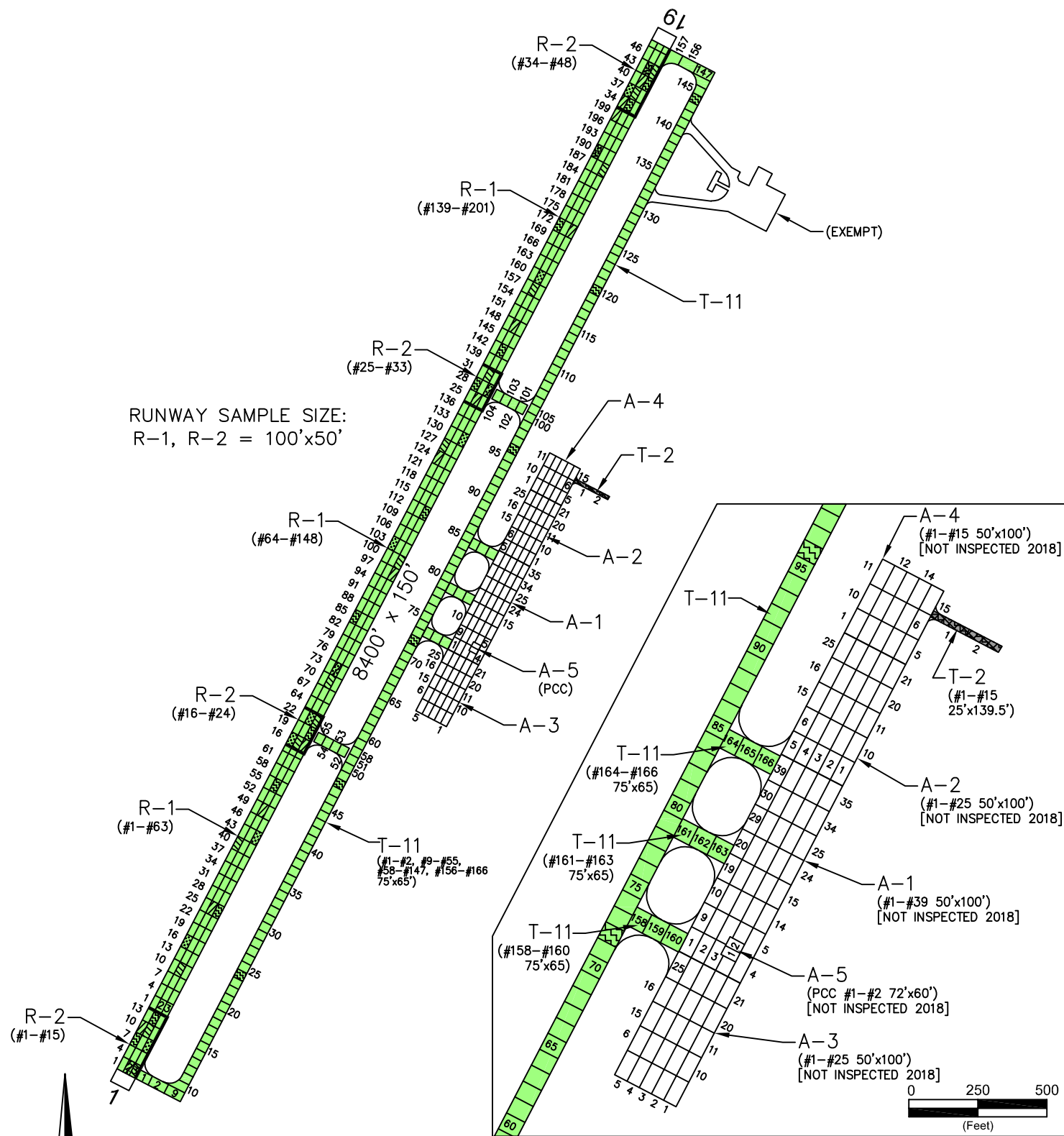


# WEST YELLOWSTONE



## PAVEMENT STRENGTH SURVEY/PAVEMENT CONDITION SURVEY

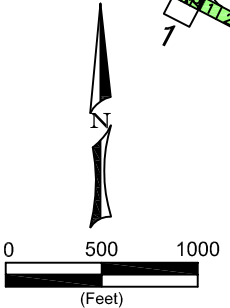
PAVE. IDENT.	SOIL CLASS	SUB GRADE CLASS	SUBBASE COURSE	BASE COURSE	SURFACE COURSE	OVERLAY	PAVEMENT STRENGTH			REMARKS
							MAX. GROSS LOAD (LBS)			
							SINGLE	DUAL	DUAL TAN.	
<b>RUNWAYS</b>										
R-1	E-1	FA		7" P-201	2.5" P-401	3" P-401,P-609	105,000	190,000	360,000	2,3
R-2	E-1	FA		8" P-201	3" P-401	3" P-401,P-609	90,000	150,000	280,000	2,3
<b>TAXIWAYS</b>										
T-2			P-152	4" P-208	3" P-401	P-609	12,500			1,3
T-11	E-1	FA		8" P-201	2.5"+/- P-401	4"-5.5" P-401	90,000	150,000	280,000	3,4
<b>APRONS</b>										
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	2" P-402,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.

- AIP-003-1991, CONSTRUCT ACCESS TAXIWAY (T-2); REHABILITATE APRON (A-4).
- AIP-005-2003, OVERLAY AND GROOVE RUNWAY 1/19 (R-1,R-2).
- AIP-014-2013, CRACK SEAL, FOG SEAL, AND REMARK PAVEMENTS; RESEAL CONCRETE JOINTS (A-5).
- AIP-018-2016, MILL AND OVERLAY APRON (A-1,A-2,A-3,A-4) AND TAXIWAY (T-11). [APRONS NOT INSPECTED 2018].



<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>WEST YELLOWSTONE AIRPORT</b> (WYS)
	EVALUATED BY:		
	DATE OF MOST RECENT PAVEMENT CONDITION SURVEY:	OCT. 19, 2018	Date: Prepared For: Prepared By:
	EVALUATED BY:	N. SCHROHT	DECEMBER 2018
LOCATION:	W. YELLOWSTONE MONTANA		

WEST YELLOWSTONE



**R-1, Overview**



**R-1, Cracking**



**R-2, Overview**



**R-2, Ravel-Grind**



**T-1, Overview**



**T-2, Ravel-Hook Drag**



**T-2, Overview**



**T-2, Oil Spill**

# WEST YELLOWSTONE AIRPORT

Branch: 10R

RUNWAY

