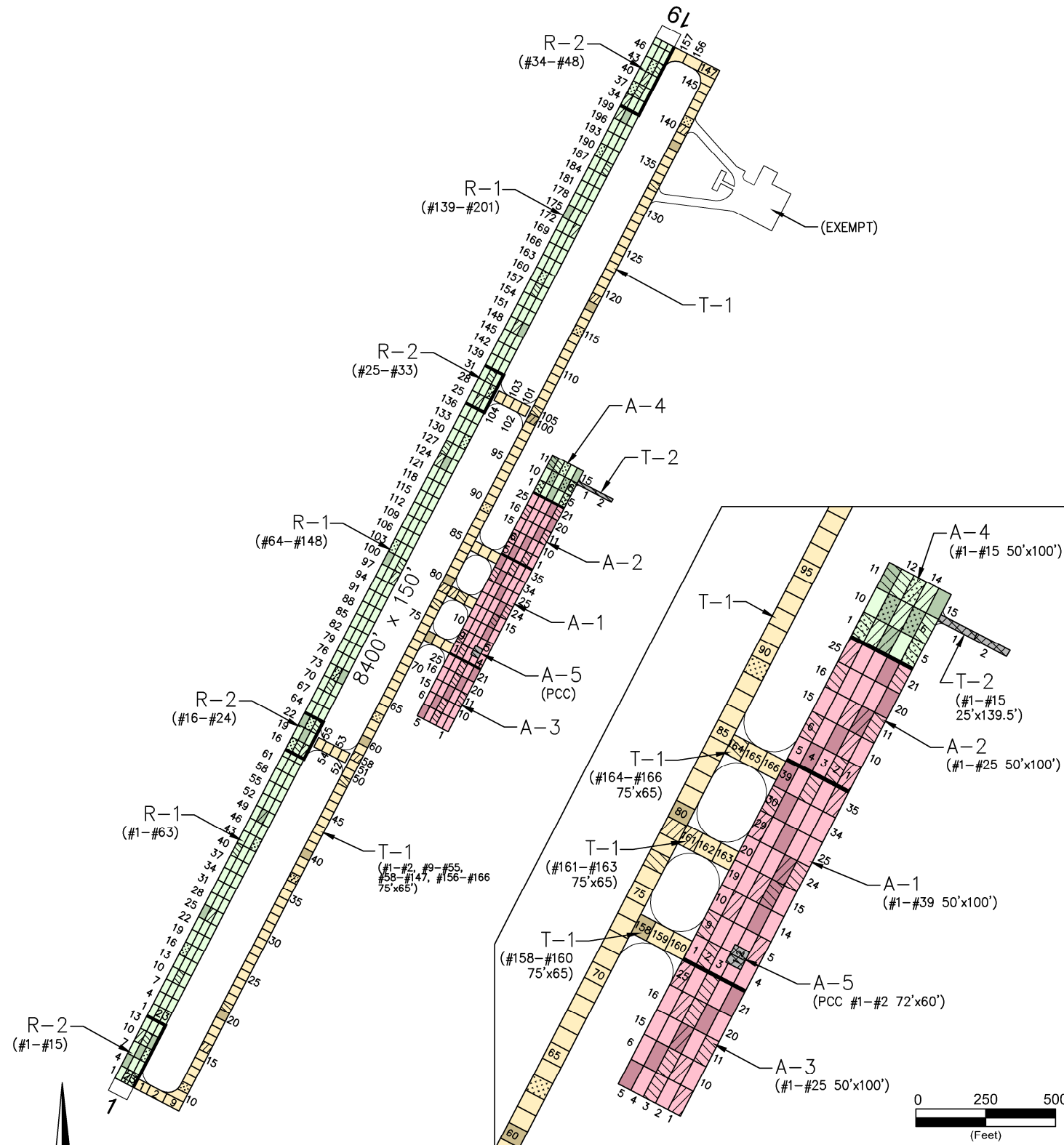
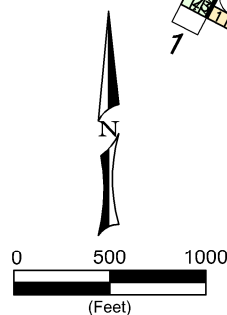


WEST YELLOWSTONE



RUNWAY SAMPLE SIZE:
R-1, R-2 = 100'x50'



