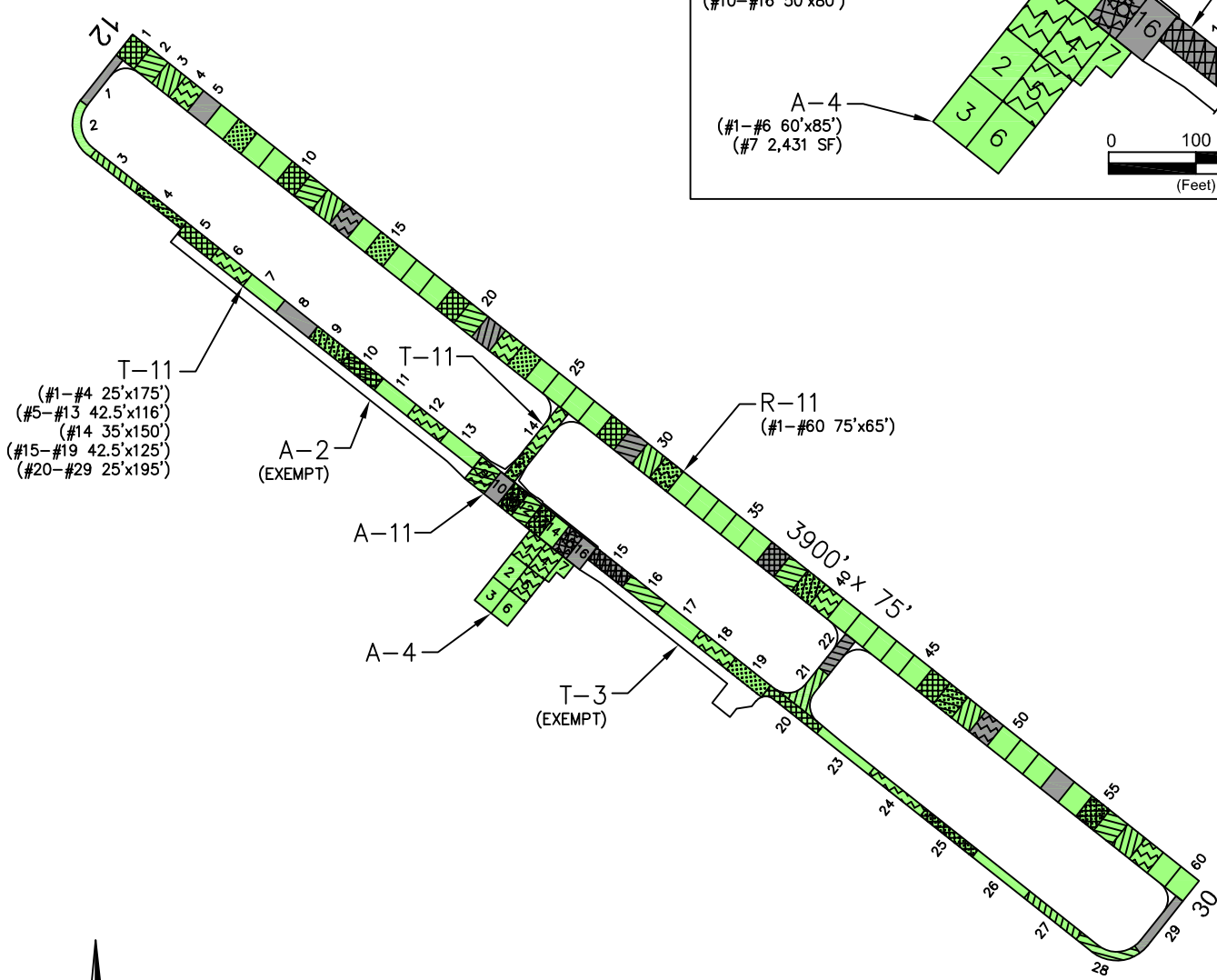
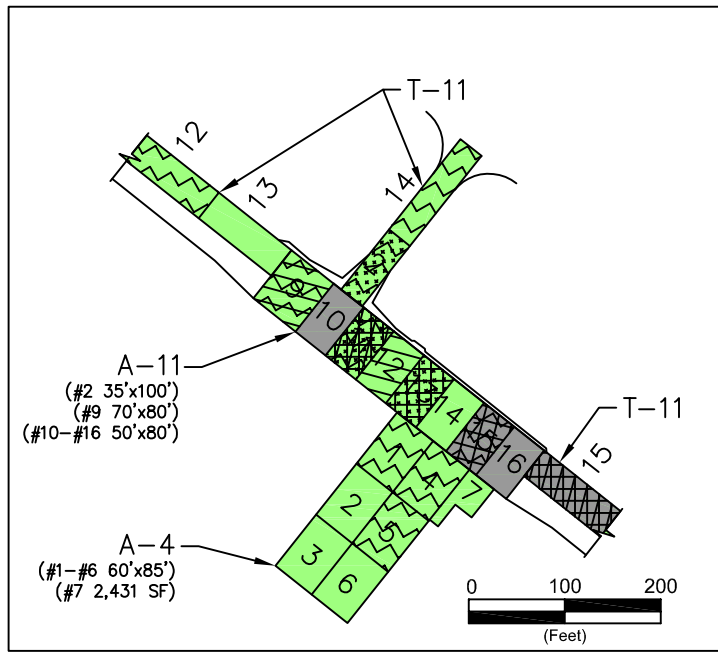


