

Alaska DOT&PF

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

Pavement Inspection Report Unalaska Airport





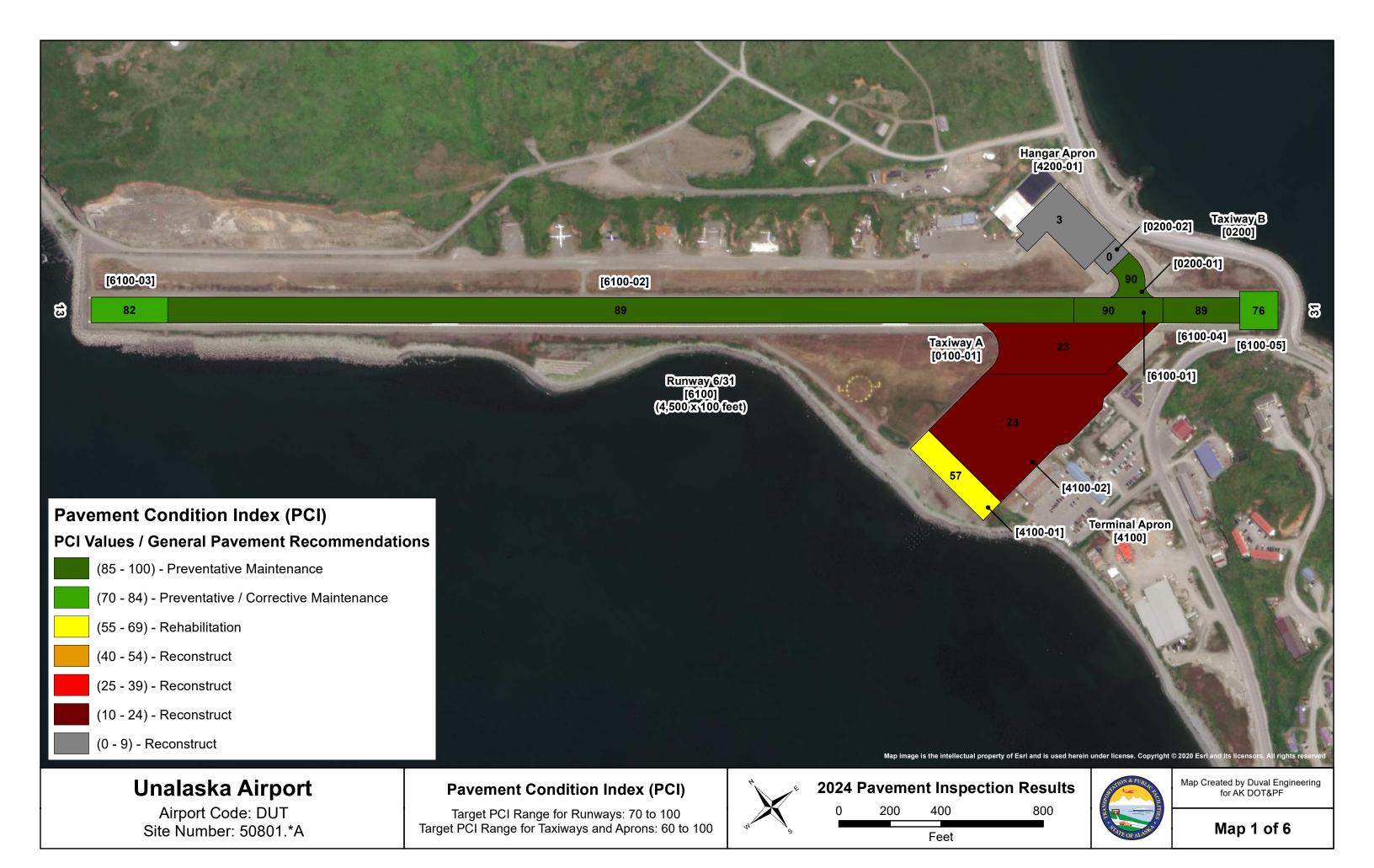
Airport Name	IATA	ICAO	Latitude	Longitude	Elevation (ft)
Unalaska Airport	DUT	PADU	53° 53' 56.2" N	166° 32' 42.1" W	23.3

