

ROSEBURG REGIONAL 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

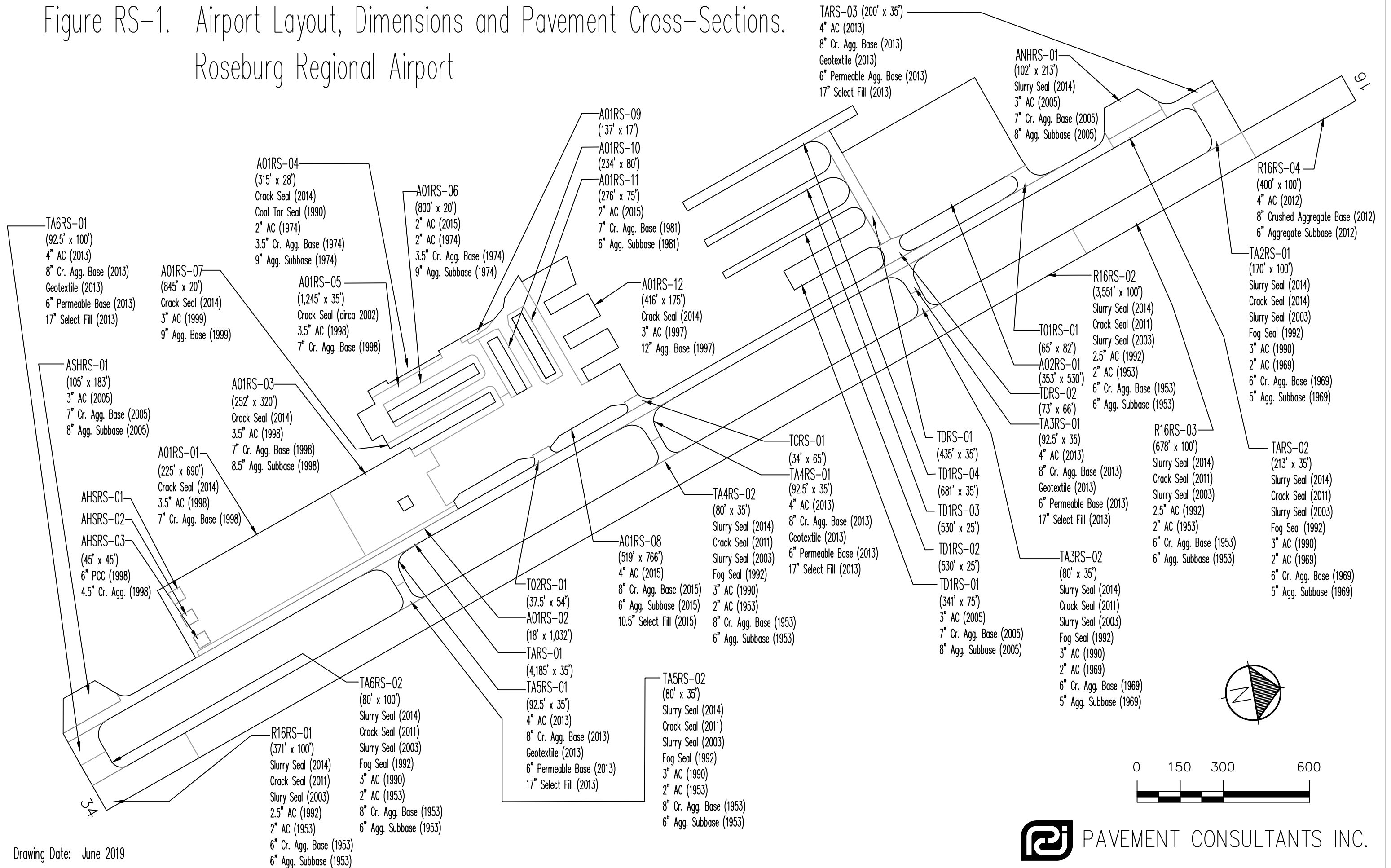
To determine how your pavements were constructed and their age, a records review was conducted. Figure RS-1 shows the records review results. This figure identifies pavement boundaries, dimensions, pavement layer types, thicknesses and dates of construction. The most recent construction date for each pavement can also be found in the Section Condition Report in Appendix 2. Figure RS-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 RS-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 Roseburg Regional Airport in May 2019. 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.