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-1	FA		7" P-201	2.5" P-401	3" P-401,P-609	105,000	190,000	360,000	2,3
R-2	E-1	FA		8" P-201	3" P-401	3" P-401,P-609	90,000	150,000	280,000	2,3
TAXIWAYS										
T-1	E-1	FA		8" P-201	3" P-401	P-609	90,000	150,000	280,000	3
T-2			P-152	4" P-208	3" P-401	P-609	12,500			1,3
APRONS										
A-1	E-1	FA		8" P-201	3" P-401	P-609	90,000	150,000	280,000	3
A-2	E-1	FA			1.5"	P-609	30,000			A,3
A-3	E-1	FA		7" P-201	4" P-401	P-609	90,000	150,000	280,000	3
A-4				6" P-152	6" P-208	P-609				1,3
A-5				32"		16" P-501				3

REMARKS:

- SEPT. 1969, CRITICAL AIRCRAFT IS 100,000 LBS. (737) ON DUAL GEAR.
- A. ESTIMATED SINGLE WHEEL LOADING.
- 1. AIP-03, 1991, CONSTRUCT ACCESS TAXIWAY (T-2); REHABILITATE APRON (A-4).
- 2. AIP-005-2003, OVERLAY AND GROOVE RUNWAY 1/19 (R-1,R-2).
- 3. AIP-014-2013, CRACK SEAL, FOG SEAL, AND REMARK PAVEMENTS; RESEAL CONCRETE JOINTS (A-5).

LEGEND

- 2003 SURVEY AREA (NOT SURVEYED)
- 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:	
EVALUATED BY:	
DATE OF MOST RECENT PAVEMENT CONDITION SURVEY:	SEPT. 10, 2015
EVALUATED BY:	S. MRAKWARDT
LOCATION:	W. YELLOWSTONE MONTANA

**MONTANA AVIATION SYSTEM PLAN
2015 UPDATE - PAVEMENT CONDITION INDEXES
WEST YELLOWSTONE AIRPORT
(WYS)**

Date: DECEMBER 2015

Prepared For: MONTANA DEPARTMENT OF TRANSPORTATION

Prepared By: RPA Robert Peccia & Associates, Inc.

WEST YELLOWSTONE

WEST YELLOWSTONE AIRPORT

9/10/2015



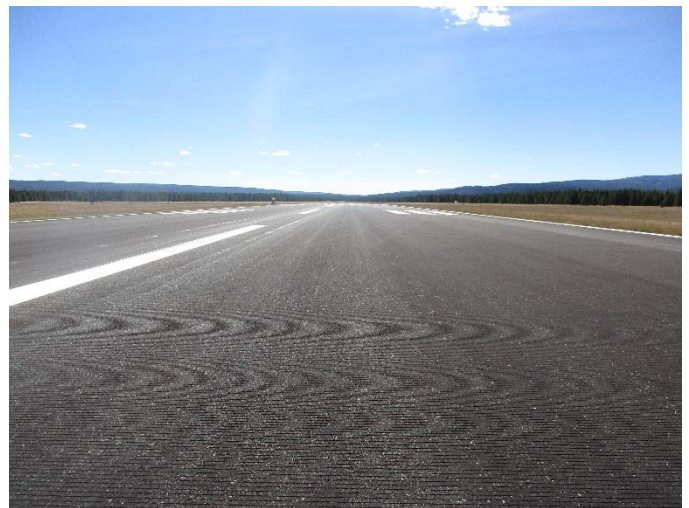
A-4, Overview



A-4, Surface detail with cracking



R-1, Surface detail with weathering & raveling



R-1, Overview

WEST YELLOWSTONE AIRPORT

9/10/2015



R-2, Overview



R-2, Surface detail with raveling



T-1, Surface detail with cracking and patch



T-1, Overview

WEST YELLOWSTONE AIRPORT

Branch: 10A

APRON

A-4

Length: 300 LF **Width:** 250 LF **Area:** 75,000 SF **Last Const. :** 1980 **Family:** ACPS15
From: STA 18+00A **To:** STA 21+00A **Surface:** AC

Inspections

Samples Surveyed: 5 **Total Samples:** 15 **Last Inspection Date (RPA)** 9/10/2015 **PCI:** 76

Sample # 1 **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	262 LF
WEATHERING	L	50 SF
RAVELING	L	25 SF
BLEEDING	N	5 SF
DEPRESSION	L	2 SF

Sample # 5 **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	272 LF
WEATHERING	L	50 SF
RAVELING	L	25 SF
PATCHING	L	10 SF
DEPRESSION	H	5 SF
OIL SPILLAGE	N	4 SF

