Alaska DOT&PF

Data Modernization and Innovation Office
Pavement Management and Preservation
5800 East Tudor Road, Anchorage AK 99507-1286

Pavement Inspection Report
Kake Airport

Airport Name	IATA	ICAO	Latitude	Longitude	Elevation (ft)
Kake Airport	AFE	PAFE	56° 57' 40.91" N	133° 54' 36.94" W	171.5

Please refer all questions or for further information about this report, please contact the AKDOT&PF Pavement Management and Preservation Office as follows:

Point of Contact	Phone	Email	Date Inspected	Date Published
Mr. Andrew Pavey, Pavement Management Engineer	(907) 269 6213	andrew.pavey@alaska.gov	April 2024	June 2025

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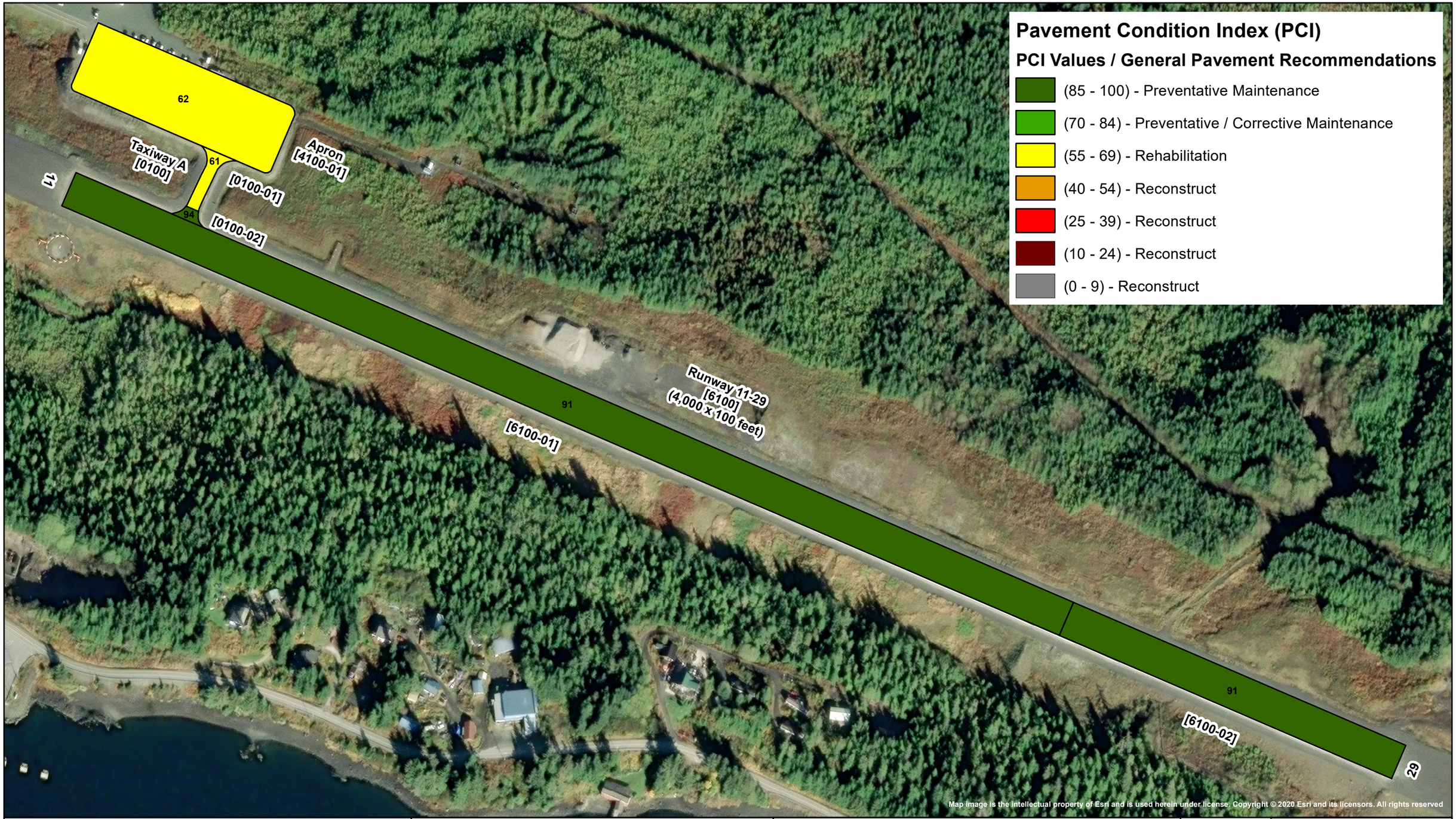


