Alaska DOT&PF

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

Pavement Inspection Report
Gambell Airport

Airport Name	IATA	ICAO	Latitude	Longitude	Elevation (ft)
Gambell Airport	GAM	PAGM	63° 45' 59.82" N	171° 43' 58.02" W	29.5

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	July 2024	November 2024

TABLE OF CONTENTS

Gambell Airport

Airport Code: GAM
Site Number: 50260.*A

Pavement Condition Index (PCI)

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

2024 Pavement Inspection Results

0 250 500 1,000
Feet

Map Created by Duval Engineering for AK DOT&PF

Map 1 of 6

Gambell Airport

Airport Code: GAM
Site Number: 50260.*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

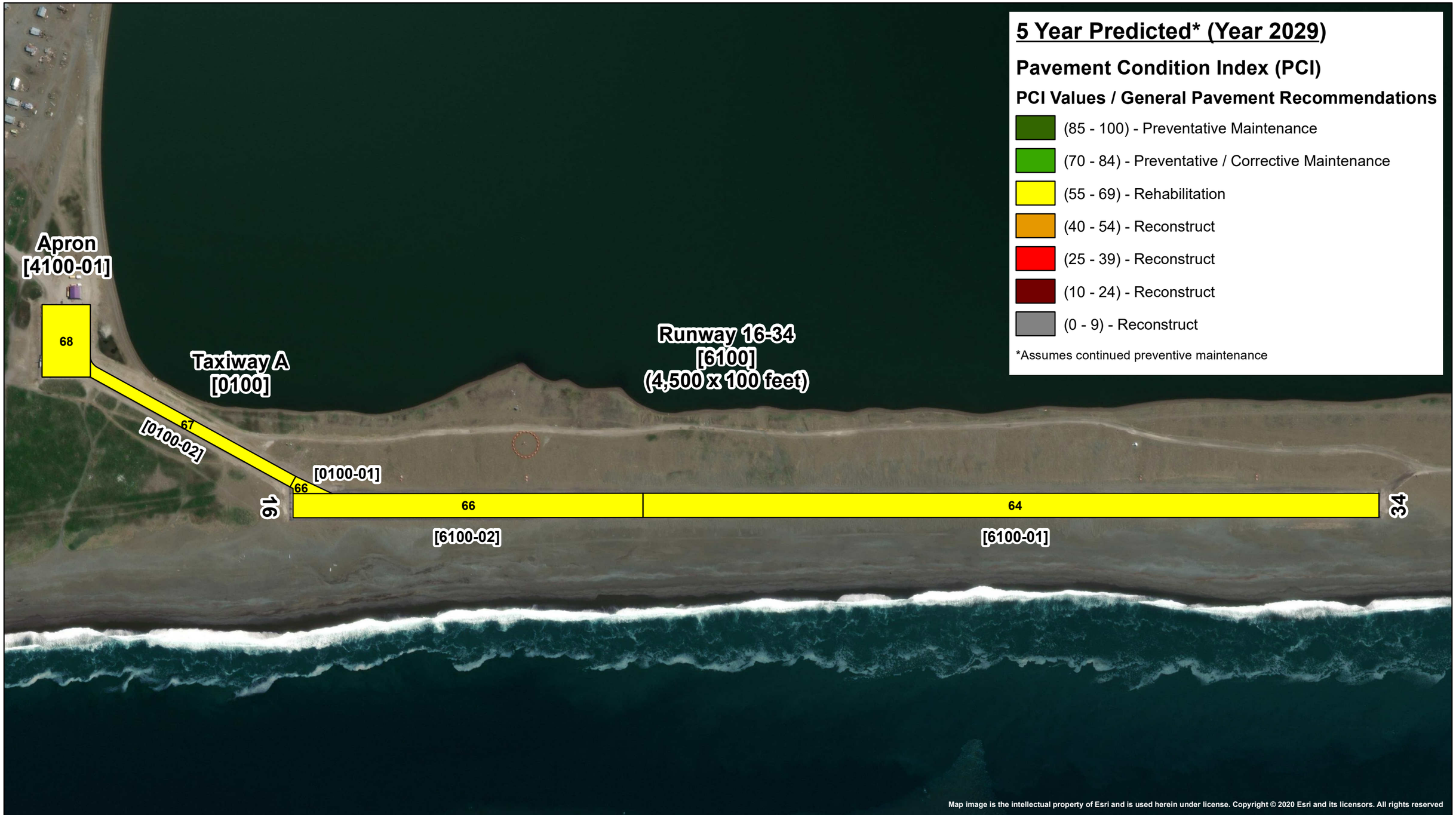
N E S W

2024 Pavement Inspection Results

0 250 500 1,000
Feet

Map Created by Duval Engineering
for AK DOT&PF

Map 2 of 6



Gambell Airport

Airport Code: GAM
Site Number: 50260.*A

5 Year Predicted
Pavement Condition Index (PCI)

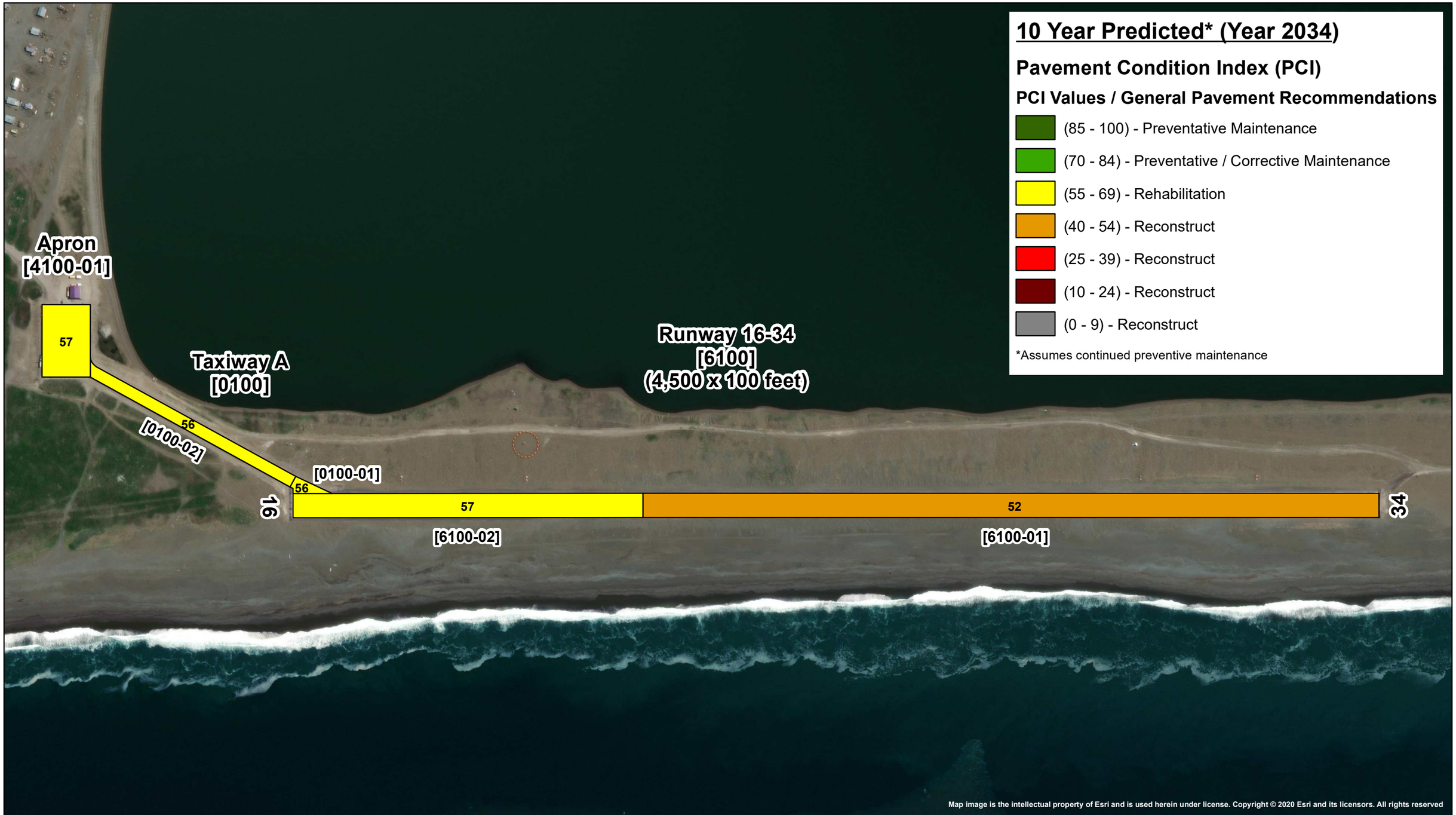
Target PCI Range for Runways: 70 to 100
Target PCI Range for Taxiways and Aprons: 60 to 100

2024 Pavement Inspection Results

0 250 500 1,000
Feet

Map Created by Duval Engineering for AK DOT&PF

Map 3 of 6



Gambell Airport

Airport Code: GAM
Site Number: 50260.*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

