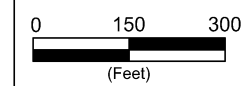
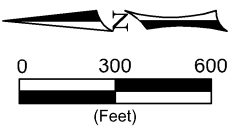
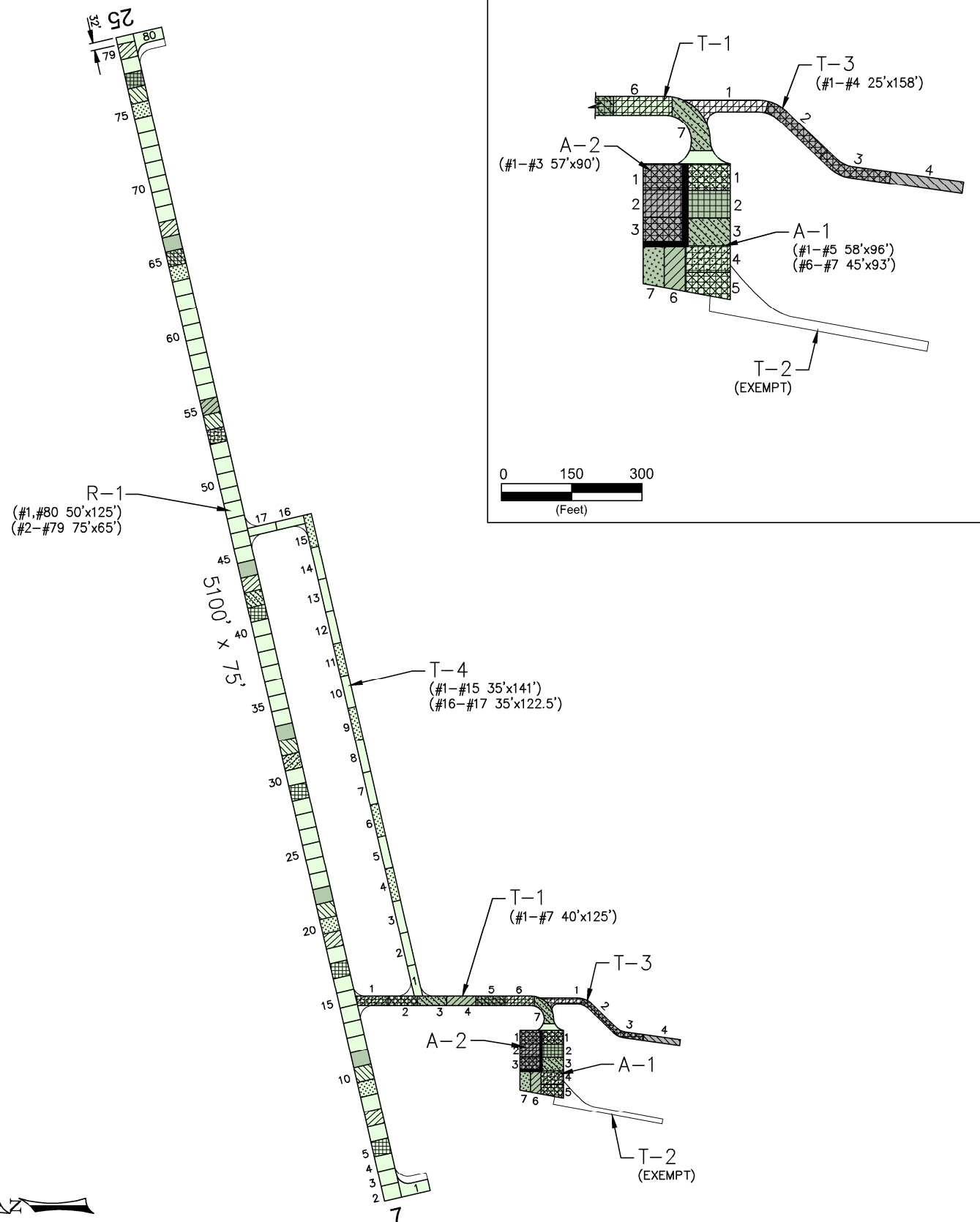


