Alaska DOT&PF

Statewide Design and Engineering Services
Pavement Management and Preservation Office
5800 East Tudor Road, Anchorage AK 99507-1286

Pavement Inspection Report
Wrangell Airport

Airport Name	IATA	ICAO	Latitude	Longitude	Elevation (ft)
Sitka Airport	WRG	PAWG	56° 29.06'N	132° 22.19'W	44

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	October 2022	June 2023

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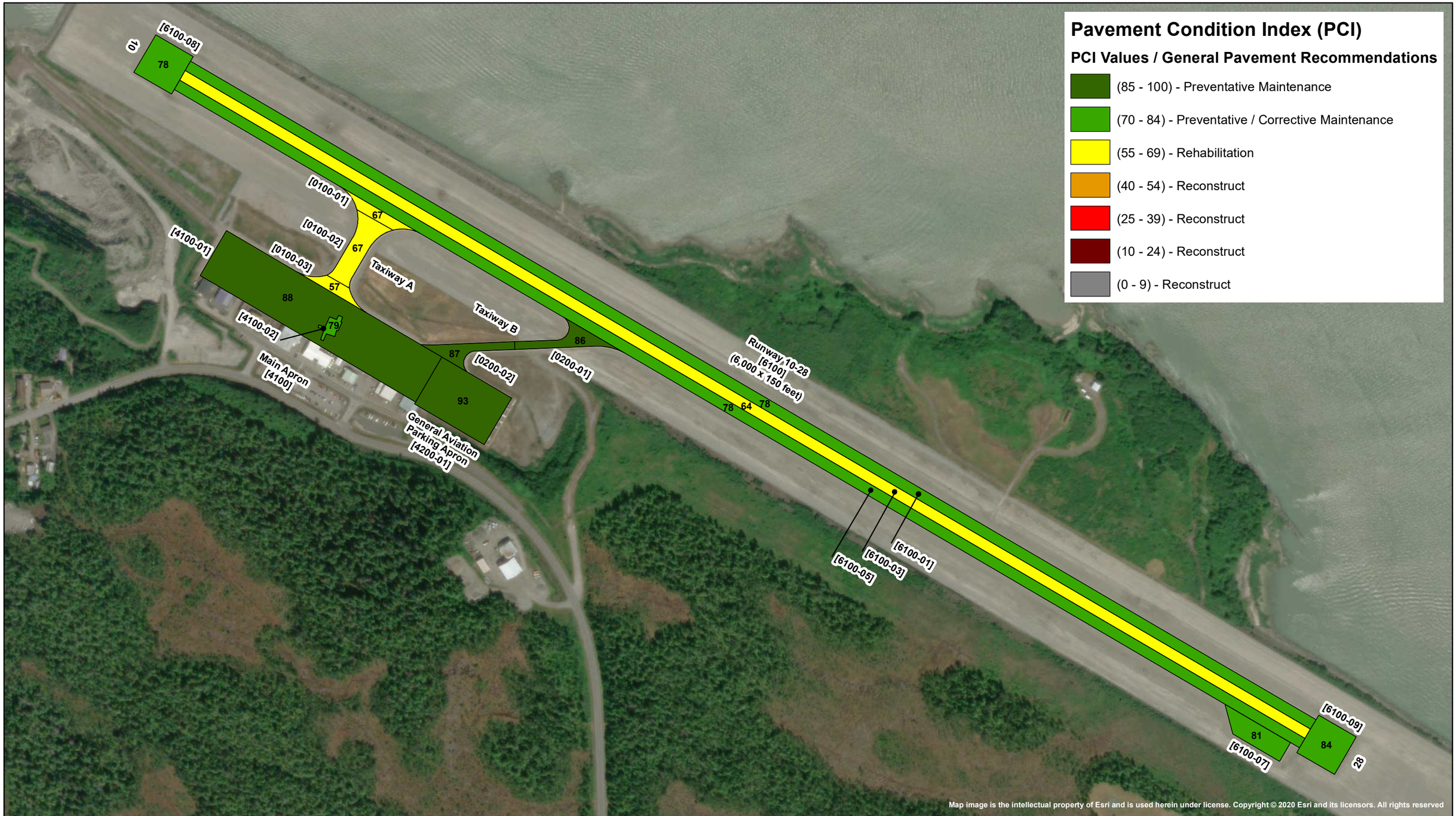


Wrangell Airport

Airport Code: WRG
Site Number: 50905.2*A

Pavement Condition Index (PCI)