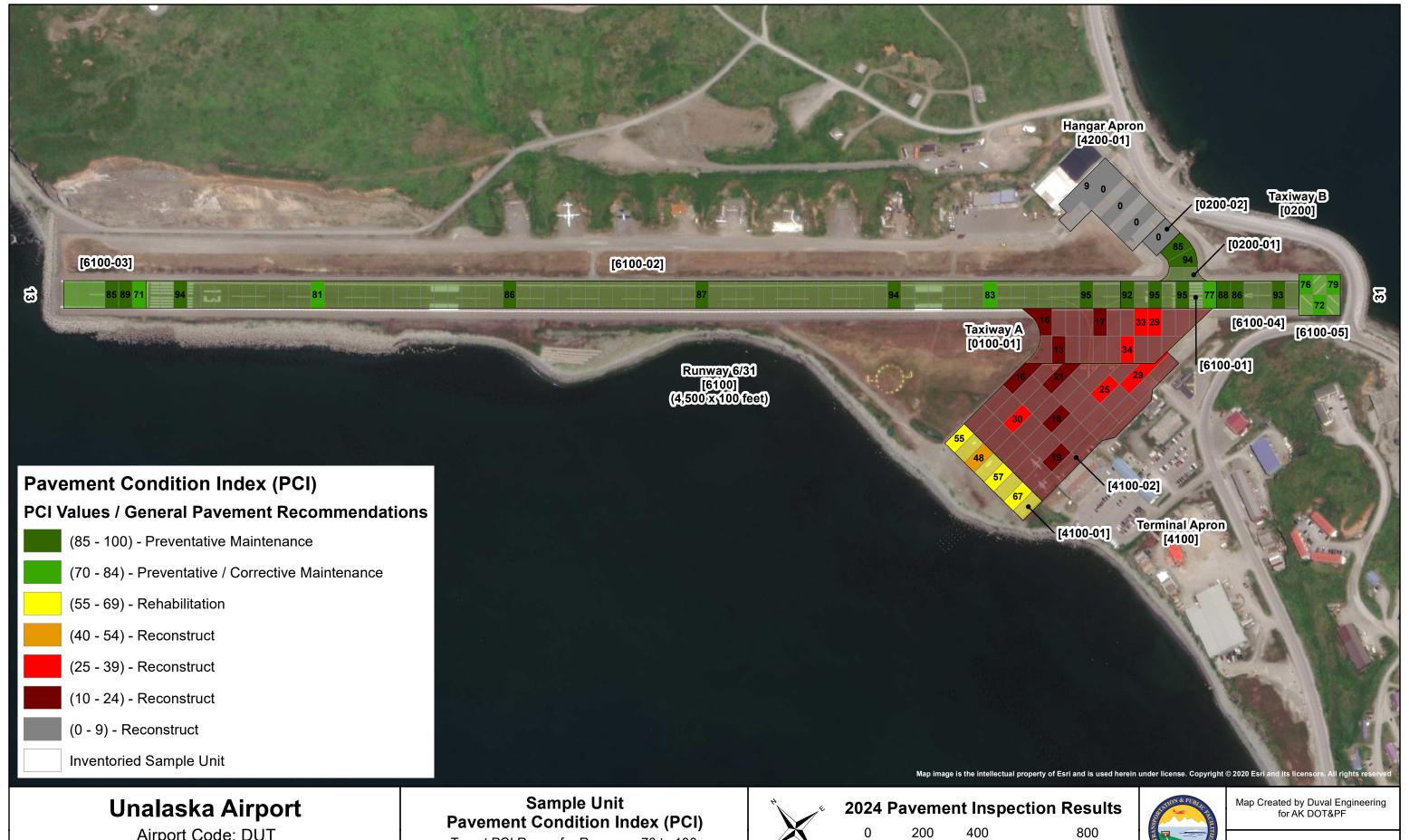
Please refer all questions or for further information about this report, please contact the AKDOT&PF Pavement Management and Preservation Office as follows:

Point of Contact	Phone	Email	Date Inspected	Date Published
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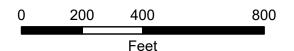