Kake Airport

Airport Code: AFE
Site Number: 50393.01*A

Pavement Condition Index (PCI)
Target PCI Range for Runways: 70 to 100
Target PCI Range for Taxiways and Aprons: 60 to 100

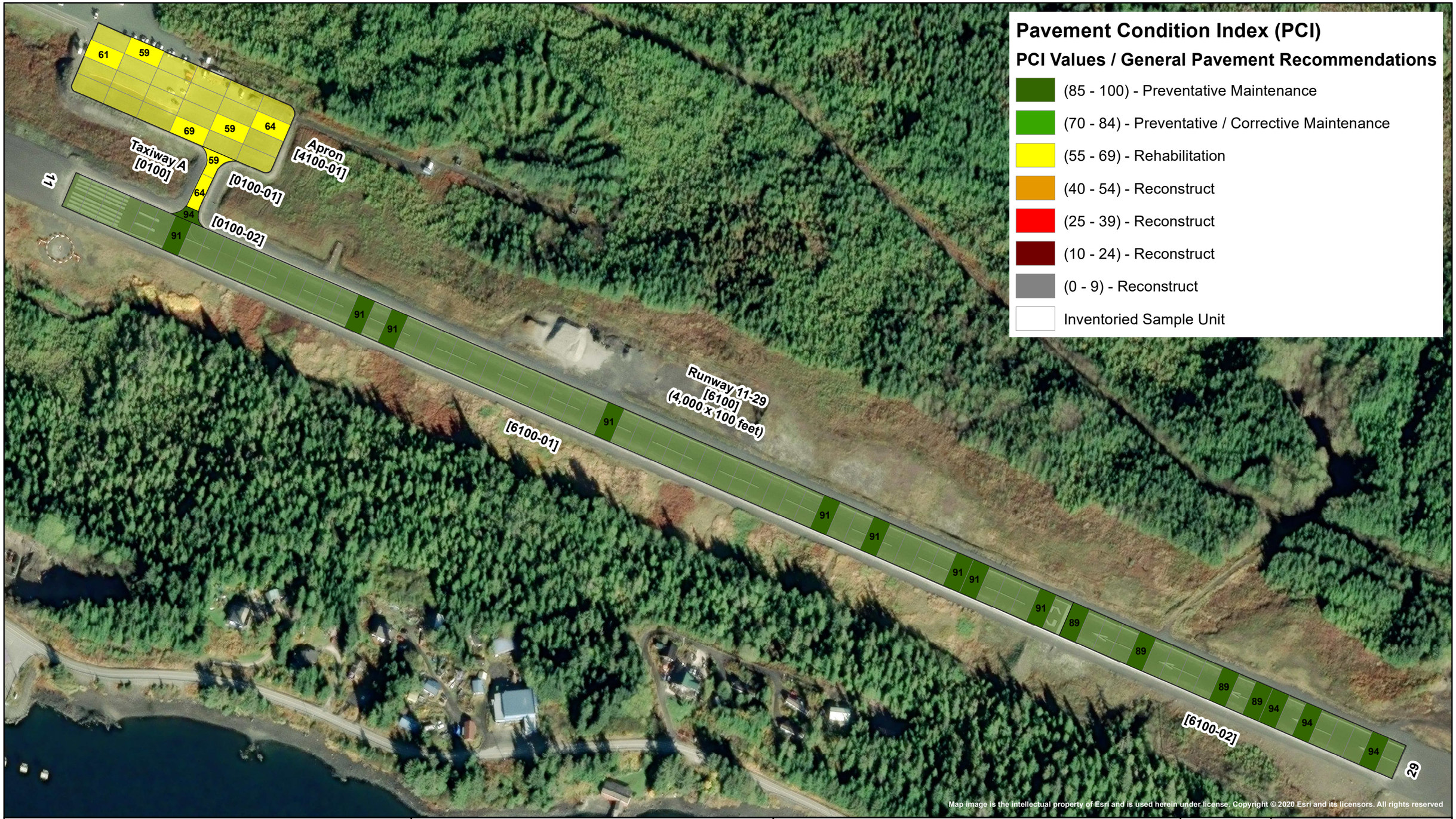
N E S W

2024 Pavement Inspection Results

0 200 400 800
Feet

Map Created by Duval Engineering for AK DOT&PF

Map 1 of 6



Kake Airport

Airport Code: AFE
Site Number: 50393.01*A

Sample Unit
Pavement Condition Index (PCI)
Target PCI Range for Runways: 70 to 100
Target PCI Range for Taxiways and Aprons: 60 to 100