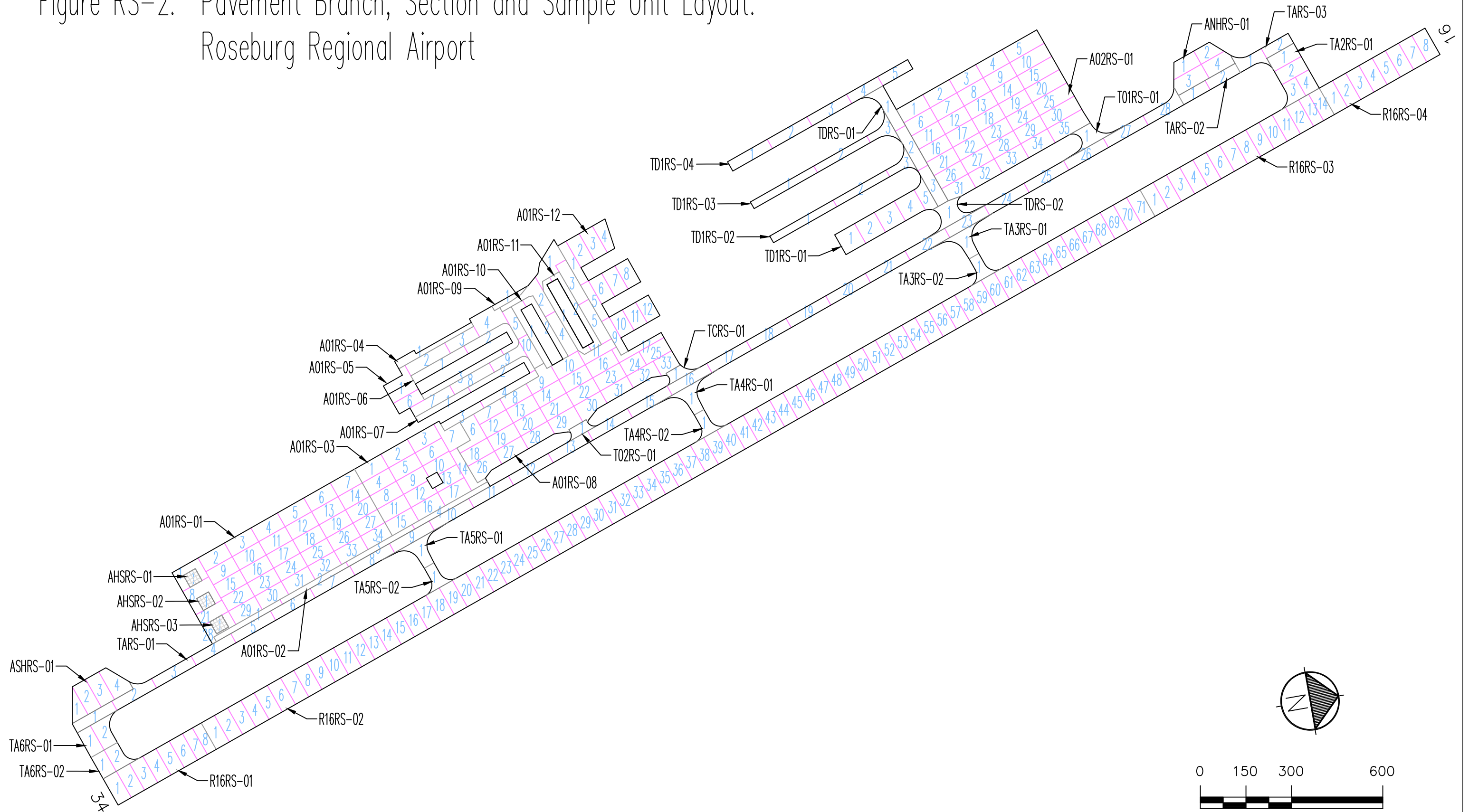
The PAVER database updated during this project ensures your airport complies with the “record keeping and information retrieval” requirements of FAA’s PMMP guidelines.