ROUNDUP



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.	
RUNWAYS										
R-1	E-5	F5		10" P-208	2" P-401	2"P-401,P-609	22,000			2,3,4,5
TAXIWAYS										
T-1	E-5	F5		10" P-208	1" P-609	2"P-401,P-609	14,000			1,3,5
T-2	E-5	F5		10" P-208	2" P-401	2"P-401,P-609	22,000			2,5
T-3				8" P-208	3" P-401	P-609	12,500			3,5
T-4		CBR=5	12" P-154	6" P-208	3" P-401					6
APRONS										
A-1	E-5	F5		10" P-208	1" P-609	2"P-401,P-609	14,000			1,3,5
A-2	E-5	F5		10" P-208	2" P-401	2"P-401,P-609	22,000			2,3,5

REMARKS:

- ADAP-01, 1980, CONSTRUCT RUNWAY, TAXIWAY, AND APRON.
- AIP-01, 1987, REHABILITATE RUNWAY, TAXIWAY, AND APRON.
- AIP-03, 2002, CONSTRUCT HANGAR ACCESS TAXIWAY (T-3); OVERLAY RUNWAY (R-1), TAXIWAY (T-1), AND APRON (A-1,A-2).
- AIP-004, 2004, RUNWAY (R-1) PAVEMENT MAINTENANCE.
- AIP-007-2007, CRACK SEAL, FOG SEAL, AND REMARK ALL PAVEMENTS.
- AIP-011-2013, CONSTRUCT TAXIWAY (T-4).

LEGEND ■ 2003 SURVEY AREA ■ 2006 SURVEY AREA ▨ 2009 SURVEY AREA ▩ 2012 SURVEY AREA ▪ 2015 SURVEY AREA ■ MAINTAIN: PCI > 60 ■ TRANSITION: PCI 45 TO 60 ■ RECONSTRUCT: PCI < 45	DATE OF PAVEMENT STRENGTH SURVEY:	SEPT. 9, 1988	MONTANA AVIATION SYSTEM PLAN 2015 UPDATE - PAVEMENT CONDITION INDEXES	
	EVALUATED BY:	J. STYBA		
	DATE OF MOST RECENT PAVEMENT CONDITION SURVEY:	SEPT. 15, 2015	Date:	Prepared For:
	EVALUATED BY:	S. MARKWARDT	DECEMBER 2015	Prepared By:
LOCATION:	ROUNDUP MONTANA			

