

# PRINEVILLE/CROOK COUNTY AIRPORT

This report describes how your Pavement Maintenance Management Program (PMMP) was developed. Your Program was developed as part of the Oregon Continuous Aviation System Plan sponsored in part by the Oregon Department of Aviation and the Federal Aviation Administration (FAA). The information and data contained in this report ensures you comply with the requirements of FAA Grant Assurance Number 11 which states that any airport requesting federal funds for pavement improvement projects must have implemented a pavement maintenance management program.

## DATA COLLECTION

To determine how your pavements were constructed and their age, a records review was conducted. Figure PR-1 shows the records review results. This figure identifies pavement boundaries, dimensions, pavement layer types, thicknesses and dates of construction. The most recent construction date for each pavement can also be found in the Section Condition Report in Appendix 2. Figure PR-1 and the information contained in Appendices 1, 2 and 4 ensure that your airport complies with the “pavement inventory” requirement of FAA’s PMMP guidelines.

The pavements at your airport were divided into branches, sections and sample units in accordance with the methodology outlined in the current edition of ASTM D5430, *Standard Test Method for Airport Condition Index Surveys*. The branches, sections and sample units established at your airport are shown in Figure PR-2. A Branch Condition Report showing all branches, their associated areas, and their area-weighted average condition is provided in Appendix 1. Additionally, the Appendix 2 Section Condition Report provides information used to define each branch and section in the PAVER database.

Using the branch, section and sample unit divisions established, a visual condition survey was conducted at Prineville Airport in June 2017. During the inspection, pavement defects were identified and measured in accordance with the methodology outlined in ASTM D5430. This inspection ensures your airport complies with the “detailed inspection” requirement of FAA’s PMMP guidelines. After collection, the data were entered into the PAVER software for analysis. These data are reproduced in the Re-Inspection Report attached as Appendix 4.

The PAVER database updated during this project ensures your airport complies with the “record keeping and information retrieval” requirements of FAA’s PMMP guidelines.