Sample # 7 **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	173 LF
WEATHERING	L	50 SF
RAVELING	L	25 SF
PATCHING	L	16 SF
DEPRESSION	H	8 SF
OIL SPILLAGE	N	1 SF

Sample # 9 **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	94 LF
WEATHERING	L	50 SF
RAVELING	L	25 SF
BLEEDING	N	14 SF
PATCHING	L	2 SF
DEPRESSION	H	1 SF

Sample # 13 **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	157 LF
WEATHERING	L	50 SF
RAVELING	L	25 SF
PATCHING	L	16 SF
SWELLING	L	12 SF
DEPRESSION	L	10 SF
DEPRESSION	H	8 SF
OIL SPILLAGE	N	3 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	L	2874 LF	3.83 %	12.12
DEPRESSION	H	66 SF	0.09 %	12.00
PATCHING	L	132 SF	0.18 %	2.01
OIL SPILLAGE	N	24 SF	0.03 %	2.00
RAVELING	L	375 SF	0.50 %	1.77
SWELLING	L	36 SF	0.05 %	1.00
WEATHERING	L	750 SF	1.00 %	0.49
DEPRESSION	L	36 SF	0.05 %	0.30
BLEEDING	N	57 SF	0.08 %	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 52.0 % Climate/Durability 48.0 % Other

WEST YELLOWSTONE AIRPORT

Branch: 10T

TAXIWAY

T-1

Length: 0 LF **Width:** 0 LF **Area:** 750,000 SF **Last Const. :** 1980 **Family:** ACPS15
From: STA 0+00 **To:** STA 84+00 **Surface:** AC

Inspections

Samples Surveyed: 6 **Total Samples:** 166 **Last Inspection Date (RPA)** 9/10/2015 **PCI:** 48

Sample # 11 **Area:** 4875 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	917 LF
WEATHERING	L	500 SF
RAVELING	L	192 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	57 LF
RUTTING	L	65 SF

Sample # 37 **Area:** 4875 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	955 LF
WEATHERING	L	500 SF
RAVELING	L	192 SF
RUTTING	L	130 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	28 LF
RAVELING	M	65 SF

Sample # 63 **Area:** 4875 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	932 LF
WEATHERING	L	788 SF
RAVELING	L	192 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	47 LF
RUTTING	L	65 SF
RAVELING	M	65 SF
SWELLING	L	7 SF
RAVELING	H	2 SF
BLEEDING	N	1 SF

Sample # 90 **Area:** 4875 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	936 LF
WEATHERING	L	500 SF
RAVELING	L	288 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	67 LF
BLEEDING	N	1 SF

Sample # 115 **Area:** 4875 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	854 LF
WEATHERING	L	500 SF
RAVELING	L	192 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	37 LF
RUTTING	L	65 SF
RAVELING	H	1 SF

Sample # 141 **Area:** 4875 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	1003 LF
WEATHERING	L	500 SF
RAVELING	L	192 SF
RUTTING	L	65 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	10 LF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	L	143513 LF	19.14 %	32.24
RUTTING	L	10000 SF	1.33 %	16.58
LONGITUDINAL/TRANSVERSE CRACKING	M	6308 LF	0.84 %	10.41
RAVELING	L	32000 SF	4.27 %	6.22
RAVELING	H	77 SF	0.01 %	6.00
RAVELING	M	3333 SF	0.44 %	5.91
WEATHERING	L	84308 SF	11.24 %	1.87
SWELLING	L	179 SF	0.02 %	1.00
BLEEDING	N	51 SF	0.01 %	0.00

WEST YELLOWSTONE AIRPORT

Branch: 10T

TAXIWAY

T-1

* 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

21.0 % **Load**

78.0 % **Climate/Durability**

1.0 % **Other**

WEST YELLOWSTONE AIRPORT

FIFTEEN YEAR PROJECTIONS: ESTIMATED AVERAGE ANNUAL COST: \$919,057

PLAN YEAR: 2016				ESTIMATED COST:		\$3,943,053	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-1	Prev. & Thin AC	\$277,803	\$1,462,498			\$1,740,302	46	55
R-2	Prev. & Seal Coat	\$2,269	\$69,300			\$71,570	81	84
A-4	Prev. & Thin AC	\$2,271	\$146,250			\$148,521	75	82
R-1	Prev. & Thin AC	\$8,287	\$1,974,373			\$1,982,660	82	90

PLAN YEAR: 2017				ESTIMATED COST:		\$194,701	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-1	Basic Prev.	\$1,967				\$1,967	88	88
R-2	Basic Prev.	\$1,954				\$1,954	82	82
T-1	Basic Prev.	\$190,041				\$190,041	54	54
A-4	Basic Prev.	\$739				\$739	80	80

