

# INDEPENDENCE STATE 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

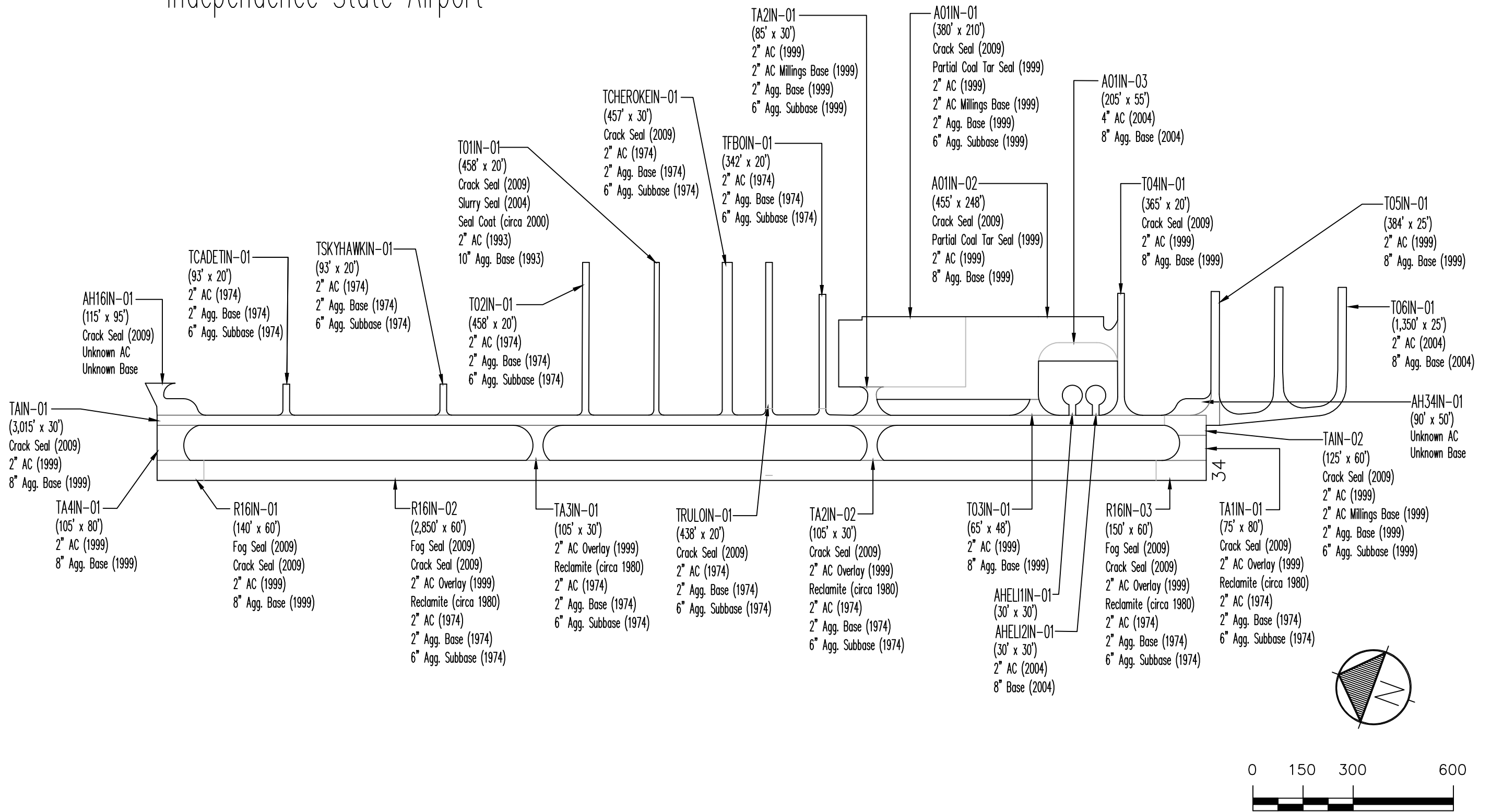
To determine how your pavements were constructed and their age, a records review was conducted. Figure IN-1 shows the records review results. This figure identifies pavement boundaries, dimensions, pavement layer types, thicknesses and dates of construction. The most recent construction date for each pavement can also be found in the Section Condition Report in Appendix 2. Figure IN-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 IN-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 Independence State Airport in May 2018. 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.