Figure RS-1. Airport Layout, Dimensions and Pavement Cross-Sections.
Roseburg Regional Airport



Drawing Date: June 2019

Figure RS-2. Pavement Branch, Section and Sample Unit Layout.
Roseburg Regional Airport



Drawing Date: June 2019

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 2024 and 2029. 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 RS-3.

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

Branch	Section	Inspections			Forecast	
		2013	2016	2019	2024	2029
A01RS	1	85	81	71	67	64
A01RS	2	100	100	98	85	73
A01RS	3	88	86	73	68	65
A01RS	4	67	85	54	53	52
A01RS	5	97	77	85	78	71
A01RS	6	47	100	100	86	75
A01RS	7	88	93	72	67	65
A01RS	8	54	100	100	96	90
A01RS	9	---	44	63	54	47
A01RS	10	---	100	94	81	70
A01RS	11	22	100	100	86	75
A01RS	12	93	86	73	68	65
A02RS	1	100	99	98	92	85
AHSRS	1	98	98	91	86	81
AHSRS	2	98	98	83	78	73
AHSRS	3	89	89	82	77	72
ANHRS	1	74	99	96	89	82
ASHRS	1	---	100	100	96	90
R16RS	1	75	82	54	21	0
R16RS	2	79	81	60	27	0
R16RS	3	79	80	63	28	0
R16RS	4	100	100	100	96	92
T01RS	1	100	100	100	98	90

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

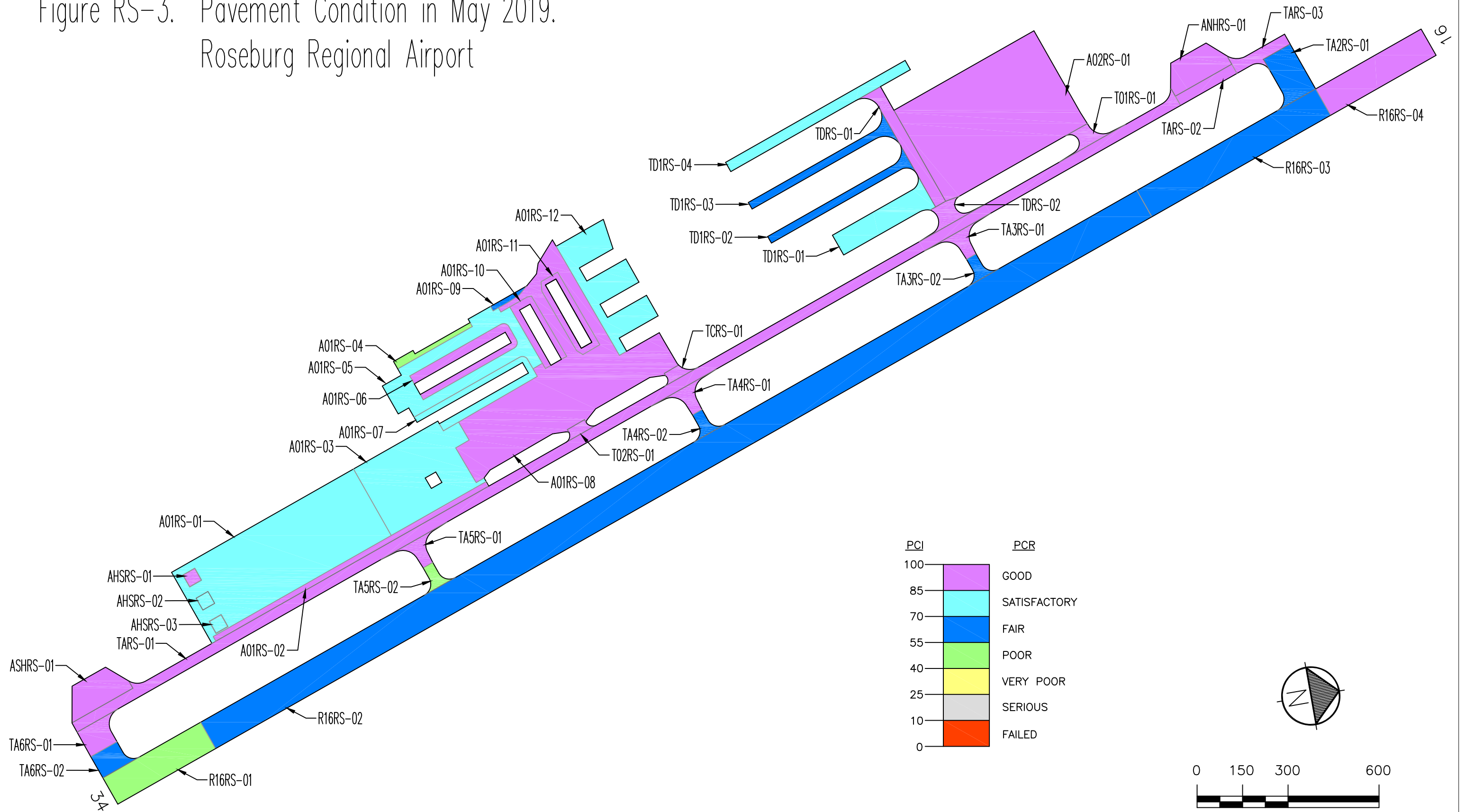
Branch	Section	Inspections			Forecast	
		2013	2016	2019	2024	2029
T02RS	1	100	100	100	98	90
TA2RS	1	74	79	69	62	55
TA3RS	1	100	100	100	98	90
TA3RS	2	100	82	60	53	46
TA4RS	1	100	100	94	84	73
TA4RS	2	77	72	58	51	44
TA5RS	1	100	100	100	98	90
TA5RS	2	74	73	55	48	41
TA6RS	1	100	100	100	98	90
TA6RS	2	69	79	57	50	43
TARS	1	100	100	98	90	79
TARS	2	74	100	95	83	75
TARS	3	100	100	100	98	90
TCRS	1	100	100	100	98	90
TD1RS	1	100	98	78	69	67
TD1RS	2	94	94	68	67	63
TD1RS	3	94	92	69	67	65
TD1RS	4	94	92	80	71	67
TDRS	1	94	94	94	84	73
TDRS	2	100	100	89	78	69