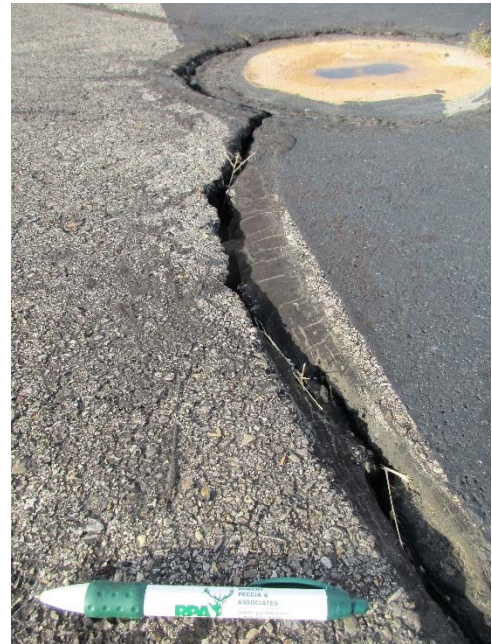
ROUNDUP

ROUNDUP AIRPORT

9/15/2015



A-1, Overview



A-1, Surface detail with cracking



R-1, Surface detail with cracking



R-1, Overview

ROUNDUP AIRPORT

9/15/2015



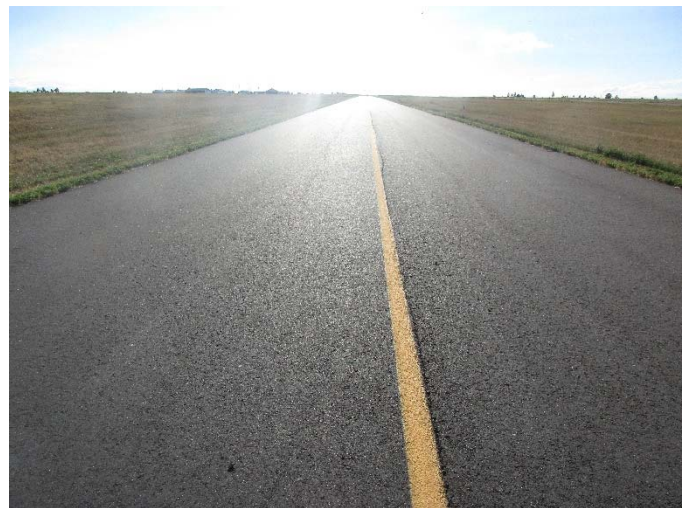
T-1, Overview



T-1, Surface detail of aggressive paint removal



T-4, Surface detail with cracking



T-4, Overview

ROUNDUP AIRPORT

Branch: 47R

RUNWAY

R-1

Length: 5,100 LF **Width:** 75 LF **Area:** 382,500 SF **Last Const. :** 2002 **Family:** ACRML15
From: RWY 6-24 STA 0+00 **To:** RWY 6-24 STA 51+00 **Surface:** AAC

Inspections

Samples Surveyed: 7 **Total Samples:** 80 **Last Inspection Date (RPA)** 9/15/2015 **PCI:** 56

Sample # 9

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	326 LF
WEATHERING	L	488 SF
RAVELING	L	244 SF
DEPRESSION	L	21 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	5 LF
SWELLING	L	10 SF
RAVELING	H	3 SF

Area: 4875 SF

Sample # 20

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	383 LF
WEATHERING	L	488 SF
RAVELING	L	244 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	40 LF
DEPRESSION	L	21 SF
RAVELING	H	10 SF

Area: 4875 SF

Sample # 31

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	280 LF
WEATHERING	L	488 SF
RAVELING	L	244 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	65 LF
LONGITUDINAL/TRANSVERSE CRACKING	H	10 LF
DEPRESSION	H	10 SF
DEPRESSION	L	7 SF
DEPRESSION	M	7 SF

Area: 4875 SF

Sample # 42

Distress Description	Severity	Quantity
WEATHERING	L	488 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	130 LF
RAVELING	L	244 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	20 LF
RAVELING	H	10 SF
DEPRESSION	L	5 SF
SWELLING	L	2 SF

Area: 4875 SF

Sample # 53

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	179 LF
WEATHERING	L	488 SF
RAVELING	L	244 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	42 LF
LONGITUDINAL/TRANSVERSE CRACKING	H	32 LF
DEPRESSION	H	27 SF
DEPRESSION	L	16 SF
SWELLING	L	14 SF
RAVELING	H	11 SF
ALLIGATOR CRACKING	L	8 SF
DEPRESSION	M	8 SF

Area: 4875 SF

Sample # 64

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	288 LF
WEATHERING	L	488 SF
RAVELING	L	244 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	40 LF
LONGITUDINAL/TRANSVERSE CRACKING	H	31 LF
DEPRESSION	L	30 SF
DEPRESSION	M	16 SF
RAVELING	H	8 SF
DEPRESSION	H	5 SF
SWELLING	L	2 SF