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

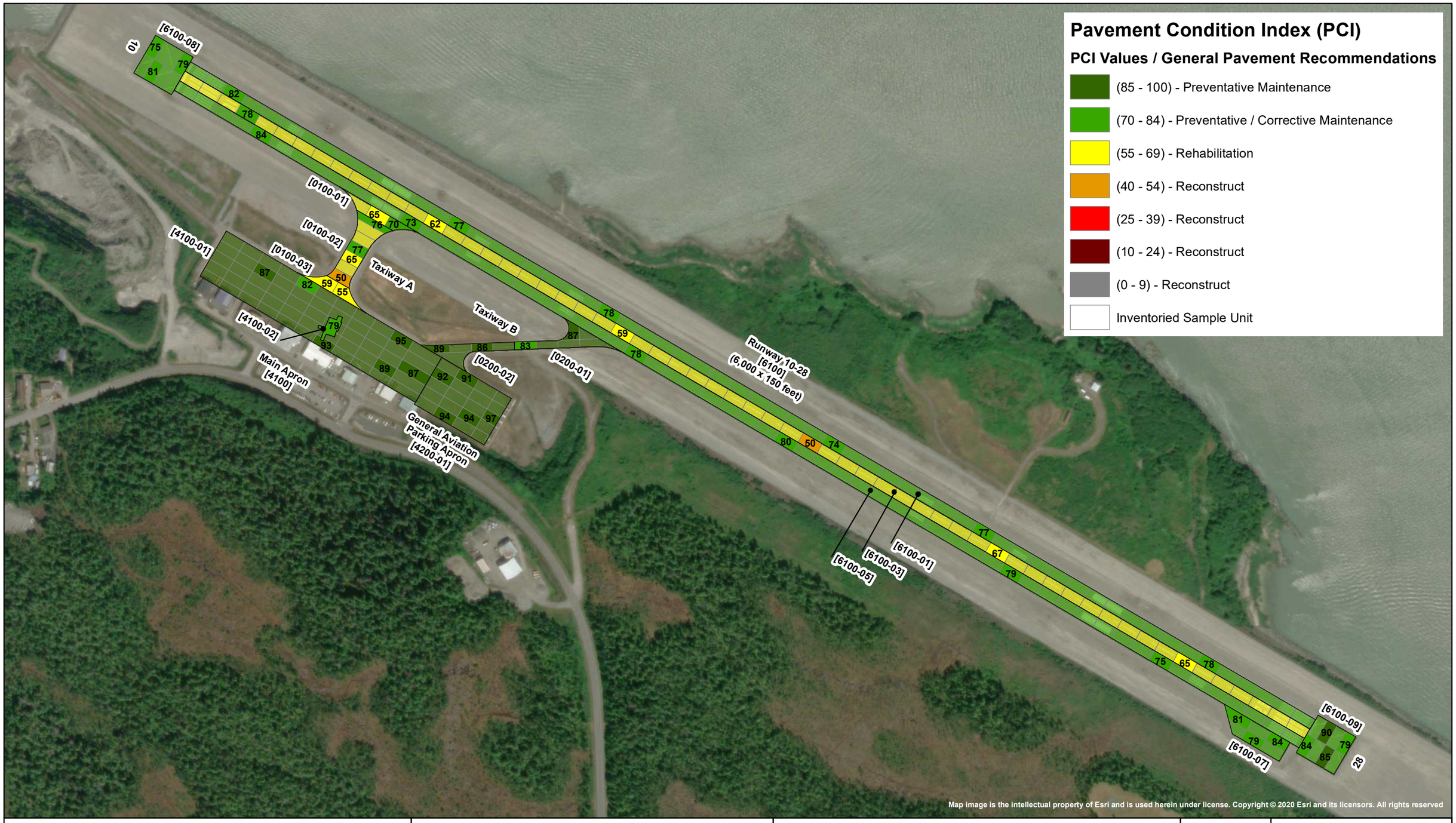
N W E S

2022 Pavement Inspection Results

0 200 400 800 1,200
Feet

Map Created by Duval Engineering for AK DOT&PF

Map 1 of 6



Wrangell Airport

Airport Code: WRG
Site Number: 50905.2*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