# Figure PR-1. Airport Layout, Dimensions and Pavement Cross-Sections. Prineville/Crook County Airport

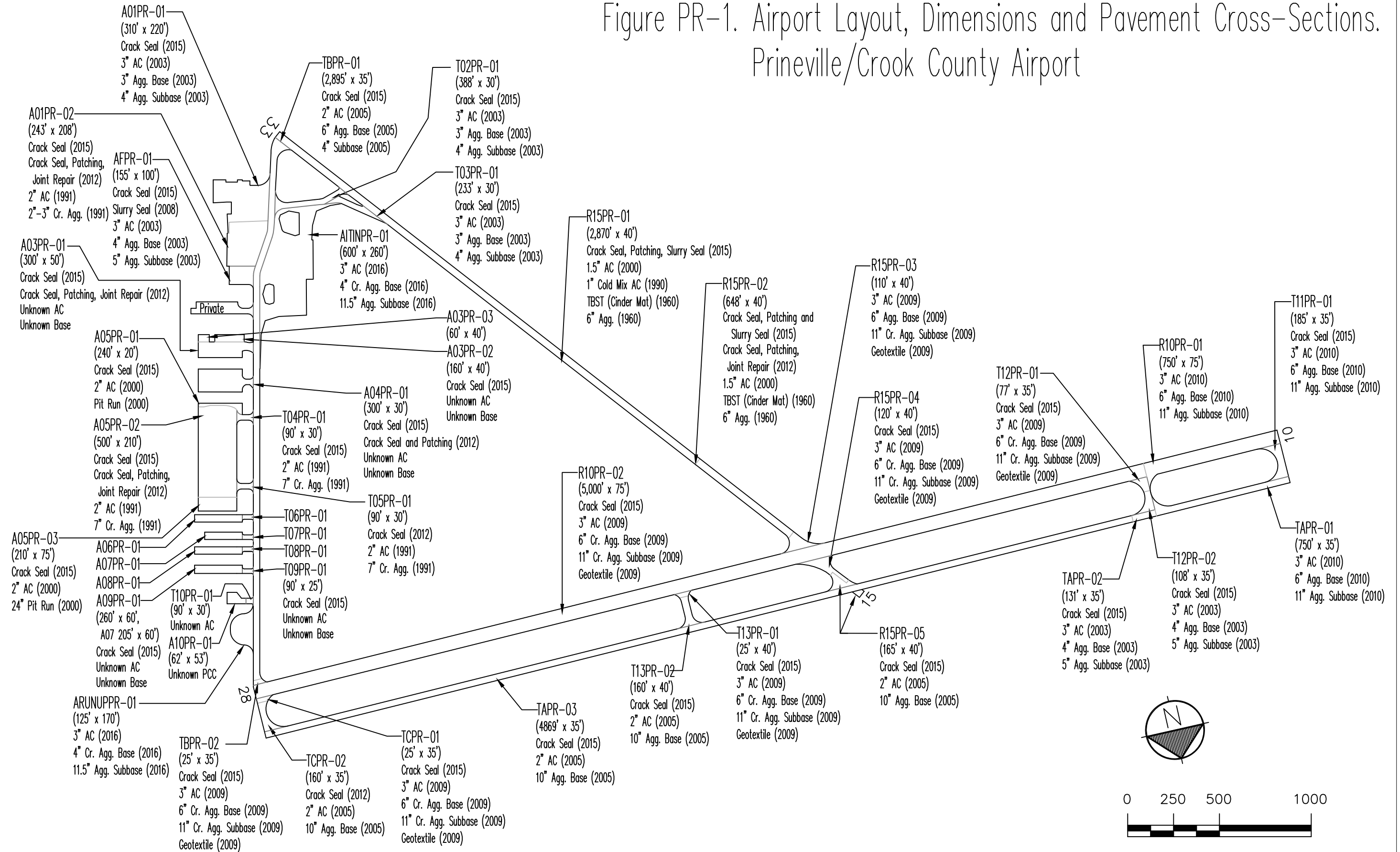
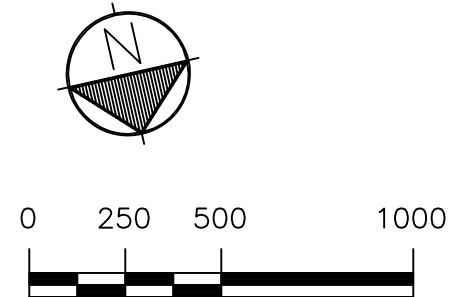
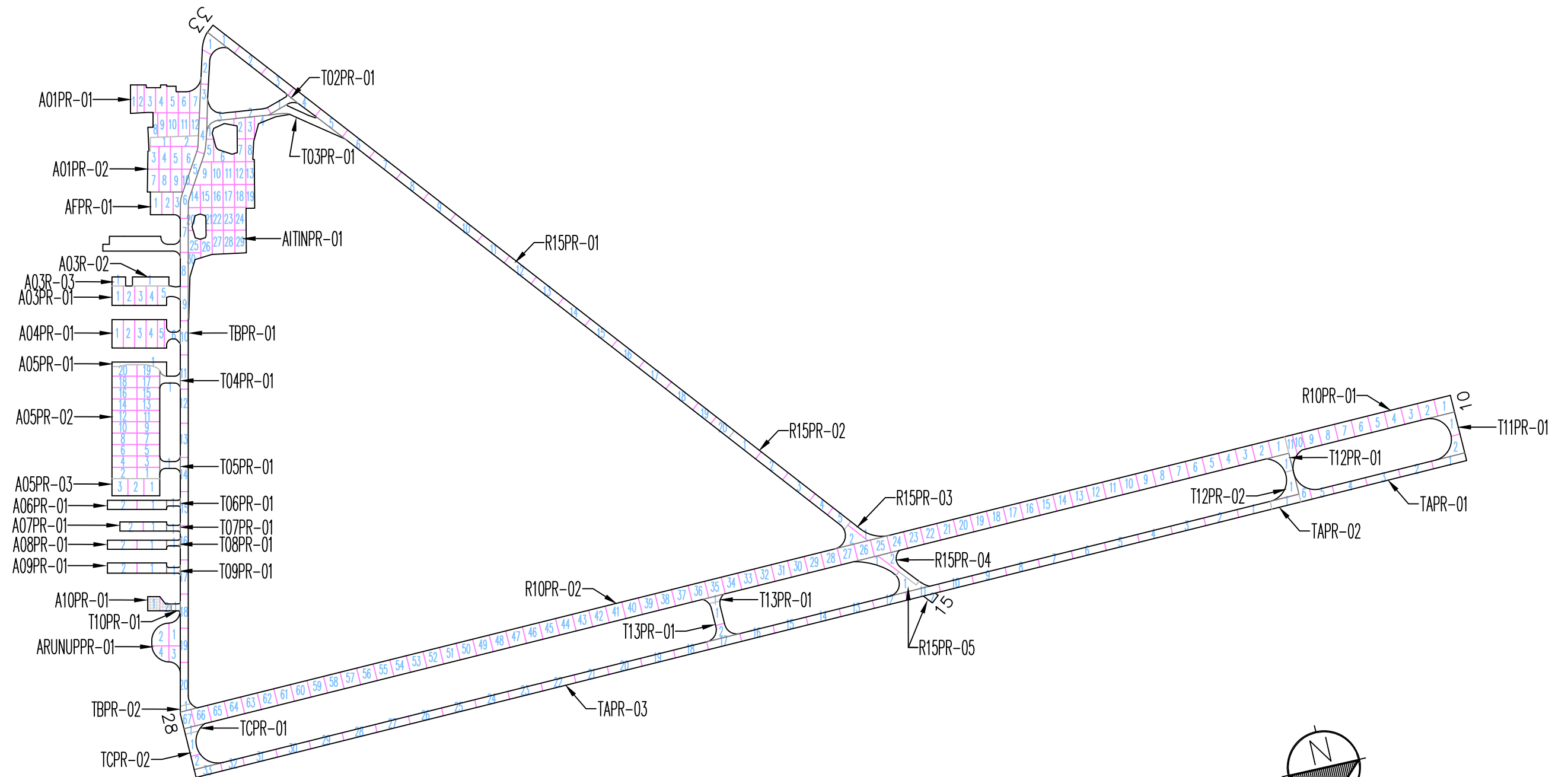