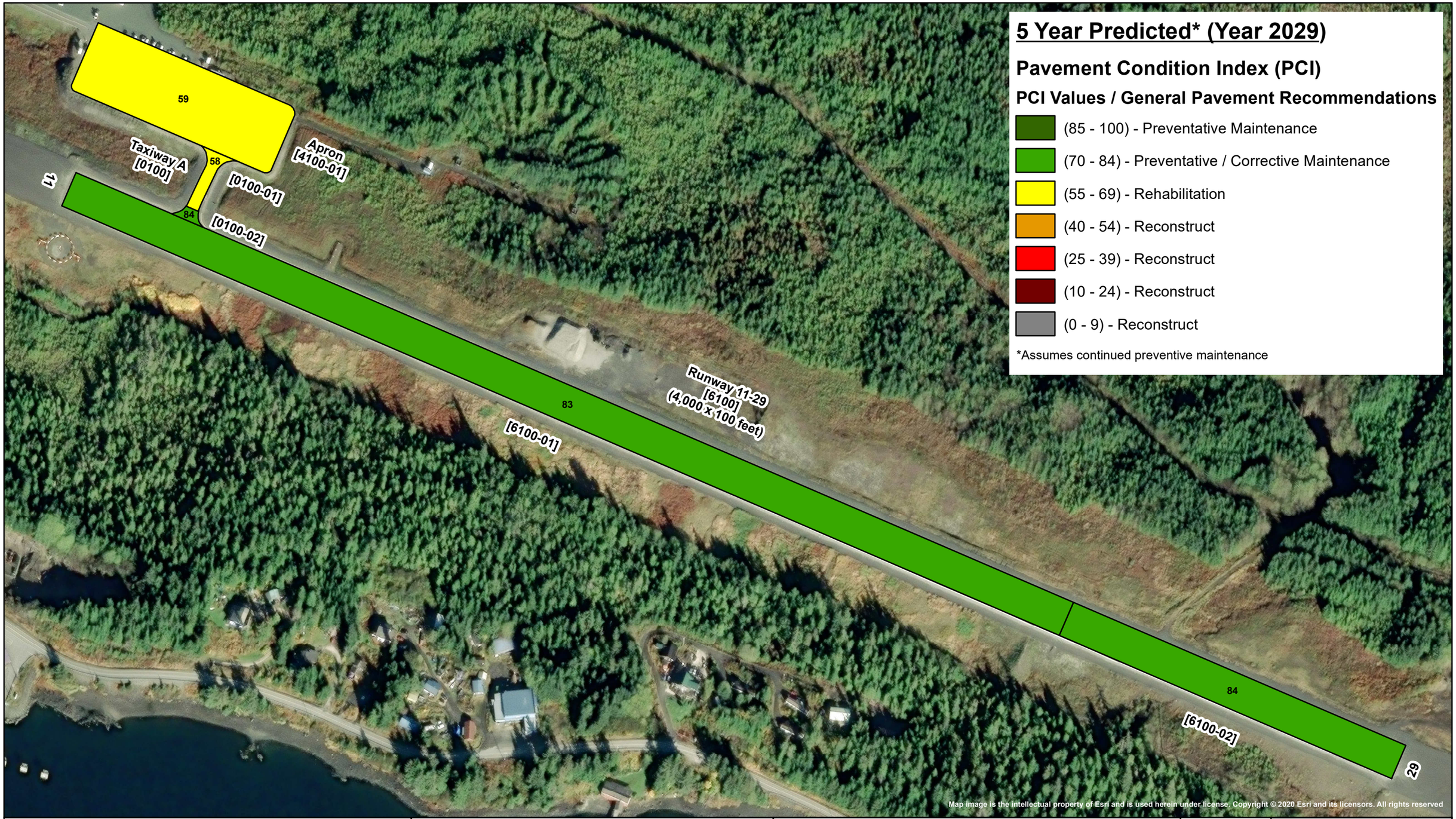
N E S W

2024 Pavement Inspection Results

0 200 400 800
Feet

Map Created by Duval Engineering for AK DOT&PF

Map 2 of 6



5 Year Predicted* (Year 2029)

Pavement Condition Index (PCI)

PCI Values / General Pavement Recommendations

- (85 - 100) - Preventative Maintenance
- (70 - 84) - Preventative / Corrective Maintenance
- (55 - 69) - Rehabilitation
- (40 - 54) - Reconstruct
- (25 - 39) - Reconstruct
- (10 - 24) - Reconstruct
- (0 - 9) - Reconstruct

*Assumes continued preventive maintenance

Kake Airport

Airport Code: AFE
Site Number: 50393.01*A

5 Year Predicted
Pavement Condition Index (PCI)

Target PCI Range for Runways: 70 to 100
Target PCI Range for Taxiways and Aprons: 60 to 100