Airport Code: DUT Site Number: 50801.*A

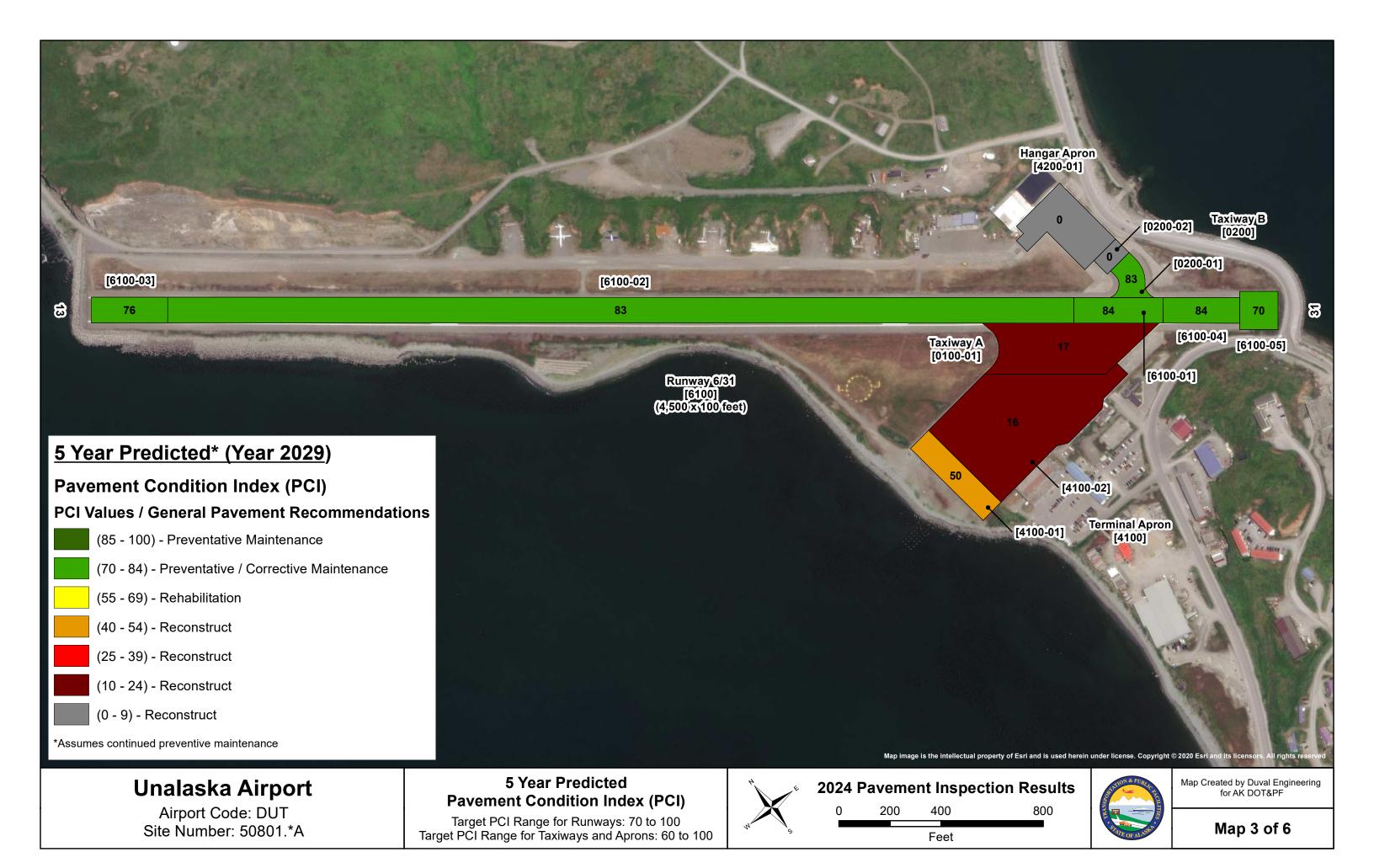
Target PCI Range for Runways: 70 to 100
Target PCI Range for Taxiways and Aprons: 60 to 100