Figure PR-2. Pavement Branch, Section and Sample Unit Layout.  
Prineville/Crook County Airport



## RESULTS

Using the data collected during the visual inspection, the PAVER software was used to calculate an area-weighted average Pavement Condition Index (PCI) for each pavement section inspected using the sample units evaluated. Using each section's PCI, a Pavement Condition Rating (PCR) was assigned. The PCIs measured during this inspection are shown in Table 1. The table also contains PCIs from past inspections as well as projected PCIs for 2022 and 2027. The projections were based on pavement deterioration models developed by PAVER using the inspection data from other pavements in the same airport category as your airport, located in the same climatic region, and with the same surface type and use.

The Branch Condition Report in Appendix 1 summarizes current pavement condition by branch while the Section Condition Report in Appendix 2 lists pavement condition by section. The current Pavement Condition Rating (PCR) is shown graphically in Figure PR-3.

**Table 1. Past, Present and Future Pavement Condition Indices.**

Branch	Section	Inspections			Forecast	
		2011	2014	2017	2022	2027
A01PR	1	79	73	73	72	68
A01PR	2	62	83	73	72	68
A03PR	1	62	78	65	58	53
A03PR	2	75	80	70	64	57
A03PR	3	72	79	79	74	73
A04PR	1	64	77	76	73	72
A05PR	1	88	71	87	77	73
A05PR	2	57	71	72	68	62
A05PR	3	64	85	67	60	54
A06PR	1	72	67	73	72	68
A07PR	1	87	81	83	75	73
A08PR	1	90	78	68	61	55
A09PR	1	90	81	80	74	73
A10PR	1	81	69	78	67	59
AFPR	1	85	83	79	74	73
AITINPR	1	---	---	100	89	78
ARUNUPPR	1	---	---	100	89	78
R10PR	1	100	100	92	83	80
R10PR	2	100	96	82	72	52
R15PR	1	56	75	68	54	40
R15PR	2	61	75	65	51	37
R15PR	3	100	100	79	62	47
R15PR	4	100	96	83	80	66
R15PR	5	---	74	83	80	66