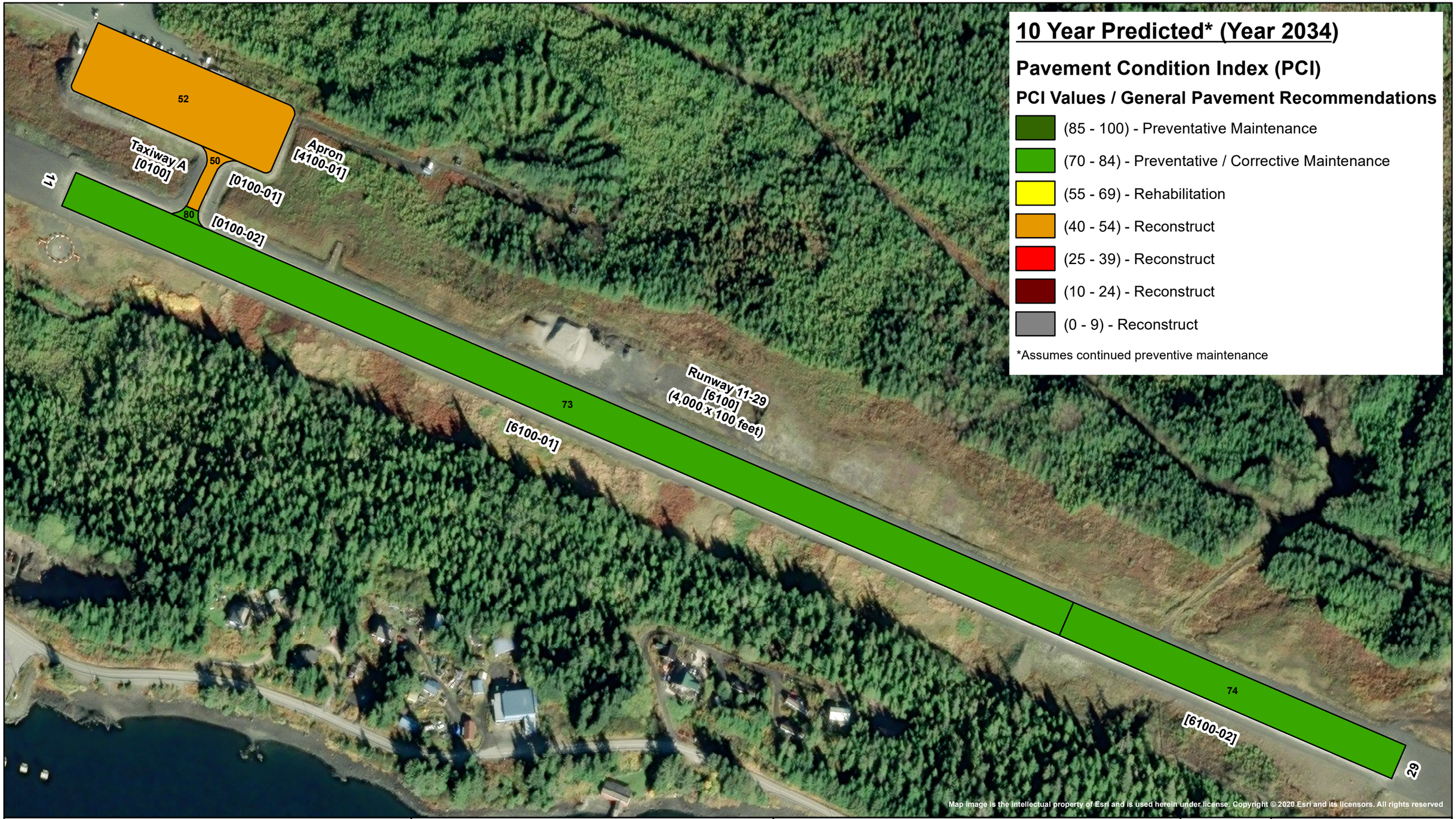
N E S W

2024 Pavement Inspection Results

0 200 400 800
Feet

Map Created by Duval Engineering for AK DOT&PF

Map 3 of 6



10 Year Predicted* (Year 2034)

Pavement Condition Index (PCI)

PCI Values / General Pavement Recommendations

- (85 - 100) - Preventative Maintenance
- (70 - 84) - Preventative / Corrective Maintenance
- (55 - 69) - Rehabilitation
- (40 - 54) - Reconstruct
- (25 - 39) - Reconstruct
- (10 - 24) - Reconstruct
- (0 - 9) - Reconstruct

*Assumes continued preventive maintenance

Kake Airport

Airport Code: AFE
Site Number: 50393.01*A

10 Year Predicted
Pavement Condition Index (PCI)

Target PCI Range for Runways: 70 to 100
Target PCI Range for Taxiways and Aprons: 60 to 100