2024 Pavement Inspection Results

0 250 500 1,000
Feet

Map Created by Duval Engineering for AK DOT&PF

Map 4 of 6

Gambell Airport

Airport Code: GAM
Site Number: 50260.*A

Pavement Age at Inspection

N E S W

2024 Pavement Inspection Results

0 250 500 1,000
Feet

Map Created by Duval Engineering for AK DOT&PF

Map 5 of 6

Gambell Airport

Airport Code: GAM
Site Number: 50260.*A

Pavement Crack Seal Condition (CSC)

N E S W

2024 Pavement Inspection Results

0 250 500 1,000
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	54,150	84

Taxiway A was initially constructed in 1999 and then underwent surface reconstruction in 2018. The surface reconstruction consisted of milling 2” of existing HMA and 2” of existing CABC which in turn was replaced with 4” of P-209 CABC and 4” of P-401 HMA. Crack seal operations have not been performed on the taxiway. The most common distresses observed are low to medium severity longitudinal and transverse cracking, low severity raveling, and low severity weathering. Field observations include initial deterioration of the top layer of asphalt which is contributing to higher quantities of raveling and weathering across the taxiway as well as the development of new unfilled cracks.

Branch ID	Branch Name	Branch Use	No. of Sections	Area (sf)	Weighted Average PCI
4100	Apron	Apron	1	60,000	86

Like Taxiway A, the Apron was initially constructed in 1999 and then underwent surface reconstruction in 2018. The surface reconstruction consisted of milling 2” of existing HMA and 2” of existing CABC which in turn was replaced with 4” of P-209 CABC and 4” of P-401 HMA. 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 quantities of oil spillage, low severity raveling, and low severity weathering. Field observations include the development of new unfilled cracks, some of which are widening to the level of medium severity.

Branch ID	Branch Name	Branch Use	No. of Sections	Area (sf)	Weighted Average PCI
6100	Runway 16/34	Runway	2	450,000	77




Runway 16/34 was constructed in 1999 and then underwent surface reconstruction in 2018. The surface reconstruction consisted of milling 4” of existing HMA and 2” of existing CABC which in turn was replaced with 6” of P-209 CABC and 4” of P-401 HMA. Crack seal operations have not been performed on the runway. The most common distresses observed are low to medium severity longitudinal and transverse cracking, low severity raveling, and low severity weathering. Field observations include initial deterioration of the top layer of asphalt which is contributing to higher quantities of raveling and weathering across the runway as well as the development of new unfilled cracks, some of which are widening to the level of medium severity.

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	1,069	50	54,150	TAXIWAY	83.85	0.45	84.20
4100	1	300	200	60,000	APRON	86.10	0.00	86.10
6100	2	4,500	100	450,000	RUNWAY	77.80	3.50	76.56

BRANCH USE CONDITION REPORT

Use Category	No. of Sections	Total Area (Sq Ft)	Arithmetic Average PCI	Standard Deviation PCI	Weighted Average PCI
APRON	1	60,000	86.10	0.00	86.10
RUNWAY	2	450,000	77.80	3.50	76.56
TAXIWAY	2	54,150	83.85	0.45	84.20
ALL	5	564,150	81.88	4.09	78.30

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	7/11/2018	AC	TAXIWAY	S	6,250	7/20/2024	6	83
0100	0100-02	7/11/2018	AAC	TAXIWAY	S	47,900	7/20/2024	6	84
4100	4100-01	7/11/2018	AAC	APRON	S	60,000	7/20/2024	6	86
6100	6100-01	7/11/2018	AAC	RUNWAY	S	305,000	7/20/2024	6	74
6100	6100-02	7/11/2018	AAC	RUNWAY	S	145,000	7/20/2024	6	81

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	564,150	5	81.88	4.09	78.30
ALL	6	564,150	5	81.88	4.09	78.30

Work History Report

Pavement Database: Alaska

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

L.C.D. 7/11/2018 **Use:** TAXIWAY **Rank:** S **Length:** 104.00 (Ft) **Width:** 50.00 (Ft) **True Area:** 6250 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
7/11/2018	CR-AC	Complete Reconstruction - AC	0.00	4.00	☑ X	(Funded via AIP)Includes 4" of crushe
8/1/1999	ST-SB	Surface Treatment - Single Bitum.	0.00	0.00	☐ X	(Funded via AIP)
8/1/1985	NC-IN	New Construction - Initial	0.00	2.00	☑ X	(Funded via AIP)

Network: Gambell Airport **Branch:** 0100 Taxiway A **Section:** 0100-02 **Surface:**AAC

L.C.D. 7/11/2018 **Use:** TAXIWAY **Rank:** S **Length:** 965.00 (Ft) **Width:** 50.00 (Ft) **True Area:** 47900 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
7/11/2018	SR-AC	Surface Reconstruction - AC	0.00	4.00	☑ X	(Funded via AIP)Includes 4" of crushe
8/1/1999	NC-IN	New Construction - Initial	0.00	2.00	☑ X	(Funded via AIP)