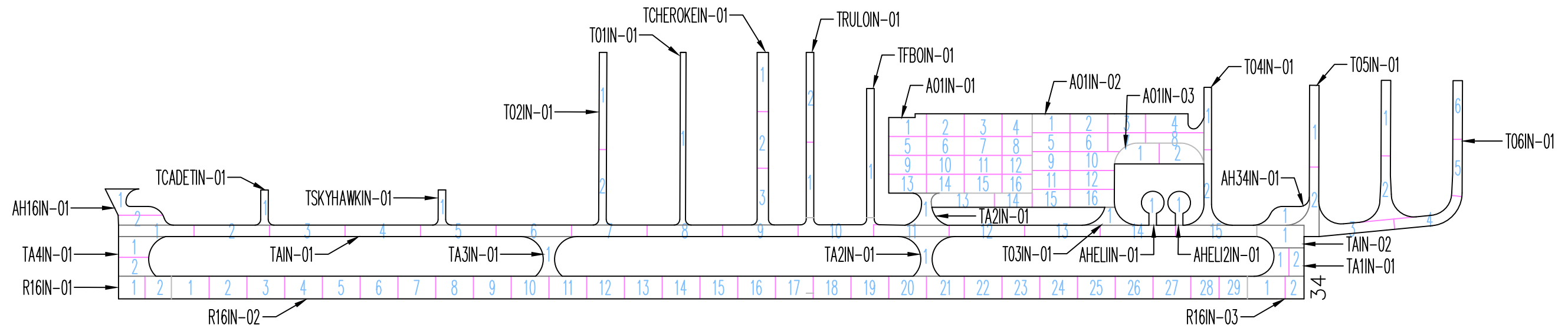
The PAVER database updated during this project ensures your airport complies with the “record keeping and information retrieval” requirements of FAA’s PMMP guidelines.

Figure IN-1. Airport Layout, Dimensions and Pavement Cross-Sections.  
Independence State Airport



Drawing Date: September 2018

Figure IN-2. Pavement Branch, Section and Sample Unit Layout.  
Independence State Airport



Drawing Date: September 2018

# 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 2023 and 2028. 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 IN-3.

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

Branch	Section	Inspections			Forecast	
		2012	2015	2018	2023	2028
A01IN	01	91	89	77	72	66
A01IN	02	87	85	73	67	60
A01IN	03	87	77	74	68	61
AH16IN	01	88	88	76	71	64
AH34IN	01	89	92	74	68	61
AHELI1IN	01	87	89	80	77	72
AHELI2IN	01	96	100	84	82	80
R16IN	01	96	95	86	85	85
R16IN	02	94	91	82	77	73
R16IN	03	95	92	85	80	76
T01IN	01	75	83	76	67	53
T02IN	01	85	81	76	67	53
T03IN	01	92	89	79	73	62
T04IN	01	95	93	92	86	83
T05IN	01	90	84	73	62	47
T06IN	01	89	85	73	62	47
TA1IN	01	94	89	82	82	82
TA2IN	01	90	85	76	67	53
TA2IN	02	96	94	82	81	76
TA3IN	01	89	87	73	62	47
TA4IN	01	100	94	86	83	82
TAIN	01	95	97	79	73	62
TAIN	02	88	91	80	75	65

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

Branch	Section	Inspections			Forecast	
		2012	2015	2018	2023	2028
TCADETIN	01	78	78	74	64	49
TCHEROKEIN	01	91	86	76	67	53
TFBOIN	01	42	44	47	28	10
TRULOIN	01	65	64	59	43	24
TSKYHAWKIN	01	73	64	64	49	31

Section PCIs at Independence State Airport range from a low of 47 (a PCR of “Poor”) to a high of 92 (a PCR of “Good”). The area-weighted average PCI for all airport pavements is 78, corresponding to an overall PCR of “Satisfactory”. Figure IN-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 2012 and 2015.

The primary distresses observed during the inspection were: longitudinal and transverse cracking, weathering, patching, alligator cracking, depressions, and block cracking, and an isolated occurrence of raveling.