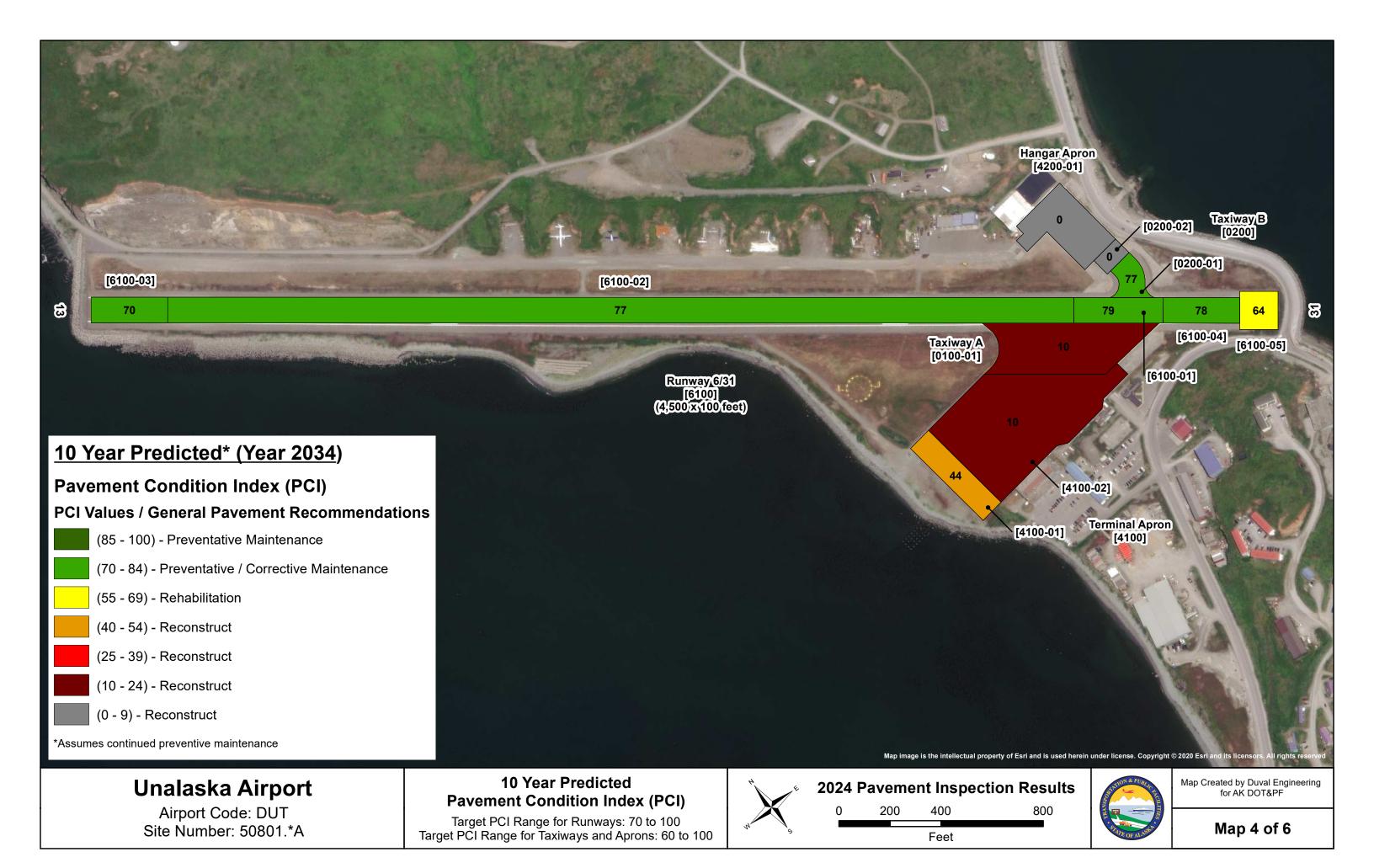


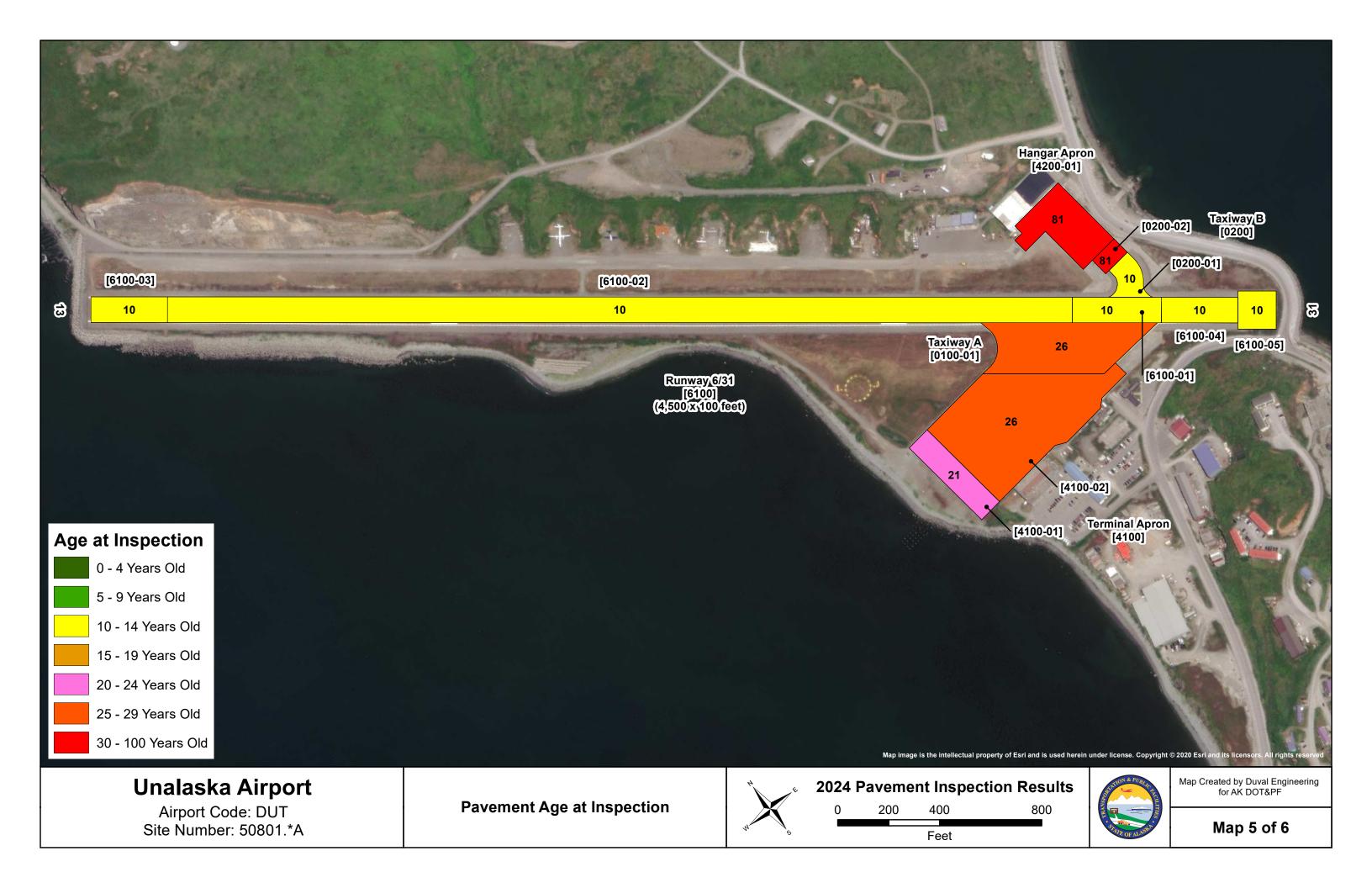




Map 2 of 6









AIRPORT PAVEMENT INSPECTION NOTES BY BRANCH

Branch ID	Branch Name	Branch Use	No. of Sections	Area (sf)	Weighted Average PCI
0100	Taxiway A	Taxiway	1	108,500	23
	AGAL A	ESTER		Test 1	
			_>====		
		A		4	
1		*			
					X

Taxiway A was originally built in 1943 using portland cement concrete (PCC). Over the years, it has undergone asphalt concrete (AC) surface rehabilitations, with the most recent rehabilitation taking place in 1998. These rehabilitations have resulted in a surface categorized as asphalt over portland cement (APC). Crack seal operations have not been performed on the branch. The most common distresses observed are low to medium severity depressions, low to high severity longitudinal and transverse cracking, medium to high severity patching, low to high severity raveling, and medium severity weathering. Field observations indicate a heavily deteriorated pavement surface, characterized by extensive medium and high severity distresses across the taxiway. Large quantities of these distresses are present, highlighting the need for maintenance and rehabilitation to prevent further degradation of the pavement structure. Additionally, the prevalence of raveling suggests significant surface material loss, which can further compromise pavement integrity and functionality.

Branch ID	Branch Name	Branch Use	No. of Sections	Area (sf)	Weighted Average PCI
0200	Taxiway B	Taxiway	2	26,078	59

APC Section 0200-01 (90 PCI)





Taxiway B is comprised of two sections, Section 0200-01 and Section 0200-02. APC Section 0200-01 was originally constructed in 1943 using PCC and has undergone multiple AC surface rehabilitations over the years, with the most recent occurring in 2014. Crack seal operations have not been performed on the section. The most common distress observed is low to medium severity weathering. Field observations include initial deterioration to the top layer of AC.

PCC Section 0200-02 (0 PCI)





Taxiway B Section 0200-02 was constructed in 1943 and has not received any major work since. Crack and joint seal operations have not been performed on the section. The most common distresses observed are high severity joint seal damage, low to high small and large severity patching, high severity scaling, and high severity joint and corner spalling. Field observations include wearing of the surface of the PCC leading to high severity scaling, and vegetation growth in every joint leading to the high severity joint seal damage. Overall, the pavement surface is heavily deteriorated, with extensive high-severity distresses evident throughout the taxiway. This section remains the original PCC and has exceeded its original service life.