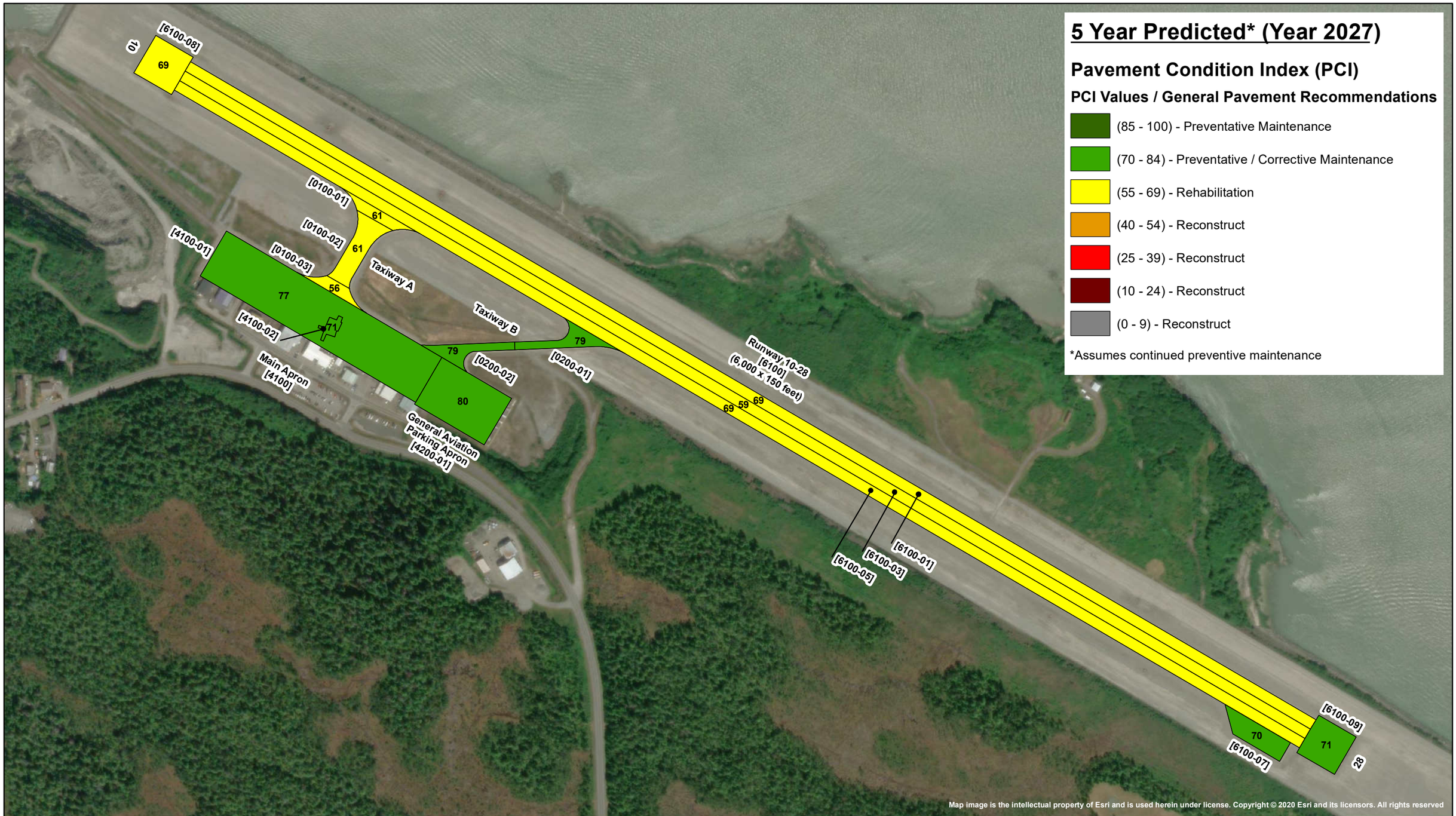
N W E S

2022 Pavement Inspection Results

0 200 400 800 1,200
Feet

Map Created by Duval Engineering for AK DOT&PF

Map 2 of 6



5 Year Predicted* (Year 2027)

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

Wrangell Airport

Airport Code: WRG
Site Number: 50905.2*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

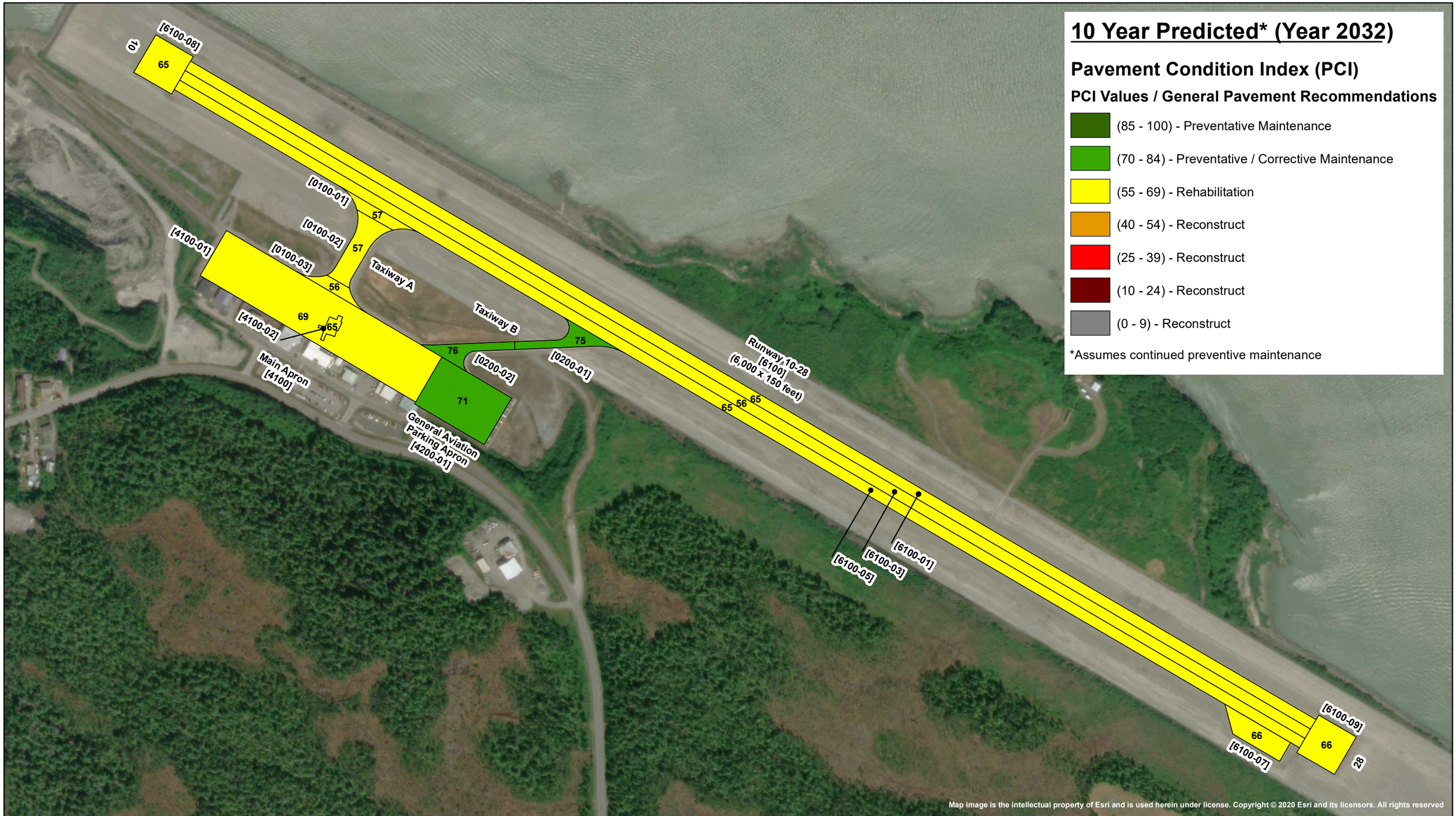
N W E S

2022 Pavement Inspection Results

0 200 400 800 1,200
Feet

Map Created by Duval Engineering for AK DOT&PF

Map 3 of 6



10 Year Predicted* (Year 2032)

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

Wrangell Airport

Airport Code: WRG
Site Number: 50905.2*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

