

CORVALLIS MUNICIPAL 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. Figures CR-1A and CR-1B show the records review results. These figures identify 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. Figures CR-1A and CR-1B 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 CR-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 Corvallis Municipal 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 CR-1A. Airport Layout, Dimensions and Pavement Cross-Sections.
Runways and Aprons
Corvallis Municipal Airport

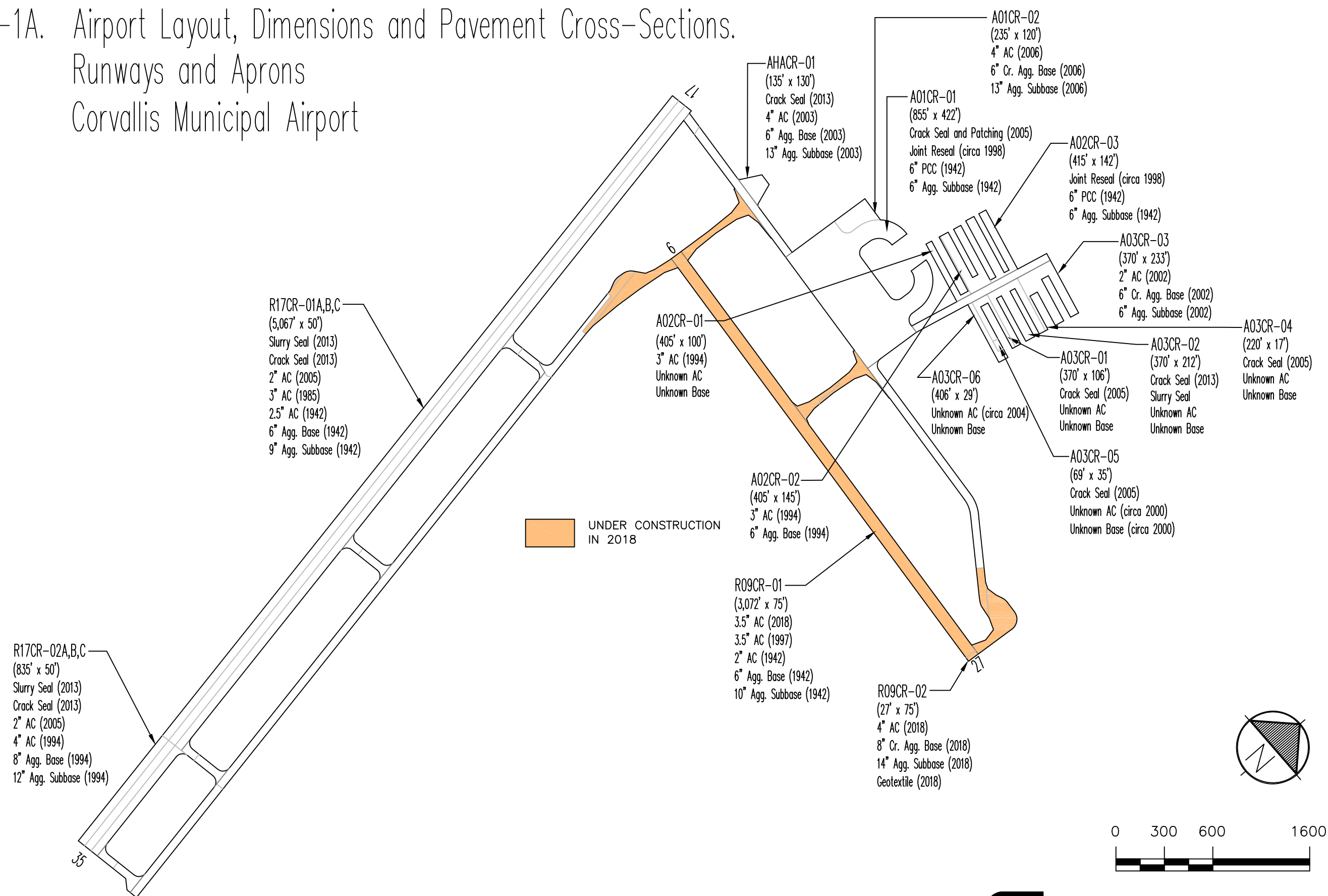
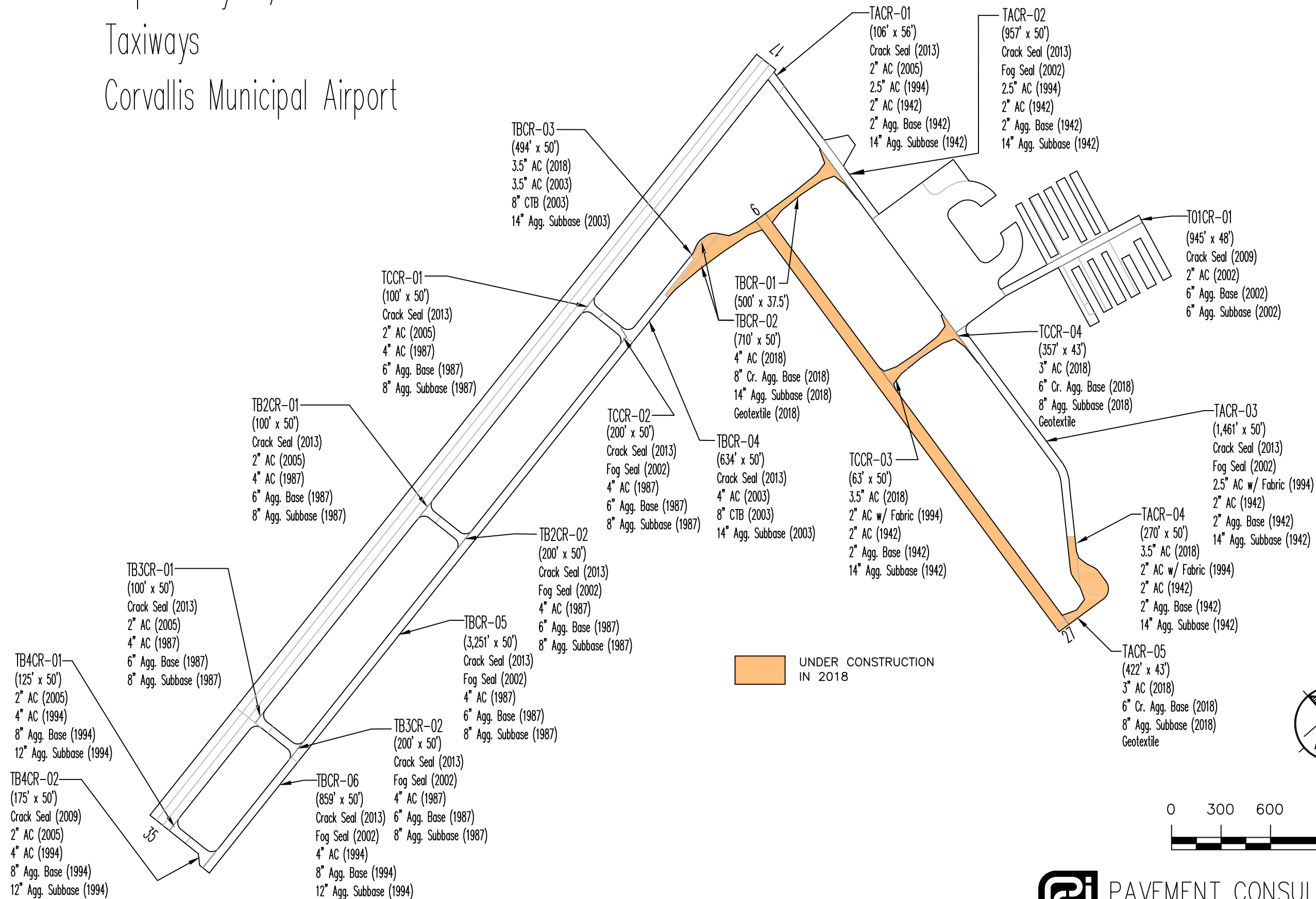