N E S W

2024 Pavement Inspection Results

0 200 400 800
Feet

Map Created by Duval Engineering for AK DOT&PF

Map 4 of 6

Kake Airport

Airport Code: AFE
Site Number: 50393.01*A

Pavement Age at Inspection

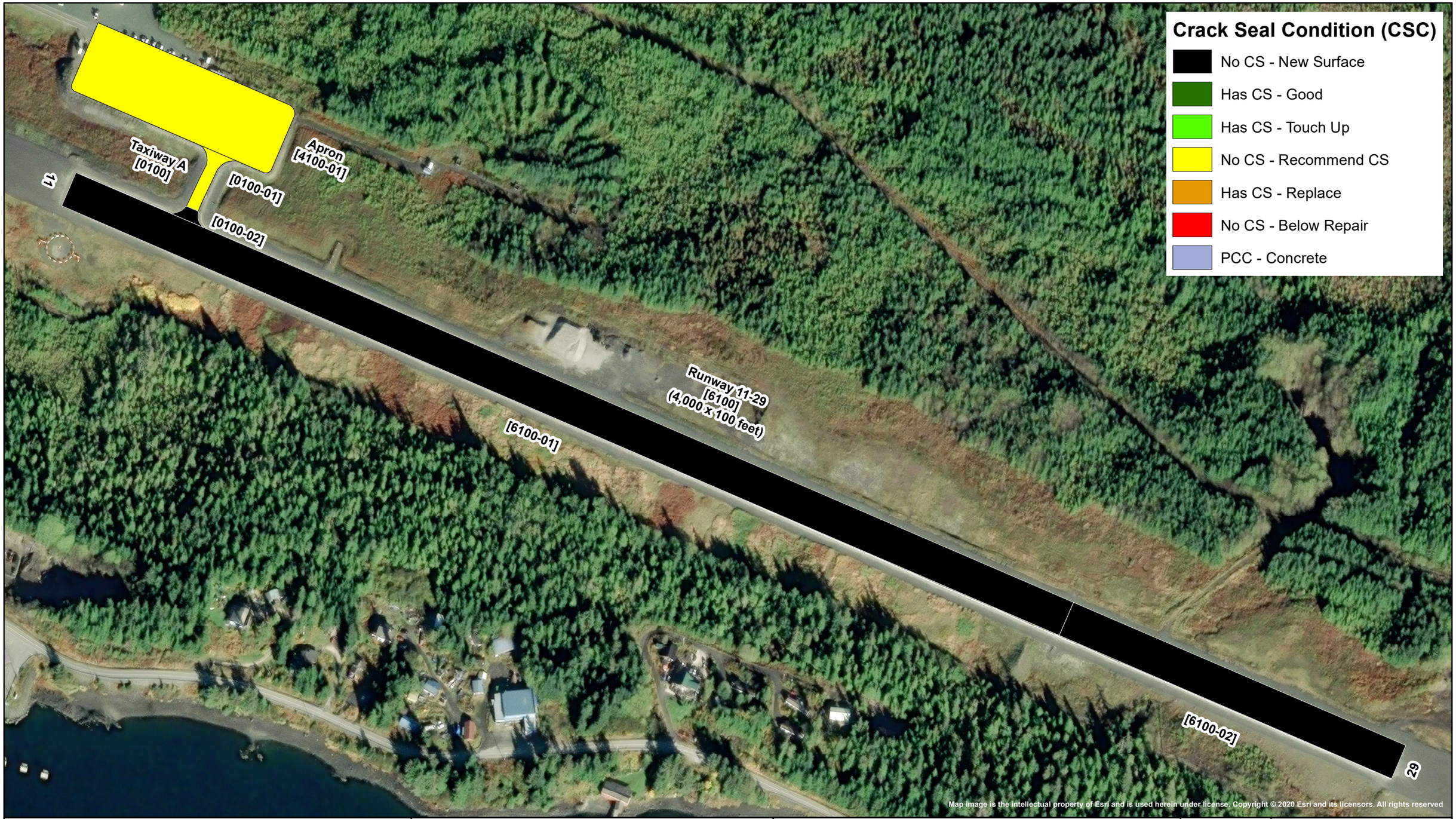
N E S W

2024 Pavement Inspection Results

0 200 400 800
Feet

Map Created by Duval Engineering for AK DOT&PF

Map 5 of 6



Kake Airport

Airport Code: AFE
Site Number: 50393.01*A

Pavement Crack Seal Condition (CSC)

N E S W

2024 Pavement Inspection Results

0 200 400 800
Feet

Map Created by Duval Engineering for AK DOT&PF

Map 6 of 6

AIRPORT PAVEMENT INSPECTION NOTES BY BRANCH

Branch ID	Branch Name	Branch Use	No. of Sections	Area (sf)	Weighted Average PCI
0100	Taxiway A	Taxiway	2	8,746	69

Section 0100-01 (61 PCI)

Taxiway A consists of two sections, Section 0100-01 and Section 0100-02. Section 0100-01 was initially constructed in 1991 and has not received any major work since. Crack seal operations have not been performed on this section. The most common distresses observed are low severity longitudinal and transverse cracking, low severity raveling, and low severity weathering. Field observations include the development of new unfilled cracks and continued wearing of the asphalt binder and fine aggregate matrix from the pavement surface.

Section 0100-02 (94 PCI)

Taxiway A Section 0100-02 was initially constructed in 1991 and was completely reconstructed in 2018. Crack seal operations have not been performed on this section. The only distress observed was low severity weathering. No additional field observations were documented.

