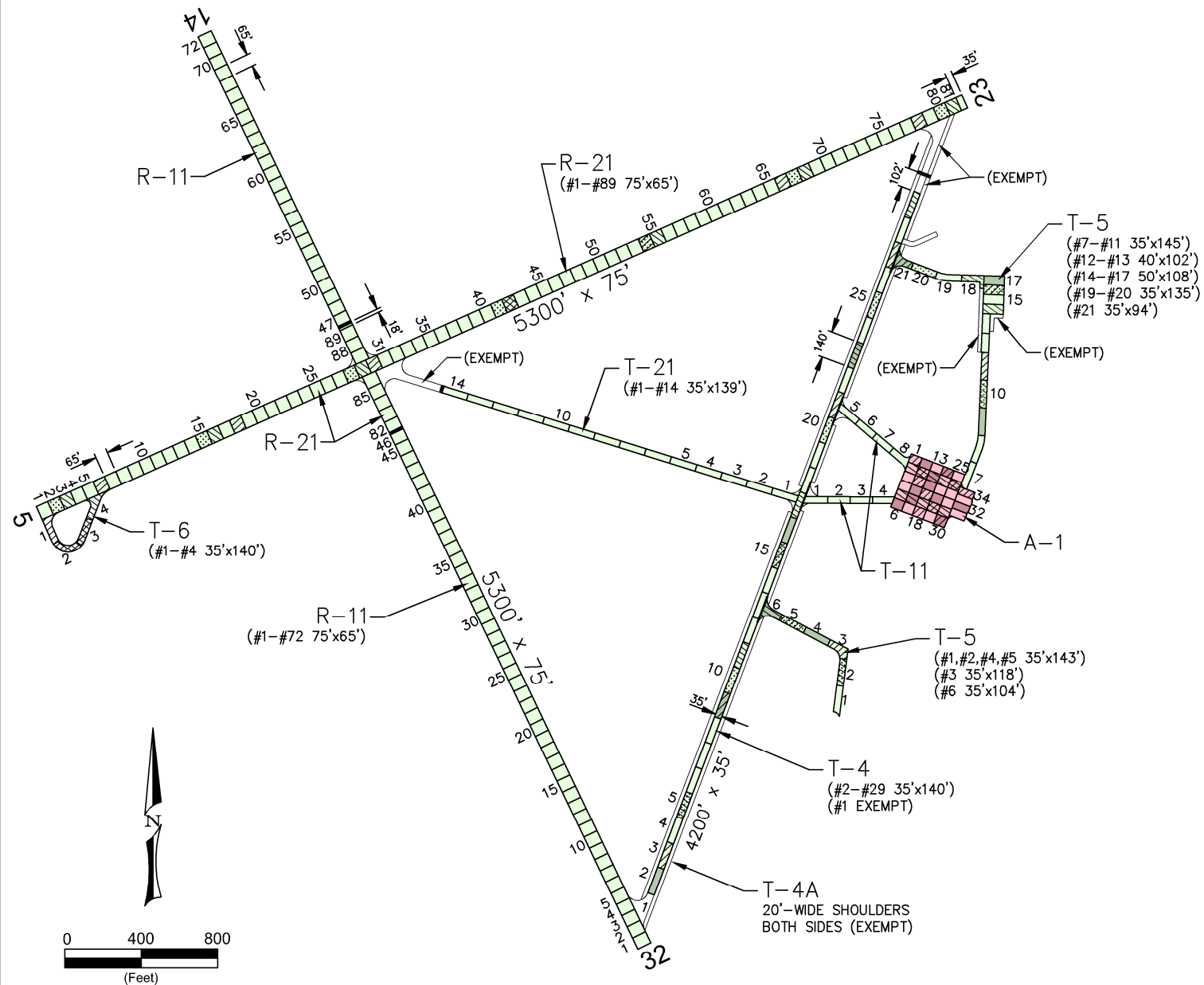
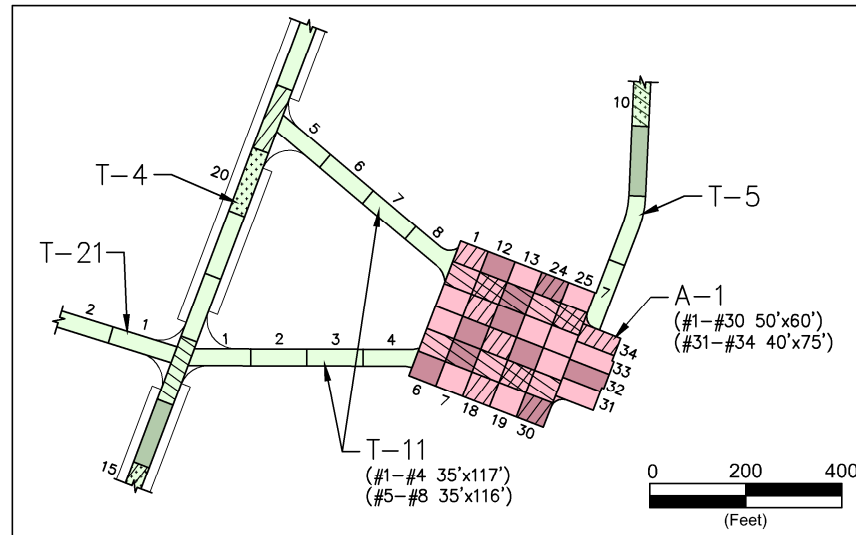