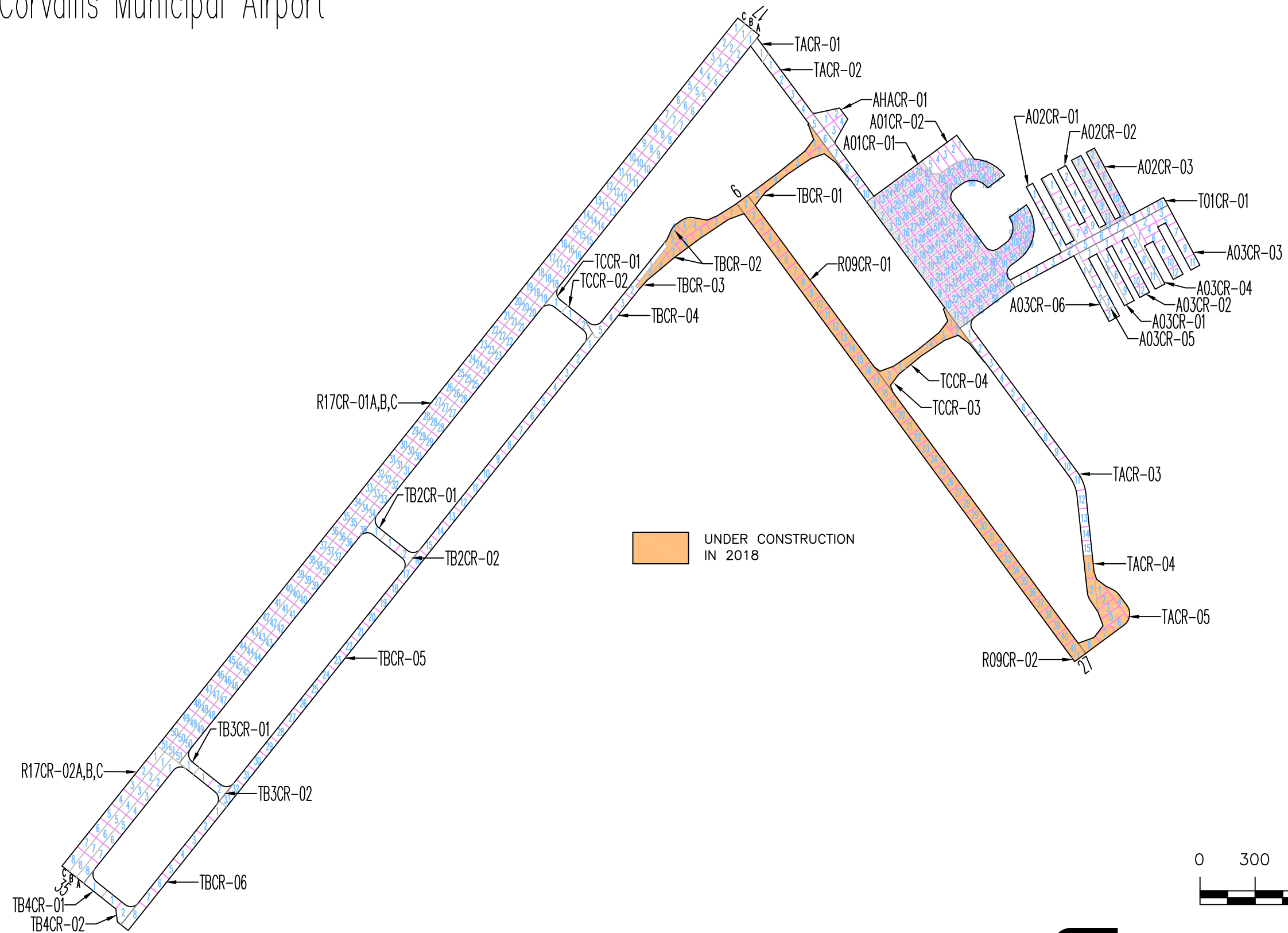
Figure CR-1B. Airport Layout, Dimensions and Pavement Cross-Sections.

