 45	Reconstruct with AC

[1]For Sections with Structural Distress and PCI greater than Critical PCI

The depths for the milling and overlay (AC OL) in Table 1 were established by creating a balance between removal of surficial distress and providing additional pavement structural capacity. All overlay options include full-depth patching to repair localized distresses.

From the FAA 5010 records, the Alabama airport network includes a wide range of allowable aircraft loads. The airports were divided into three categories of allowable aircraft loads based on requirements for minimum pavement thickness and the use of a P-401 surface layer. The categories are based on the aircraft maximum gross takeoff weight (MGTOW) and include: less than 12,500 lbs, 12,500 to 30,000 lbs, and 30,000 to 100,000 lbs. Appendix H3 presents the category for each airport.

For any sections requiring reconstruction, the pavement sections were established primarily in accordance with the requirements in Table 3 of the FAA's Advisory Circular 150/5320-6F. The pavement sections used for developing the cost estimates are:

≤ 12,500 lbs	4" P-403 (State HMA Mix) + 6" P-209 Base
12,500 – 30,000 lbs	4" P-403 (State HMA Mix) + 8" P-209 Base
30,000 – 100,000 lbs	5" P-401 + 10" P-209 Base

It is important to note that while the FAA requires a stabilized base for those pavements that support aircraft operations with MGTOWs that are greater than 100,000 lbs, the number of such operations is minimal for those airports shown in Appendix H3. As a result, the cost of a stabilized base is excluded in the development of the unit costs for ALDOT's PMP update. However, based on the Engineer's future design and aircraft fleet mix development, project-level construction work could include the use of a stabilized base at that time.

M&R Unit Costs

Paving projects typically include additional project costs like mobilization, design, construction administration and inspections, and drainage improvements. A summary of non-direct pavement construction line items has been included in the unit costs in Tables 5 and 6 as described below. These non-direct items are expressed as a percentage of the total component costs for each activity.

These non-direct pavement construction items were developed from API's extensive experience with APMP project cost estimation. These percentages may vary for Alabama airport construction projects; however, since the direct pavement scope of work is estimated in a network-level evaluation, these conservative estimates serve as a good starting point for the development of realistic total project costs and annual APMP budgets for ALDOT. For repair activities such as Mill & Overlay, which typically do not include significant drainage work, the corresponding multiplier was reduced by 50 percent. The non-direct cost factors are presented in Table 2.

Table 2: Cost Factors.

Factor	Function of	Estimate		
		Preservation	Rehabilitation	Reconstruction
Mobilization	All costs, less design	10%	10%	10%
Drainage Improvements	Paving costs	-	4%	8%
Contingency	All costs, less mobilization and design	10%	20%	20%
Design & CM	All costs, less mobilization and design	15%	20%	20%

The M&R unit costs for maintenance, preservation, and repair activities were developed from the RSMeans cost data and are presented in the following section.

Maintenance

The maintenance activities include crack seal, and full and partial-depth patching. The unit costs are presented in Table 3.

Table 3: Unit Costs for Maintenance.

Activity	Unit Cost	Unit
Seal Cracks - AC	$3.95	lf
AC Full-Depth Patching	$25.05	sf
AC Partial-Dept Patching	$16.28	sf
Seal Cracks – PCC	$8.35	lf
PCC Full-Depth Patching	$48.70	sf
PCC Partial-Depth Patching	$243.51	sf
Jt. Seal	$11.13	lf
Slab Replacement	$27.83	sf
Grinding	$6.96	lf

Preservation

The unit costs for the surface treatments are presented in Table 4. They include sealing of cracks and application of pavement markings.

Table 4: Unit Costs for Preservation Activities.

Activity	Unit Cost	Unit
Runway Surface Treatment	$0.57	sf
Taxiway and Apron Surface Treatment	$0.88	sf

Rehabilitation and Reconstruction

As discussed previously, repair activities are also divided into rehabilitation and reconstruction. The unit costs for airport repair for the Northern Region (Birmingham Area) and Southern Region (Montgomery Area) are shown in Tables 5 and 6, respectively.

Table 5: Unit Costs for Repair Activities, Northern Region.

