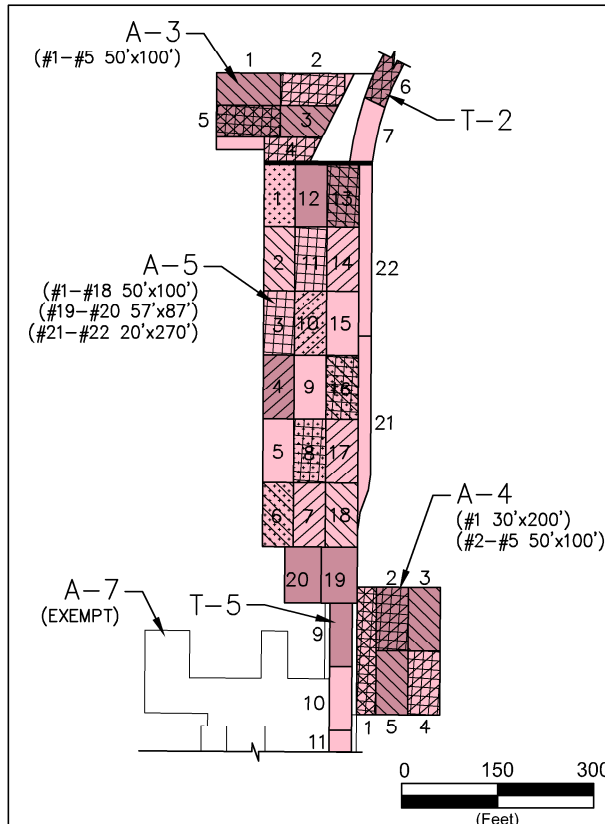
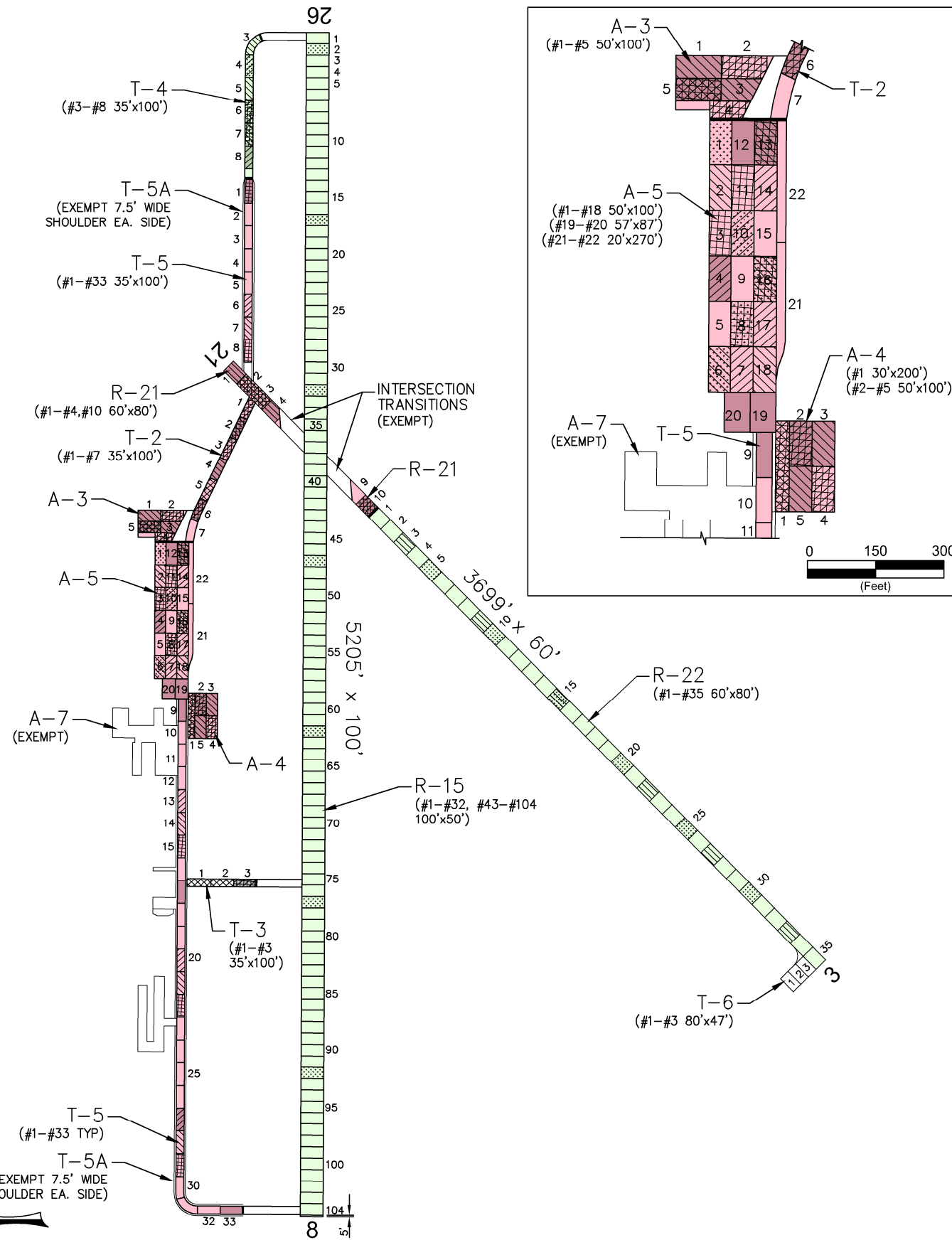