**R-1**

**Length:** 6750 LF

**Width:** 150 LF

**Area:** 1,012,500 SF

**Last Const:** 2003

**Family:** ACRH

**From:** 5+00 / 29+50 / 57+50

**To:** 26+50 / 54+50 / 78+50

**Surface:** AAC

**Inspections**

**Samples Surveyed:** 7      **Total Samples:** 201      **Last Inspection Date:** 10/19/2018      **PCI:** 82

**Sample # 27**      **Area:** 5,000 SF

Distress Description	Severity	Quantity
WEATHERING	L	5000 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	155 LF

**Sample # 56**      **Area:** 5,000 SF

Distress Description	Severity	Quantity
WEATHERING	L	5000 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	177 LF

**Sample # 85**      **Area:** 5,000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	145 LF
WEATHERING	L	5000 SF

**Sample # 114**      **Area:** 5,000 SF

Distress Description	Severity	Quantity
WEATHERING	L	5000 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	125 LF

**Sample # 143**      **Area:** 5,000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	81 LF
WEATHERING	L	5000 SF
PATCHING	L	0.09 SF
RAVELING	H	70 SF

**Sample # 172**      **Area:** 5,000 SF

Distress Description	Severity	Quantity
WEATHERING	L	5000 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	184 LF

**Sample # 190**      **Area:** 5,000 SF

Distress Description	Severity	Quantity
WEATHERING	L	5000 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	142 LF

**Extrapolated Distress Quantities\***

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	LOW	29,189 LF	2.88%	9.74
PATCHING	LOW	3 SF	0.00%	2.00
RAVELING	HIGH	2,025 SF	0.20%	7.93
WEATHERING	LOW	1,012,500 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