Activity Type	Activity	MGTOW, thousand lbs		
		≤ 12.5	12.5-30	30-100
Rehabilitation	2" AC OL	$3.78		$4.19
	Mill 2" & 2" AC OL	$4.15		$4.56
	Mill 2" & 2" AC OLP	$5.18		$5.79
Reconstruction	AC Reconstruction	$8.40	$9.10	$10.91

Table 6: Unit Costs for Repair Activities, Southern Region.

Activity Type	Activity	MGTOW, thousand lbs		
		≤ 12.5	12.5-30	30-100
Rehabilitation	2" AC OL	$3.54		$3.91
	Mill 2" & 2" AC OL	$3.90		$4.27
	Mill 2" & 2" AC OLP	$4.82		$5.37
Reconstruction	AC Reconstruction	$7.63	$8.25	$9.87

Appendix H2
Component Costs for Repair

Activity Type	Unit	Birmingham (Northern)	Montgomery (Southern)	Comments
Milling 1" to 3"	SY	$2.08	$2.01	
Pavement Demolition	SY	$6.34	$6.12	
Haulage - For Demolition & AC	CY	$6.08	$5.87	
Haulage for 12" Thick Demolition	SY	$2.03	$1.96	
Haulage for 2" Thick AC Paving	SY	$0.34	$0.33	
Haulage for 3" Thick AC Paving	SY	$0.51	$0.49	
Haulage for 4" Thick AC Paving	SY	$0.68	$0.65	
AC Wearing Course	Ton	$97.42	$86.90	
AC Binder Course	Ton	$87.80	$78.17	
P401 - For airports with >60 kip aircraft	Ton	$116.90	$104.28	Assumed P401 cost to be 20% greater than AC Wearing Course
6" Aggregate Base (P208)	SY	$10.17	$9.12	
8" Aggregate Base (P208)	SY	$13.29	$11.89	
6" P209 Aggregate Base	SY	$12.20	$10.94	Assumed P209 cost to be 20% greater than P208
8" P209 Aggregate Base	SY	$15.95	$14.27	Assumed P209 cost to be 20% greater than P208
10" P209 Aggregate Base	SY	$19.94	$17.84	Direct multiplier for 10" from 8"
4" P154 Aggregate Base	SY	$5.42	$4.86	Assumed P154 cost to be 20% lower than P208
6" P154 Aggregate Base	SY	$8.14	$7.30	Assumed P154 cost to be 20% lower than P208
Pavement Markings	sf	$1.48	$1.39	

Appendix H3
Airport Category

Region	City	FAA ID	Max Gross Weight (Thousand lbs)			Max GW	Category
			S	D	2D		
Birmingham	Reform	3M8	12.5	-	-	12.5	<= 12,500
	Fayette	M95	15.0	-	-	15.0	12,500-30,000
	Hamilton	HAB	15.0	-	-	15.0	12,500-30,000
	Scottsboro	4A6	15.0	-	-	15.0	12,500-30,000
	Alabaster	EET	16.0	-	-	16.0	12,500-30,000
	Centre-Piedmont	PYP	16.0	-	-	16.0	12,500-30,000
	Fort Payne	4A9	16.0	-	-	16.0	12,500-30,000
	Haleyville	1M4	20.0	-	-	20.0	12,500-30,000
	Hartselle	5M0	20.0	-	-	20.0	12,500-30,000
	Guntersville	8A1	24.0	-	-	24.0	12,500-30,000
	Cullman	CMD	30.0	-	-	30.0	12,500-30,000
	Russellville	M22	30.0	-	-	30.0	12,500-30,000
	Jasper	JFX	50.0	-	-	50.0	> 30,000
	Oneonta	20A	20.0	35.0	55.0	55.0	> 30,000
	Bessemer	EKY	60.0	60.0	-	60.0	> 30,000
	Albertville	8A0	60.0	90.0	130.0	130.0	> 30,000
	Madison	MDQ	60.0	75.0	140.0	140.0	> 30,000
	Decatur	DCU	75.0	125.0	150.0	150.0	> 30,000
	Tuscaloosa	TCL	61.0	87.0	168.0	168.0	> 30,000
	Gadsen	GAD	90.0	115.0	195.0	195.0	> 30,000
Montgomery	Florala	0J4	-	-	-	-	<= 12,500
	Elba	14J	4.0	-	-	4.0	<= 12,500
	Headland	0J6	12.0	-	-	12.0	<= 12,500
	Roanoke	7A5	12.0	-	-	12.0	<= 12,500
	Greenville	PRN	15.0	-	-	15.0	12,500-30,000
	Union Springs	07A	15.0	-	-	15.0	12,500-30,000
	Wetumpka	08A	15.0	-	-	15.0	12,500-30,000
	Atmore	0R1	16.0	-	-	16.0	12,500-30,000
	Clanton	02A	16.0	-	-	16.0	12,500-30,000
	Eufaula	EUF	16.0	-	-	16.0	12,500-30,000
	Geneva	33J	16.0	-	-	16.0	12,500-30,000
	Greensboro	7A0	16.0	-	-	16.0	12,500-30,000
	Centreville	0A8	18.0	-	-	18.0	12,500-30,000
	Ashland-Lineville	26A	20.0	-	-	20.0	12,500-30,000
	Sylacauga	SCD	20.0	-	-	20.0	12,500-30,000
	St. Elmo	2R5	23.0	-	-	23.0	12,500-30,000
	Ozark	71J	-	25.0	-	25.0	12,500-30,000
	Camden	61A	27.0	-	-	27.0	12,500-30,000
	Bay Minette	1R8	28.0	-	-	28.0	12,500-30,000
	Foley	5R4	28.0	-	-	28.0	12,500-30,000
	Tuskegee	06A	28.5	-	-	28.5	12,500-30,000