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

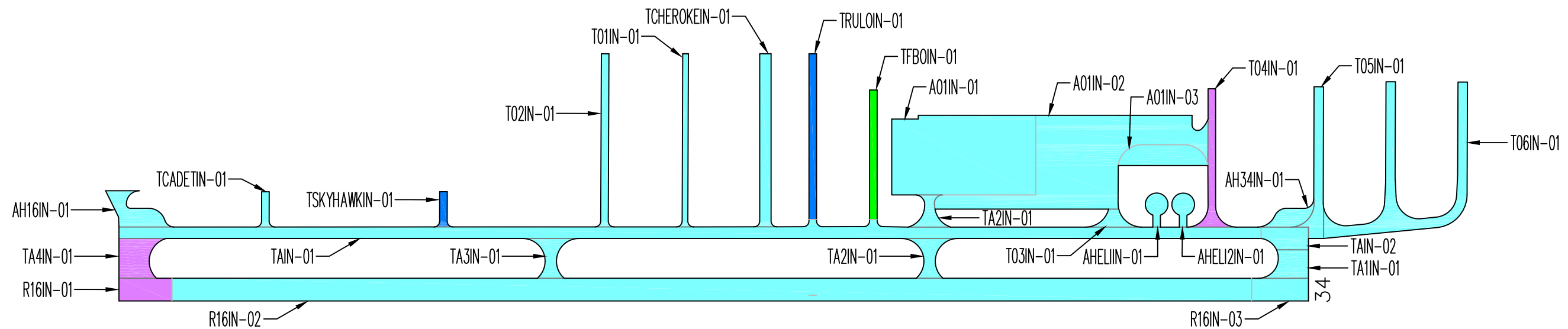
## **RECOMMENDATIONS**

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.

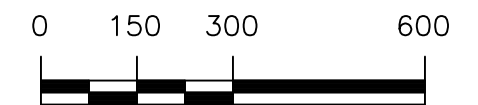
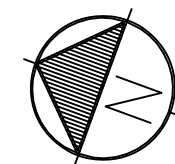
The recommended localized maintenance activities to be applied are selected by the PAVER software based on a Distress Maintenance Policy established for the Oregon airport system. The report results indicate that, over your entire airport, the following quantities of localized maintenance are needed:

- 14,389 linear feet of asphalt concrete crack sealing
- 66 linear feet of asphalt concrete wide crack sealing/repair.