HAVRE



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-15	E-7	F7	16" BC	2" P-208	4" P-401		30,000	40,000	50,000	10
R-21	E-7	F7	16" BC	2" P-208	3" P-403		12,500			9,10
R-22	E-7	F7	16" BC	2" P-208	3" P-403		12,500			9,10
TAXIWAYS										
T-2			8" CR. AGG.	6" P-153 PULV.	3" P-401	1"P-402,P-609	30,000	40,000	50,000	3,6,7,8
T-3	E-7	F7	6" P-154	6" P-209	2" P-401	1"P-402,P-609	12,500	40,000	50,000	3,6,7,8
T-4			11.5" P-154	6" P-208	3" P-401	1"P-402,P-609	30,000			2,6,7,8
T-5			8" CR. AGG.	6" P-153 PULV.	3" P-401	1"P-402,P-608	30,000	40,000	50,000	4,6,7,8,10
T-6				9" P-208	3" P-403		12,500			9
APRONS										
A-3	E-7	F7		5" CR. AGG.	6" AC, SEAL COAT	4"P-401, 1"P-402, P-609	30,000			6,7,8
A-4	E-7	F7		8" CR. AGG.	3" AC		25,000			1
A-5	E-7	F7	16" P-153	3" P-208	4" P-401	1"P-402,P-609	45,000	55,000	75,000	3,6,7,8
A-7				UNKNOWN	UNKNOWN	P-609	12,500			5,6,7,8

REMARKS:

AIP-01, 1985, ENTIRE RUNWAY 7/25 CHIP SEALED P-609 WITH PRIOR HEATER SCARIFIER AND LEVEL UP. CENTER 100' WIDTH; OUTER 25' CHIPPED ONLY.