Appendix H3
Airport Category

Region	City	FAA ID	Max Gross Weight (Thousand lbs)			Max GW	Category
			S	D	2D		
Montgomery	Alexander City	ALX	30.0	-	-	30.0	12,500-30,000
	Dauphin Island	4R9	30.0	-	-	30.0	12,500-30,000
	Pell City	PLR	30.0	-	-	30.0	12,500-30,000
	Prattville	1A9	30.0	-	-	30.0	12,500-30,000
	Enterprise	EDN	-	-	-	-	> 30,000
	Evergreen	GZH	30.0	50.0	-	50.0	> 30,000
	Marion	A08	30.0	50.0	-	50.0	> 30,000
	Selma	SEM	33.0	54.0	-	54.0	> 30,000
	Fairhope	CQF	36.0	58.0	-	58.0	> 30,000
	Brewton	12J	40.0	60.0	-	60.0	> 30,000
	Demopolis	DYA	30.0	38.0	60.0	60.0	> 30,000
	Monroeville	MVC	70.0	-	-	70.0	> 30,000
	Auburn-Opelika	AUO	45.0	75.0	-	75.0	> 30,000
	Talladega	ASN	30.0	65.0	95.0	95.0	> 30,000
	Gulf Shores	JKA	80.0	100.0	-	100.0	> 30,000
	Troy	TOI	24.0	80.0	140.0	140.0	> 30,000
	Anniston	ANB	28.0	43.5	260.0	260.0	> 30,000
	Andalusia-OPP	79J	98.0	160.0	275.0	275.0	> 30,000

APPENDIX I

PAVEMENT CAPITAL IMPROVEMENT PROGRAM

I1: PCIP Summary
I2: Year 1 Maintenance Plan

Appendix I1

PCIP Summary

Auburn University Regional Airport (AUO)