# PLENTYWOOD



## PAVEMENT STRENGTH SURVEY/PAVEMENT CONDITION SURVEY

PAVE. IDENT.	SOIL CLASS	SUB GRADE CLASS	SUBBASE COURSE	BASE COURSE	SURFACE COURSE	OVERLAY	PAVEMENT STRENGTH			REMARKS
							MAX. GROSS LOAD (LBS)			
							SINGLE	DUAL	DUAL TAN.	
<b>RUNWAYS</b>										
R-11	E-7	F7, CBR=2	11" P-152	9" P-208 WITH FABRIC	4" P-401	P-608	12,500			4,5,6
<b>TAXIWAYS</b>										
T-3	E-7	F7		6" AGG.	P-609		4,000			
T-11	E-7	F7, CBR=2	11" P-152	9" P-208 WITH FABRIC	4" P-401	P-608	12,500			4,5,6
<b>APRONS</b>										
A-2	E-7	F7		6" AGG.	P-609		4,000			
A-4			14.5" P-154	4" P-403	2" P-403		12,500			1,3,4,5,6
A-11	E-7	F6/7, CBR=2		8" AGG.	3" P-401	3" P-401	12,500			1,3,4,5,6

**REMARKS:**  
 P-410 IS OPEN-GRADED EMULSIFIED SURFACE OVERLAY.

- ADAP-01, 1979, RECONSTRUCT AND EXTEND RUNWAY, CONNECTING TAXIWAY, AND APRON.
- AIP-001-1985, REHABILITATED ALL PAVEMENTS.
- AIP-002-1989, P-402 OVERLAY TO R-1, R-2, T-1, A-1, AND A-3; NO STRENGTH ADDED (P-410 IN POOR CONDITION).
- AIP-003-2001, RECONSTRUCT RUNWAY 12-30 (R-11), CONSTRUCT PARALLEL TAXIWAY (T-11), AND OVERLAY APRON (A-11).
- AIP-005-2009, CRACK SEAL, FOG SEAL, AND REMARK ALL PAVEMENTS [INSPECTED PRIOR TO MAINTENANCE PROJECT].
- AIP-010-2015, RECONSTRUCT APRON (A-11); CRACK SEAL, SEAL COAT, AND REMARK PAVEMENTS [INSPECTED PRIOR TO PROJECT].

<b>LEGEND</b> ■ 2006 SURVEY AREA ▨ 2009 SURVEY AREA ▩ 2012 SURVEY AREA ▪ 2015 SURVEY AREA ▫ 2018 SURVEY AREA ■ MAINTAIN: PCI > 60 ■ TRANSITION: PCI 45 TO 60 ■ RECONSTRUCT: PCI < 45	DATE OF PAVEMENT STRENGTH SURVEY:		<b>MONTANA AVIATION SYSTEM PLAN</b> <b>2018 UPDATE - PAVEMENT CONDITION INDEXES</b> <b>SHER-WOOD AIRPORT</b> (PWD)
	EVALUATED BY:		
	DATE OF MOST RECENT PAVEMENT CONDITION SURVEY:	OCT. 4, 2018	
	EVALUATED BY:	N. SCHROHT	
LOCATION:	PLENTYWOOD MONTANA	Date: DECEMBER 2018 Prepared For: MONTANA DEPARTMENT OF TRANSPORTATION Prepared By: KLJ	