Taxiways
Corvallis Municipal Airport



Drawing Date: September 2018

Figure CR-2. Pavement Branch, Section and Sample Unit Layout.
Corvallis Municipal 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 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 CR-3.

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

Branch	Section	Inspections			Forecast	
		2012	2015	2018	2023	2028
A01CR	01	77	82	82	77	75
A01CR	02	97	97	97	84	78
A02CR	01	98	78	64	60	58
A02CR	02	98	99	86	79	75
A02CR	03	91	97	98	87	80
A03CR	01	98	79	77	74	70
A03CR	02	83	71	66	61	55
A03CR	03	97	84	77	74	70
A03CR	04	100	83	71	67	61
A03CR	05	100	67	68	63	57
A03CR	06	100	94	94	82	77
AHACR	01	82	74	63	57	52
R09CR	01	---	---	100	80	79
R09CR	02	---	---	100	91	80
R17CR	01A	78	84	67	41	17
R17CR	01B	66	76	53	29	5
R17CR	01C	80	83	69	43	19
R17CR	02A	89	84	65	50	35
R17CR	02B	78	76	58	43	28
R17CR	02C	94	84	69	53	38
T01CR	01	96	91	77	71	59
TACR	01	87	74	63	62	60
TACR	02	86	80	70	69	67
TACR	03	90	86	77	74	74