CUT BANK



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-11		CBR=3	12.5" P-207	6" P-209	3" P-401		30,000	30,000		9
R-21		CBR=3	8" GRAVEL	12" P-208 W/P-669 FABRIC	3" P-401	P-609	30,000	30,000		2,6,7,8
TAXIWAYS										
T-4			6" PULV. ASPH	3" P-208	3" P-401	1" P-402	12,500			4,6,7,8
T-4A					6.5" AC	P-609	12,500			4
T-5		CBR=5	6" COMP. P-152 W/P-669 FABRIC	7" P-207, 4" P-208	3" P-401	P-609	12,500			5,7,8
T-6		CBR=3		12" P-208 W/P-669 FABRIC	3" P-401	P-609	20,000	22,000	34,000	7,8
T-11		CBR=3	12.5" P-207	6" P-209	3" P-401		30,000	30,000		9
T-21		CBR=3	12" P-207	6" P-209	3" P-401		30,000	30,000		9
APRONS										
A-1	E-5	Rb			7" TO 10" PCC		4,000			A,5,6

REMARKS:

A. NTL'S REPORT JULY 1969 SHOWS THAT THE ASPHALTIC CONCRETE HAS COMPLETELY DETERIORATED AND THE BASE IS 'G-1' DUE TO PUMPING ACTION WITH CLAY SUBGRADE ON RUNWAY 4-22; ASSUME THE SAME HOLDS TRUE FOR OTHER PVMTS.

- ADAP-01, 1980, REHABILITATE RUNWAY 4/22 AND TAXIWAY.
- AIP-01, 1984, REHABILITATE RUNWAY 13/31, OVERLAY RUNWAY 4/22.
- AIP-02, 1990, REMOVED AND ABANDON 75'-WIDE OLD PAVEMENT ALONG RUNWAY 13/31.
- AIP-03, 1991, CONVERT RUNWAY 18/36 TO TAXIWAY C (T-4), 35' WIDE WITH 20' WIDE SHOULDERS.
- AIP-04, 2000, CONSTRUCT HANGAR ACCESS TAXIWAY; REPLACE SELECT CONCRETE APRON PANELS.
- AIP-005-2003, CRACK SEAL, FOG SEAL, AND REMARK (R-1,R-11,T-1,T-2,T-4); REPLACE SELECT CONCRETE PANELS (A-1).
- AIP-008-2007, RECONSTRUCT RUNWAY & TRANSITIONS (R-21); CONSTRUCT TURNAROUND (T-6); CRACK SEAL OTHER PVMTS.
- AIP-010-2012, CRACK SEAL, FOG SEAL, AND REMARK (R-21,T-4,T-5,T-6).
- AIP-011-2014, RECONSTRUCT RUNWAY 14/32 (R-11), TAXIWAYS A & B (T-11,T-21).