**Table 1. Past, Present and Future Pavement Condition Indices.**

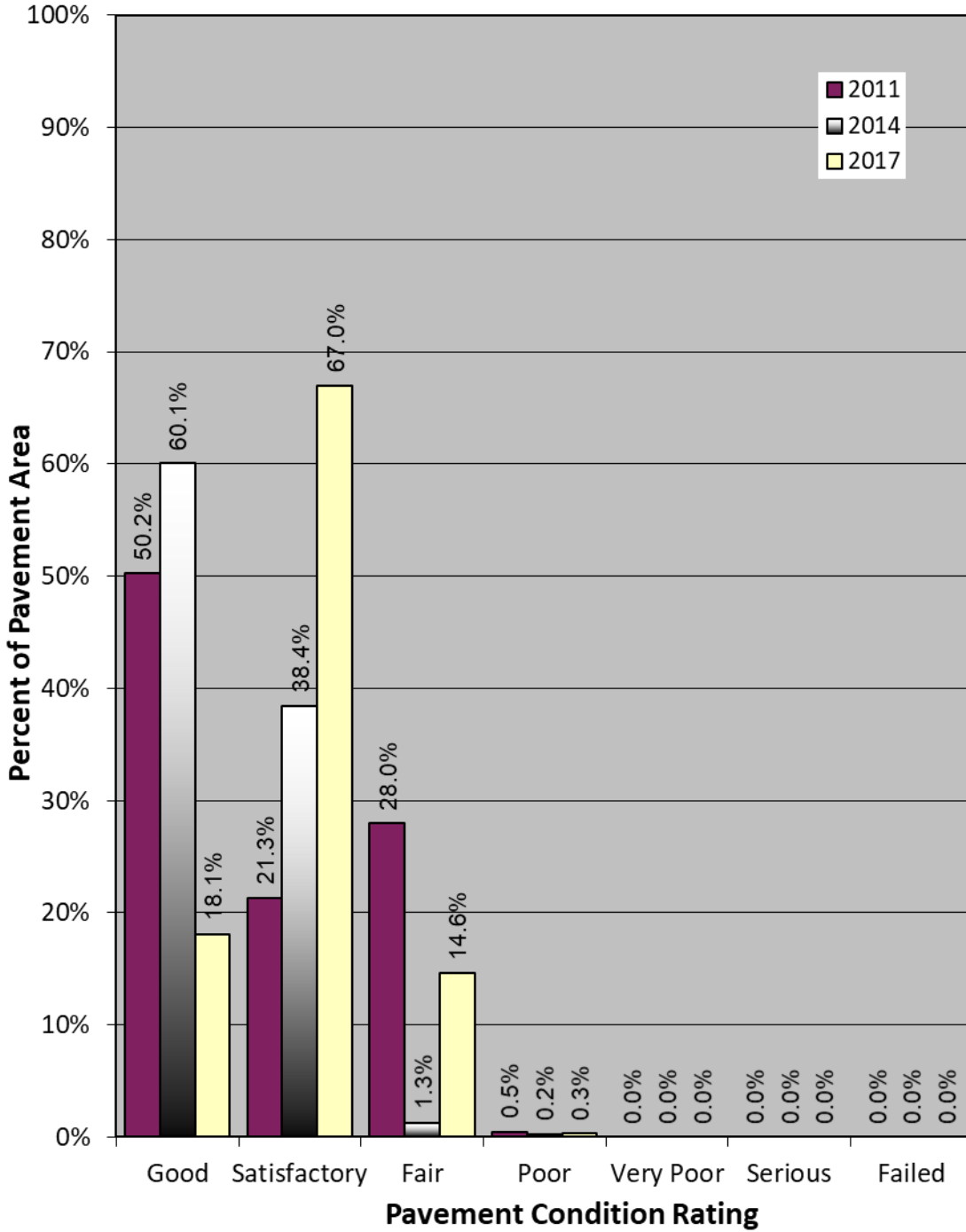
Branch	Section	Inspections			Forecast	
		2011	2014	2017	2022	2027
T02PR	1	88	89	83	74	69
T03PR	1	89	72	68	66	66
T04PR	1	46	66	61	58	51
T05PR	1	46	42	50	29	0
T06PR	1	77	71	48	25	0
T07PR	1	62	79	81	73	68
T08PR	1	57	83	59	53	36
T09PR	1	83	71	70	67	66
T10PR	1	84	90	58	50	30
T11PR	1	100	94	90	80	72
T12PR	1	100	93	76	70	67
T12PR	2	75	71	73	68	66
T13PR	1	100	83	82	74	68
T13PR	2	83	94	83	74	69
TAPR	1	100	100	94	83	74
TAPR	2	60	71	63	62	60
TAPR	3	78	92	79	72	68
TBPR	1	97	90	79	72	68
TBPR	2	100	90	68	66	66
TCPR	1	100	94	69	66	66
TCPR	2	94	89	87	77	71

Section PCIs at Prineville Airport range from a low of 48 (a PCR of “Poor”) to a high of 100 (a PCR of “Good”). The area-weighted average PCI for all airport pavements is 80, corresponding to an overall PCR of “Satisfactory”. Figure PR-4 shows how much pavement area is associated with each Pavement Condition Rating category and also shows pavement condition distribution from the inspections conducted in 2011 and 2014.