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

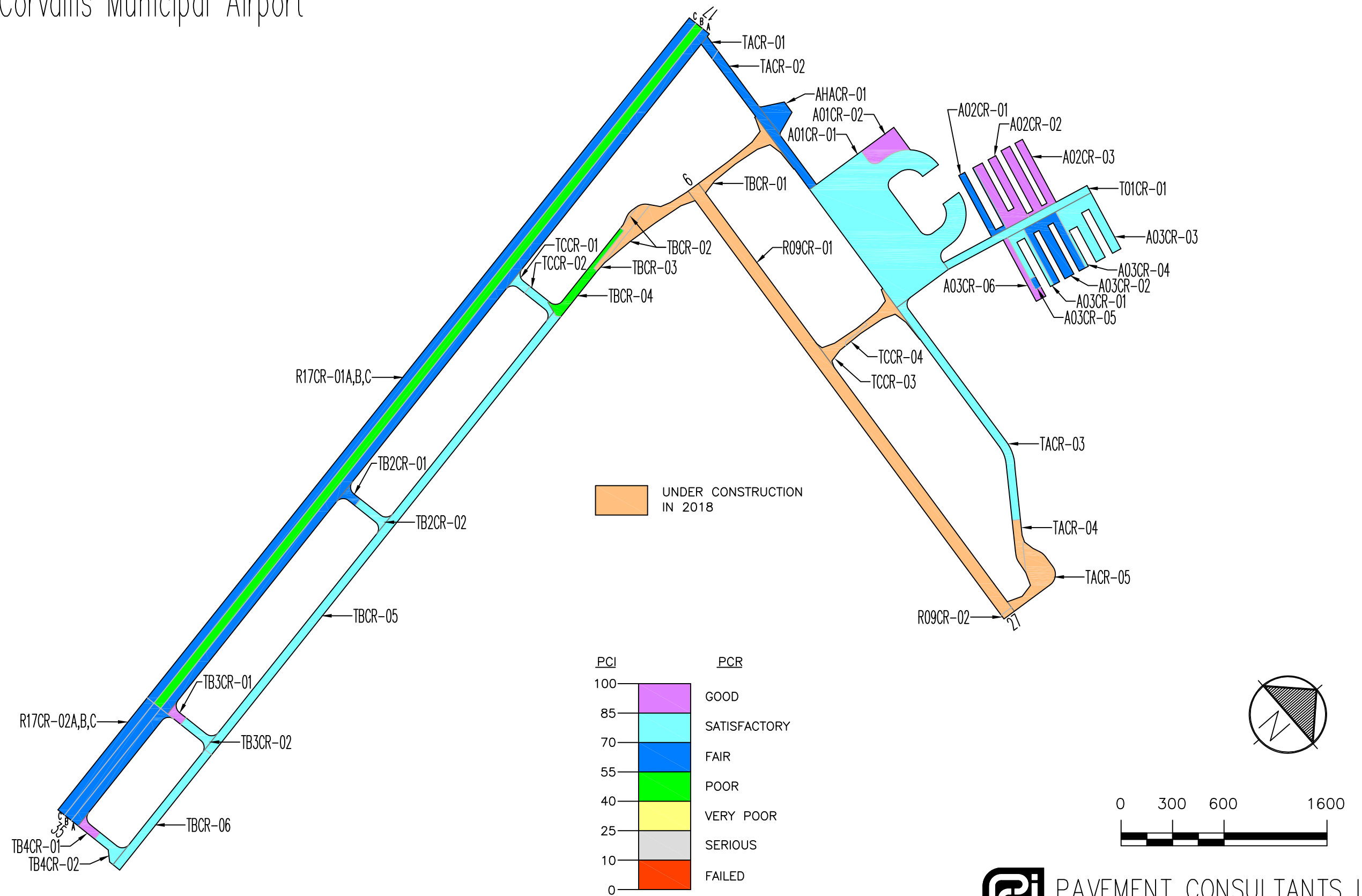
Branch	Section	Inspections			Forecast	
		2012	2015	2018	2023	2028
TACR	04	---	---	100	86	78
TACR	05	---	---	100	93	85
TB2CR	01	95	79	70	58	44
TB2CR	02	85	90	76	68	56
TB3CR	01	95	96	89	82	79
TB3CR	02	89	86	74	65	52
TB4CR	01	100	96	87	81	79
TB4CR	02	95	91	80	79	79
TBCR	01	---	---	100	93	85
TBCR	02	---	---	100	93	85
TBCR	03	---	---	100	86	78
TBCR	04	77	76	49	35	24
TBCR	05	88	84	73	63	50
TBCR	06	93	95	78	73	63
TCCR	01	89	86	74	65	52
TCCR	02	81	86	75	67	54
TCCR	03	---	---	100	86	78
TCCR	04	---	---	100	93	85