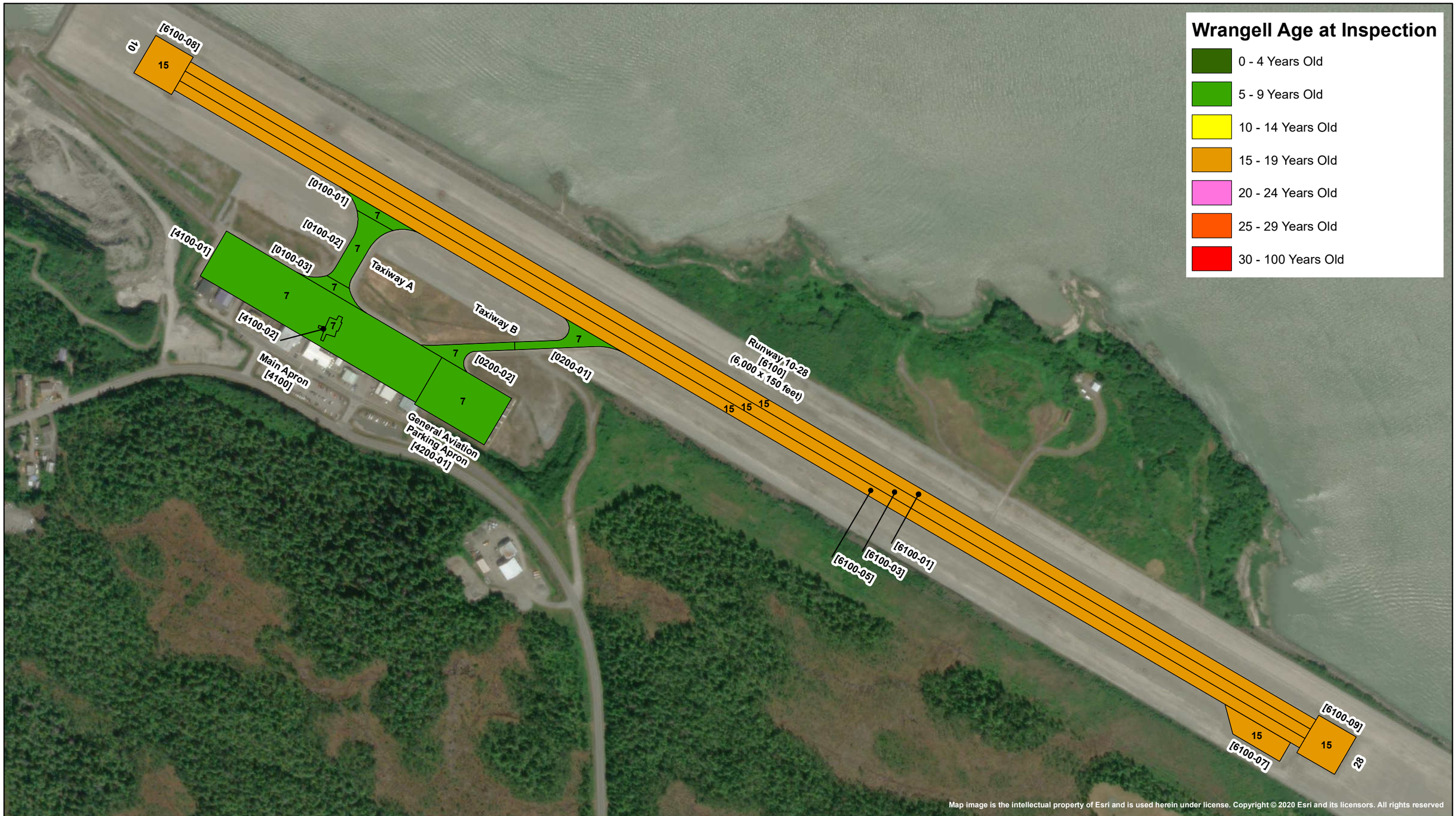
N W E S

2022 Pavement Inspection Results

0 200 400 800 1,200
Feet

Map Created by Duval Engineering for AK DOT&PF

Map 4 of 6



Wrangell Airport

Airport Code: WRG
Site Number: 50905.2*A

Pavement Age at Inspection

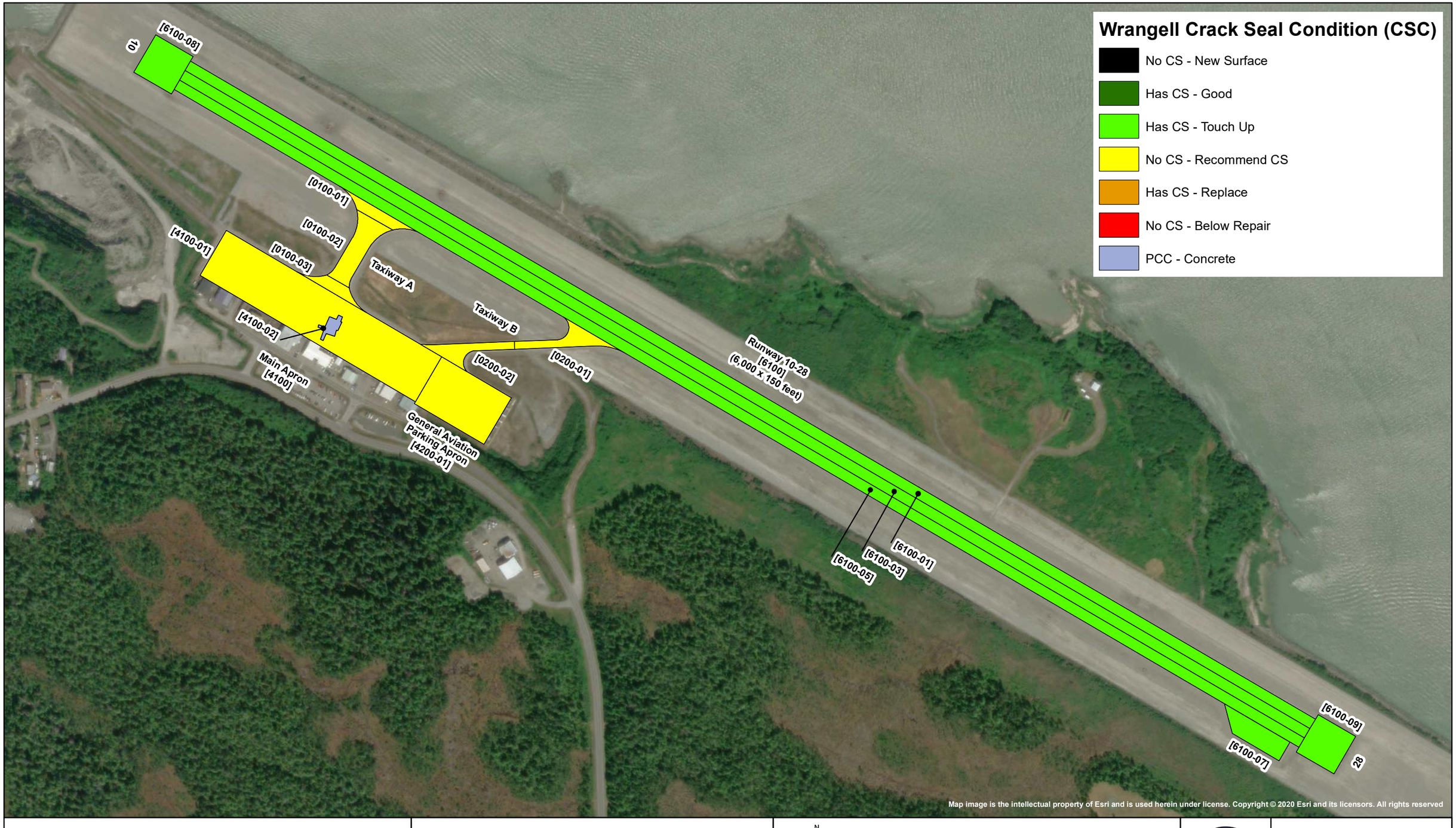
N
W E
S

2022 Pavement Inspection Results

0 200 400 800 1,200
Feet

Map Created by Duval Engineering for AK DOT&PF

Map 5 of 6



Wrangell Airport

Airport Code: WRG
Site Number: 50905.2*A

Pavement Crack Seal Condition (CSC)

N W E S

2022 Pavement Inspection Results

0 200 400 800 1,200
Feet

Map Created by Duval Engineering for AK DOT&PF

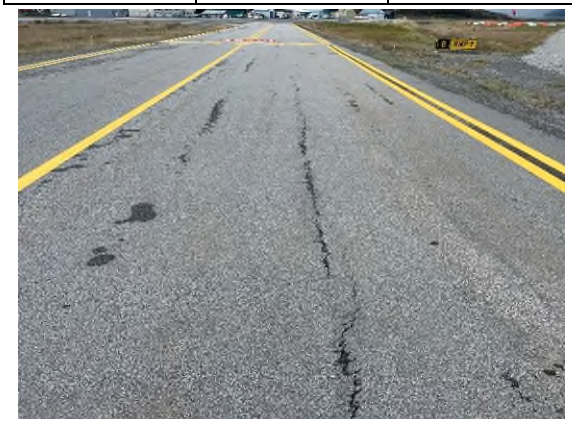
Map 6 of 6

AIRPORT PAVEMENT INSPECTION NOTES BY BRANCH

Branch ID	Branch Name	Branch Use	No. of Sections	Area (sf)	Weight Average PCI
0100	Taxiway A	Taxiway	3	59,553	65

Taxiway A was initially constructed in 1981 and received a 2-inch overlay in 2015. The most common distresses observed are low severity alligator cracking, low to medium severity