Section PCIs at Roseburg Regional Airport range from a low of 54 (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 RS-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 2013 and 2016.

The primary distresses observed during the inspection were: longitudinal and transverse cracking, weathering, block cracking, raveling, patching, joint seal damage, joint and corner spalls, and linear cracking.

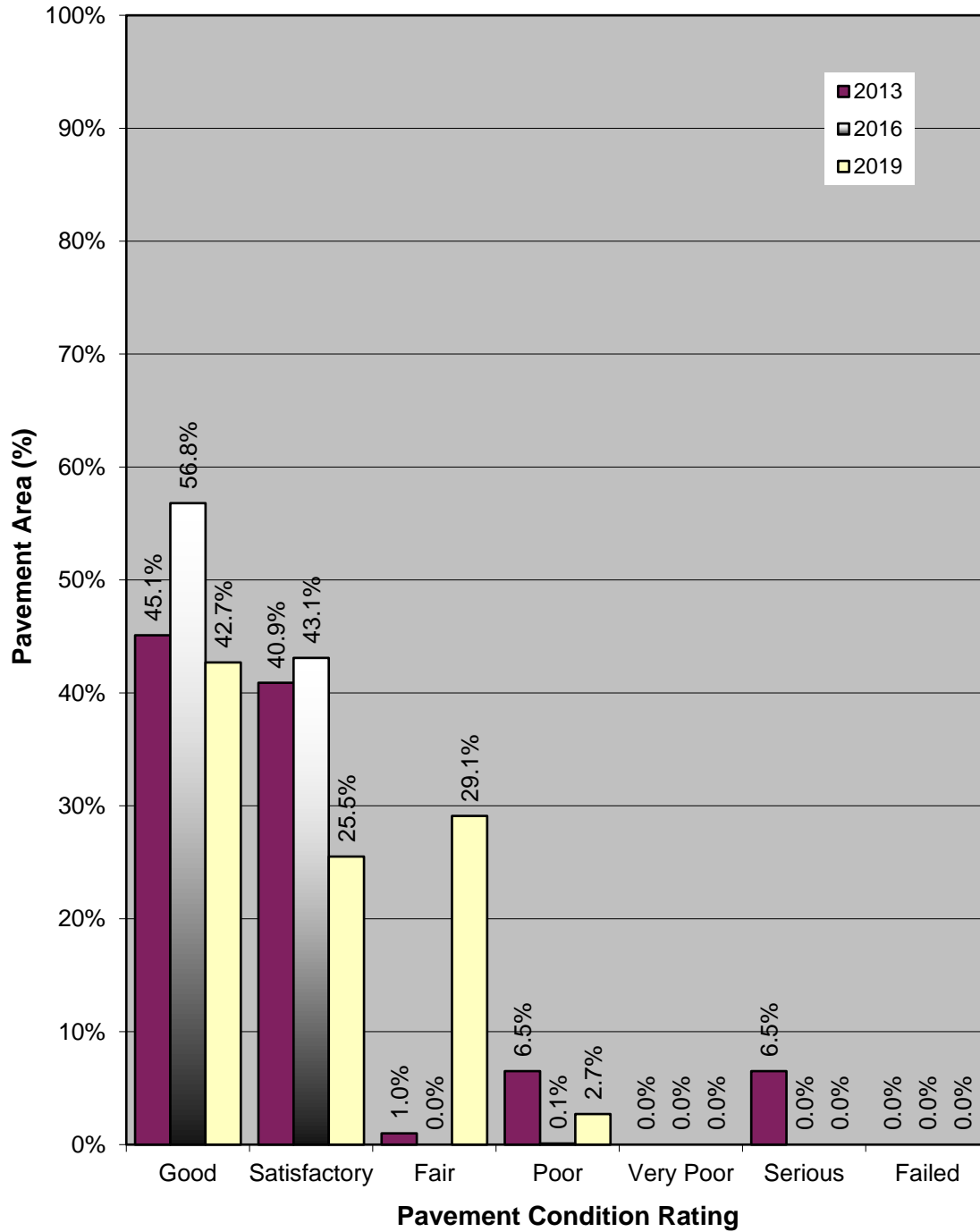
A graphical representation of the projected PCIs listed in Table 1 is shown in Figure RS-5.