Branch & Section	2021	2022	2023	2024	2025	2026	2027
A01-01	Preventive $8587.2 Before:72.66 After:72.66	Preventive $9511.04 Before:70.45	Preventive $12885.88 Before:68.24	Preventive $17091.08 Before:66.03	Required Project Major Below Critical $1559433.15	Preventive $824.49 Before:97.79 After:97.79	Preventive $1698.44 Before:95.58
A02-01	StopGap $9075.27 Before:57.66 After:57.66	Required Project Major Below Critical $1818056.61	Preventive $961.21 Before:97.79 After:97.79	Preventive $1984.17 Before:95.57	Preventive + Required Project Global MR	Preventive $2100.69 Before:95.58	Preventive $3245.56 Before:93.37
R1129-01	Preventive $44.42 Before:98.05 After:98.05	Preventive $71.72 Before:96.94 After:96.94	Preventive $97.32 Before:95.96 After:95.96	Preventive $128.24 Before:94.84 After:94.84	Preventive $171.16 Before:93.31 After:93.31	Preventive $234.26 Before:91.11 After:91.11	Preventive + Required Project Global MR
R1129-02	Required Project Major Below Critical $34729.06	Preventive $9.63 Before:98.7 After:98.7	Preventive $19.22 Before:97.48 After:97.48	Preventive , (SS-ST) Surface Treatment $27.87 Before:96.45	Preventive $36.95 Before:95.44 After:95.44	Preventive $48.68 Before:94.16 After:94.16	Preventive $65.99 Before:92.32 After:92.32
R1129-04	Preventive $469.34 Before:98.05 After:98.05	Preventive $757.74 Before:96.94 After:96.94	Preventive $1028.27 Before:95.96	Preventive $1354.91 Before:94.84	Preventive $1808.33 Before:93.31	Preventive $2475.01 Before:91.11	Preventive + Required Project Global MR
R1129-05	Preventive $45.69 Before:98.05 After:98.05	Preventive $73.77 Before:96.94 After:96.94	Preventive $100.1 Before:95.96 After:95.96	Preventive $131.9 Before:94.84 After:94.84	Preventive $176.04 Before:93.31 After:93.31	Preventive $240.94 Before:91.11 After:91.11	Preventive + Required Project Global MR
R1836-01	Required Project Major Below Critical $2910992	Preventive $720.31 Before:98.7 After:98.7	Preventive $1437.14 Before:97.48	Preventive + Required Project Global MR	Preventive $1524.67 Before:97.48	Preventive $2211.04 Before:96.45	Preventive $2919.71 Before:95.45
TA-01	StopGap $1213.16 Before:67.44 After:67.44	Required Project Major Below Critical $428035.17	Preventive $104.3 Before:98.98 After:98.98	Preventive $227.34 Before:97.85 After:97.85	Preventive + Required Project Global MR	Preventive $241.18 Before:97.85 After:97.85	Preventive $423.46 Before:96.33 After:96.33
TA-02	Preventive $164.21 Before:98.44 After:98.44	Preventive $309.76 Before:97.14 After:97.14	Preventive $514.53 Before:95.38 After:95.38	Preventive $781.38 Before:93.19 After:93.19	Preventive $1101.4 Before:90.68 After:90.68	Preventive $1456.51 Before:88.04	Preventive + Required Project Global MR

Appendix I1

PCIP Summary

Auburn University Regional Airport (AUO)

Branch & Section	2021	2022	2023	2024	2025	2026	2027
TA-03	Required Project Major Below Critical $301398.12	Preventive $31.76 Before:98.98 After:98.98	Preventive $69.23 Before:97.85 After:97.85	Preventive + Required Project Global MR	Preventive $73.44 Before:97.85 After:97.85	Preventive $128.95 Before:96.33 After:96.33	Preventive $203.83 Before:94.36 After:94.36
TA1-01	Preventive $40.95 Before:98.44 After:98.44	Preventive $77.25 Before:97.14 After:97.14	Preventive $128.32 Before:95.38 After:95.38	Preventive $194.87 Before:93.19 After:93.19	Preventive $274.68 Before:90.68 After:90.68	Preventive $363.25 Before:88.04 After:88.04	Preventive + Required Project Global MR
TA2-01	Preventive $40.84 Before:98.44 After:98.44	Preventive $77.04 Before:97.14 After:97.14	Preventive $127.98 Before:95.38 After:95.38	Preventive $194.35 Before:93.19 After:93.19	Preventive $273.95 Before:90.68 After:90.68	Preventive $362.27 Before:88.04 After:88.04	Preventive + Required Project Global MR $27292.8
TA3-01	Required Project Major Below Critical $117324.48	Preventive $22.74 Before:98.98 After:98.98	Preventive $49.56 Before:97.85 After:97.85	Preventive + Required Project Global MR	Preventive $52.58 Before:97.85 After:97.85	Preventive $92.31 Before:96.33 After:96.33	Preventive $145.92 Before:94.36 After:94.36
TB-01	Preventive + Required Project Global MR	Preventive $727.06 Before:90.3 After:90.3	Preventive $953.11 Before:87.65 After:87.65	Preventive $1189.91 Before:85.04	Preventive $1424.41 Before:82.61	Preventive $1654.27 Before:80.39	Preventive $1867.42 Before:78.36
TB-02	Preventive $10.26 Before:98.44 After:98.44	Preventive $19.35 Before:97.14 After:97.14	Preventive $32.14 Before:95.38 After:95.38	Preventive $48.82 Before:93.19 After:93.19	Preventive $68.81 Before:90.68 After:90.68	Preventive $90.99 Before:88.04 After:88.04	Preventive + Required Project Global MR $6855.23
TC-01	Preventive + Required Project Global MR	Preventive $2204.08 Before:83.14	Preventive $2573.71 Before:80.88	Preventive $2923.2 Before:78.81 After:78.81	Preventive $3265.38 Before:76.85	Preventive $3630.8 Before:74.85 After:74.85	Preventive $4049.65 Before:72.6
TC-02	Preventive + Required Project Global MR	Preventive $1712.14 Before:87.29	Preventive $2123.02 Before:84.7	Preventive $2531.02 Before:82.29	Preventive $2929.48 Before:80.1	Preventive $3295.8 Before:78.09 After:78.09	Preventive $3671.53 Before:76.14