LEGEND [Grid] 2003 SURVEY AREA (NOT SURVEYED) [Grey] 2006 SURVEY AREA [Diagonal] 2009 SURVEY AREA [Cross-hatch] 2012 SURVEY AREA [Dotted] 2015 SURVEY AREA [Green] MAINTAIN: PCI > 60 [Yellow] TRANSITION: PCI 45 TO 60 [Red] RECONSTRUCT: PCI < 45	DATE OF PAVEMENT STRENGTH SURVEY:	SEPT. 22, 1987	MONTANA AVIATION SYSTEM PLAN 2015 UPDATE - PAVEMENT CONDITION INDEXES
	EVALUATED BY:	C. NEW	
	DATE OF MOST RECENT PAVEMENT CONDITION SURVEY:	SEPT. 28, 2015	Date: DECEMBER 2015 Prepared For: MONTANA DEPARTMENT OF TRANSPORTATION Prepared By: RPA Robert Peccia & Associates, Inc.
	EVALUATED BY:	D. SCHANDEL	LOCATION:

CUT BANK

CUT BANK AIRPORT

9/28/2015



R-21, Overview



R-21, Surface detail



T-4, Surface detail with cracking



T-4, Overview

CUT BANK AIRPORT

9/28/2015



T-5, Overview



T-5, Surface detail with tie down

CUT BANK AIRPORT

Branch: 13R3 **RUNWAY R-21**

Length: 5,785 LF **Width:** 75 LF **Area:** 437,850 SF **Last Const. :** 2007 **Family:** ACRMU15
From: STA. 12+00 RWY 5-23 **To:** STA. 65+00 RWY 5-23 **Surface:** AC

Inspections

Samples Surveyed: 7 **Total Samples:** 89 **Last Inspection Date (RPA)** 9/28/2015 **PCI:** **83**

Sample # 2 **Area:** 4875 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	117 LF
WEATHERING	L	244 SF
RAVELING	L	196 SF
PATCHING	L	1 SF
OIL SPILLAGE	N	1 SF

Sample # 15 **Area:** 4875 SF

Distress Description	Severity	Quantity
WEATHERING	L	244 SF
RAVELING	L	196 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	39 LF
PATCHING	L	1 SF

Sample # 28 **Area:** 4875 SF

Distress Description	Severity	Quantity
WEATHERING	L	244 SF
RAVELING	L	196 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	53 LF

Sample # 41 **Area:** 4875 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	121 LF
WEATHERING	L	244 SF
RAVELING	L	196 SF
PATCHING	L	1 SF

Sample # 54 **Area:** 4875 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	214 LF
WEATHERING	L	244 SF
RAVELING	L	196 SF
PATCHING	L	1 SF

Sample # 67 **Area:** 4875 SF

Distress Description	Severity	Quantity
WEATHERING	L	309 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	82 LF
RAVELING	L	163 SF

Sample # 80 **Area:** 4875 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	176 LF
WEATHERING	L	244 SF
RAVELING	L	98 SF
RAVELING	M	22 SF
PATCHING	L	1 SF
OIL SPILLAGE	N	1 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	L	10290 LF	2.35 %	8.34
RAVELING	L	15923 SF	3.64 %	5.68
RAVELING	M	282 SF	0.06 %	4.00
OIL SPILLAGE	N	26 SF	0.01 %	2.00
PATCHING	L	64 SF	0.01 %	2.00
WEATHERING	L	22749 SF	5.20 %	1.11

* 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 91.0 % Climate/Durability 9.0 % Other

CUT BANK AIRPORT Branch: 13T **TAXIWAY** **T-4**

Length: 4,480 LF **Width:** 35 LF **Area:** 156,800 SF **Last Const. :** 1991 **Family:** ACRMU15
From: R/W 31-13 **To:** R/W 22-4 **Surface:** AC

Inspections

Samples Surveyed: 5 **Total Samples:** 32 **Last Inspection Date (RPA)** 9/28/2015 **PCI:** 72

Sample # 5 **Area:** 4900 SF

Distress Description	Severity	Quantity
WEATHERING	L	2450 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	53 LF
RAVELING	L	102 SF
DEPRESSION	L	20 SF
RAVELING	H	10 SF
SWELLING	L	5 SF
PATCHING	L	2 SF

Sample # 10 **Area:** 4900 SF

Distress Description	Severity	Quantity
WEATHERING	L	2450 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	207 LF
RAVELING	L	102 SF
DEPRESSION	L	20 SF
RAVELING	H	10 SF
SWELLING	L	4 SF

Sample # 15 **Area:** 4900 SF

Distress Description	Severity	Quantity
WEATHERING	L	2450 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	208 LF
RAVELING	L	102 SF
DEPRESSION	L	25 SF
RAVELING	H	5 SF
SWELLING	L	2 SF