Figure RS-3. Pavement Condition in May 2019.
Roseburg Regional Airport

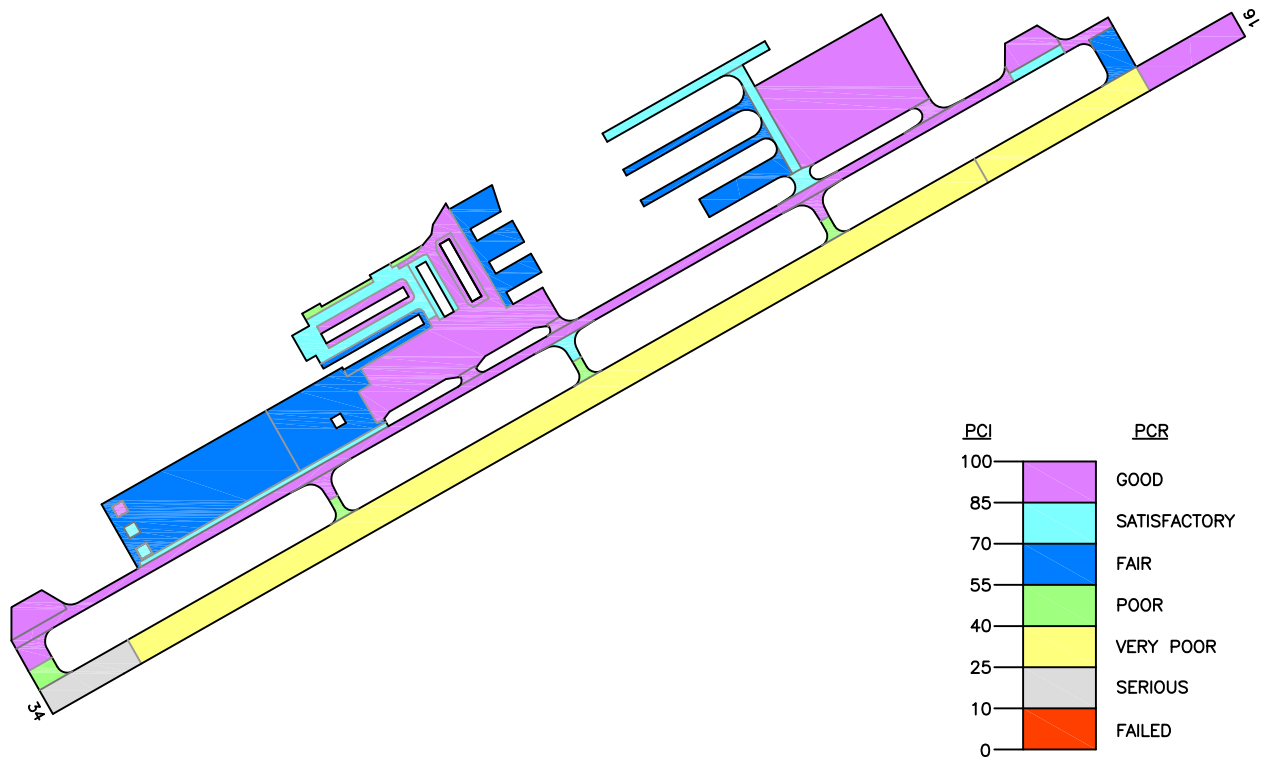


Drawing Date: June 2019