Appendix I1

PCIP Summary

Auburn University Regional Airport (AUO)

Branch & Section	2021	2022	2023	2024	2025	2026	2027
TC-03	Preventive $8.84 Before:98.44 After:98.44	Preventive $16.68 Before:97.14 After:97.14	Preventive $27.71 Before:95.38 After:95.38	Preventive $42.09 Before:93.19 After:93.19	Preventive $59.32 Before:90.68 After:90.68	Preventive $78.45 Before:88.04 After:88.04	Preventive + Required Project Global MR $5910.24 Before:85.42 After:93.19
TC01-01	Preventive $33.98 Before:98.44 After:98.44	Preventive $64.09 Before:97.14 After:97.14	Preventive $106.47 Before:95.38 After:95.38	Preventive $161.68 Before:93.19 After:93.19	Preventive $227.9 Before:90.68 After:90.68	Preventive $301.38 Before:88.04 After:88.04	Preventive + Required Project Global MR $22705.56 Before:85.42 After:93.19
TC02-01	Preventive $26.53 Before:98.44 After:98.44	Preventive $50.04 Before:97.14 After:97.14	Preventive $83.12 Before:95.38 After:95.38	Preventive $126.24 Before:93.19 After:93.19	Preventive $177.94 Before:90.68 After:90.68	Preventive $235.31 Before:88.04 After:88.04	Preventive + Required Project Global MR $17727.51 Before:85.42 After:93.19
TC2-01	Preventive + Required Project Global MR $17125.33 Before:83.19 After:90.94	Preventive $234.89 Before:88.31 After:88.31	Preventive $296.31 Before:85.68 After:85.68	Preventive $358.29 Before:83.19 After:83.19	Preventive $418.94 Before:80.92 After:80.92	Preventive $475.91 Before:78.85 After:78.85	Preventive $531.48 Before:76.9 After:76.9

Appendix I1

PCIP Summary

Auburn University Regional Airport (AUO)

Branch & Section	2021	2022	2023	2024	2025	2026	2027
TC3-01	Preventive + Required Project Global MR $21985.2 Before:82.3 After:89.94	Preventive $327.48 Before:87.29 After:87.29	Preventive $406.07 Before:84.7 After:84.7	Preventive $484.11 Before:82.29 After:82.29	Preventive $560.32 Before:80.1 After:80.1	Preventive $630.39 Before:78.09 After:78.09	Preventive $702.25 Before:76.14 After:76.14
THANG01-01	StopGap $32635.74 Before:30.65 After:30.65	StopGap $37433 Before:27.11 After:27.11	Required Project Major Below Critical $1770304.51 Before:23.56 After:100	Preventive $188.21 Before:98.97 After:98.97	Preventive $406.59 Before:97.85 After:97.85	Preventive $713.88 Before:96.33 After:96.33	Preventive $1132.06 Before:94.35 After:94.35
THANG02-01	Preventive + Required Project Global MR $64091.88 Before:87.02 After:94.58	Preventive $584.96 Before:92.25 After:92.25	Preventive $803.35 Before:89.67 After:89.67	Preventive $1040.87 Before:87.01 After:87.01	Preventive $1284.41 Before:84.44 After:84.44	Preventive $1524.63 Before:82.06 After:82.06	Preventive $1759.8 Before:79.89 After:79.89
THANG02-02	Preventive + Required Project Global MR $30930.78 Before:90.27 After:96.89	Preventive $180.26 Before:95.07 After:95.07	Preventive $270.62 Before:92.82 After:92.82	Preventive $377.53 Before:90.27 After:90.27	Preventive $494.61 Before:87.63 After:87.63	Preventive $616.51 Before:85.03 After:85.03	Preventive $738.33 Before:82.59 After:82.59