Figure IN-3. Pavement Condition in May 2018.  
Independence State Airport

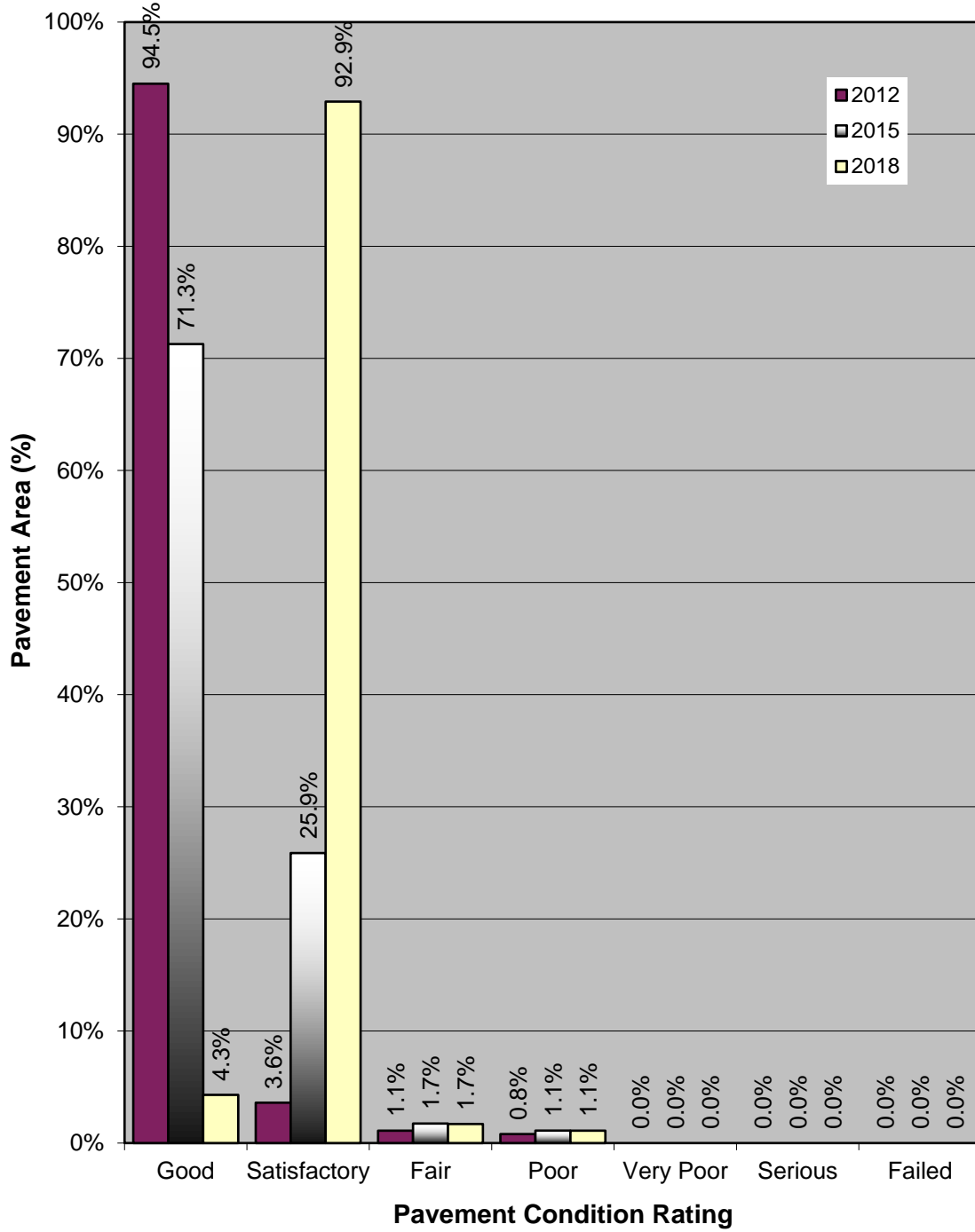


PCI	PCR
100	GOOD
85	SATISFACTORY
70	FAIR
55	POOR
40	VERY POOR
25	SERIOUS
10	FAILED
0	

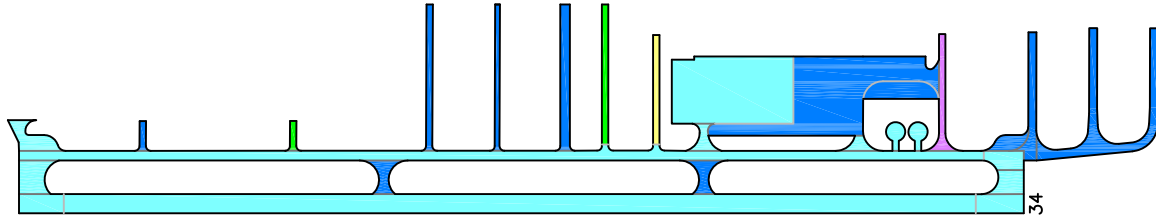


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**Figure IN-4. Pavement Condition Distribution  
Independence State Airport**

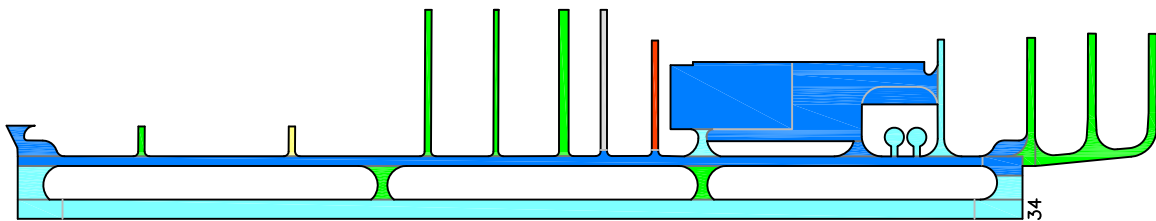
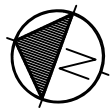


**Predicted Condition in 2023.**



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

**Predicted Condition in 2028.**



Drawing Date: September 2018



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



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 2019 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 IN-6.

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

Year	Branch	Section	Action	Area (sf)	Unit Cost (\$/sf)	Total Cost (\$)
2019	A01IN	01	Slurry Seal	79,100	\$0.31	\$24,521
2019	A01IN	02	Slurry Seal	82,651	\$0.31	\$25,622
2019	A01IN	03	Slurry Seal	11,388	\$0.31	\$3,530
2019	AH16IN	01	Slurry Seal	8,201	\$0.31	\$2,542
2019	AH34IN	01	Slurry Seal	4,714	\$0.31	\$1,461
2019	AHELI1IN	01	Slurry Seal	3,421	\$0.31	\$1,061
2019	AHELI2IN	01	Slurry Seal	3,429	\$0.31	\$1,063
2019	R16IN	01	Slurry Seal	8,400	\$0.31	\$2,604
2019	R16IN	02	Slurry Seal	171,000	\$0.31	\$53,010
2019	R16IN	03	Slurry Seal	9,000	\$0.31	\$2,790
2019	T01IN	01	Slurry Seal	6,954	\$0.31	\$2,156
2019	T02IN	01	Slurry Seal	9,240	\$0.31	\$2,864
2019	T03IN	01	Slurry Seal	2,759	\$0.31	\$855
2019	T04IN	01	Slurry Seal	8,650	\$0.31	\$2,682
2019	T05IN	01	Slurry Seal	10,888	\$0.31	\$3,375
2019	T06IN	01	Slurry Seal	31,944	\$0.31	\$9,903
2019	TA1IN	01	Slurry Seal	6,586	\$0.31	\$2,042
2019	TA2IN	01	Slurry Seal	4,019	\$0.31	\$1,246
2019	TA2IN	02	Slurry Seal	5,256	\$0.31	\$1,629
2019	TA3IN	01	Slurry Seal	5,256	\$0.31	\$1,629
2019	TA4IN	01	Slurry Seal	9,370	\$0.31	\$2,905
2019	TAIN	01	Slurry Seal	92,537	\$0.31	\$28,686
2019	TAIN	02	Slurry Seal	6,673	\$0.31	\$2,069
2019	TCADETIN	01	Slurry Seal	1,955	\$0.31	\$606