100.0 % Climate/Durability

0.0 % Other

# WEST YELLOWSTONE AIRPORT

Branch: 10R

RUNWAY

**R-2**

**Length:** 1,650 LF

**Width:** 150 LF

**Area:** 247,500 SF

**Last Const:** 2003

**Family:** ACRH

**From:** 00+00/26+50/54+50/78+50

**To:** 5+00/29+50/57+50/84+00

**Surface:** AAC

**Inspections**

**Samples Surveyed:** 7      **Total Samples:** 48      **Last Inspection Date:** 10/19/2018      **PCI:** 81

**Sample # 7**      **Area:** 5,000 SF

Distress Description	Severity	Quantity
WEATHERING	L	5000 SF
PATCHING	L	0.18 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	74 LF

**Sample # 14**      **Area:** 5,000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	65 LF
WEATHERING	L	5000 SF

**Sample # 21**      **Area:** 5,000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	197 LF
WEATHERING	L	5000 SF

**Sample # 28**      **Area:** 5,000 SF

Distress Description	Severity	Quantity
RAVELING	H	25 SF
WEATHERING	L	5000 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	160 LF

**Sample # 35**      **Area:** 5,000 SF

Distress Description	Severity	Quantity
PATCHING	L	0.09 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	236 LF
WEATHERING	L	5000 SF

**Sample # 42**      **Area:** 5,000 SF

Distress Description	Severity	Quantity
WEATHERING	L	5000 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	407 LF

**Sample # 44**      **Area:** 5,000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	397 LF
WEATHERING	L	5000 SF

**Extrapolated Distress Quantities\***

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	LOW	10,862 LF	4.39%	13.42
PATCHING	LOW	2 SF	0.00%	2.00
RAVELING	HIGH	177 SF	0.07%	6.00
WEATHERING	LOW	247,500 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      100.0 % Climate/Durability      0.0 % Other

**WEST YELLOWSTONE AIRPORT**

Branch: 10T TAXIWAY

**T-2**

**Length:** 280 LF      **Width:** 25 LF      **Area:** 7,000 SF      **Last Const:** 1993      **Family:** ACRMU  
**From:** NE CORNER OF MAIN RAMP      **To:**      **Surface:** AC

**Inspections**

**Samples Surveyed:** 2      **Total Samples:** 2      **Last Inspection Date:** 10/19/2018      **PCI:** 72

<b>Sample # 1</b>		<b>Area:</b>	3,488 SF
	<b>Distress Description</b>	<b>Severity</b>	<b>Quantity</b>
	LONGITUDINAL/TRANSVERSE CRACKING	L	3 LF
	PATCHING	L	975 SF
	RAVELING	H	1 SF
	WEATHERING	M	3,488 SF

<b>Sample # 2</b>		<b>Area:</b>	3,488 SF
	<b>Distress Description</b>	<b>Severity</b>	<b>Quantity</b>
	WEATHERING	M	3,488 SF

**Extrapolated Distress Quantities\***

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	LOW	3 LF	0.04%	2.50
PATCHING	LOW	978 SF	13.98%	17.23
RAVELING	HIGH	1 SF	0.01%	6.00
WEATHERING	MEDIUM	7,000 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      100.0 % Climate/Durability      0.0 % Other

**WEST YELLOWSTONE AIRPORT**

Branch: 10T TAXIWAY

**T-11**

**Length:** 8400 LF      **Width:** 75 LF      **Area:** 750,000 SF      **Last Const:** 2016      **Family:** ACRH  
**From:** 0+00      **To:** 84+00      **Surface:** AAC