Appendix I1
PCIP Summary
Auburn University Regional Airport (AUO)

Branch & Section	2021	2022	2023	2024	2025	2026	2027
TL01-01	Preventive $591.77 Before:75.02 After:75.02	Preventive $659.9 Before:72.79 After:72.79	Preventive $741.82 Before:70.12 After:70.12	Preventive $1178.47 Before:66.82 After:66.82	Required Project Major Below Critical $116864.55 Before:62.8 After:100	Preventive $28.48 Before:98.98 After:98.98	Preventive $62.07 Before:97.85 After:97.85
TL02-01	Preventive $552.4 Before:81.42 After:81.42	Preventive $631.6 Before:79.31 After:79.31	Preventive $707.04 Before:77.34 After:77.34	Preventive $786.72 Before:75.36 After:75.36	Required Project Major Above Critical $143995.5 Before:73.19 After:100	Preventive $35.09 Before:98.98 After:98.98	Preventive $76.48 Before:97.85 After:97.85
TTRW29-01	Preventive $7.92 Before:98.44 After:98.44	Preventive $14.93 Before:97.14 After:97.14	Preventive $24.8 Before:95.38 After:95.38	Preventive $37.67 Before:93.19 After:93.19	Preventive $53.1 Before:90.68 After:90.68	Preventive $70.21 Before:88.04 After:88.04	Preventive , (RW-ST) Runway Surface Treatment $88.15 Before:85.42 After:85.42
TTRW29-02	Required Project Major Below Critical $167296.45 Before:51.59 After:100	Preventive $34.51 Before:98.98 After:98.98	Preventive $75.23 Before:97.85 After:97.85	Preventive + Required Project Global MR $20742.64 Before:96.33 After:98.98	Preventive $79.81 Before:97.85 After:97.85	Preventive $140.12 Before:96.33 After:96.33	Preventive $221.49 Before:94.36 After:94.36
TTRW29-03	Preventive $7.43 Before:98.44 After:98.44	Preventive $14.02 Before:97.14 After:97.14	Preventive $23.29 Before:95.38 After:95.38	Preventive $35.36 Before:93.19 After:93.19	Preventive $49.85 Before:90.68 After:90.68	Preventive $65.92 Before:88.04 After:88.04	Preventive , (RW-ST) Runway Surface Treatment $82.76 Before:85.42 After:85.42

Appendix I2

Localized Maintenance Plan

Auburn Univeristy Regional Airport (AUO)