PLENTYWOOD



**A-15, Overview**



**A-15, Oil Spill**



**R-11, Overview**



**R-11, Ravel-Surface Grind**



**T-11, Overview**



**T-11, Cracking**

# PLENTYWOOD AIRPORT

Branch: 36A

APRON

**A-4**

Length: 255 LF

Width: 120 LF

Area: 33,031 SF

Last Const: 2015

Family: ACAM

From: A-11

To: HANGARS

Surface: AC

**Inspections**

**Samples Surveyed:** 3      **Total Samples:** 7      **Last Inspection Date:** 10/4/2018      **PCI:** 96

**Sample # 1**      **Area:** 5,100 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	30 LF
RAVELING	L	3 SF
PATCHING	L	0.09 SF

**Sample # 4**      **Area:** 5,100 SF

Distress Description	Severity	Quantity
PATCHING	L	20.03 SF

**Sample # 5**      **Area:** 5,100 SF

Distress Description	Severity	Quantity
PATCHING	L	0.09 SF

**Extrapolated Distress Quantities\***

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	LOW	65 LF	0.20%	3.08
PATCHING	LOW	44 SF	0.13%	2.00
RAVELING	LOW	6 SF	0.02%	1.00

\* Multiple deduct values are scaled down from their algebraic sum to keep the model consistent with experimental data.

**Percent of Deduct Values Based on Distress Mechanism**

0.0 % Load      100.0 % Climate/Durability      0.0 % Other

# PLENTYWOOD AIRPORT

Branch: 36A

APRON

**A-11**

Length: 417 LF

Width: 182 LF

Area: 73,348 SF

Last Const: 2001

Family: ACAM

From: T-1

To: TIEDOWNS

Surface: AAC

**Inspections**

**Samples Surveyed:** 4      **Total Samples:** 8      **Last Inspection Date:** 10/4/2018      **PCI:** 68

**Sample # 2**

**Area:** 3,500 SF

Distress Description	Severity	Quantity
WEATHERING	M	3500 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	230 LF
DEPRESSION	L	5 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	28 LF

**Sample # 9**

**Area:** 5,600 SF

Distress Description	Severity	Quantity
DEPRESSION	L	3 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	5 LF
LONGITUDINAL/TRANSVERSE CRACKING	L	221 LF
WEATHERING	M	5600 SF

**Sample # 11**

**Area:** 4,000 SF

Distress Description	Severity	Quantity
WEATHERING	M	4000 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	8 LF
DEPRESSION	L	4 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	164 LF
PATCHING	L	100 SF

**Sample # 15**

**Area:** 4,000 SF

Distress Description	Severity	Quantity
DEPRESSION	L	6 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	195 LF
LONGITUDINAL/TRANSVERSE CRACKING	M	8 LF
WEATHERING	M	4000 SF

**Extrapolated Distress Quantities\***

Distress Description	Severity	Quantity	Density	Deduct
DEPRESSION	LOW	77 SF	0.11%	0.29
LONGITUDINAL/TRANSVERSE CRACKING	LOW	3,474 LF	4.74%	14.20
LONGITUDINAL/TRANSVERSE CRACKING	MEDIUM	210 LF	0.29%	6.32
PATCHING	LOW	429 SF	0.58%	2.64
WEATHERING	MEDIUM	73,348 SF	100.00%	20.34

\* Multiple deduct values are scaled down from their algebraic sum to keep the model consistent with experimental data.