longitudinal and transverse cracking, low to medium severity raveling, and low severity weathering. Degradation of the paving joints is causing longitudinal cracking and raveling. In addition, we observed the development of alligator cracking in the wheel paths of the taxiway. Historical PCI results show that alligator cracking was recorded prior to the placement of the overlay in 2015, which means that structural weakness exists at the stabilized base layer and it is reflecting through the overlay.

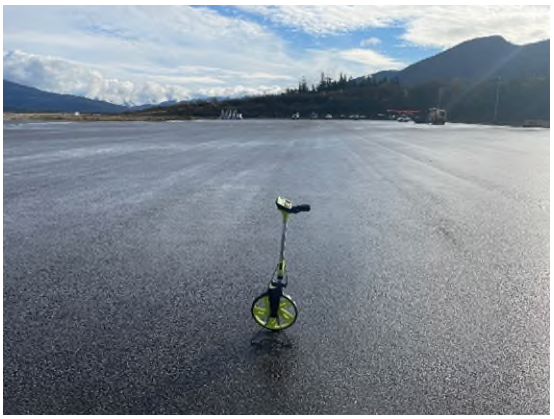
Branch ID	Branch Name	Branch Use	No. of Sections	Area (sf)	Weight Average PCI
0200	Taxiway B	Taxiway	2	42,771	86



Taxiway B was initially constructed in 1997 and its most recent major work was a 2-inch asphalt concrete overlay in 2015. The most common distresses observed are low severity longitudinal and transverse cracking, low severity raveling, and low severity weathering. Field observations include the degradation of the paving joints which is causing longitudinal cracking and raveling.