Section PCIs at Corvallis Municipal Airport range from a low of 49 (a PCR of “Poor”) to a high of 100 (a PCR of “Good”). The area-weighted average PCI for all airport pavements is 76, corresponding to an overall PCR of “Satisfactory”. Figure CR-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 in the asphalt pavements during the inspection were longitudinal and transverse cracking, weathering, depressions, alligator cracking, and patching, with an isolated occurrences of block cracking. The primary distresses observed in the concrete pavements were corner breaks, linear cracking and shrinkage cracking, with isolated occurrences of corner spalls, joint spalls, shattered slabs and small patches.

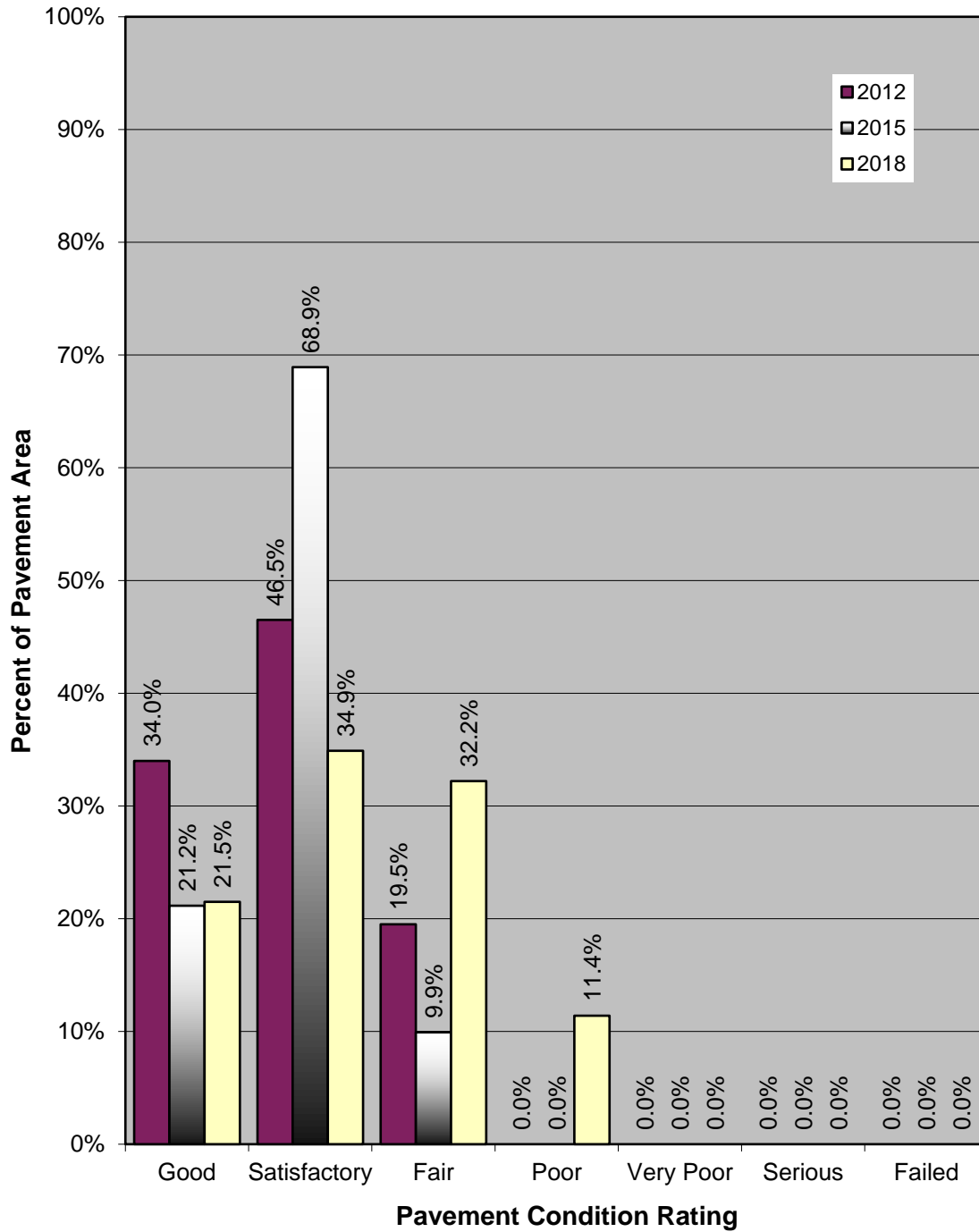
A graphical representation of the projected PCIs listed in Table 1 is shown in Figure CR-5.