**Percent of Deduct Values Based on Distress Mechanism**

0.0 % Load

99.0 % Climate/Durability

1.0 % Other

**PLENTYWOOD AIRPORT**

Branch: 36R

APRON

**R-11**

Length: 3,900 LF  
From: 12+00

Width: 75 LF

Area: 292,500 SF  
To: 51+00

Last Const: 2001

Family: ACRMU  
Surface: AC

**Inspections**

**Samples Surveyed:** 7      **Total Samples:** 60      **Last Inspection Date:** 10/4/2018      **PCI:** 72

<b>Sample # 4</b>	<b>Distress Description</b> RAVELING WEATHERING LONGITUDINAL/TRANSVERSE CRACKING	<b>Severity</b> L M L	<b>Quantity</b> 10 SF 4875 SF 263 LF	<b>Area:</b> 4,875 SF
<b>Sample # 13</b>	<b>Distress Description</b> LONGITUDINAL/TRANSVERSE CRACKING WEATHERING	<b>Severity</b> L M	<b>Quantity</b> 232 LF 4875 SF	<b>Area:</b> 4,875 SF
<b>Sample # 22</b>	<b>Distress Description</b> SWELL WEATHERING LONGITUDINAL/TRANSVERSE CRACKING	<b>Severity</b> L M L	<b>Quantity</b> 144 SF 4875 SF 307 LF	<b>Area:</b> 4,875 SF
<b>Sample # 31</b>	<b>Distress Description</b> WEATHERING LONGITUDINAL/TRANSVERSE CRACKING SWELL	<b>Severity</b> M L L	<b>Quantity</b> 4875 SF 279 LF 80 SF	<b>Area:</b> 4,875 SF
<b>Sample # 40</b>	<b>Distress Description</b> RAVELING LONGITUDINAL/TRANSVERSE CRACKING WEATHERING	<b>Severity</b> L L M	<b>Quantity</b> 72 SF 222 LF 4875 SF	<b>Area:</b> 4,875 SF
<b>Sample # 49</b>	<b>Distress Description</b> LONGITUDINAL/TRANSVERSE CRACKING WEATHERING LONGITUDINAL/TRANSVERSE CRACKING	<b>Severity</b> L M M	<b>Quantity</b> 252 LF 4875 SF 31 LF	<b>Area:</b> 4,875 SF
<b>Sample # 58</b>	<b>Distress Description</b> WEATHERING LONGITUDINAL/TRANSVERSE CRACKING RAVELING	<b>Severity</b> M L L	<b>Quantity</b> 4875 SF 140 LF 15 SF	<b>Area:</b> 4,875 SF

**Extrapolated Distress Quantities\***

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	LOW	14,529 LF	4.97%	14.70
LONGITUDINAL/TRANSVERSE CRACKING	MEDIUM	266 LF	0.09%	4.00
RAVELING	LOW	831 SF	0.28%	1.37
SWELL	LOW	1,920 SF	0.66%	2.21
WEATHERING	MEDIUM	292,500 SF	100.00%	20.34

\* Multiple deduct values are scaled down from their algebraic sum to keep the model consistent with experimental data.

**Percent of Deduct Values Based on Distress Mechanism**

0.0 % Load                      95.0 % Climate/Durability                      5.0 % Other

# PLENTYWOOD AIRPORT

Branch: 36T TAXIWAY T-11

Length: 4,320 LF Width: 32 LF Area: 141,080 SF Last Const: 2001 Family: ACRMU  
 From: R-11 To: A-11 Surface: AC

**Inspections**

**Samples Surveyed:** 5      **Total Samples:** 29      **Last Inspection Date:** 10/4/2018      **PCI:** 68

**Sample # 6**      **Area:** 4,930 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	M	48 LF
WEATHERING	L	4930 SF
RAVELING	M	26 SF
RAVELING	L	60 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	266 LF

**Sample # 12**      **Area:** 4,930 SF

Distress Description	Severity	Quantity
RAVELING	M	77 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	303 LF
RAVELING	L	18 SF
WEATHERING	L	4930 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	26 LF

**Sample # 14**      **Area:** 4,900 SF

Distress Description	Severity	Quantity
RAVELING	L	33 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	397 LF
RAVELING	H	90 SF
WEATHERING	L	4900 SF
DEPRESSION	L	14 SF
PATCHING	L	8 SF

**Sample # 18**      **Area:** 5,312 SF

Distress Description	Severity	Quantity
RAVELING	L	36 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	66 LF
DEPRESSION	L	112 SF
RAVELING	M	40 SF
WEATHERING	L	5312 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	171 LF