Branch ID	Branch Name	Branch Use	No. of Sections	Area (sf)	Weighted Average PCI
4100	Apron	Apron	1	219,723	62

The Apron was constructed in 1991 and has not received any work since. Crack seal operations have not been performed on the Apron. The most common distresses observed are low to medium severity longitudinal and transverse cracking, low to medium severity raveling, and low severity weathering. Field observations include the development of new unfilled cracks, the widening of cracks increasing the severity, and continued wearing of the asphalt binder and fine aggregate matrix from the pavement surface.

Branch ID	Branch Name	Branch Use	No. of Sections	Area (sf)	Weighted Average PCI
6100	Runway 11/29	Runway	2	400,000	91




Runway 11/29 was constructed in 1991 and was completely reconstructed in 2018. Crack seal operations have not been performed on Runway 11/29. The only distress observed was low to medium severity weathering. No additional field observations were documented.

BRANCH CONDITION REPORT

Branch ID	No. of Sections	Sum Section Length (Ft)	Avg Section Width (Ft)	True Area (Sq Ft)	Use	Average PCI	Standard Deviation PCI	Weighted Average PCI
0100	2	205	35	8,746	TAXIWAY	77.60	16.40	68.80
4100	1	600	200	119,723	APRON	62.20	0.00	62.20
6100	2	4,000	100	400,000	RUNWAY	90.90	0.30	90.75

Note: the dimensions in the Branch Condition Report are derived from area calculations and may not reflect actual dimensions of individual sections. Refer to the maps for actual section dimensions.

BRANCH USE CONDITION REPORT

Use Category	No. of Sections	Total Area (Sq Ft)	Arithmetic Average PCI	Standard Deviation PCI	Weighted Average PCI
APRON	1	119,723	62.20	0.00	62.20
RUNWAY	2	400,000	90.90	0.30	90.75
TAXIWAY	2	8,746	77.60	16.40	68.80
ALL	5	528,469	79.84	14.86	83.92

SECTION CONDITION REPORT

Branch ID	Section ID	Last Const. Date	Surface	Use	Rank	True Area (Sq Ft)	Last Inspection Date	Age At Inspection	PCI
0100	0100-01	8/1/1991	AC	TAXIWAY	T	6,719	4/15/2024	33	61
0100	0100-02	9/1/2018	AC	TAXIWAY	T	2,027	4/15/2024	6	94
4100	4100-01	8/1/1991	AC	APRON	T	119,723	4/15/2024	33	62
6100	6100-01	9/1/2018	AC	RUNWAY	T	300,000	4/15/2024	6	91
6100	6100-02	9/1/2018	AC	RUNWAY	T	100,000	4/15/2024	6	91

SECTION CONDITION REPORT (SUMMARY BY AGE CATEGORY)

Age Category	Average Age at Inspection	Total Area (Sq Ft)	Number of Sections	Arithmetic Average PCI	Standard Deviation PCI	Weighted Average PCI
06-10	6	402,027	3	91.93	1.48	90.77
31-35	33	126,442	2	61.70	0.50	62.15
ALL	17	528,469	5	79.84	14.86	83.92

Work History Report

Pavement Database: Alaska

Network: Kake Airport **Branch:** 0100 Taxiway A **Section:** 0100-01 **Surface:** AC

L.C.D. 8/1/1991 **Use:** TAXIWAY **Rank:** T **Length:** 170.00 (Ft) **Width:** 35.00 (Ft) **True Area:** 6719 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
8/1/1991	NC-IN	New Construction - Initial	0.00	0.00	☑	2" HMA, 6" Crushed Aggregate Base

Network: Kake Airport **Branch:** 0100 Taxiway A **Section:** 0100-02 **Surface:** AC

L.C.D. 9/1/2018 **Use:** TAXIWAY **Rank:** T **Length:** 35.00 (Ft) **Width:** 35.00 (Ft) **True Area:** 2027 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2018	CR-AC	Complete Reconstruction - AC	0.00	0.00	☑	3" HMA Type I, Class B, 2" CABC (F
8/1/1991	NC-IN	New Construction - Initial	0.00	0.00	☑	2" HMA, 6" Crushed Aggregate Base