Figure CR-3. Pavement Condition in June 2018.
Corvallis Municipal Airport

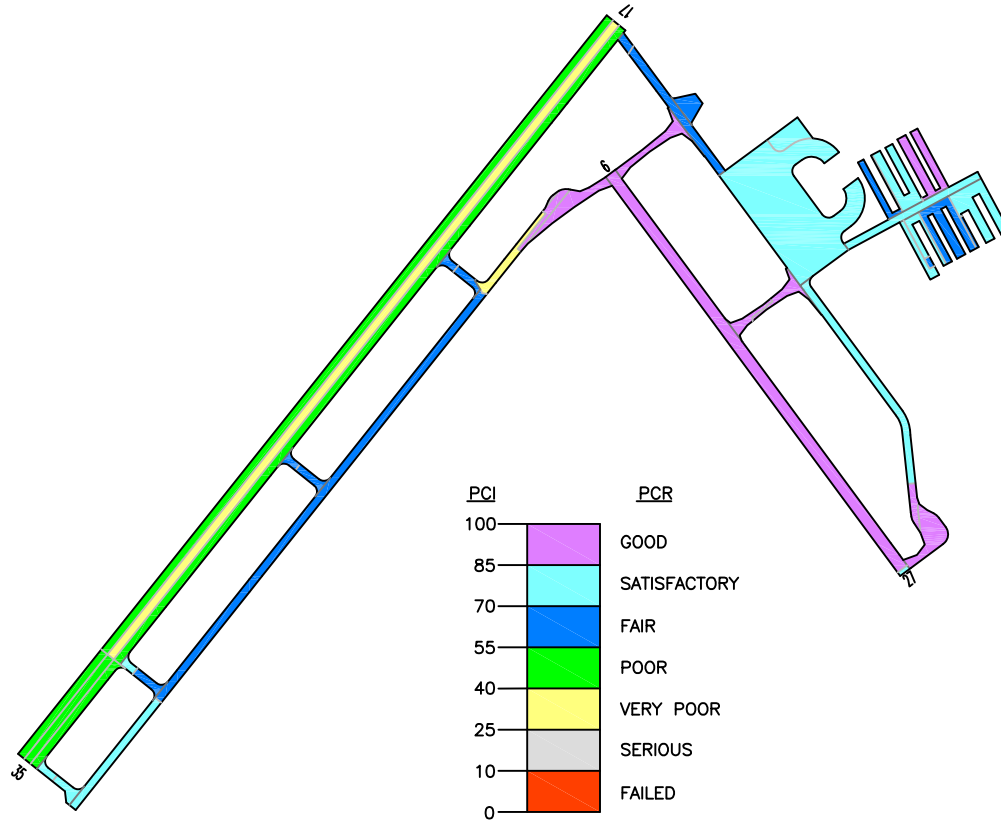


Drawing Date: September 2018

**Figure CR-4. Pavement Condition Distribution
Corvallis Municipal Airport**



Predicted Condition in 2023.



Predicted Condition in 2028.