Area: 4875 SF

ROUNDUP AIRPORT

Branch: 47R

RUNWAY

R-1

Sample # 75

Area: 4875 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	226 LF
WEATHERING	L	488 SF
RAVELING	L	244 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	26 LF
LONGITUDINAL/TRANSVERSE CRACKING	H	8 LF
DEPRESSION	L	9 SF
RAVELING	H	8 SF
DEPRESSION	H	7 SF
SWELLING	L	5 SF
DEPRESSION	M	4 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	L	20310 LF	5.31 %	15.42
DEPRESSION	H	549 SF	0.14 %	13.62
LONGITUDINAL/TRANSVERSE CRACKING	H	908 LF	0.24 %	10.87
LONGITUDINAL/TRANSVERSE CRACKING	M	2668 LF	0.70 %	9.59
RAVELING	H	560 SF	0.15 %	7.35
ALLIGATOR CRACKING	L	90 SF	0.02 %	7.00
RAVELING	L	19145 SF	5.01 %	6.81
DEPRESSION	M	392 SF	0.10 %	5.19
DEPRESSION	L	1222 SF	0.32 %	1.80
WEATHERING	L	38289 SF	10.01 %	1.72
SWELLING	L	370 SF	0.10 %	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

9.0 % Load

64.0 % Climate/Durability

27.0 % Other

ROUNDUP AIRPORT

Branch: 47T

TAXIWAY

T-1

Length: 918 LF **Width:** 40 LF **Area:** 36,720 SF **Last Const. :** 2002 **Family:** ACRML15
From: RWY 6-24 STA 8+25 **To:** APRON (A-1) **Surface:** AC

Inspections

Samples Surveyed: 4 **Total Samples:** 7 **Last Inspection Date (RPA)** 9/15/2015 **PCI:** **63**

Sample # 1 **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	247 LF
WEATHERING	L	500 SF
WEATHERING	H	280 SF
RAVELING	L	250 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	52 LF
RAVELING	H	1 SF

Sample # 3 **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	223 LF
WEATHERING	L	500 SF
RAVELING	L	250 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	63 LF
WEATHERING	H	167 SF
RAVELING	H	6 SF
SWELLING	L	5 SF

Sample # 5 **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	296 LF
WEATHERING	L	500 SF
RAVELING	L	250 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	62 LF
WEATHERING	H	50 SF
DEPRESSION	L	5 SF
PATCHING	L	1 SF

Sample # 7 **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	315 LF
WEATHERING	L	500 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	93 LF
RAVELING	L	250 SF
RAVELING	H	30 SF
DEPRESSION	L	14 SF
BLEEDING	N	7 SF
SWELLING	L	6 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	L	1985 LF	5.41 %	15.62
LONGITUDINAL/TRANSVERSE CRACKING	M	496 LF	1.35 %	12.91
WEATHERING	H	912 SF	2.49 %	12.09
RAVELING	H	68 SF	0.19 %	7.80
RAVELING	L	1836 SF	5.00 %	6.80
PATCHING	L	2 SF	0.01 %	2.00
WEATHERING	L	3672 SF	10.00 %	1.72
SWELLING	L	20 SF	0.06 %	1.00
DEPRESSION	L	35 SF	0.10 %	0.30
BLEEDING	N	13 SF	0.04 %	0.00

* 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 98.0 % Climate/Durability 2.0 % Other

ROUNDUP AIRPORT

FIFTEEN YEAR PROJECTIONS: ESTIMATED AVERAGE ANNUAL COST: \$176,769

PLAN YEAR: 2016			ESTIMATED COST:			\$1,856,962		PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after	
R-1	Reconstruct			\$1,764,472		\$1,764,472	53	100	
T-1	Prev. & Thin AC	\$5,288	\$71,604			\$76,892	61	72	
T-4	Basic Prev.	\$12				\$12	90	90	
A-1	Prev. & Seal Coat	\$5,394	\$10,192			\$15,586	60	65	

PLAN YEAR: 2017			ESTIMATED COST:			\$6,790		PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after	
T-1	Basic Prev.	\$1,862				\$1,862	70	70	
T-4	Basic Prev.	\$283				\$283	87	87	
A-1	Basic Prev.	\$4,645				\$4,645	63	63	

PLAN YEAR: 2018			ESTIMATED COST:			\$33,186		PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after	
A-1	Basic Prev.	\$5,611				\$5,611	60	61	
T-4	Prev. & Seal Coat	\$529	\$24,537			\$25,066	84	91	
T-1	Basic Prev.	\$2,509				\$2,509	69	69	