Network: Kake Airport **Branch:** 4100 Apron **Section:** 4100-01 **Surface:** AC

L.C.D. 8/1/1991 **Use:** APRON **Rank:** T **Length:** 600.00 (Ft) **Width:** 200.00 (Ft) **True Area:** 119723 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
8/1/1991	NC-IN	New Construction - Initial	0.00	0.00	☑	2" HMA, 6" Crushed Aggregate Base

Network: Kake Airport **Branch:** 6100 11/29 **Section:** 6100-01 **Surface:** AC

L.C.D. 9/1/2018 **Use:** RUNWAY **Rank:** T **Length:** 3,000.00 (Ft) **Width:** 100.00 (Ft) **True Area:** 300000 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2018	CR-AC	Complete Reconstruction - AC	0.00	0.00	☑	3" HMA Type II, Class B, 2" CABC, I
8/1/1991	NC-IN	New Construction - Initial	0.00	0.00	☑	2" HMA, 6" Crushed Aggregate Base

Network: Kake Airport **Branch:** 6100 11/29 **Section:** 6100-02 **Surface:** AC

L.C.D. 9/1/2018 **Use:** RUNWAY **Rank:** T **Length:** 1,000.00 (Ft) **Width:** 100.00 (Ft) **True Area:** 100000 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
9/1/2018	CR-AC	Complete Reconstruction - AC	0.00	0.00	☑	3" HMA Type II, Class B, 2" CABC, I
8/1/1991	NC-IN	New Construction - Initial	0.00	0.00	☑	2" HMA, 6" Crushed Aggregate Base

Work History Report

Pavement Database: Alaska

Summary:

Work Description	Section Count	Area Total (SqFt)	Thickness Avg (in)	Thickness STD (in)
Complete Reconstruction - AC	3	402,027.00	0.00	0.00
New Construction - Initial	5	528,469.00	0.00	0.00

PHYSICAL PROPERTY DATA

		Pavement		Base		Subbase		Subgrade	
Branch ID	Section ID	Thick (in)	Type	Thick (in)	Type	Thick (in)	Type	Type	CBR
Taxiway A 100	0100-01	3	P-401	12 est	P-208	12 est	P-154	SP	8
	0100-02	3.7	P-401	8 est	P-208	12 est	P-154	SP	8
Apron 4100	4100-01	2	P-401	12 est	P-208	12 est	P-154	SP	8
Runway 11/29 6100	6100-01	3	P-401	8 est	P-208	12 est	P-154	SP	8
	6100-02 Southeast Displaced Threshold	3	P-401	8 est	P-208	12 est	P-154	SP	8

Notes:
“est" = estimated based on construction as-builts

AIRCRAFT FLEET MIX

No.	Aircraft	Gross Wt (lb)	% Gross Wt on Main Gear	Tire Pressure (psi)	Annual Departures	20 Yr Coverages
1	Cessna 206 Stationair	3,612	95.0	52.0	150	1,402
2	Cessna 208B	8,750	95.0	75.0	1,343	13,029
3	S-10	10,450	95.0	52.0	868	8,762

PAVEMENT CLASSIFICATION RATINGS

Runway	Critical Aircraft	Max Allowable Wt (lb)	Subgrade Mr (psi)	Evaluation Thickness (in)	Pass to Traffic Cycle Ratio	PCR
11-29	S-10	73,736	4,500	29.0	1.0	248/F/D/X/T

PCR CALCULATION NOTES

- 1% traffic growth assumed
- Subgrade strength reduction for frost applied
- S-10 refers to “generic” single gear aircraft as modeled in FAARFIELD

REFERENCES

Year	Project No.	Document Title
2018	3-02-0458, SFAPT00078	Runway Rehabilitation As-Builts
2017	SFAPT00078	DOT Geotechnical Data Memo
2008	68333	Settlement Repairs rebid As-Builts
1997	72049	Obstruction Removal As-Builts
1988	69301	Airport Improvements
1985	67496	Runway Expansion As-Builts
1983	D19711	Runway, Apron, Access As-Builts
1983	D19711	DOT Engineering Geology & Soils Report