Drawing Date: September 2018

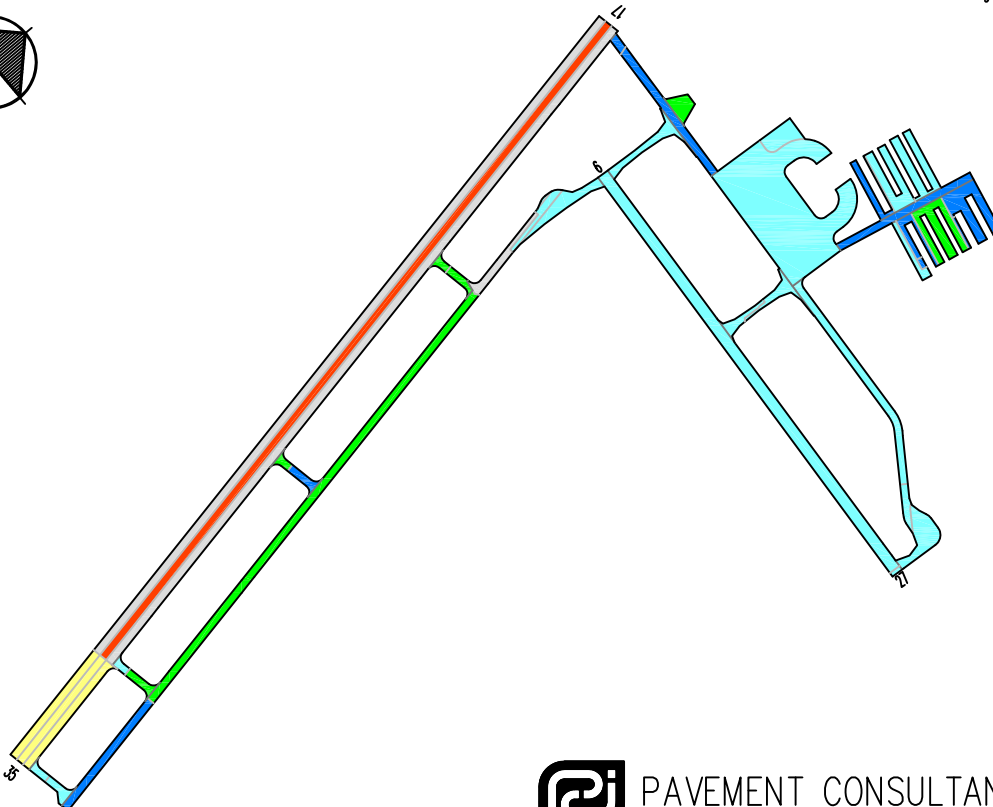


Figure CR-5. Future Pavement Condition.

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 quantity of localized maintenance is needed:

- 81,250 linear feet of asphalt concrete crack sealing

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 CR-6.

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

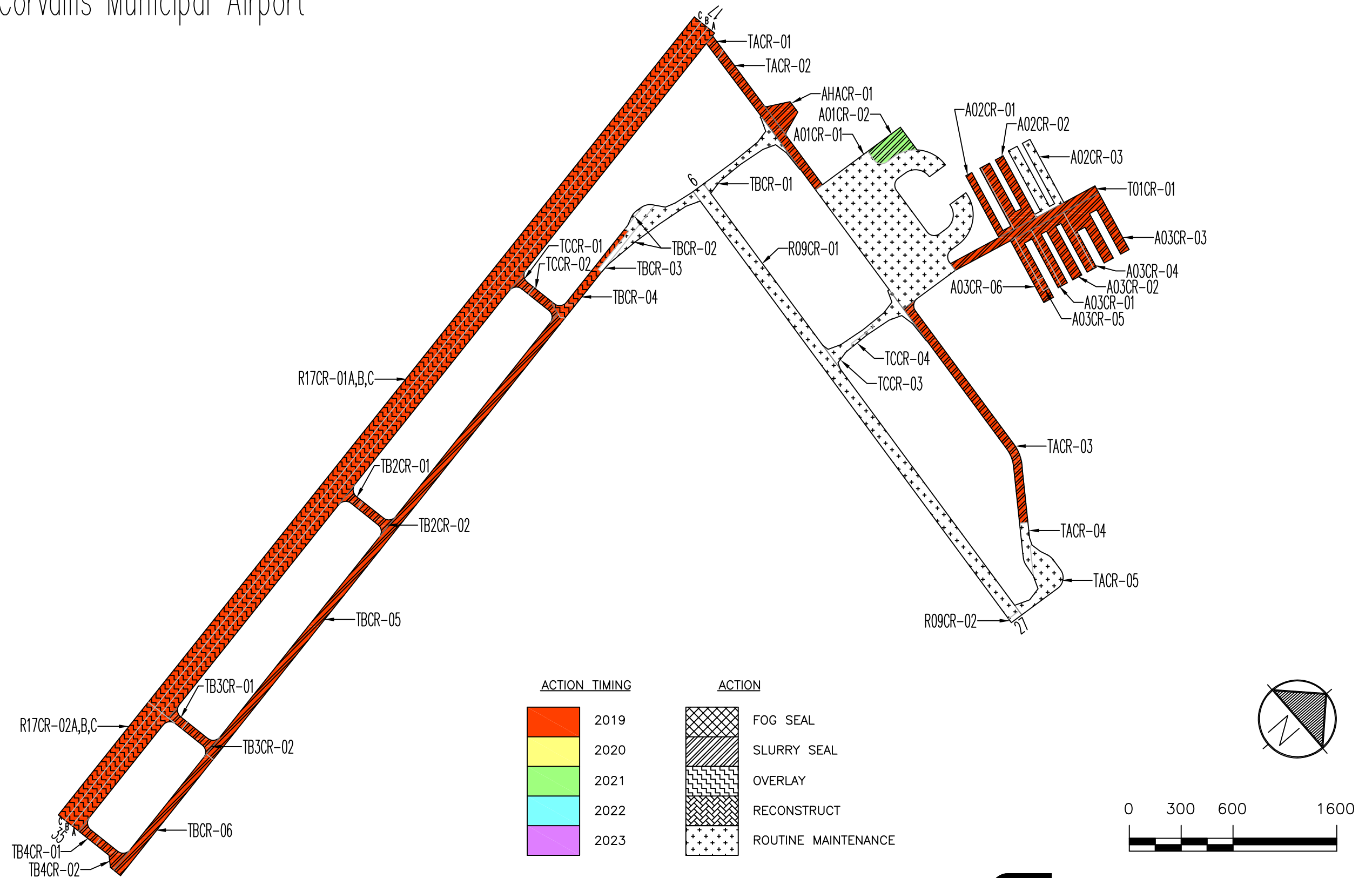
Year	Branch	Section	Action	Area (sf)	Unit Cost (\$/sf)	Total Cost (\$)
2019	A02CR	01	Slurry Seal	20,740	\$0.31	\$6,429
2019	A02CR	02	Slurry Seal	46,603	\$0.31	\$14,447
2019	A03CR	01	Slurry Seal	19,895	\$0.31	\$6,167
2019	A03CR	02	Slurry Seal	56,040	\$0.31	\$17,372
2019	A03CR	03	Slurry Seal	56,234	\$0.31	\$17,433
2019	A03CR	04	Slurry Seal	3,740	\$0.31	\$1,159
2019	A03CR	05	Slurry Seal	2,415	\$0.31	\$749