Branch ID	Branch Name	Branch Use	No. of Sections	Area (sf)	Weighted Average PCI
4100	Terminal Apron	Apron	2	250,166	28

APC Section 4100-01 (23 PCI)





The Terminal Apron is comprised of two sections, Section 4100-01 and Section 4100-02. APC Section 4100-01 was originally constructed in 1943 using PCC and has received multiple AC surface rehabilitations, most recently in 1998. Crack seal operations have not been performed on the section. The most common distresses observed are low to medium severity depressions, low to medium severity longitudinal and transverse cracking, high severity patching, low to high severity raveling, and high severity weathering. Field observations indicate a heavily deteriorated pavement surface, characterized by extensive medium and high severity distresses across the taxiway. Large quantities of these distresses are present, highlighting the need for maintenance and rehabilitation to prevent further degradation of the pavement structure. In addition, the prevalence of raveling suggests significant surface material loss, which can further compromise the pavement integrity and functionality.

AC Section 4100-02 (57 PCI)





Terminal Apron Section 4100-02 was constructed in 2003 and has not received any major work since. Crack seal operations have not been performed on the section. The most common distresses observed are low severity longitudinal and transverse cracking, oil spillage, low to medium severity raveling, and low to medium severity weathering. Field observations include continued deterioration to the top layer of AC, leading to increased loss of the fine and coarse aggregates across the apron.

Branch ID	Branch Name	Branch Use	No. of Sections	Area (sf)	Weighted Average PCI
4200	Hangar Apron	Apron	1	62,100	3





The Hangar Apron was constructed in 1943 and has not received any major work since. The most common distresses observed are high severity corner breaks, high severity linear cracks, high severity joint seal damage, high severity small and large patching, high severity scaling, and high severity joint and corner spalling. Field observations include wearing of the surface of the concrete leading to high severity scaling, and vegetation growth in every joint leading to the high severity joint seal damage. Overall, the pavement surface is heavily deteriorated, with extensive high-severity distresses evident throughout the apron. This section remains the original PCC and has exceeded its original service life.