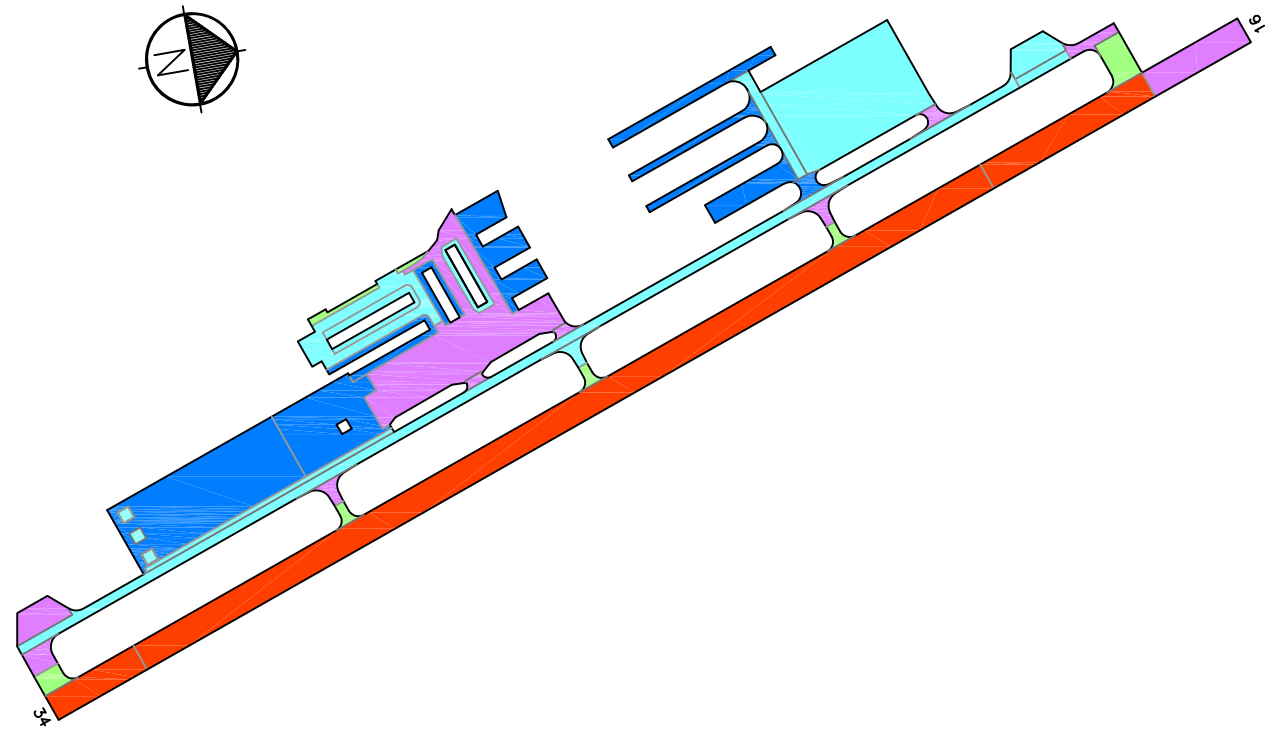
**Figure RS-4. Pavement Condition Distribution
Roseburg Regional Airport**