- AIP-02, 1987 QUAD HANGAR TAXIWAYS CONSTRUCTED UNDER AIP-02 NOT SHOWN IN DETAIL.
- AIP-03, 1993 RUNWAY 7/25 RECONSTRUCTION AND TAXIWAY CENTER EXTENSION.
- AIP-04, 1994, RECONSTRUCT APRON; REHABILITATE RUNWAY 3/21; REHABILITATE TAXIWAYS (T-2,T-3).
- AIP-05, 1995, REHABILITATE TAXIWAY (T-5).
- 1995, APRON (A-7) CONSTRUCTED.
- AIP-07, 2001, CRACK SEAL, FOG SEAL, AND REMARK.
- AIP-009-2005, CRACK SEAL, FOG SEAL, AND REMARK.
- AIP-011-2009, CRACK SEAL, FOG SEAL, AND REMARK.
- AIP-014-2010, MILL AND OVERLAY RUNWAY 3/21 (R-11,R-12).
- AIP-017-2015, RECONSTRUCT RUNWAY 8/26 (R-15); SEAL COAT RUNWAY 3/21 (R-11,R-12) AND TAXIWAY (T-5). [INSPECTED DURING/AFTER PROJECT]

LEGEND	DATE OF PAVEMENT STRENGTH SURVEY:	AUG. 23, 1987
	EVALUATED BY:	C. NEW
	DATE OF MOST RECENT PAVEMENT CONDITION SURVEY:	OCT. 5, 2015
	EVALUATED BY:	S. MARKWARDT
<ul style="list-style-type: none"> 2003 SURVEY AREA 2006 SURVEY AREA 2009 SURVEY AREA 2012 SURVEY AREA 2015 SURVEY AREA 	LOCATION:	HAVRE MONTANA

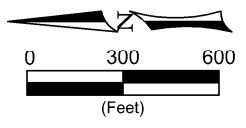
**MONTANA AVIATION SYSTEM PLAN
2015 UPDATE - PAVEMENT CONDITION INDEXES**

**HAVRE CITY-COUNTY AIRPORT
(HVR)**

Date: DECEMBER 2015

Prepared For: MONTANA DEPARTMENT OF TRANSPORTATION

Prepared By: RPA Robert Peccia & Associates, Inc.



HAVRE AIRPORT

9/29/2015



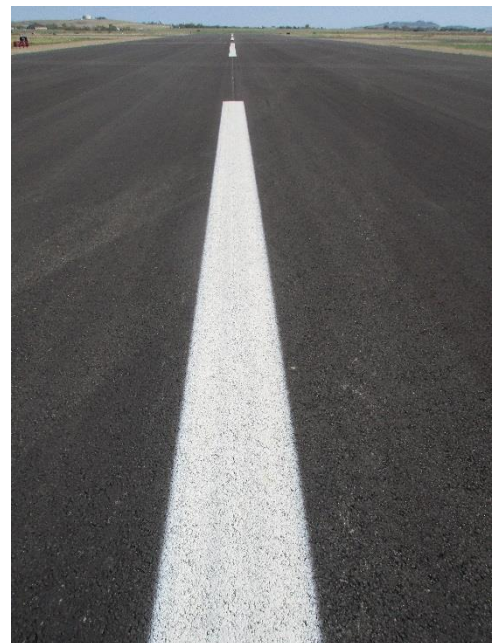
A-5, Surface detail with alligator cracking



A-5, Overview



R-15, Surface detail with concrete patch



R-15, Overview

HAVRE AIRPORT

9/29/2015



R-22, Overview



R-22, Surface detail with grass



T-4, Surface detail



T-4, Overview

HAVRE AIRPORT

Branch: 16A

APRON

A-5

Length: 675 LF **Width:** 170 LF **Area:** 109,350 SF **Last Const. :** 1994 **Family:** ACAH15
From: Hangar **To:** T-2 & T-5 **Surface:** AC

Inspections

Samples Surveyed: 5 **Total Samples:** 22 **Last Inspection Date (RPA)** 9/29/2015 **PCI:** 33

Sample # 1 **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	914 LF
WEATHERING	L	1000 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	250 LF
RAVELING	L	500 SF
ALLIGATOR CRACKING	L	52 SF
DEPRESSION	L	51 SF
PATCHING	M	18 SF
DEPRESSION	M	14 SF
SWELLING	L	10 SF
PATCHING	L	4 SF