Branch ID	Section ID	Policy	Distress Code	Description	Severity	Distress Qty	Distress Unit	Percent Distress	Work Description	Work Qty	Work Unit	Unit Cost	Work Cost
A01	01	Preventive	48	L & T CR	Low	2,483	Ft	0.79	No Localized M & R	0		$0.00	$0
A01	01	Preventive	52	RAVELING	Low	7,213	SqFt	2.29	No Localized M & R	0		$0.00	$0
A01	01	Preventive	48	L & T CR	Medium	5,938	Ft	1.88	Crack Sealing - AC	5,938	Ft	$3.95	$23,457
A01	01	Preventive	49	OIL SPILLAGE	N/A	1,221	SqFt	0.39	Patching - AC Full-Depth	1,366	SqFt	$25.05	$34,215
A01	01	Preventive	57	WEATHERING	Low	307,824	SqFt	97.71	No Localized M & R	0		$0.00	$0
A02	01	Safety	48	L & T CR	Medium	27,404	Ft	6.83	No Localized M & R	0		$0.00	$0
A02	01	Safety	57	WEATHERING	Medium	389,262	SqFt	96.99	No Localized M & R	0		$0.00	$0
A02	01	Safety	48	L & T CR	Low	10,988	Ft	2.74	No Localized M & R	0		$0.00	$0
A02	01	Safety	52	RAVELING	Low	12,075	SqFt	3.01	No Localized M & R	0		$0.00	$0
A02	01	Safety	49	OIL SPILLAGE	N/A	181	SqFt	0.05	No Localized M & R	0		$0.00	$0
R1129	02	Safety	57	WEATHERING	Medium	7,040	SqFt	100	No Localized M & R	0		$0.00	$0
R1129	02	Safety	50	PATCHING	Low	260	SqFt	3.69	No Localized M & R	0		$0.00	$0
R1129	02	Safety	48	L & T CR	Medium	345	Ft	4.9	No Localized M & R	0		$0.00	$0
R1836	01	Safety	57	WEATHERING	Medium	294,526	SqFt	55.95	No Localized M & R	0		$0.00	$0
R1836	01	Safety	57	WEATHERING	Low	230,260	SqFt	43.74	No Localized M & R	0		$0.00	$0
R1836	01	Safety	52	RAVELING	Medium	323	SqFt	0.06	No Localized M & R	0		$0.00	$0
R1836	01	Safety	48	L & T CR	Low	11,516	Ft	2.19	No Localized M & R	0		$0.00	$0
R1836	01	Safety	48	L & T CR	Medium	23,019	Ft	4.37	No Localized M & R	0		$0.00	$0
R1836	01	Safety	50	PATCHING	Low	1,292	SqFt	0.25	No Localized M & R	0		$0.00	$0
TA	01	Preventive	48	L & T CR	Medium	108	Ft	0.11	Crack Sealing - AC	108	Ft	$3.95	$427
TA	01	Preventive	48	L & T CR	Low	3,651	Ft	3.86	No Localized M & R	0		$0.00	$0
TA	01	Preventive	50	PATCHING	Low	81	SqFt	0.09	No Localized M & R	0		$0.00	$0
TA	01	Preventive	57	WEATHERING	Medium	94,408	SqFt	99.91	No Localized M & R	0		$0.00	$0
TA	03	Safety	43	BLOCK CR	Medium	3,746	SqFt	12.64	No Localized M & R	0		$0.00	$0
TA	03	Safety	48	L & T CR	Low	107	Ft	0.36	No Localized M & R	0		$0.00	$0
TA	03	Safety	57	WEATHERING	Medium	29,636	SqFt	100	No Localized M & R	0		$0.00	$0
TA	03	Safety	48	L & T CR	Medium	3,129	Ft	10.56	No Localized M & R	0		$0.00	$0
TA3	01	Preventive	48	L & T CR	Low	748	Ft	3.52	No Localized M & R	0		$0.00	$0
TA3	01	Preventive	57	WEATHERING	Medium	21,216	SqFt	100	No Localized M & R	0		$0.00	$0

Appendix I2

Localized Maintenance Plan

Auburn Univeristy Regional Airport (AUO)