Sample # 20 **Area:** 4900 SF

Distress Description	Severity	Quantity
WEATHERING	L	2450 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	202 LF
RAVELING	L	102 SF
DEPRESSION	L	13 SF
RAVELING	H	5 SF
SWELLING	L	4 SF

Sample # 25 **Area:** 4900 SF

Distress Description	Severity	Quantity
WEATHERING	L	2450 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	119 LF
RAVELING	L	102 SF
DEPRESSION	L	10 SF
RAVELING	H	5 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	L	5050 LF	3.22 %	10.61
RAVELING	H	224 SF	0.14 %	7.29
WEATHERING	L	78400 SF	50.00 %	4.81
RAVELING	L	3264 SF	2.08 %	4.08
DEPRESSION	L	563 SF	0.36 %	2.14
PATCHING	L	13 SF	0.01 %	2.00
SWELLING	L	96 SF	0.06 %	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 90.0 % Climate/Durability 10.0 % Other

CUT BANK AIRPORT

Branch: 13T

TAXIWAY

T-5

Length: 2,798 LF **Width:** 35 LF **Area:** 104,013 SF **Last Const. :** 2000 **Family:** ACRMU15
From: T-4 **To:** HANGARS **Surface:** AC

Inspections

Samples Surveyed: 5 **Total Samples:** 21 **Last Inspection Date (RPA)** 9/28/2015 **PCI:** **63**

Sample # 2 **Area:** 5005 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	343 LF
WEATHERING	L	250 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	57 LF
RAVELING	L	100 SF
LONGITUDINAL/TRANSVERSE CRACKING	H	20 LF
DEPRESSION	L	51 SF
DEPRESSION	M	20 SF
RAVELING	H	15 SF
PATCHING	L	2 SF

Sample # 5 **Area:** 5005 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	183 LF
WEATHERING	L	250 SF
RAVELING	L	100 SF
RAVELING	H	10 SF
DEPRESSION	L	10 SF
SWELLING	L	4 SF

Sample # 10 **Area:** 5075 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	342 LF
WEATHERING	L	254 SF
WEATHERING	M	250 SF
RAVELING	L	102 SF
RAVELING	H	10 SF
DEPRESSION	L	10 SF
ALLIGATOR CRACKING	L	10 SF
PATCHING	L	1 SF

Sample # 16 **Area:** 5400 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	300 LF
LONGITUDINAL/TRANSVERSE CRACKING	M	85 LF
WEATHERING	L	270 SF
WEATHERING	M	250 SF
RAVELING	L	108 SF
PATCHING	L	12 SF
RAVELING	H	10 SF
DEPRESSION	H	3 SF
OIL SPILLAGE	N	1 SF

Sample # 20 **Area:** 4725 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	221 LF
WEATHERING	L	235 SF
RAVELING	L	94 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	6 LF
PATCHING	L	1 SF
OIL SPILLAGE	N	1 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	L	5731 LF	5.51 %	15.83
DEPRESSION	H	12 SF	0.01 %	12.00
LONGITUDINAL/TRANSVERSE CRACKING	M	611 LF	0.59 %	8.90
RAVELING	H	186 SF	0.18 %	7.74
LONGITUDINAL/TRANSVERSE CRACKING	H	83 LF	0.08 %	7.50
ALLIGATOR CRACKING	L	41 SF	0.04 %	7.00
DEPRESSION	M	83 SF	0.08 %	5.20
RAVELING	L	2079 SF	2.00 %	3.99
WEATHERING	M	2063 SF	1.98 %	2.24
OIL SPILLAGE	N	8 SF	0.01 %	2.00
PATCHING	L	66 SF	0.06 %	2.00

CUT BANK AIRPORT

Branch: 13T

TAXIWAY

T-5

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
DEPRESSION	L	293 SF	0.28 %	1.47
WEATHERING	L	5194 SF	4.99 %	1.09
SWELLING	L	17 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