Branch ID	Branch Name	Branch Use	No. of Sections	Area (sf)	Weight Average PCI
4100	Main Apron	Apron	2	275,953	88

AC Section 4100-01 (88 PCI)

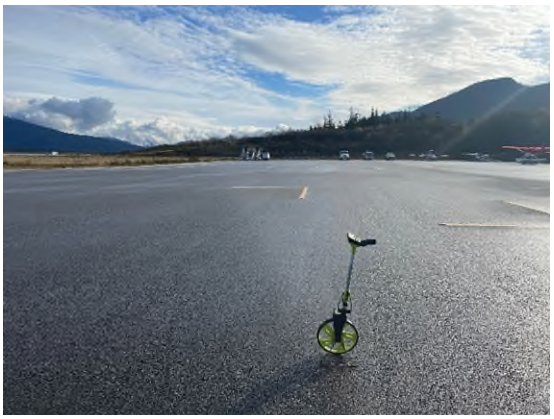


The main apron consists of two sections—one AC section and one PCC section. The AC section was initially constructed in 1997 and then received a 2-inch AC overlay in 2015. The most common distresses observed are low severity longitudinal and transverse cracking, low to medium severity raveling, and low severity weathering. While onsite it was observed that the paving joints are degraded, which is leading to the development of longitudinal cracking and raveling. Field personnel noted the initiation of cracking along the AC-PCC transitions.

PCC Section 4100-02 (79 PCI)

The PCC section consists of a single hardstand constructed in 1997. No major work has occurred since that time. The most common distresses observed are low severity joint and corner spalling, low severity scaling, and medium severity joint seal damage. Field observations indicate that the concrete has several spalls across the hardstand and the joint sealant is failing in areas.

Branch ID	Branch Name	Branch Use	No. of Sections	Area (sf)	Weight Average PCI
4200	GA Parking Apron	Apron	1	93,000	93



The general aviation parking apron was constructed in 1997 and received a 2-inch overlay in 2015. The most common distresses observed are low severity longitudinal and transverse cracking, low to high severity raveling, and oil spillage. Field personnel noted that the longitudinal paving lane joints are degraded, which is causing longitudinal cracking and raveling to develop.

Branch ID	Branch Name	Branch Use	No. of Sections	Area (sf)	Weight Average PCI
6100	Runway 10/28	Runway	6	1,010,000	74




Runway 10/28 was constructed in 1981. The most recent major work was a 3-inch thick AC mill/overlay in 2007. The most common distresses observed are low severity alligator cracking, low to medium severity longitudinal and transverse cracking, low to medium severity raveling, and low severity weathering. Our field personnel observed that the longitudinal joints are degrading, which is causing longitudinal cracking and raveling. Also, alligator cracking is developing in the runway keel in the aircraft wheel paths. Historical PCI records report that alligator cracking existed prior to the AC mill/overlay in 2007, indicating that structural weakness exists in layers below the surface layer.

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	3	492	153	59,553	TAXIWAY	63.67	4.71	65.07
0200	2	785	35	42,771	TAXIWAY	86.50	0.50	86.48
4100	2	1,235	143	275,953	APRON	83.50	4.50	87.81
4200	1	372	250	93,000	APRON	93.00	0.00	93.00
6100	6	18,700	108	1,010,000	RUNWAY	77.17	6.28	74.17

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	3	368,953	86.67	5.79	89.12
RUNWAY	6	1,010,000	77.17	6.28	74.17
TAXIWAY	5	102,324	72.80	11.77	74.02
ALL	14	1,481,277	77.64	9.98	77.88

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	6/1/2015	AAC	TAXIWAY	A	13,960.00	10/24/2022	7	67
0100	0100-02	6/1/2015	AC	TAXIWAY	A	34,078.00	10/24/2022	7	67
0100	0100-03	6/1/2015	AC	TAXIWAY	A	11,515.00	10/24/2022	7	57
0200	0200-01	6/1/2015	AAC	TAXIWAY	A	22,263.00	10/24/2022	7	86
0200	0200-02	6/1/2015	AC	TAXIWAY	A	20,508.00	10/24/2022	7	87
4100	4100-01	6/1/2015	AC	APRON	A	270,120.00	10/24/2022	7	88
4100	4100-02	6/1/2015	PCC	APRON	A	5,833.00	10/24/2022	7	79
4200	4200-01	6/1/2015	AC	APRON	A	93,000.00	10/24/2022	7	93
6100	6100-01	6/1/2007	AAC	RUNWAY	A	300,000.01	10/24/2022	15	78
6100	6100-03	6/1/2007	AAC	RUNWAY	A	300,000.01	10/24/2022	15	64
6100	6100-05	6/1/2007	AAC	RUNWAY	A	300,000.01	10/24/2022	15	78
6100	6100-07	6/1/2007	AAC	RUNWAY	A	30,000.00	10/24/2022	15	81
6100	6100-08	6/1/2007	AAC	RUNWAY	P	40,000.00	10/24/2022	15	78
6100	6100-09	6/1/2007	AAC	RUNWAY	P	40,000.00	10/24/2022	15	84