Branch ID	Branch Name	Branch Use	No. of Sections	Area (sf)	Weighted Average PCI
6100	Runway 13/31	Runway	5	472,500	88
		Pille			
	DESCRIPTION OF THE PROPERTY OF				

Runway 13/31 was originally constructed in 1943 of PCC and has undergone multiple AC surface rehabilitations over the years, with the most recent occurring in 2014. Crack seal operations have not been performed on the section. The most common distresses observed are low to medium severity longitudinal and transverse cracking, low to medium severity raveling, and low to medium severity weathering. Field observations indicate a gradual increase in weathering and raveling, leading to some loss of both fine and coarse aggregate across the runway. Additionally, the inspection noted several mechanical gouges to the AC surface. These gouges are classified as high-severity raveling, which significantly impacts the overall runway condition rating.

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	1	200	550	108,500	TAXIWAY	23.40	0.00	23.40
0200	2	235	110	26,078	TAXIWAY	44.75	44.75	58.61
4100	2	925	250	250,166	APRON	39.65	17.05	28.05
4200	1	310	280	62,100	APRON	3.00	0.00	3.00
6100	5	4,650	110	472,500	RUNWAY	84.92	5.36	87.58

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	312,266	27.43	22.19	23.07
RUNWAY	5	472,500	84.92	5.36	87.58
TAXIWAY	3	134,578	37.63	37.90	30.22
ALL	11	919,344	56.35	35.12	57.27

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	8/1/1998	APC	TAXIWAY	S	108,500	6/10/2024	26	23
0200	0200-01	8/1/2014	APC	TAXIWAY	S	17,078	6/10/2024	10	90
0200	0200-02	9/1/1943	PCC	TAXIWAY	S	9,000	6/10/2024	81	0
4100	4100-01	8/1/1998	APC	APRON	S	210,166	6/10/2024	26	23
4100	4100-02	8/1/2003	AC	APRON	S	40,000	6/10/2024	21	57
4200	4200-01	9/1/1943	PCC	APRON	S	62,100	6/10/2024	81	3
6100	6100-01	8/1/2014	AC	RUNWAY	S	35,000	6/10/2024	10	90
6100	6100-02	8/1/2014	AC	RUNWAY	S	355,000	6/10/2024	10	89
6100	6100-03	8/1/2014	AC	RUNWAY	S	30,000	6/10/2024	10	82
6100	6100-04	8/1/2014	AC	RUNWAY	S	30,000	6/10/2024	10	89
6100	6100-05	8/1/2014	AC	RUNWAY	Т	22,500	6/10/2024	10	76

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	10	489,578	6	85.68	5.18	87.64
21-25	21	40,000	1	56.70	0.00	56.70
26-30	26	318,666	2	23.00	0.40	22.87
50+	81	71,100	2	1.50	1.50	2.62
ALL	27	919,344	11	56.35	35.12	57.27

Work History Report

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Pavement Database: Alaska

Network:	Unalaska/I	Outch Harb Branch: 0100	Taxiwa	ay A	Section:	0100-01 Surface:APC		
L.C.D. 8/1/19	998 Us	se: TAXIWAY Rank: S L	ength: 200	.00 (Ft) Wi o	dth: 550.0	0 (Ft) True Area: 108500 (SqFt)		
Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments		
8/1/1998	MOL	Cold Mill and Overlay	0.00	0.00	~	2" AC (Funded via AIP)		
9/1/1988	OL-AS	Overlay - AC Structural	0.00	0.00		2" AC (Funded via AIP)		
8/1/1943	NC-IN	New Construction - Initial	0.00	0.00	~ :	8" PCC (Funded via AIP)		
Network:	Network: Unalaska/Dutch Harb Branch: 0200 Taxiway B Section: 0200-01 Surface:APC							
L.C.D. 8/1/20	014 Us	se: TAXIWAY Rank: S L		-	dth: 100.0	0 (Ft) True Area: 17078 (SqFt)		
Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments		
8/1/2014	SR-AC	Surface Reconstruction - AC	0.00	0.00	V :	3" AC (Funded via AIP)		
8/1/1998	MOL	Cold Mill and Overlay	0.00	0.00		2" AC (Funded via AIP)		
8/1/1988	OL-AS	Overlay - AC Structural	0.00	0.00		2" AC (Funded via AIP)		
8/1/1943	NC-IN	New Construction - Initial	0.00	0.00		9" PCC (Funded via AIP)		
			l .					
Network:	Unalaska/I	Outch Harb Branch: 0200	Taxiwa	ay B	Section:	0200-02 Surface:PCC		
L.C.D. 9/1/19	943 Us	se: TAXIWAY Rank: S L	ength: 75	.00 (Ft) Wie	dth: 120.0	0 (Ft) True Area: 9000 (SqFt)		
Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments		
9/1/1943	NC-IN	New Construction - Initial	0.00	0.00		9" PCC (Funded via AIP)		
			•					
Network:	Unalaska/I	Outch Harb Branch: 4100		nal Apron	Section:	4100-01 Surface:APC		
L.C.D. 8/1/1	998 Us	se: APRON Rank: S L	ength: 525	.00 (Ft) Wie	dth: 400.0	0 (Ft) True Area: 210166 (SqFt)		
Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments		
8/1/1998	MOL	Cold Mill and Overlay	0.00	0.00		2" AC (Funded via AIP)		
9/1/1943	NC-IN	New Construction - Initial	0.00	0.00	V :	9" PCC (Funded via AIP)		
Network:	I Inalaska/I	Outch Harb Branch: 4100	Termir	nal Apron	Section:	4100-02 Surface:AC		
L.C.D. 8/1/20				•		0 (Ft) True Area: 40000 (SqFt)		
Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments		
8/1/2003	NC-IN	New Construction - Initial	0.00	0.00	V	4" AC, 8" Crushed Aggregate Base Co		
Network: L.C.D. 9/1/19			_	r Apron .00 (Ft) Wi o	Section: dth: 280.0	4200-01 Surface: PCC 0 (Ft) True Area: 62100 (SqFt)		
Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments		
6/4/2002	CS-PC	Crack Sealing - PCC	0.00	0.00		(Funded via AIP)		
6/4/2001	PA-PP	Patching - PCC Partial Depth	0.00	0.00		(Funded via AIP)		
9/1/1943	NC-IN	New Construction - Initial	0.00	0.00	~	9" PCC (Funded via AIP)		
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Pavement Management System PAVER 7.0 TM