**Sample # 24**      **Area:** 4,875 SF

Distress Description	Severity	Quantity
RAVELING	M	75 SF
WEATHERING	L	4875 SF
RAVELING	L	62 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	177 LF

**Extrapolated Distress Quantities\***

Distress Description	Severity	Quantity	Density	Deduct
DEPRESSION	LOW	713 SF	0.51%	3.33
LONGITUDINAL/TRANSVERSE CRACKING	LOW	7,431 LF	5.27%	15.33
LONGITUDINAL/TRANSVERSE CRACKING	MEDIUM	792 LF	0.56%	8.73
PATCHING	LOW	45 SF	0.03%	2.00
RAVELING	HIGH	509 SF	0.36%	9.38
RAVELING	LOW	1,182 SF	0.84%	2.36
RAVELING	MEDIUM	1,233 SF	0.87%	7.49
WEATHERING	LOW	141,080 SF	100.00%	5.96

\* Multiple deduct values are scaled down from their algebraic sum to keep the model consistent with experimental data.

**Percent of Deduct Values Based on Distress Mechanism**

0.0 % Load      94.0 % Climate/Durability      6.0 % Other

**PLENTYWOOD AIRPORT (36)**

FIFTEEN YEAR PROJECTIONS							ESTIMATED AVERAGE ANNUAL COST:		\$115,330	
Plan Year: 2019							Estimated Cost:	\$198,533	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After		
A-11	Preventive + Global MR	\$4,581	\$24,938	\$0	\$0	\$29,519	68	73		
A-4	None	\$0	\$0	\$0	\$0	\$0	95	95		
R-11	Preventive + Global MR	\$12,788	\$99,449	\$0	\$0	\$112,237	72	77		
T-11	Preventive + Global MR	\$8,810	\$47,967	\$0	\$0	\$56,777	68	73		
Plan Year: 2020							Estimated Cost:	\$29,683	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After		
A-11	Preventive	\$3,274	\$0	\$0	\$0	\$3,274	71	71		
A-4	Global MR	\$0	\$11,230	\$0	\$0	\$11,230	92	100		
R-11	Preventive	\$8,881	\$0	\$0	\$0	\$8,881	75	75		
T-11	Preventive	\$6,298	\$0	\$0	\$0	\$6,298	71	71		
Plan Year: 2021							Estimated Cost:	\$21,865	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After		
A-11	Preventive	\$3,821	\$0	\$0	\$0	\$3,821	70	70		
A-4	None	\$0	\$0	\$0	\$0	\$0	97	97		
R-11	Preventive	\$10,693	\$0	\$0	\$0	\$10,693	73	73		
T-11	Preventive	\$7,350	\$0	\$0	\$0	\$7,350	70	70		
Plan Year: 2022							Estimated Cost:	\$25,553	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After		
A-11	Preventive	\$4,467	\$0	\$0	\$0	\$4,467	68	68		
A-4	None	\$0	\$0	\$0	\$0	\$0	94	94		
R-11	Preventive	\$12,495	\$0	\$0	\$0	\$12,495	72	72		
T-11	Preventive	\$8,591	\$0	\$0	\$0	\$8,591	68	68		
Plan Year: 2023							Estimated Cost:	\$29,245	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After		
A-11	Preventive	\$5,109	\$0	\$0	\$0	\$5,109	66	66		
A-4	None	\$0	\$0	\$0	\$0	\$0	91	91		
R-11	Preventive	\$14,310	\$0	\$0	\$0	\$14,310	70	70		
T-11	Preventive	\$9,826	\$0	\$0	\$0	\$9,826	66	66		
Plan Year: 2024							Estimated Cost:	\$205,723	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After		
A-11	Preventive + Global MR	\$5,754	\$24,938	\$0	\$0	\$30,692	64	70		
A-4	Preventive	\$66	\$0	\$0	\$0	\$66	88	88		
R-11	Preventive + Global MR	\$16,481	\$99,449	\$0	\$0	\$115,930	69	74		
T-11	Preventive + Global MR	\$11,067	\$47,967	\$0	\$0	\$59,034	64	70		
Plan Year: 2025							Estimated Cost:	\$36,310	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After		
A-11	Preventive	\$4,350	\$0	\$0	\$0	\$4,350	68	68		
A-4	Preventive + Global MR	\$160	\$11,230	\$0	\$0	\$11,391	85	94		
R-11	Preventive	\$12,204	\$0	\$0	\$0	\$12,204	72	72		
T-11	Preventive	\$8,366	\$0	\$0	\$0	\$8,366	68	68		
Plan Year: 2026							Estimated Cost:	\$28,609	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After		
A-11	Preventive	\$4,991	\$0	\$0	\$0	\$4,991	66	66		
A-4	None	\$0	\$0	\$0	\$0	\$0	91	91		
R-11	Preventive	\$14,016	\$0	\$0	\$0	\$14,016	71	71		
T-11	Preventive	\$9,601	\$0	\$0	\$0	\$9,601	66	66		
Plan Year: 2027							Estimated Cost:	\$32,652	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After		
A-11	Preventive	\$5,637	\$0	\$0	\$0	\$5,637	65	65		
A-4	Preventive	\$56	\$0	\$0	\$0	\$56	88	88		
R-11	Preventive	\$16,117	\$0	\$0	\$0	\$16,117	69	69		
T-11	Preventive	\$10,842	\$0	\$0	\$0	\$10,842	65	65		
Plan Year: 2028							Estimated Cost:	\$36,889	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After		
A-11	Preventive	\$6,279	\$0	\$0	\$0	\$6,279	63	63		
A-4	Preventive	\$150	\$0	\$0	\$0	\$150	85	86		
R-11	Preventive	\$18,383	\$0	\$0	\$0	\$18,383	67	68		
T-11	Preventive	\$12,077	\$0	\$0	\$0	\$12,077	63	63		