Branch ID	Section ID	Policy	Distress Code	Description	Severity	Distress Qty	Distress Unit	Percent Distress	Work Description	Work Qty	Work Unit	Unit Cost	Work Cost
TA3	01	Preventive	48	L & T CR	Medium	303	Ft	1.43	Crack Sealing - AC	303	Ft	$3.95	$1,198
TA3	01	Preventive	49	OIL SPILLAGE	N/A	7	SqFt	0.03	Patching - AC Full-Depth	22	SqFt	$25.05	$541
TB	01	Preventive	57	WEATHERING	Low	71,210	SqFt	100	No Localized M & R	0		$0.00	$0
TB	01	Preventive	48	L & T CR	Low	677	Ft	0.95	No Localized M & R	0		$0.00	$0
TC	01	Preventive	50	PATCHING	Low	4,139	SqFt	3.33	No Localized M & R	0		$0.00	$0
TC	01	Preventive	48	L & T CR	Low	2,545	Ft	2.05	No Localized M & R	0		$0.00	$0
TC	01	Preventive	57	WEATHERING	Low	120,031	SqFt	96.67	No Localized M & R	0		$0.00	$0
TC	01	Preventive	48	L & T CR	Medium	207	Ft	0.17	Crack Sealing - AC	207	Ft	$3.95	$817
TC	02	Preventive	57	WEATHERING	Low	127,987	SqFt	100	No Localized M & R	0		$0.00	$0
TC	02	Preventive	48	L & T CR	Low	3,076	Ft	2.4	No Localized M & R	0		$0.00	$0
TC2	01	Preventive	57	WEATHERING	Low	19,088	SqFt	100	No Localized M & R	0		$0.00	$0
TC2	01	Preventive	48	L & T CR	Medium	133	Ft	0.69	Crack Sealing - AC	133	Ft	$3.95	$524
TC2	01	Preventive	48	L & T CR	Low	39	Ft	0.21	No Localized M & R	0		$0.00	$0
TC3	01	Preventive	48	L & T CR	Medium	83	Ft	0.34	Crack Sealing - AC	83	Ft	$3.95	$328
TC3	01	Preventive	48	L & T CR	Low	226	Ft	0.92	No Localized M & R	0		$0.00	$0
TC3	01	Preventive	57	WEATHERING	Low	24,480	SqFt	100	No Localized M & R	0		$0.00	$0
THANG01	01	Safety	41	ALLIGATOR CR	High	3,961	SqFt	2.41	Patching - AC Full-Depth	4,218	SqFt	$25.05	$105,679
THANG01	01	Safety	41	ALLIGATOR CR	Medium	4,634	SqFt	2.82	No Localized M & R	0		$0.00	$0
THANG01	01	Safety	50	PATCHING	High	720	SqFt	0.44	Patching - AC Full-Depth	832	SqFt	$25.05	$20,848
THANG01	01	Safety	43	BLOCK CR	Medium	5,762	SqFt	3.51	No Localized M & R	0		$0.00	$0
THANG01	01	Safety	48	L & T CR	Low	480	Ft	0.29	No Localized M & R	0		$0.00	$0
THANG01	01	Safety	50	PATCHING	Low	4,581	SqFt	2.79	No Localized M & R	0		$0.00	$0
THANG01	01	Safety	48	L & T CR	Medium	11,236	Ft	6.85	No Localized M & R	0		$0.00	$0
THANG01	01	Safety	52	RAVELING	Medium	96	SqFt	0.06	No Localized M & R	0		$0.00	$0
THANG01	01	Safety	48	L & T CR	High	72	Ft	0.04	Crack Sealing - AC	72	Ft	$3.95	$285
THANG01	01	Safety	52	RAVELING	Low	24,008	SqFt	14.63	No Localized M & R	0		$0.00	$0
THANG02	01	Preventive	57	WEATHERING	Low	71,750	SqFt	100	No Localized M & R	0		$0.00	$0
THANG02	01	Preventive	48	L & T CR	Low	465	Ft	0.65	No Localized M & R	0		$0.00	$0
THANG02	02	Preventive	52	RAVELING	Low	48	SqFt	0.14	No Localized M & R	0		$0.00	$0

Appendix I2

Localized Maintenance Plan

Auburn Univeristy Regional Airport (AUO)

Branch ID	Section ID	Policy	Distress Code	Description	Severity	Distress Qty	Distress Unit	Percent Distress	Work Description	Work Qty	Work Unit	Unit Cost	Work Cost
THANG02	02	Preventive	48	L & T CR	Low	289	Ft	0.83	No Localized M & R	0		$0.00	$0
THANG02	02	Preventive	49	OIL SPILLAGE	N/A	10	SqFt	0.03	Patching - AC Full-Depth	27	SqFt	$25.05	$663
TL01	01	Preventive	48	L & T CR	Medium	330	Ft	1.4	Crack Sealing - AC	330	Ft	$3.95	$1,303
TL01	01	Preventive	57	WEATHERING	Low	23,609	SqFt	100	No Localized M & R	0		$0.00	$0
TL01	01	Preventive	48	L & T CR	Low	310	Ft	1.31	No Localized M & R	0		$0.00	$0
TL02	01	Preventive	48	L & T CR	Low	862	Ft	2.96	No Localized M & R	0		$0.00	$0
TL02	01	Preventive	57	WEATHERING	Low	29,090	SqFt	100	No Localized M & R	0		$0.00	$0
TTRW29	02	Safety	57	WEATHERING	Medium	24,056	SqFt	74.7	No Localized M & R	0		$0.00	$0
TTRW29	02	Safety	57	WEATHERING	Low	8,148	SqFt	25.3	No Localized M & R	0		$0.00	$0
TTRW29	02	Safety	48	L & T CR	Medium	2,832	Ft	8.8	No Localized M & R	0		$0.00	$0
TTRW29	02	Safety	48	L & T CR	Low	421	Ft	1.31	No Localized M & R	0		$0.00	$0