Sample # 6 **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	680 LF
WEATHERING	L	1000 SF
RAVELING	L	500 SF
PATCHING	L	432 SF
ALLIGATOR CRACKING	L	250 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	64 LF
ALLIGATOR CRACKING	M	200 SF
DEPRESSION	L	70 SF
DEPRESSION	M	8 SF
PATCHING	M	4 SF
OIL SPILLAGE	N	2 SF

Sample # 8 **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	904 LF
LONGITUDINAL/TRANSVERSE CRACKING	M	362 LF
WEATHERING	L	1000 SF
RAVELING	L	500 SF
ALLIGATOR CRACKING	L	190 SF
DEPRESSION	L	55 SF
DEPRESSION	M	10 SF
OIL SPILLAGE	N	6 SF
SWELLING	L	2 SF

Sample # 10 **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	784 LF
LONGITUDINAL/TRANSVERSE CRACKING	M	310 LF
WEATHERING	L	1000 SF
RAVELING	L	500 SF
ALLIGATOR CRACKING	L	50 SF
DEPRESSION	L	46 SF
PATCHING	M	8 SF
DEPRESSION	M	8 SF
OIL SPILLAGE	N	6 SF
PATCHING	L	1 SF

Sample # 16 **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	917 LF
LONGITUDINAL/TRANSVERSE CRACKING	M	324 LF
WEATHERING	L	1000 SF
RAVELING	L	500 SF
ALLIGATOR CRACKING	L	82 SF
DEPRESSION	L	42 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	L	18366 LF	16.80 %	30.44
ALLIGATOR CRACKING	L	2729 SF	2.50 %	29.27
ALLIGATOR CRACKING	M	875 SF	0.80 %	27.05

HAVRE AIRPORT

Branch: 16A

APRON

A-5

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	M	5730 LF	5.24 %	26.34
RAVELING	L	10935 SF	10.00 %	9.83
DEPRESSION	L	1155 SF	1.06 %	6.96
PATCHING	M	131 SF	0.12 %	6.58
DEPRESSION	M	175 SF	0.16 %	5.61
PATCHING	L	1911 SF	1.75 %	5.09
WEATHERING	L	21870 SF	20.00 %	2.81
OIL SPILLAGE	N	61 SF	0.06 %	2.00
SWELLING	L	52 SF	0.05 %	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

37.0 % Load

53.0 % Climate/Durability

10.0 % Other

HAVRE AIRPORT

Branch: 16R1

RUNWAY

R-15

Length: 5,300 LF **Width:** 100 LF **Area:** 530,000 SF **Last Const. :** 2015 **Family:** ACRMU15
From: T-5 **To:** T-4 **Surface:** AC

Inspections

Samples Surveyed: 6 **Total Samples:** 106 **Last Inspection Date (RPA)** 9/29/2015 **PCI: 100**

Sample #	Distress Description	Severity	Quantity	Area:
Sample # 2	NONE			5000 SF
Sample # 17	NONE			5000 SF
Sample # 32	NONE			5000 SF
Sample # 47	PATCHING	L	1 SF	5000 SF
Sample # 62	NONE			5000 SF
Sample # 84	NONE			5000 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
PATCHING	L	18 SF	0.00 %	2.00

* 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

HAVRE AIRPORT

Branch: 16R2

RUNWAY

R-22

Length: 2,860 LF **Width:** 60 LF **Area:** 171,600 SF **Last Const. :** 2010 **Family:** ACRMU15
From: STA 8+40 RWY 3-21 **To:** STA 37+00 RWY 3-21 **Surface:** AC

Inspections

Samples Surveyed: 6 **Total Samples:** 35 **Last Inspection Date (RPA)** 9/29/2015 **PCI:** **96**