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	7	471,277	8	78.00	12.01	85.84
11-15	15	1,010,000	6	77.17	6.28	74.17
ALL	10.42857143	1,481,277	14	77.64	9.98	77.88

Work History Report

Pavement Database: Alaska

Network: Wrangell Airport **Branch:** 0100 Taxiway A **Section:** 0100-01 **Surface:**AAC
L.C.D. 6/1/2015 **Use:** TAXIWAY **Rank:** A **Length:** 52.00 (Ft) **Width:** 250.00 (Ft) **True Area:** 13960.00000 (SqFt

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
6/1/2015	OL_2	2 in overlay	0.00	2.00	☑	(Funded via AIP)
6/1/2007	SR-AC	Surface Reconstruction - AC	0.00	0.00	☑	(Funded via AIP)
9/1/1981	HI-AG	New Construction	0.00	0.00	☑	(Funded via AIP)

Network: Wrangell Airport **Branch:** 0100 Taxiway A **Section:** 0100-02 **Surface:**AC
L.C.D. 6/1/2015 **Use:** TAXIWAY **Rank:** A **Length:** 383.00 (Ft) **Width:** 90.00 (Ft) **True Area:** 34078.00001 (SqFt

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
6/1/2015	OL_2	2 in overlay	0.00	2.00	☑	(Funded via AIP)
9/1/1981	NU-IN	New Construction - Initial	0.00	2.00	☑	(Funded via AIP)

Network: Wrangell Airport **Branch:** 0100 Taxiway A **Section:** 0100-03 **Surface:**AC
L.C.D. 6/1/2015 **Use:** TAXIWAY **Rank:** A **Length:** 57.00 (Ft) **Width:** 120.00 (Ft) **True Area:** 11515.00000 (SqFt

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
6/1/2015	OL_2	2 in overlay	0.00	2.00	☑	(Funded via AIP)
9/1/1997	NU-IN	New Construction - Initial	0.00	2.00	☑	(Funded via AIP)

Network: Wrangell Airport **Branch:** 0200 Taxiway B **Section:** 0200-01 **Surface:**AAC
L.C.D. 6/1/2015 **Use:** TAXIWAY **Rank:** A **Length:** 385.00 (Ft) **Width:** 35.00 (Ft) **True Area:** 22263.00000 (SqFt

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
6/1/2015	OL_2	2 in overlay	0.00	2.00	☑	(Funded via AIP)
6/1/2007	SR-AC	Surface Reconstruction - AC	0.00	0.00	☑	(Funded via AIP)
9/1/1997	HI-AG	New Construction	0.00	0.00	☑	(Funded via AIP)

Network: Wrangell Airport **Branch:** 0200 Taxiway B **Section:** 0200-02 **Surface:**AC
L.C.D. 6/1/2015 **Use:** TAXIWAY **Rank:** A **Length:** 400.00 (Ft) **Width:** 35.00 (Ft) **True Area:** 20508.00000 (SqFt

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
6/1/2015	OL_2	2 in overlay	0.00	2.00	☑	(Funded via AIP)
9/1/1997	NU-IN	New Construction - Initial	0.00	2.00	☑	(Funded via AIP)

Network: Wrangell Airport **Branch:** 4100 Main Apron **Section:** 4100-01 **Surface:**AC
L.C.D. 6/1/2015 **Use:** APRON **Rank:** A **Length:** 1,150.00 (Ft) **Width:** 240.00 (Ft) **True Area:** 270120.0000 (SqFt

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
6/1/2015	OL_2	2 in overlay	0.00	2.00	☑	(Funded via AIP)
9/1/1997	NU-IN	New Construction - Initial	0.00	1.50	☑	(Funded via AIP)

Network: Wrangell Airport **Branch:** 4100 Main Apron **Section:** 4100-02 **Surface:**PCC
L.C.D. 6/1/2015 **Use:** APRON **Rank:** A **Length:** 85.00 (Ft) **Width:** 45.00 (Ft) **True Area:** 5833.000001 (SqFt

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
6/1/2015	OL_2	2 in overlay	0.00	2.00	☑	(Funded via AIP)
8/1/1997	NU-IN	New Construction - Initial	0.00	0.00	☑	(Funded via AIP)

Network: Wrangell Airport **Branch:** 4200 GA Parking Apron **Section:** 4200-01 **Surface:**AC
L.C.D. 6/1/2015 **Use:** APRON **Rank:** A **Length:** 372.00 (Ft) **Width:** 250.00 (Ft) **True Area:** 93000.00232 (SqFt

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
6/1/2015	OL_2	2 in overlay	0.00	2.00	☑	(Funded via AIP)
9/1/1997	NU-IN	New Construction - Initial	0.00	3.00	☑	(Funded via AIP)

Network: Wrangell Airport **Branch:** 6100 10/28 **Section:** 6100-01 **Surface:**AAC
L.C.D. 6/1/2007 **Use:** RUNWAY **Rank:** A **Length:** 6,000.00 (Ft) **Width:** 50.00 (Ft) **True Area:** 300000.0075 (SqFt

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
6/1/2007	SR-AC	Surface Reconstruction - AC	0.00	3.00	☑	(Funded via AIP)
9/1/1981	NU-IN	New Construction - Initial	0.00	2.00	☑	(Funded via AIP)

Network: Wrangell Airport **Branch:** 6100 10/28 **Section:** 6100-03 **Surface:**AAC
L.C.D. 6/1/2007 **Use:** RUNWAY **Rank:** A **Length:** 6,000.00 (Ft) **Width:** 50.00 (Ft) **True Area:** 300000.0075 (SqFt