**Inspections**

**Samples Surveyed:** 6      **Total Samples:** 166      **Last Inspection Date:** 10/19/2018      **PCI:** 99

<b>Sample #</b> 24	<b>Distress Description</b> NO DISTRESSES	<b>Severity</b>	<b>Quantity</b>	<b>Area:</b> 4,875 SF
<b>Sample #</b> 48	<b>Distress Description</b> NO DISTRESSES	<b>Severity</b>	<b>Quantity</b>	<b>Area:</b> 4,875 SF
<b>Sample #</b> 72	<b>Distress Description</b> NO DISTRESSES	<b>Severity</b>	<b>Quantity</b>	<b>Area:</b> 4,875 SF
<b>Sample #</b> 96	<b>Distress Description</b> RAVELING	<b>Severity</b> H	<b>Quantity</b> 1 SF	<b>Area:</b> 4,875 SF
<b>Sample #</b> 120	<b>Distress Description</b> NO DISTRESSES	<b>Severity</b>	<b>Quantity</b>	<b>Area:</b> 4,875 SF
<b>Sample #</b> 144	<b>Distress Description</b> NO DISTRESSES	<b>Severity</b>	<b>Quantity</b>	<b>Area:</b> 4,875 SF

**Extrapolated Distress Quantities\***

<b>Distress Description</b>	<b>Severity</b>	<b>Quantity</b>	<b>Density</b>	<b>Deduct</b>
RAVELING	HIGH	26 SF	0.00%	6.00

\* 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

**WEST YELLOWSTONE AIRPORT (10)**

FIFTEEN YEAR PROJECTIONS							ESTIMATED AVERAGE ANNUAL COST:		\$164,627		
Plan Year: 2019							Estimated Cost:	\$441,744		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After			
R-1	Preventive + Global MR	\$8,372	\$344,247	\$0	\$0	\$352,619	82	85			
R-2	Preventive + Global MR	\$2,295	\$84,149	\$0	\$0	\$86,444	81	85			
T-11	None	\$0	\$0	\$0	\$0	\$0	98	98			
T-2	Preventive + Global MR	\$301	\$2,380	\$0	\$0	\$2,681	72	75			
Plan Year: 2020							Estimated Cost:	\$7,828		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After			
R-1	Preventive	\$5,926	\$0	\$0	\$0	\$5,926	84	84			
R-2	Preventive	\$1,665	\$0	\$0	\$0	\$1,665	83	83			
T-11	None	\$0	\$0	\$0	\$0	\$0	95	95			
T-2	Preventive	\$237	\$0	\$0	\$0	\$237	74	74			
Plan Year: 2021							Estimated Cost:	\$264,301		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After			
R-1	Preventive	\$7,074	\$0	\$0	\$0	\$7,074	83	83			
R-2	Preventive	\$1,961	\$0	\$0	\$0	\$1,961	82	82			
T-11	Global MR	\$0	\$254,998	\$0	\$0	\$254,998	92	100			
T-2	Preventive	\$268	\$0	\$0	\$0	\$268	73	73			
Plan Year: 2022							Estimated Cost:	\$10,786		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After			
R-1	Preventive	\$8,231	\$0	\$0	\$0	\$8,231	82	82			
R-2	Preventive	\$2,258	\$0	\$0	\$0	\$2,258	81	81			
T-11	None	\$0	\$0	\$0	\$0	\$0	97	97			
T-2	Preventive	\$298	\$0	\$0	\$0	\$298	72	72			
Plan Year: 2023							Estimated Cost:	\$12,488		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After			
R-1	Preventive	\$9,369	\$0	\$0	\$0	\$9,369	81	81			
R-2	Preventive	\$2,791	\$0	\$0	\$0	\$2,791	80	80			
T-11	None	\$0	\$0	\$0	\$0	\$0	94	94			
T-2	Preventive	\$328	\$0	\$0	\$0	\$328	71	71			
Plan Year: 2024							Estimated Cost:	\$446,856		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After			
R-1	Preventive + Global MR	\$11,739	\$344,247	\$0	\$0	\$355,986	80	83			
R-2	Preventive + Global MR	\$3,980	\$84,149	\$0	\$0	\$88,129	78	82			
T-11	None	\$0	\$0	\$0	\$0	\$0	91	91			
T-2	Preventive + Global MR	\$360	\$2,380	\$0	\$0	\$2,740	70	73			
Plan Year: 2025							Estimated Cost:	\$12,103		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After			
R-1	Preventive	\$8,090	\$0	\$0	\$0	\$8,090	82	82			
R-2	Preventive	\$2,221	\$0	\$0	\$0	\$2,221	81	81			
T-11	Preventive	\$1,498	\$0	\$0	\$0	\$1,498	88	88			
T-2	Preventive	\$294	\$0	\$0	\$0	\$294	72	72			
Plan Year: 2026							Estimated Cost:	\$270,748		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After			
R-1	Preventive	\$9,237	\$0	\$0	\$0	\$9,237	81	81			
R-2	Preventive	\$2,642	\$0	\$0	\$0	\$2,642	80	80			
T-11	Preventive + Global MR	\$3,547	\$254,998	\$0	\$0	\$258,545	85	95			
T-2	Preventive	\$325	\$0	\$0	\$0	\$325	71	71			
Plan Year: 2027							Estimated Cost:	\$15,361		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After			
R-1	Preventive	\$11,175	\$0	\$0	\$0	\$11,175	80	80			
R-2	Preventive	\$3,831	\$0	\$0	\$0	\$3,831	79	79			
T-11	None	\$0	\$0	\$0	\$0	\$0	92	92			
T-2	Preventive	\$356	\$0	\$0	\$0	\$356	70	70			
Plan Year: 2028							Estimated Cost:	\$22,293		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After			
R-1	Preventive	\$15,793	\$0	\$0	\$0	\$15,793	79	79			
R-2	Preventive	\$5,019	\$0	\$0	\$0	\$5,019	77	77			
T-11	Preventive	\$1,087	\$0	\$0	\$0	\$1,087	89	89			
T-2	Preventive	\$393	\$0	\$0	\$0	\$393	69	69			