Sample # 5	Distress Description RAVELING	Severity L	Quantity 40 SF	Area: 4800 SF
Sample # 10	Distress Description LONGITUDINAL/TRANSVERSE CRACKING RAVELING	Severity L L	Quantity 42 LF 25 SF	Area: 4800 SF
Sample # 15	Distress Description RAVELING SWELLING PATCHING	Severity L L L	Quantity 25 SF 1 SF 1 SF	Area: 4800 SF
Sample # 20	Distress Description RAVELING	Severity L	Quantity 40 SF	Area: 4800 SF
Sample # 25	Distress Description LONGITUDINAL/TRANSVERSE CRACKING RAVELING	Severity L L	Quantity 42 LF 20 SF	Area: 4800 SF
Sample # 30	Distress Description RAVELING	Severity L	Quantity 15 SF	Area: 4800 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	L	501 LF	0.29 %	3.58
PATCHING	L	6 SF	0.00 %	2.00
RAVELING	L	983 SF	0.57 %	1.90
SWELLING	L	6 SF	0.00 %	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 88.0 % Climate/Durability 12.0 % Other

HAVRE AIRPORT

Branch: 16T

TAXIWAY

T-4

Length: 900 LF **Width:** 35 LF **Area:** 31,500 SF **Last Const. :** 1993 **Family:** ACRMU15
From: T-1 **To:** RWY 7/25 EAST END **Surface:** AC

Inspections

Samples Surveyed: 3 **Total Samples:** 9 **Last Inspection Date (RPA)** 9/29/2015 **PCI:** **66**

Sample # 4	Distress Description	Severity	Quantity	Area: 3500 SF
	WEATHERING	L	700 SF	
	LONGITUDINAL/TRANSVERSE CRACKING	L	168 LF	
	RAVELING	L	350 SF	
	LONGITUDINAL/TRANSVERSE CRACKING	M	9 LF	
	SWELLING	L	7 SF	

Sample # 6	Distress Description	Severity	Quantity	Area: 3500 SF
	LONGITUDINAL/TRANSVERSE CRACKING	L	256 LF	
	WEATHERING	L	700 SF	
	RAVELING	L	350 SF	
	LONGITUDINAL/TRANSVERSE CRACKING	M	22 LF	
	RAVELING	H	5 SF	
	SWELLING	L	2 SF	

Sample # 7	Distress Description	Severity	Quantity	Area: 3500 SF
	LONGITUDINAL/TRANSVERSE CRACKING	L	216 LF	
	WEATHERING	L	700 SF	
	RAVELING	L	350 SF	
	LONGITUDINAL/TRANSVERSE CRACKING	M	11 LF	
	RAVELING	H	3 SF	

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	L	1920 LF	6.10 %	16.99
RAVELING	L	3150 SF	10.00 %	9.83
LONGITUDINAL/TRANSVERSE CRACKING	M	126 LF	0.40 %	7.49
RAVELING	H	24 SF	0.08 %	6.00
WEATHERING	L	6300 SF	20.00 %	2.81
SWELLING	L	27 SF	0.09 %	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 98.0 % Climate/Durability 2.0 % Other