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
6/1/2007	SR-AC	Surface Reconstruction - AC	0.00	3.00	☑	(Funded via AIP)
9/1/1981	NU-IN	New Construction - Initial	0.00	2.00	☑	(Funded via AIP)

Network: Wrangell Airport **Branch:** 6100 10/28 **Section:** 6100-05 **Surface:**AAC
L.C.D. 6/1/2007 **Use:** RUNWAY **Rank:** A **Length:** 6,000.00 (Ft) **Width:** 50.00 (Ft) **True Area:** 300000.0075 (SqFt

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
6/1/2007	SR-AC	Surface Reconstruction - AC	0.00	3.00	☑	(Funded via AIP)
9/1/1981	NU-IN	New Construction - Initial	0.00	2.00	☑	(Funded via AIP)

Network: Wrangell Airport **Branch:** 6100 10/28 **Section:** 6100-07 **Surface:**AAC
L.C.D. 6/1/2007 **Use:** RUNWAY **Rank:** A **Length:** 300.00 (Ft) **Width:** 100.00 (Ft) **True Area:** 30000.00000 (SqFt

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
6/1/2007	HI-AG	New Construction	0.00	3.00	☑	(Funded via AIP)

Network: Wrangell Airport **Branch:** 6100 10/28 **Section:** 6100-08 **Surface:**AAC
L.C.D. 6/1/2007 **Use:** RUNWAY **Rank:** P **Length:** 200.00 (Ft) **Width:** 200.00 (Ft) **True Area:** 40000.00001 (SqFt

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
6/1/2007	SR-AC	Surface Reconstruction - AC	0.00	3.00	☑	(Funded via AIP)
9/1/1981	NU-IN	New Construction - Initial	0.00	0.00	☑	

Work History Report

Pavement Database: Alaska

Network: Wrangell Airport **Branch:** 6100 10/28 **Section:** 6100-09 **Surface:**AAC

L.C.D. 6/1/2007 **Use:** RUNWAY **Rank:** P **Length:** 200.00 (Ft) **Width:** 200.00 (Ft) **True Area:** 40000.00001 (SqFt

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
6/1/2007	SR-AC	Surface Reconstruction - AC	0.00	3.00	☑	(Funded via AIP)
9/1/1981	NU-IN	New Construction - Initial	0.00	0.00	☑	

Work History Report

Pavement Database: Alaska

Summary:

Work Description	Section Count	Area Total (SqFt)	Thickness Avg (in)	Thickness STD (in)
2 in overlay	8	471,277.00	2.00	0.00
New Construction	3	66,223.00	1.00	1.41
New Construction - Initial	11	1,415,054.02	1.50	0.98
Surface Reconstruction - AC	7	1,016,223.02	2.14	1.36

PHYSICAL PROPERTY DATA

		Pavement		Base		Subbase		Subgrade	
Branch ID	Section ID	Thick (in)	Type	Thick (in)	Type	Thick (in)	Type	Type	CBR
Taxiway A 0100	0100-01	5	P-401	6	P-209	6	P-154	GP	20*
	0100-02	5	P-401	6	P-209	6	P-154	GP	20*
	0100-03	5	P-401	6	P-209	6	P-154	GP	20*
Taxiway B 0200	0200-01	5	P-401	6	P-209	12	P-154	GP	20*
	0200-02	5	P-401	16	P-209	12	P-154	GP	20*
Main Parking Apron 4100	4100-01	4.5	P-401	8	P-209	8	P-154	GP	20*
	4100-02		PCC						
GA Parking Apron 4200	4200-01	5	P-401	6	P-209	12	P-154	GP	20*
Runway 10-28 6100	6100-01	11	P-401	6	P-209	6	P-154	GP	20*
	6100-03	11	P-401	6	P-209	6	P-154	GP	20*
	6100-05	11	P-401	6	P-209	6	P-154	GP	20*
	6100-07	10	P-401	16	P-209	6	P-154	GP	20*
	6100-08	3	P-401	6	P-209	6	P-154	GP	20*
	6100-09	2	P-401	6	P-209	6	P-154	GP	20*

* CBR values from 1992 R&M Report for subgrade strength

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	3612	95.0	52	5	31
2	Cessna 208B	8750	95.0	75	8	53
3	S-10	10450	95.0	52	4	29
4	PA-31 Navajo	6536	95.0	66	35	227
5	D-15	17227	95.0	63	638	6135
6	B737-7 MAX	177500	95.0	204	1502	21394

PAVEMENT CLASSIFICATION RATING

Runway	Critical Aircraft	Max Allowable Wt (lb)	Subgrade Mr (psi)	Evaluation Thickness (in)	Pass to Traffic Cycle Ratio	PCR
10-28	B737-7 MAX	177500	10000	23.0	1.0	384/F/A/X/T

PCR CALCULATION NOTES

- 1% traffic growth assumed
- S-10 refers to “generic” single gear aircraft as modeled in FAARFIELD
- D-15 refers to “generic” dual gear aircraft as modeled in FAARFIELD
- PCR taken as ACR of critical aircraft

REFERENCES

Year	Project No.	Document Title
2015	3-02-0323-14, 68262	Taxiway and Apron Overlay, As-Built
2006	3-02-0323-1105, 68167	Runway Overlay, As-Built
2005		Runway Extension, Site Investigation and Design Evaluation
1997	3-02-0323-0797, 70150	Paving, As-Built
1997	3-02-0323-05, 70150	Geotechnical Report
1997	3-02-0323-14, 69253	Runway Friction, As-Built
1982	3-02-033-01, D-46762	Pavement Bituminous Surface Treatment
1973	ADAP8-02-0323-02	Runway Extension