Predicted Condition in 2024.



Predicted Condition in 2029.



Drawing Date: June 2019

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Figure RS-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:

- 46,351 linear feet of asphalt concrete crack sealing
- 27 square feet of shallow 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 2020 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 RS-6.

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

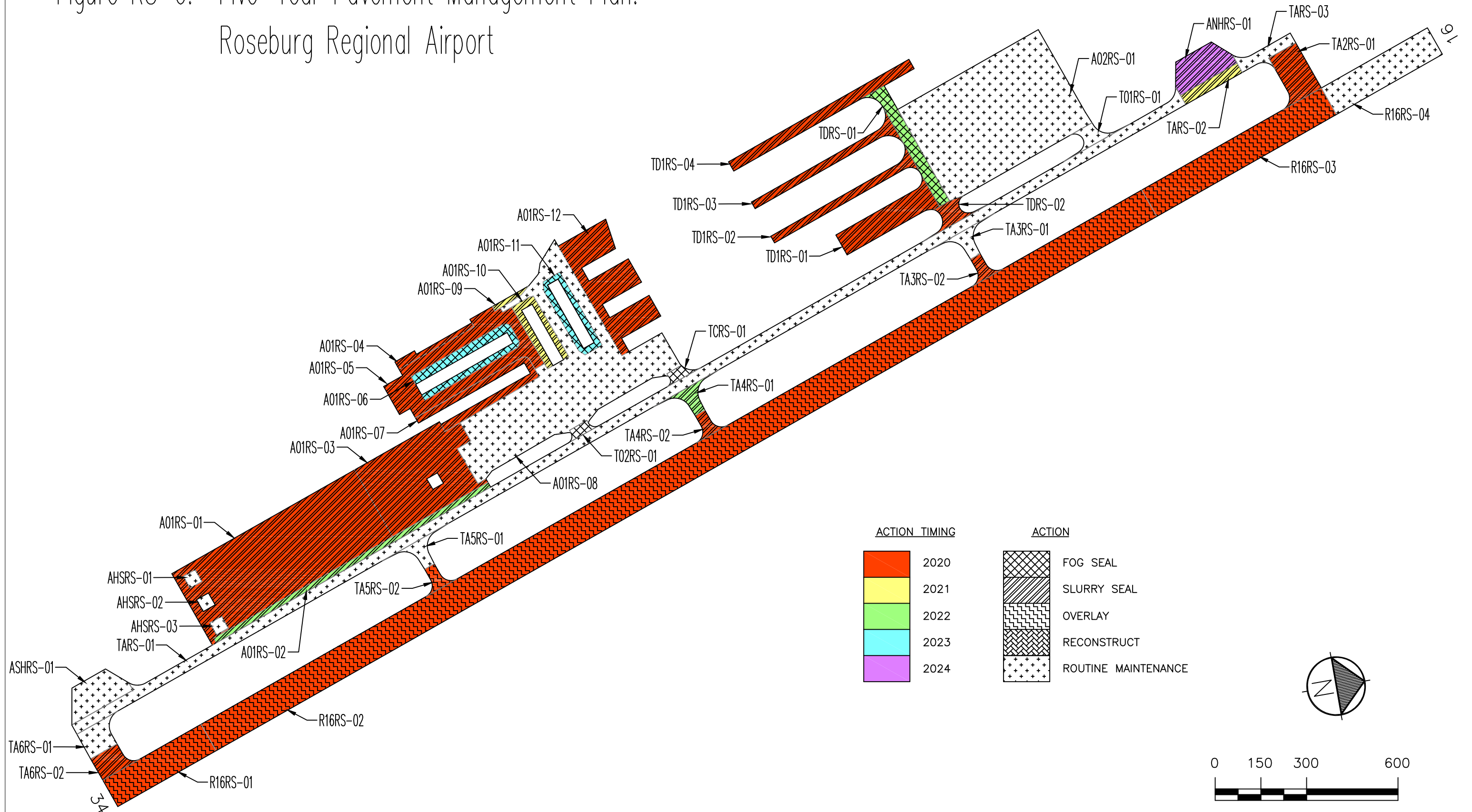
Year	Branch	Section	Action	Area (sf)	Unit Cost (\$/sf)	Total Cost (\$)
2020	A01RS	01	Slurry Seal	168,115	\$0.31	\$52,115
2020	A01RS	03	Slurry Seal	86,367	\$0.31	\$26,774
2020	A01RS	04	Slurry Seal	5,207	\$0.31	\$1,614
2020	A01RS	05	Slurry Seal	50,306	\$0.31	\$15,595
2020	A01RS	07	Slurry Seal	18,239	\$0.31	\$5,654
2020	A01RS	12	Slurry Seal	50,590	\$0.31	\$15,683