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

Year	Branch	Section	Action	Area (sf)	Unit Cost (\$/sf)	Total Cost (\$)
2019	A03CR	06	Slurry Seal	13,944	\$0.31	\$4,323
2019	AHACR	01	Slurry Seal	18,340	\$0.31	\$5,685
2019	R17CR	01A	2" AC Overlay	253,350	\$2.50	\$633,375
2019	R17CR	01B	2" AC Overlay	253,350	\$2.50	\$633,375
2019	R17CR	01C	2" AC Overlay	253,350	\$2.50	\$633,375
2019	R17CR	02A	2" AC Overlay	41,750	\$2.50	\$104,375
2019	R17CR	02B	2" AC Overlay	41,750	\$2.50	\$104,375
2019	R17CR	02C	2" AC Overlay	41,750	\$2.50	\$104,375
2019	T01CR	01	Slurry Seal	45,382	\$0.31	\$14,068
2019	TACR	01	Slurry Seal	5,771	\$0.31	\$1,789
2019	TACR	02	Slurry Seal	48,619	\$0.31	\$15,072
2019	TACR	03	Slurry Seal	73,027	\$0.31	\$22,638
2019	TB2CR	01	Slurry Seal	6,073	\$0.31	\$1,883
2019	TB2CR	02	Slurry Seal	11,088	\$0.31	\$3,437
2019	TB3CR	01	Slurry Seal	5,537	\$0.31	\$1,716
2019	TB3CR	02	Slurry Seal	11,088	\$0.31	\$3,437
2019	TB4CR	01	Slurry Seal	6,787	\$0.31	\$2,104
2019	TB4CR	02	Slurry Seal	11,809	\$0.31	\$3,661
2019	TBCR	04	2" AC Overlay	26,112	\$2.50	\$65,280
2019	TBCR	05	Slurry Seal	162,832	\$0.31	\$50,478
2019	TBCR	06	Slurry Seal	42,950	\$0.31	\$13,315
2019	TCCR	01	Slurry Seal	6,073	\$0.31	\$1,883
2019	TCCR	02	Slurry Seal	9,370	\$0.31	\$2,905
2019 Total						\$2,490,681
2021	A01CR	02	Slurry Seal	28,529	\$0.31	\$8,844
2021 Total						\$8,844
5-Year Total						\$2,499,525

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.

Figure CR-6. Five-Year Pavement Management Plan.
Corvallis Municipal Airport



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.