**WEST YELLOWSTONE AIRPORT (10)**

FIFTEEN YEAR PROJECTIONS						ESTIMATED AVERAGE ANNUAL COST:		\$164,627			
Plan Year: 2029						Estimated Cost:		\$460,954		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After			
R-1	Preventive + Global MR	\$20,412	\$344,247	\$0	\$0	\$364,659	77	81			
R-2	Preventive + Global MR	\$6,206	\$84,149	\$0	\$0	\$90,355	76	80			
T-11	Preventive	\$3,129	\$0	\$0	\$0	\$3,129	86	86			
T-2	Preventive + Global MR	\$431	\$2,380	\$0	\$0	\$2,811	68	71			
Plan Year: 2030						Estimated Cost:		\$19,849		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After			
R-1	Preventive	\$10,648	\$0	\$0	\$0	\$10,648	80	80			
R-2	Preventive	\$3,672	\$0	\$0	\$0	\$3,672	79	79			
T-11	Preventive	\$5,177	\$0	\$0	\$0	\$5,177	83	83			
T-2	Preventive	\$352	\$0	\$0	\$0	\$352	70	70			
Plan Year: 2031						Estimated Cost:		\$282,740		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After			
R-1	Preventive	\$15,267	\$0	\$0	\$0	\$15,267	79	79			
R-2	Preventive	\$4,861	\$0	\$0	\$0	\$4,861	78	78			
T-11	Preventive + Global MR	\$7,226	\$254,998	\$0	\$0	\$262,223	80	90			
T-2	Preventive	\$390	\$0	\$0	\$0	\$390	69	69			
Plan Year: 2032						Estimated Cost:		\$28,826		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After			
R-1	Preventive	\$19,838	\$0	\$0	\$0	\$19,838	78	78			
R-2	Preventive	\$6,038	\$0	\$0	\$0	\$6,038	76	76			
T-11	Preventive	\$2,522	\$0	\$0	\$0	\$2,522	87	87			
T-2	Preventive	\$427	\$0	\$0	\$0	\$427	68	68			
Plan Year: 2033						Estimated Cost:		\$36,720		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After			
R-1	Preventive	\$24,457	\$0	\$0	\$0	\$24,457	76	77			
R-2	Preventive	\$7,227	\$0	\$0	\$0	\$7,227	75	75			
T-11	Preventive	\$4,571	\$0	\$0	\$0	\$4,571	84	84			
T-2	Preventive	\$465	\$0	\$0	\$0	\$465	67	67			