

HERMISTON 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. Figure HE-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 HE-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 HE-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 Hermiston Municipal 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 HE-1. Airport Layout, Dimensions and Pavement Cross-Sections.
Hermiston Municipal Airport

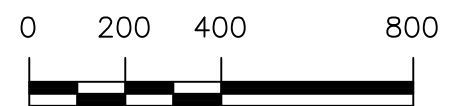
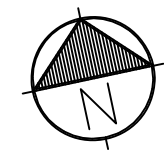
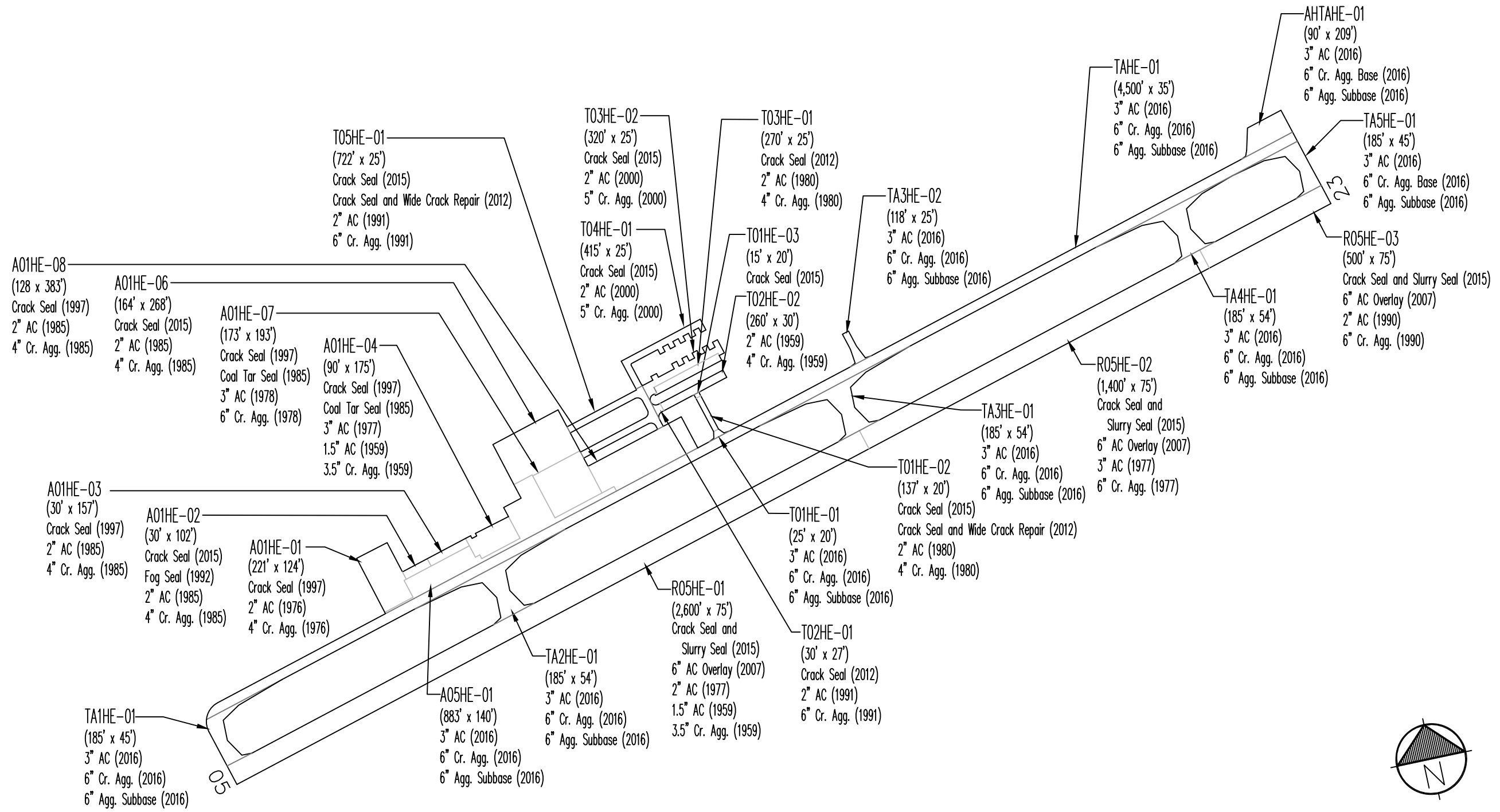
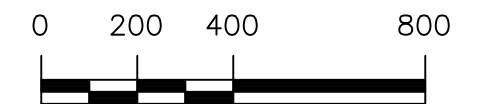
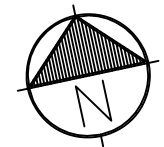
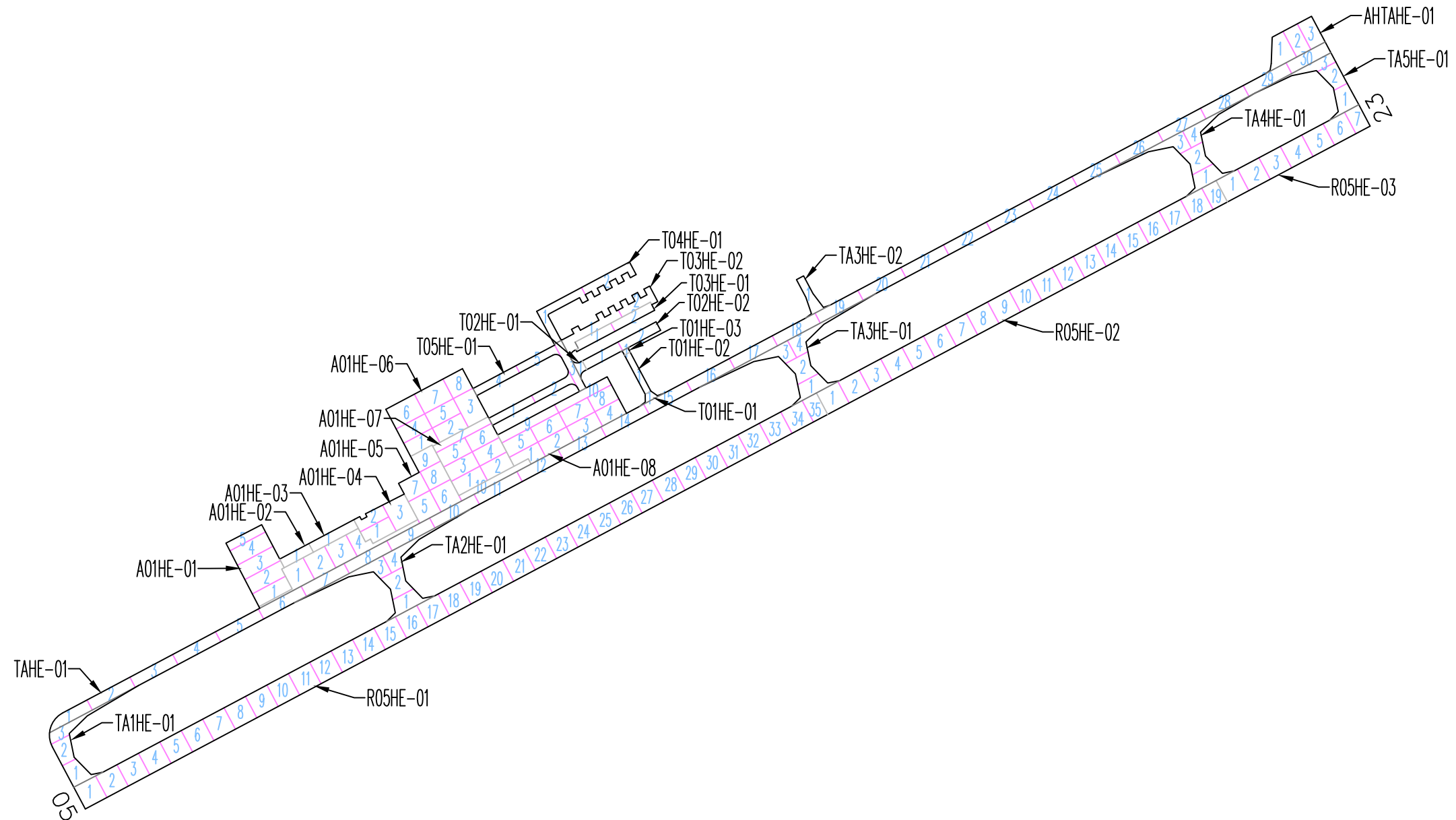