The primary distresses observed during the inspection of asphalt concrete pavements were: longitudinal and transverse cracking, weathering, patching, alligator cracking, and depressions, with isolated occurrences of oil spillage and swelling. The primary distresses observed during the inspection of portland cement concrete pavements were: joint seal damage, joint spalls, scaling, linear cracks and shrinkage cracks.

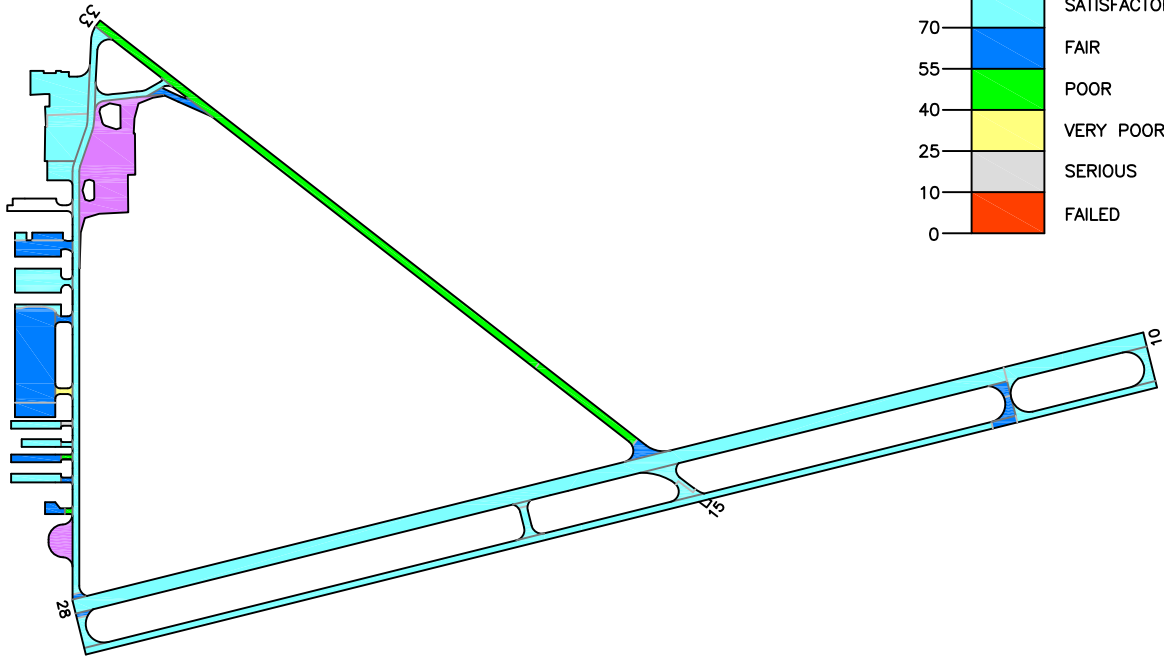
A graphical representation of the projected PCIs listed in Table 1 is shown in Figure PR-5.