PLAN YEAR: 2018				ESTIMATED COST:		\$222,059	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-1	Basic Prev.	\$3,742				\$3,742	87	87
A-4	Basic Prev.	\$1,095				\$1,095	79	79
R-2	Basic Prev.	\$2,386				\$2,386	81	81
T-1	Basic Prev.	\$214,836				\$214,836	52	52

PLAN YEAR: 2019				ESTIMATED COST:		\$252,145	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-1	Basic Prev.	\$241,807				\$241,807	50	50
R-2	Basic Prev.	\$3,214				\$3,214	80	80
R-1	Basic Prev.	\$5,561				\$5,561	85	85
A-4	Basic Prev.	\$1,563				\$1,563	78	78

PLAN YEAR: 2020				ESTIMATED COST:		\$291,360	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-1	Basic Prev.	\$277,051				\$277,051	49	49
R-2	Basic Prev.	\$4,814				\$4,814	78	78
A-4	Basic Prev.	\$2,052				\$2,052	76	76
R-1	Basic Prev.	\$7,443				\$7,443	83	84

PLAN YEAR: 2021				ESTIMATED COST:		\$415,383	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-1	Basic Prev.	\$9,367				\$9,367	82	82
T-1	Basic Prev.	\$316,654				\$316,654	47	47
A-4	Basic Prev.	\$2,563				\$2,563	75	75
R-2	Prev. & Seal Coat	\$6,461	\$80,338			\$86,799	77	80

PLAN YEAR: 2022				ESTIMATED COST:		\$5,179,537	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-2	Basic Prev.	\$5,000				\$5,000	78	78
T-1	Reconstruct			\$5,160,101		\$5,160,101	45	100
A-4	Basic Prev.	\$3,092				\$3,092	74	74
R-1	Basic Prev.	\$11,344				\$11,344	81	81

PLAN YEAR: 2023				ESTIMATED COST:		\$26,646	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
A-4	Basic Prev.	\$3,645				\$3,645	73	73
R-2	Basic Prev.	\$6,759				\$6,759	77	77
R-1	Basic Prev.	\$16,242				\$16,242	79	79

PLAN YEAR: 2024				ESTIMATED COST:		\$36,413	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-2	Basic Prev.	\$8,590				\$8,590	76	76
A-4	Basic Prev.	\$4,230				\$4,230	71	71
R-1	Basic Prev.	\$23,593				\$23,593	78	78

PLAN YEAR: 2025				ESTIMATED COST:		\$46,553	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-2	Basic Prev.	\$10,488				\$10,488	74	74
A-4	Basic Prev.	\$4,842				\$4,842	70	70
R-1	Basic Prev.	\$31,223				\$31,223	77	77

PLAN YEAR: 2026		ESTIMATED COST:				\$3,000,897	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-1	Prev. & Thin AC	\$39,189	\$2,653,392			\$2,692,580	75	82
R-2	Prev. & Seal Coat	\$12,478	\$93,134			\$105,612	73	76
A-4	Prev. & Thin AC	\$6,158	\$196,548			\$202,705	69	75
PLAN YEAR: 2027		ESTIMATED COST:				\$27,358	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
A-4	Basic Prev.	\$3,501				\$3,501	74	74
R-1	Basic Prev.	\$12,838				\$12,838	81	81
R-2	Basic Prev.	\$11,019				\$11,019	74	75
PLAN YEAR: 2028		ESTIMATED COST:				\$36,509	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-2	Basic Prev.	\$13,126				\$13,126	73	73
A-4	Basic Prev.	\$4,145				\$4,145	73	73
R-1	Basic Prev.	\$17,609				\$17,609	79	79
T-1	Basic Prev.	\$1,629				\$1,629	88	89
PLAN YEAR: 2029		ESTIMATED COST:				\$49,766	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-1	Basic Prev.	\$26,163				\$26,163	78	78
T-1	Basic Prev.	\$3,448				\$3,448	87	87
R-2	Basic Prev.	\$15,340				\$15,340	72	72
A-4	Basic Prev.	\$4,815				\$4,815	72	72
PLAN YEAR: 2030		ESTIMATED COST:				\$63,472	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-1	Basic Prev.	\$5,322				\$5,322	85	85
R-1	Basic Prev.	\$34,973				\$34,973	77	77
A-4	Basic Prev.	\$5,523				\$5,523	70	70
R-2	Basic Prev.	\$17,654				\$17,654	71	71