PLAN YEAR: 2019			ESTIMATED COST:			\$11,749		PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after	
A-1	Basic Prev.	\$7,011				\$7,011	58	58	
T-1	Basic Prev.	\$3,339				\$3,339	67	67	
R-1	Basic Prev.	\$1,130				\$1,130	87	88	
T-4	Basic Prev.	\$269				\$269	87	87	

PLAN YEAR: 2020			ESTIMATED COST:			\$15,905		PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after	
A-1	Basic Prev.	\$8,646				\$8,646	56	56	
T-4	Basic Prev.	\$535				\$535	84	84	
R-1	Basic Prev.	\$2,372				\$2,372	84	85	
T-1	Basic Prev.	\$4,352				\$4,352	64	65	

PLAN YEAR: 2021			ESTIMATED COST:			\$32,140		PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after	
A-1	Prev. & Seal Coat	\$10,463	\$11,815			\$22,278	53	59	
R-1	Basic Prev.	\$3,497				\$3,497	82	82	
T-1	Basic Prev.	\$5,589				\$5,589	62	62	
T-4	Basic Prev.	\$776				\$776	82	82	

PLAN YEAR: 2022			ESTIMATED COST:			\$175,800		PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after	
A-1	Basic Prev.	\$8,965				\$8,965	56	56	
R-1	Basic Prev.	\$4,527				\$4,527	80	80	
T-4	Basic Prev.	\$1,022				\$1,022	80	80	
T-1	Reconstruct			\$161,286		\$161,286	59	100	

PLAN YEAR: 2023			ESTIMATED COST:			\$48,874		PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after	
A-1	Basic Prev.	\$10,872				\$10,872	54	54	
T-4	Prev. & Seal Coat	\$1,747	\$28,445			\$30,192	78	82	
R-1	Basic Prev.	\$7,810				\$7,810	78	78	

PLAN YEAR: 2024			ESTIMATED COST:			\$25,030		PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after	
T-4	Basic Prev.	\$1,032				\$1,032	80	80	
R-1	Basic Prev.	\$10,988				\$10,988	77	77	
A-1	Basic Prev.	\$13,010				\$13,010	51	51	

PLAN YEAR: 2025			ESTIMATED COST:			\$264,941		PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after	
A-1	Reconstruct			\$249,010		\$249,010	48	100	
R-1	Basic Prev.	\$14,030				\$14,030	75	76	
T-1	Basic Prev.	\$130				\$130	87	88	
T-4	Basic Prev.	\$1,771				\$1,771	78	79	

PLAN YEAR: 2026							ESTIMATED COST:		PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after		
R-1	Basic Prev.	\$17,068				\$17,068	74	74		
T-1	Basic Prev.	\$272				\$272	84	85		
T-4	Basic Prev.	\$2,500				\$2,500	77	77		
PLAN YEAR: 2027							ESTIMATED COST:		PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after		
T-1	Basic Prev.	\$401				\$401	82	82		
T-4	Basic Prev.	\$3,196				\$3,196	76	76		
R-1	Basic Prev.	\$20,246				\$20,246	73	73		
PLAN YEAR: 2028							ESTIMATED COST:		PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after		
T-4	Prev. & Seal Coat	\$3,896	\$32,975			\$36,871	74	77		
T-1	Basic Prev.	\$519				\$519	80	80		
R-1	Basic Prev.	\$23,731				\$23,731	72	72		
A-1	Basic Prev.	\$147				\$147	87	87		
PLAN YEAR: 2029							ESTIMATED COST:		PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after		
T-4	Basic Prev.	\$3,309				\$3,309	76	76		
T-1	Basic Prev.	\$897				\$897	78	78		
R-1	Basic Prev.	\$27,658				\$27,658	70	70		
A-1	Basic Prev.	\$328				\$328	84	84		
PLAN YEAR: 2030							ESTIMATED COST:		PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after		
A-1	Basic Prev.	\$504				\$504	81	81		
R-1	Basic Prev.	\$37,201				\$37,201	69	69		
T-4	Basic Prev.	\$4,053				\$4,053	74	74		
T-1	Basic Prev.	\$1,260				\$1,260	77	77		