**Figure PR-4. Distribution of Pavement Condition  
Prineville/Crook County Airport**

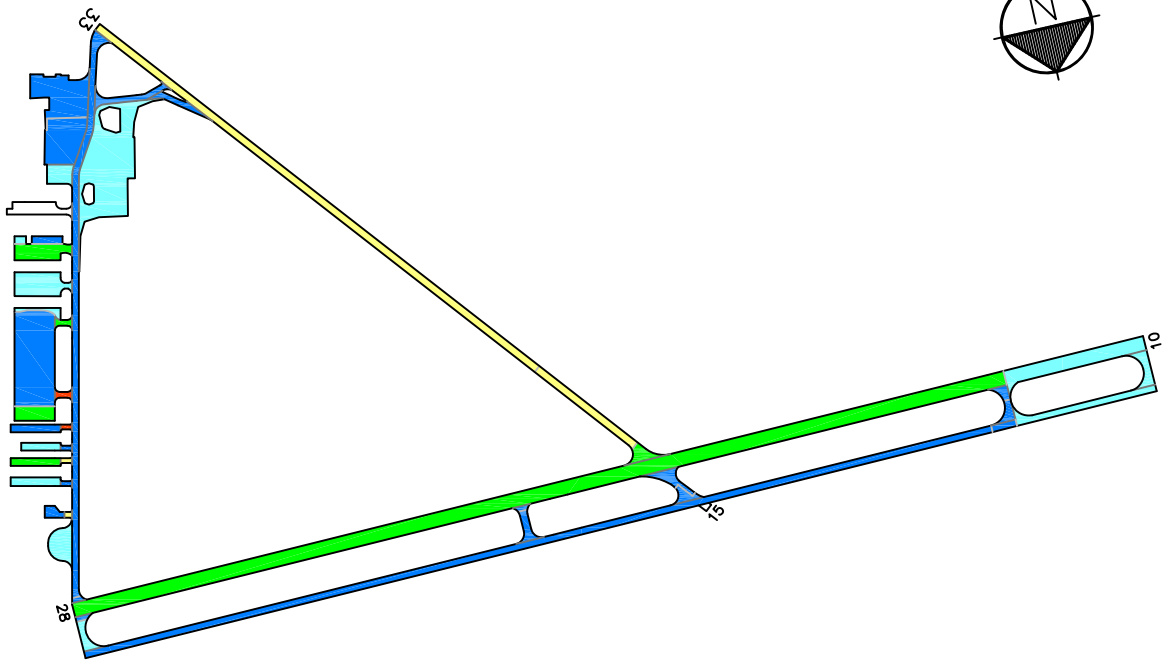
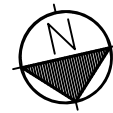


**Predicted Condition in 2022.**

PCI	PCR
100	GOOD
85	SATISFACTORY
70	FAIR
55	POOR
40	VERY POOR
25	SERIOUS
10	FAILED
0	



**Predicted Condition in 2027.**



Drawing Date: July 2017



**Figure PR-5. Future Pavement Condition.**



# RECOMMENDATIONS

Data collected during the visual condition survey were used by the PAVER software to generate the Network Maintenance Report contained in Appendix 3. This report identifies, for each pavement section, the recommended localized maintenance activities (i.e.-crack sealing, patching) that should be completed to repair the defects observed during the visual inspection. The repair quantities identified in the report were extrapolated to cover the entire pavement section, based on the distresses measured in the inspected sample units. If the repair activities identified are completed, the pavement deterioration rate will be slowed.

The recommended localized maintenance activities to be applied are selected by the PAVER software based on a Distress Maintenance Policy established for the Oregon airport system. The report results indicate that, over your entire airport, the following quantities of localized maintenance are needed:

- 26,787 linear feet of asphalt concrete crack sealing
- 412 linear feet of asphalt concrete wide crack repair
- 356 square feet of deep (full-depth) asphalt concrete patching

The PAVER software can also identify and schedule recommended global (applied over an entire section) maintenance activities such as fog seals, slurry seals and other surface treatments, as well as major rehabilitation activities such as asphalt concrete overlays and complete reconstruction. PAVER schedules global maintenance on a user-defined interval. To schedule major rehabilitation PAVER uses pavement deterioration models developed during this project. These models are used to estimate future pavement condition and to schedule rehabilitation based on a trigger PCI.

During this project a 5-year program outlining recommended global maintenance and rehabilitation was developed. The program begins in the year 2018 to allow time for project development. These recommendations are presented in Table 2, which identifies the pavement section requiring rehabilitation, the year the action should be completed, the type of action, and an associated cost. This information is also presented graphically in Figure PR-6.

**Table 2. Five-Year Global Maintenance and Rehabilitation Plan.**

Year	Branch	Section	Action	Area (sf)	Unit Cost (\$/sf)	Total Cost (\$)
2018	A01PR	01	Slurry Seal	58,043	\$0.31	\$17,993
2018	A01PR	02	Slurry Seal	50,096	\$0.31	\$15,530
2018	A03PR	01	Slurry Seal	23,268	\$0.31	\$7,213
2018	A03PR	02	Slurry Seal	6,400	\$0.31	\$1,984
2018	A03PR	03	Slurry Seal	2,400	\$0.31	\$744