Network: Gambell Airport **Branch:** 4100 Apron **Section:** 4100-01 **Surface:**AAC

L.C.D. 7/11/2018 **Use:** APRON **Rank:** S **Length:** 300.00 (Ft) **Width:** 200.00 (Ft) **True Area:** 60000 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
7/11/2018	SR-AC	Surface Reconstruction - AC	0.00	4.00	☑ X	(Funded via AIP)Includes 4" of crushe
8/1/1999	NC-IN	New Construction - Initial	0.00	2.00	☑ X	(Funded via AIP)

Network: Gambell Airport **Branch:** 6100 16/34 **Section:** 6100-01 **Surface:**AAC

L.C.D. 7/11/2018 **Use:** RUNWAY **Rank:** S **Length:** 3,050.00 (Ft) **Width:** 100.00 (Ft) **True Area:** 305000 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
7/11/2018	SR-AC	Surface Reconstruction - AC	0.00	4.00	☑ X	(Funded via AIP)Includes 4" of crushe
8/1/1999	ST-SB	Surface Treatment - Single Bitum.	0.00	0.00	☐ X	(Funded via AIP)
8/15/1985	NC-IN	New Construction - Initial	0.00	2.00	☑ X	(Funded via AIP)

Network: Gambell Airport **Branch:** 6100 16/34 **Section:** 6100-02 **Surface:**AAC

L.C.D. 7/11/2018 **Use:** RUNWAY **Rank:** S **Length:** 1,450.00 (Ft) **Width:** 100.00 (Ft) **True Area:** 145000 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
7/11/2018	SR-AC	Surface Reconstruction - AC	0.00	4.00	☑ X	(Funded via AIP)Includes 4" of crushe
8/15/1985	NC-IN	New Construction - Initial	0.00	2.00	☑ X	(Funded via AIP)

Work History Report

Pavement Database: Alaska

Summary:

Work Description	Section Count	Area Total (SqFt)	Thickness Avg (in)	Thickness STD (in)
Complete Reconstruction - AC	1	6,250.00	4.00	0.00
New Construction - Initial	5	564,150.00	2.00	0.00
Surface Reconstruction - AC	4	557,900.00	4.00	0.00
Surface Treatment - Single Bitum.	2	311,250.00	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 0100	0100-01	4	P-401	8	P-209	-	-	UNK	6
	0100-02	4	P-401	8	P-209	-	-	UNK	6
Apron 4100	4100-01	4	P-401	8	P-209	-	-	UNK	6
Runway 16/34 6100	6100-01	4	P-401	6	P-209	4	P-154	UNK	6
	6100-02	4	P-401	6	P-209	4	P-154	UNK	6

AIRCRAFT FLEET MIX

No.	Aircraft	Gross Wt (lb)	% Gross Wt on Main Gear	Tire Pressure (psi)	Annual Departures	20 Yr Coverages
1	S-15	17,637	95.0	59	291	2,356
2	Cessna 208B	8,750	95.0	75	4	28
3	PA-31-325 Navajo C/R	6,536	95.0	66	106	716
4	D-15	17,120	95.0	63	1,723	16,972
5	King Air B200	12,590	95.0	98	397	3,733
6	Saab 340B	29,000	95.0	55	21	237
7	Q100/Dash 8-100	34,700	94.4	131	2	22
8	L-100-20	155,801	96.4	104	3	57
9	S-10	10,361	95.0	52	102	755
10	C-130	155,000	95.0	105	2	38

PAVEMENT CLASSIFICATION RATINGS

Runway	Critical Aircraft	Max Allowable Wt (lb)	Subgrade Mr (psi)	Evaluation Thickness (in)	Pass to Traffic Cycle Ratio	PCR
16-34	L-100-20	108,419	9,000	14.0	1.0	221/F/C/X/T

PCR CALCULATION ASSUMPTIONS

- 1% traffic growth assumed.
- Subgrade strength reduction for frost applied.
- S-10, S-15, and D-15 refer to “generic” single and dual gear aircraft as modeled in FAARFIELD.
- Technical evaluation per AC 150/5335-5D using FAARFIELD 2.0

REFERENCES

Year	Project No.	Document Title
2017	60580	AKDOT&PF Geological Report, Quarry
2017	3-02-0103-004, 60585	Conformed Plans, Gambell Airport Rehabilitation
1995	3-02-0103-02, 6482	AKDOT&PF Geological Report
1994		Geological Study for Master Plan, Shannon & Wilson
1984		Materials Report, RW Resurfacing, Shannon & Wilson
1963		Contract Plans and Specifications, Construction of Airport at Gambell
1961		Gambell Pavement Design Report
1961		Engineering Report Proposed Gambell Airport