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

<b>Year</b>	<b>Branch</b>	<b>Section</b>	<b>Action</b>	<b>Area (sf)</b>	<b>Unit Cost (\$/sf)</b>	<b>Total Cost (\$)</b>
2019	TCHEROKEIN	01	Slurry Seal	13,803	\$0.31	\$4,279
2019	TFBOIN	01	2" AC Overlay	6,835	\$2.50	\$17,088
2019	TRULOIN	01	Slurry Seal	8,752	\$0.31	\$2,713
2019	TSKYHAWKIN	01	Slurry Seal	1,955	\$0.31	\$606
<b>2019 Total</b>						<b>\$205,537</b>
<b>5-Year Total</b>						<b>\$205,537</b>

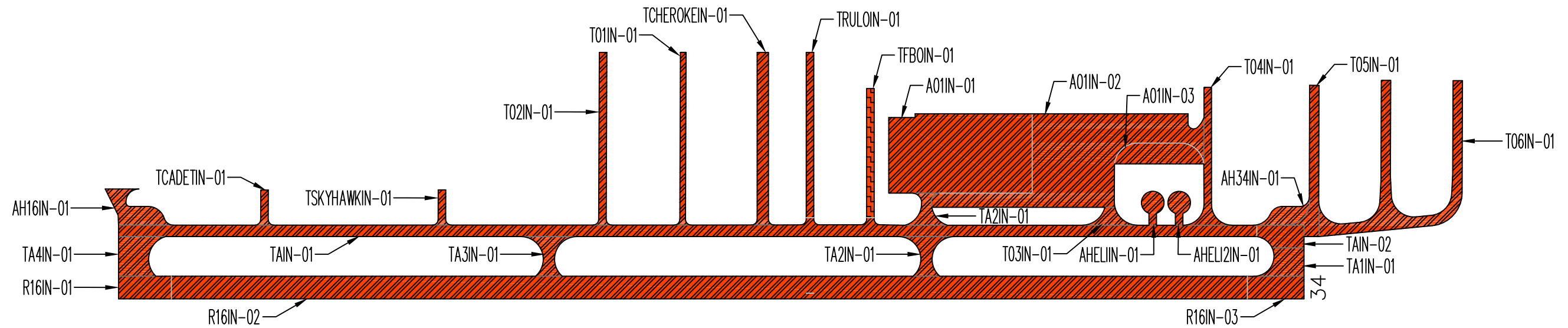
If the global maintenance and/or rehabilitation activities recommended in Table 2 are not completed, the localized maintenance activities identified in the Network Maintenance Report (Appendix 3) for that section should be done. Additionally, for those sections not listed in Table 2 as requiring global 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**

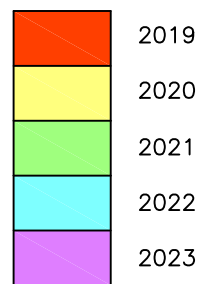
To comply with the inspection schedule requirement of FAA Grant Assurance Number 11, a detailed visual inspection should be conducted every 3 years using the methodology described in ASTM D5430. The next scheduled detailed visual inspection should take place in 2021.

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.

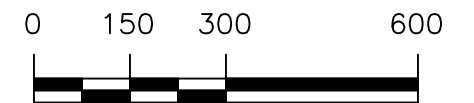
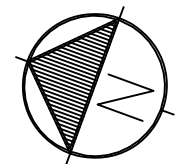
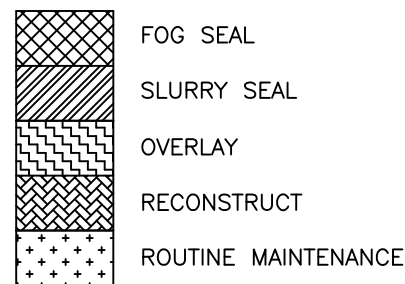
Figure IN-6. Five-Year Pavement Management Plan.  
Independence State Airport



**ACTION TIMING**



**ACTION**



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