9.0 % **Load**

63.0 % **Climate/Durability**

28.0 % **Other**

CUT BANK AIRPORT**FIFTEEN YEAR PROJECTIONS: ESTIMATED AVERAGE ANNUAL COST: \$165,992**

PLAN YEAR: 2016			ESTIMATED COST:			\$221,120	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-5	Prev. & Seal Coat	\$13,875	\$29,124			\$42,999	62	65
T-4	Prev. & Seal Coat	\$7,620	\$43,904			\$51,524	70	75
R-21	Prev. & Seal Coat	\$3,999	\$122,598			\$126,597	81	87
PLAN YEAR: 2017			ESTIMATED COST:			\$21,425	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-21	Basic Prev.	\$2,774				\$2,774	84	84
T-5	Basic Prev.	\$12,288				\$12,288	64	64
T-4	Basic Prev.	\$6,363				\$6,363	73	73
PLAN YEAR: 2018			ESTIMATED COST:			\$26,564	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-5	Basic Prev.	\$14,511				\$14,511	62	62
T-4	Basic Prev.	\$7,945				\$7,945	71	71
R-21	Basic Prev.	\$4,108				\$4,108	81	81
PLAN YEAR: 2019			ESTIMATED COST:			\$35,286	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-5	Basic Prev.	\$16,822				\$16,822	60	60
R-21	Basic Prev.	\$7,481				\$7,481	79	79
T-4	Basic Prev.	\$10,983				\$10,983	69	69
PLAN YEAR: 2020			ESTIMATED COST:			\$47,249	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-5	Basic Prev.	\$20,142				\$20,142	59	59
T-4	Basic Prev.	\$14,613				\$14,613	67	67
R-21	Basic Prev.	\$12,494				\$12,494	76	76
PLAN YEAR: 2021			ESTIMATED COST:			\$286,415	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-4	Prev. & Seal Coat	\$18,287	\$50,897			\$69,184	65	69
R-21	Prev. & Seal Coat	\$17,523	\$142,125			\$159,648	74	79
T-5	Prev. & Seal Coat	\$23,820	\$33,762			\$57,583	57	60
PLAN YEAR: 2022			ESTIMATED COST:			\$48,878	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-21	Basic Prev.	\$12,735				\$12,735	76	77
T-5	Basic Prev.	\$21,015				\$21,015	59	59
T-4	Basic Prev.	\$15,128				\$15,128	67	67
PLAN YEAR: 2023			ESTIMATED COST:			\$61,997	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-4	Basic Prev.	\$19,034				\$19,034	65	65
R-21	Basic Prev.	\$18,075				\$18,075	74	74
T-5	Basic Prev.	\$24,888				\$24,888	57	57
PLAN YEAR: 2024			ESTIMATED COST:			\$75,644	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-4	Basic Prev.	\$23,041				\$23,041	63	63
R-21	Basic Prev.	\$23,451				\$23,451	72	72
T-5	Basic Prev.	\$29,152				\$29,152	55	55
PLAN YEAR: 2025			ESTIMATED COST:			\$90,194	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-4	Basic Prev.	\$27,149				\$27,149	62	62
T-5	Basic Prev.	\$33,854				\$33,854	53	53
R-21	Basic Prev.	\$29,191				\$29,191	70	70
PLAN YEAR: 2026			ESTIMATED COST:			\$374,979	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-5	Prev. & Seal Coat	\$39,146	\$39,140			\$78,286	51	56
T-4	Prev. & Seal Coat	\$31,441	\$59,003			\$90,444	60	64
R-21	Prev. & Seal Coat	\$41,487	\$164,762			\$206,249	68	72
PLAN YEAR: 2027			ESTIMATED COST:			\$93,917	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-5	Basic Prev.	\$35,420				\$35,420	54	54
R-21	Basic Prev.	\$30,085				\$30,085	70	70
T-4	Basic Prev.	\$28,412				\$28,412	62	62

PLAN YEAR: 2028			ESTIMATED COST:			\$116,775	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-5	Basic Prev.	\$40,975				\$40,975	52	52
R-21	Basic Prev.	\$42,825				\$42,825	68	68
T-4	Basic Prev.	\$32,975				\$32,975	60	60
PLAN YEAR: 2029			ESTIMATED COST:			\$873,522	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-5	Reconstruct			\$778,168		\$778,168	49	100
R-21	Basic Prev.	\$55,943				\$55,943	66	66
T-4	Basic Prev.	\$39,411				\$39,411	59	59
PLAN YEAR: 2030			ESTIMATED COST:			\$115,917	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-21	Basic Prev.	\$69,275				\$69,275	65	65
T-4	Basic Prev.	\$46,642				\$46,642	57	57