Work History Report

Pavement Database: Alaska

Network: Unalaska/Dutch Harb		Outch Harb Branch: 6100	Branch: 6100 13/31		Section:	6100-01 Surface:AC	
L.C.D. 8/1/2	014 Us	e: RUNWAY Rank: S L	ength: 350	.00 (Ft) Wi	dth: 100.0	0 (Ft) True Area: 35000 (SqFt)	
Work Date Work Work		Work Description	Cost	Thickness (in)	Major M&R	Comments	
8/1/2014	CR-AC	Complete Reconstruction - AC	0.00	0.00	V	4" AC, 6" recycled asphalt pavement,	
8/1/1998	CR-AC	Complete Reconstruction - AC	0.00	0.00		4" AC, 9" Crushed Aggregate Base Co	
8/1/1988	OL-AS	Overlay - AC Structural	0.00	0.00		2" AC (Funded via AIP)	
8/1/1943	NC-IN	New Construction - Initial	0.00	0.00		8" PCC (Funded via AIP)	

Network:	Unalaska/I	Outch Harb Branch: 6100	13/31		Section:	6100-02 Surface:AC
L.C.D. 8/1/20	014 Us	se: RUNWAY Rank: S L	ength: 3,550	.00 (Ft) Wie	dth: 100.0	0 (Ft) True Area: 355000 (SqFt)
Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
8/1/2014	SR-AC	Surface Reconstruction - AC	0.00	0.00	V	3" AC (Funded via AIP)
6/4/2002	CS-AC	Crack Sealing - AC	0.00	0.00		(Funded via AIP)
8/1/1998	CR-AC	Complete Reconstruction - AC	0.00	0.00		3" AC (Funded via AIP)
8/1/1988	OL-AS	Overlay - AC Structural	0.00	0.00	~ :	2" AC (Funded via AIP)
8/1/1943	NC-IN	New Construction - Initial	0.00	0.00		8" PCC (Funded via AIP)

 Network:
 Unalaska/Dutch Harb
 Branch:
 6100
 13/31
 Section:
 6100-03
 Surface:AC

 L.C.D. 8/1/2014
 Use:
 RUNWAY
 Rank:
 S
 Length:
 300.00 (Ft)
 Width:
 100.00 (Ft)
 True Area:
 30000 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
8/1/2014	SR-AC	Surface Reconstruction - AC	0.00	0.00	>	3" AC (Funded via AIP)
8/1/1998	CR-AC	Complete Reconstruction - AC	0.00	0.00		3" AC (Funded via AIP)
8/1/1988	OL-AS	Overlay - AC Structural	0.00	0.00		2" AC (Funded via AIP)
8/1/1943	NC-IN	New Construction - Initial	0.00	0.00		8" PCC (Funded via AIP)

 Network:
 Unalaska/Dutch Harb
 Branch:
 6100
 13/31
 Section:
 6100-04
 Surface:AC

 L.C.D. 8/1/2014
 Use:
 RUNWAY
 Rank:
 S
 Length:
 300.00 (Ft)
 Width:
 100.00 (Ft)
 True Area:
 30000 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
8/1/2014	CR-AC	Complete Reconstruction - AC	0.00	0.00	>	2" AC, 4" recycled asphalt pavement,
8/1/1998	CR-AC	Complete Reconstruction - AC	0.00	0.00		4" AC (Funded via AIP)
8/1/1988	OL-AS	Overlay - AC Structural	0.00	0.00		2" AC (Funded via AIP)
8/1/1943	NC-IN	New Construction - Initial	0.00	0.00		8" PCC (Funded via AIP)