Figure HE-2. Pavement Branch, Section and Sample Unit Layout.
Hermiston Municipal Airport



Drawing Date: July 2017

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 HE-3.

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

Branch	Section	Inspections			Forecast	
		2011	2014	2017	2022	2027
A01HE	01	18	35	41	33	24
A01HE	02	43	57	73	68	64
A01HE	03	22	26	30	22	15
A01HE	04	37	32	42	36	29
A01HE	05	---	---	100	84	75
A01HE	06	45	53	83	74	69
A01HE	07	37	36	52	45	38
A01HE	08	22	50	58	53	47
AHTAHE	01	---	---	100	84	75
R05HE	01	99	80	79	70	68
R05HE	02	95	76	76	68	68
R05HE	03	97	75	81	73	68
T01HE	01	---	---	100	92	82
T01HE	02	77	63	81	74	69
T01HE	03	33	68	43	33	22
T02HE	01	89	75	71	68	65
T02HE	02	33	28	16	6	0
T03HE	01	38	38	16	6	0
T03HE	02	70	64	74	69	67
T04HE	01	71	59	59	48	38
T05HE	01	77	60	74	69	67
TA1HE	01	---	---	100	92	82
TA2HE	01	---	---	100	92	82
TA3HE	01	---	---	100	92	82