**PLENTYWOOD AIRPORT (36)**

FIFTEEN YEAR PROJECTIONS							ESTIMATED AVERAGE ANNUAL COST:		\$115,330
Plan Year: 2029							Estimated Cost:	\$213,476	PCI
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-11	Preventive + Global MR	\$6,924	\$24,938	\$0	\$0	\$31,862	61	67	
A-4	Preventive	\$245	\$0	\$0	\$0	\$245	83	83	
R-11	Preventive + Global MR	\$20,636	\$99,449	\$0	\$0	\$120,085	66	71	
T-11	Preventive + Global MR	\$13,318	\$47,967	\$0	\$0	\$61,285	61	67	
Plan Year: 2030							Estimated Cost:	\$43,481	PCI
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-11	Preventive	\$5,520	\$0	\$0	\$0	\$5,520	65	65	
A-4	Preventive + Global MR	\$365	\$11,230	\$0	\$0	\$11,595	80	89	
R-11	Preventive	\$15,750	\$0	\$0	\$0	\$15,750	69	69	
T-11	Preventive	\$10,616	\$0	\$0	\$0	\$10,616	65	65	
Plan Year: 2031							Estimated Cost:	\$36,161	PCI
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-11	Preventive	\$6,165	\$0	\$0	\$0	\$6,165	63	63	
A-4	Preventive	\$136	\$0	\$0	\$0	\$136	86	86	
R-11	Preventive	\$18,003	\$0	\$0	\$0	\$18,003	68	68	
T-11	Preventive	\$11,858	\$0	\$0	\$0	\$11,858	63	63	
Plan Year: 2032							Estimated Cost:	\$40,401	PCI
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-11	Preventive	\$6,807	\$0	\$0	\$0	\$6,807	61	62	
A-4	Preventive	\$230	\$0	\$0	\$0	\$230	83	83	
R-11	Preventive	\$20,272	\$0	\$0	\$0	\$20,272	66	66	
T-11	Preventive	\$13,092	\$0	\$0	\$0	\$13,092	61	62	
Plan Year: 2033							Estimated Cost:	\$676,439	PCI
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-11	Major Below Critical	\$0	\$0	\$223,565	\$0	\$223,565	60	100	
A-4	Preventive	\$324	\$0	\$0	\$0	\$324	80	80	
R-11	Preventive	\$22,538	\$0	\$0	\$0	\$22,538	65	65	
T-11	Major Below Critical	\$0	\$0	\$430,012	\$0	\$430,012	60	100	