 Network:
 Unalaska/Dutch Harb
 Branch:
 6100
 13/31
 Section:
 6100-05
 Surface:AC

 L.C.D. 8/1/2014
 Use:
 RUNWAY
 Rank:
 T
 Length:
 150.00 (Ft)
 Width:
 150.00 (Ft)
 True Area:
 22500 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
8/1/2014	NC-IN	New Construction - Initial	0.00	0.00	V	2" AC, 4" recycled asphalt pavement,

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Work History Report

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Pavement Database: Alaska

Summary:

Work Description	Section Count	Area Total (SqFt)	Thickness Avg (in)	Thickness STD (in)
Cold Mill and Overlay	3	335,744.00	0.00	0.00
Complete Reconstruction - AC	6	515,000.00	0.00	0.00
Crack Sealing - AC	1	355,000.00	0.00	0.00
Crack Sealing - PCC	1	62,100.00	0.00	0.00
New Construction - Initial	11	919,344.00	0.00	0.00
Overlay - AC Structural	6	575,578.00	0.00	0.00
Patching - PCC Partial Depth	1	62,100.00	0.00	0.00
Surface Reconstruction - AC	3	402,078.00	0.00	0.00

Pavement Management System PAVER 7.0 TM

PHYSICAL PROPERTY DATA

		Pave	ment		Base	Su	bbase	Subgr	ade
Branch ID	Section ID	Thick (in)	Туре	Thick (in)	Туре	Thick (in)	Туре	Туре	CBR
Taxiway A 100	0100-01	2	P-401	10	PCC	UNK	-	GP-GM*	18
Taxiway B	0200-01	4	P-401	4	P-209	10	PCC	GP-GM*	18
Taxiway B	0200-02	10	PCC	UNK	-	UNK	1	GP-GM*	18
Terminal	4100-01	2	P-401	10	PCC	UNK	1	GP-GM*	18
Apron 4100	4100-02	4	P-401	8	P-209	18	P-154	GM	18
Hangar Apron 4200	4200-01	10	PCC	UNK	-	UNK	-	GP-GM*	18
	6100-01	4	P-401	10	PCC	12	P-154	GP-GM	18
	6100-02	4	P-401	9	P-209	12	P-154	GP-GM	18
Runway 13/31 6100	6100-03 North Displaced Threshold	4	P-401	6	RAP	18	P-154	GP-GM	18
6100	6100-04 South Displaced Threshold	4	P-401	6	RAP	36	P-154	GP-GM	18
	6100-05 South Overrun	2	P-401	4	RAP	12	P-154	GP-GM	18

Notes: UNK - material type and/or thickness are unknown.

^{*}Subgrade assumed to be consistent with that identified in runway and apron expansion drilling.

AIRCRAFT FLEET MIX

No.	Aircraft	Gross Wt (lb)	% Gross Wt on Main Gear	Tire Pressure (psi)	Annual Departures	20 Yr Coverages
1	S-5	5,000	95	50	2	17
2	PA-31-325 Navajo C/R	6,536	95	66	972	8,332
3	Cessna 208B Grand Caravan EX	8,750	95	75	2	17
4	S-10	10,000	95	50	32	292
5	Beechcraft King Air B200	12,590	95	98	1,120	12,385
6	D-20	20,000	95	65	2,130	24,862
7	S-20	20,000	95	75	4	38
8	Saab 340B	29,000	95	55	3,846	49,308
9	Q100/Dash 8 Series 100	34,700	94.4	131	1,254	15,790
10	Q300/Dash 8 Series 300	43,200	94.4	101	126	1,645
11	D-50	50,000	95	80	1,666	23,446
12	D-100	100,000	95	140	4	59
13	L-100-20	155,801	96.4	104	26	288

PAVEMENT CLASSIFICATION RATINGS

Runway	Critical Aircraft	Max Allowable Wt (lb)	Subgrade Mr (psi)	Evaluation Thickness (in)	Pass to Traffic Cycle Ratio	PCR
RW 13-31	L-100-20	703,453	27,000	25	1	1250 F/A/X/T

PCR CALCULATION NOTES

- 1% traffic growth assumed
- Subgrade strength reduction for frost applied
- S-5, S-10, S-20, D-20, D-50, D-100 refers to "generic" single and dual gear aircraft as modeled in FAARFIELD

REFERENCES

Year	Project No.	Document Title
2012	53443	Unalaska Airport Improvements 2012 As-Builts
2012	53443	Unalaska Airport Improvements Geotechnical Report
2001	54664	Unalaska Airport Safety Improvements As-Builts
2001	54664	Unalaska Airport Safety Improvements Geotechnical Report
1997	52098	Unalaska Airport Resurfacing As-Builts
1987	56816	Unalaska Airport Paving Overrun and Obstruction Removal As-Builts
1986	53261	Unalaska Airport Runway Realignment and Obstruction Removal As-Builts
1975		Dutch Harbor Runway Resurfacing