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

Year	Branch	Section	Action	Area (sf)	Unit Cost (\$/sf)	Total Cost (\$)
2020	R16RS	01	2" AC Overlay	37,100	\$2.50	\$92,750
2020	R16RS	02	2" AC Overlay	355,100	\$2.50	\$887,750
2020	R16RS	03	2" AC Overlay	67,800	\$2.50	\$169,500
2020	TA2RS	01	Slurry Seal	17,693	\$0.31	\$5,485
2020	TA3RS	02	Slurry Seal	3,605	\$0.31	\$1,118
2020	TA4RS	02	Slurry Seal	3,606	\$0.31	\$1,118
2020	TA5RS	02	2" AC Overlay	3,608	\$2.50	\$9,020
2020	TA6RS	02	Slurry Seal	8,383	\$0.31	\$2,599
2020	TD1RS	01	Slurry Seal	26,334	\$0.31	\$8,164
2020	TD1RS	02	Slurry Seal	14,160	\$0.31	\$4,390
2020	TD1RS	03	Slurry Seal	14,659	\$0.31	\$4,544
2020	TD1RS	04	Slurry Seal	23,835	\$0.31	\$7,389
2020	TDRS	02	Slurry Seal	6,139	\$0.31	\$1,903
2020 Total						\$1,313,163
2021	A01RS	09	Slurry Seal	1,898	\$0.31	\$588
2021	A01RS	10	Slurry Seal	10,451	\$0.31	\$3,240
2021	TARS	02	Slurry Seal	7,483	\$0.31	\$2,320
2021 Total						\$6,148
2022	A01RS	02	Slurry Seal	18,120	\$0.31	\$5,617
2022	TA4RS	01	Slurry Seal	5,330	\$0.31	\$1,652
2022	TDRS	01	Fog Seal	17,267	\$0.19	\$3,281
2022 Total						\$10,550
2023	A01RS	06	Fog Seal	18,878	\$0.19	\$3,587
2023	A01RS	11	Fog Seal	11,228	\$0.19	\$2,133
2023 Total						\$5,720
2024	ANHRS	01	Slurry Seal	19,105	\$0.31	\$5,923
2024 Total						\$40,065
5-Year Total						\$1,341,504

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 RS-6. Five-Year Pavement Management Plan.
Roseburg Regional Airport



Drawing Date: June 2019

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 2022.

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.