**Table 2. Five-Year Global Maintenance and Rehabilitation Plan.**

Year	Branch	Section	Action	Area (sf)	Unit Cost (\$/sf)	Total Cost (\$)
2018	A04PR	01	Slurry Seal	32,384	\$0.31	\$10,039
2018	A05PR	01	Slurry Seal	5,052	\$0.31	\$1,566
2018	A05PR	02	Slurry Seal	104,137	\$0.31	\$32,282
2018	A05PR	03	Slurry Seal	15,750	\$0.31	\$4,882
2018	A06PR	01	Slurry Seal	10,400	\$0.31	\$3,224
2018	A07PR	01	Slurry Seal	8,200	\$0.31	\$2,542
2018	A08PR	01	Slurry Seal	10,400	\$0.31	\$3,224
2018	A09PR	01	Slurry Seal	11,700	\$0.31	\$3,627
2018	AFPR	01	Slurry Seal	15,934	\$0.31	\$4,940
2018	R10PR	01	Slurry Seal	57,712	\$0.31	\$17,891
2018	R10PR	02	Slurry Seal	374,993	\$0.31	\$116,247
2018	R15PR	03	Slurry Seal	9,047	\$0.31	\$2,805
2018	R15PR	04	Slurry Seal	10,391	\$0.31	\$3,221
2018	R15PR	05	Slurry Seal	7,275	\$0.31	\$2,255
2018	T02PR	01	Slurry Seal	13,500	\$0.31	\$4,185
2018	T03PR	01	Slurry Seal	8,499	\$0.31	\$2,635
2018	T04PR	01	Slurry Seal	3,289	\$0.31	\$1,020
2018	T05PR	01	2" AC Overlay	3,236	\$2.50	\$8,090
2018	T06PR	01	2" AC Overlay	1,564	\$2.50	\$3,910
2018	T07PR	01	Slurry Seal	1,564	\$0.31	\$485
2018	T08PR	01	Slurry Seal	1,564	\$0.31	\$485
2018	T09PR	01	Slurry Seal	1,564	\$0.31	\$485
2018	T10PR	01	Slurry Seal	1,243	\$0.31	\$385
2018	T11PR	01	Slurry Seal	11,072	\$0.31	\$3,432
2018	T12PR	01	Slurry Seal	4,294	\$0.31	\$1,331
2018	T12PR	02	Slurry Seal	5,745	\$0.31	\$1,781
2018	T13PR	01	Slurry Seal	1,684	\$0.31	\$522
2018	T13PR	02	Slurry Seal	7,769	\$0.31	\$2,408
2018	TAPR	01	Slurry Seal	28,209	\$0.31	\$8,745
2018	TAPR	02	Slurry Seal	4,578	\$0.31	\$1,419
2018	TAPR	03	Slurry Seal	170,422	\$0.31	\$52,831
2018	TBPR	01	Slurry Seal	104,112	\$0.31	\$32,275
2018	TBPR	02	Slurry Seal	1,504	\$0.31	\$466
2018	TCPR	01	Slurry Seal	1,845	\$0.31	\$572
2018	TCPR	02	Slurry Seal	8,072	\$0.31	\$2,502
2018 Total						\$382,173
2020	R15PR	01	2" AC Overlay	114,782	\$2.50	\$286,955

**Table 2. Five-Year Global Maintenance and Rehabilitation Plan.**

Year	Branch	Section	Action	Area (sf)	Unit Cost (\$/sf)	Total Cost (\$)
2020	R15PR	02	2" AC Overlay	25,940	\$2.50	\$64,850
2020 Total						\$351,801
2022	AITINPR	01	Fog Seal	141,008	\$0.19	\$26,791
2022	ARUNUPPR	01	Fog Seal	21,023	\$0.19	\$3,994
2022 Total						\$30,785
<b>TOTAL</b>						<b>\$764,763</b>