HAVRE AIRPORT**FIFTEEN YEAR PROJECTIONS: ESTIMATED AVERAGE ANNUAL COST: \$159,842**

PLAN YEAR: 2016			ESTIMATED COST:			\$913,621	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
A-5	Reconstruct			\$853,477		\$853,477	31	100
T-4	Prev. & Seal Coat	\$3,276	\$8,820			\$12,096	65	69
R-22	Seal Coat		\$48,048			\$48,048	93	100
PLAN YEAR: 2017			ESTIMATED COST:			\$2,738	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-4	Basic Prev.	\$2,738				\$2,738	67	67
PLAN YEAR: 2018			ESTIMATED COST:			\$3,517	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-4	Basic Prev.	\$3,415				\$3,415	65	65
A-5	Basic Prev.	\$102				\$102	89	90
PLAN YEAR: 2019			ESTIMATED COST:			\$6,100	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-15	Basic Prev.	\$1,361				\$1,361	88	88
T-4	Basic Prev.	\$4,103				\$4,103	63	63
A-5	Basic Prev.	\$636				\$636	85	85
PLAN YEAR: 2020			ESTIMATED COST:			\$9,711	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
A-5	Basic Prev.	\$1,173				\$1,173	80	81
R-15	Basic Prev.	\$3,115				\$3,115	85	85
T-4	Basic Prev.	\$4,822				\$4,822	61	61
R-22	Basic Prev.	\$601				\$601	87	87
PLAN YEAR: 2021			ESTIMATED COST:			\$80,677	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
A-5	Basic Prev.	\$3,062				\$3,062	76	77
R-22	Prev. & Seal Coat	\$1,183	\$55,701			\$56,884	84	90
T-4	Prev. & Seal Coat	\$5,615	\$10,225			\$15,839	60	63
R-15	Basic Prev.	\$4,892				\$4,892	82	82
PLAN YEAR: 2022			ESTIMATED COST:			\$18,516	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-22	Basic Prev.	\$571				\$571	87	87
T-4	Basic Prev.	\$5,044				\$5,044	62	62
R-15	Basic Prev.	\$7,772				\$7,772	79	80
A-5	Basic Prev.	\$5,129				\$5,129	73	73
PLAN YEAR: 2023			ESTIMATED COST:			\$29,427	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-4	Basic Prev.	\$5,846				\$5,846	60	60
R-22	Basic Prev.	\$1,190				\$1,190	84	85
A-5	Basic Prev.	\$7,948				\$7,948	69	70
R-15	Basic Prev.	\$14,443				\$14,443	77	77
PLAN YEAR: 2024			ESTIMATED COST:			\$42,914	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-4	Basic Prev.	\$7,021				\$7,021	58	58
R-22	Basic Prev.	\$1,820				\$1,820	82	82
A-5	Basic Prev.	\$12,910				\$12,910	66	66
R-15	Basic Prev.	\$21,163				\$21,163	75	75
PLAN YEAR: 2025			ESTIMATED COST:			\$57,169	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-4	Basic Prev.	\$8,292				\$8,292	57	57
R-15	Basic Prev.	\$27,882				\$27,882	72	73
A-5	Basic Prev.	\$17,906				\$17,906	62	63
R-22	Basic Prev.	\$3,089				\$3,089	79	79
PLAN YEAR: 2026			ESTIMATED COST:			\$149,571	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-4	Prev. & Seal Coat	\$9,678	\$11,853			\$21,531	55	59
A-5	Basic Prev.	\$23,410				\$23,410	59	60
R-22	Prev. & Seal Coat	\$5,442	\$64,573			\$70,015	77	82
R-15	Basic Prev.	\$34,615				\$34,615	70	70

PLAN YEAR: 2027		ESTIMATED COST:				\$90,927	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-22	Basic Prev.	\$3,030				\$3,030	79	79
R-15	Basic Prev.	\$48,494				\$48,494	68	68
T-4	Basic Prev.	\$8,660				\$8,660	57	57
A-5	Basic Prev.	\$30,743				\$30,743	56	57
PLAN YEAR: 2028		ESTIMATED COST:				\$773,143	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-22	Basic Prev.	\$5,539				\$5,539	77	77
R-15	Basic Prev.	\$64,004				\$64,004	67	67
T-4	Basic Prev.	\$10,125				\$10,125	55	55
A-5	Reconstruct			\$693,475		\$693,475	54	100
PLAN YEAR: 2029		ESTIMATED COST:				\$99,499	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-4	Basic Prev.	\$11,747				\$11,747	53	53
R-15	Basic Prev.	\$79,698				\$79,698	65	65
R-22	Basic Prev.	\$8,054				\$8,054	75	75
PLAN YEAR: 2030		ESTIMATED COST:				\$120,095	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-4	Basic Prev.	\$13,579				\$13,579	51	51
A-5	Basic Prev.	\$146				\$146	89	90
R-15	Basic Prev.	\$95,801				\$95,801	63	63
R-22	Basic Prev.	\$10,569				\$10,569	72	72