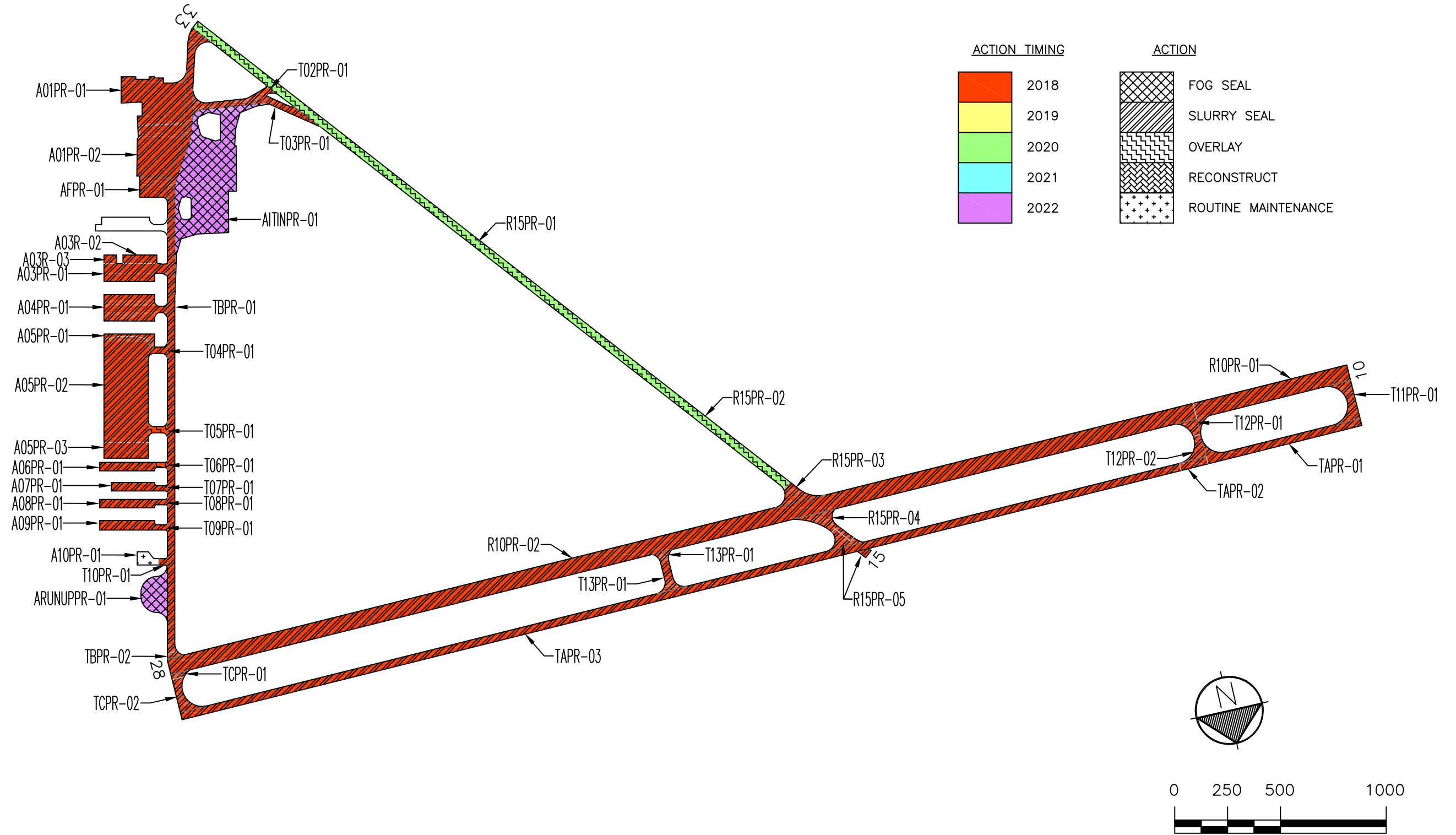
If the global maintenance and/or rehabilitation activities recommended in Table 2 are not completed, the localized maintenance activities identified in the Network Maintenance Report (Appendix 3) for that section should be done. Additionally, for those sections not listed in Table 2 as requiring global maintenance or rehabilitation, the localized maintenance activities outlined in the Network Maintenance Report should be completed. By completing the localized maintenance activities, pavement condition is improved, life is extended, deterioration is slowed and the length of time until major repair or rehabilitation is required is increased.

## **INSPECTION SCHEDULE**

To comply with the inspection schedule requirement of FAA Grant Assurance Number 11, a detailed visual inspection should be conducted every 3 years using the methodology described in ASTM D5430. The next scheduled detailed visual inspection should take place in 2020.

In addition, the FAA requires that a drive-by inspection be conducted monthly to detect unforeseen changes in pavement condition. The results of each drive-by inspection should be recorded and kept in a file. At a minimum, the date of the inspection and an indication of any maintenance performed since the last drive-by inspection should be recorded.

Figure PR-6. Five-Year Pavement Management Plan.  
Prineville/Crook County Airport



Drawing Date: July 2017