Figure HE-3. Pavement Condition in June 2017.
Hermiston Municipal Airport

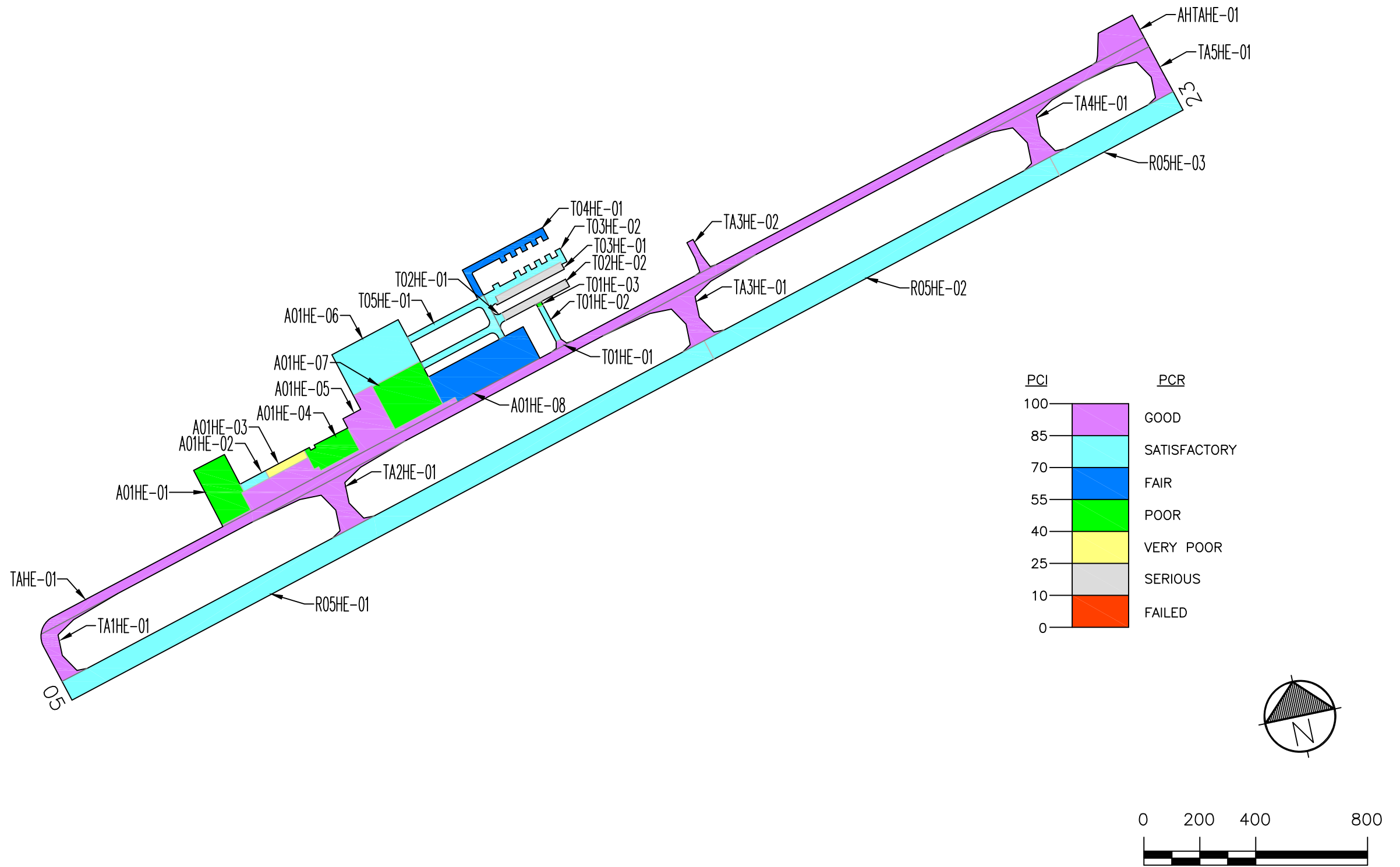


Table 1. Past, Present and Future Pavement Condition Indices.

Branch	Section	Inspections			Forecast	
		2011	2014	2017	2022	2027
TA3HE	02	---	---	100	92	82
TA4HE	01	---	---	100	92	82
TA5HE	01	---	---	100	92	82
TAHE	01	---	---	100	92	82

Section PCIs at Hermiston Municipal Airport range from a low of 16 (a PCR of “Serious”) 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 HE-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 were: weathering, longitudinal and transverse cracking, block cracking, alligator cracking, and raveling, with an isolated occurrence of patching.

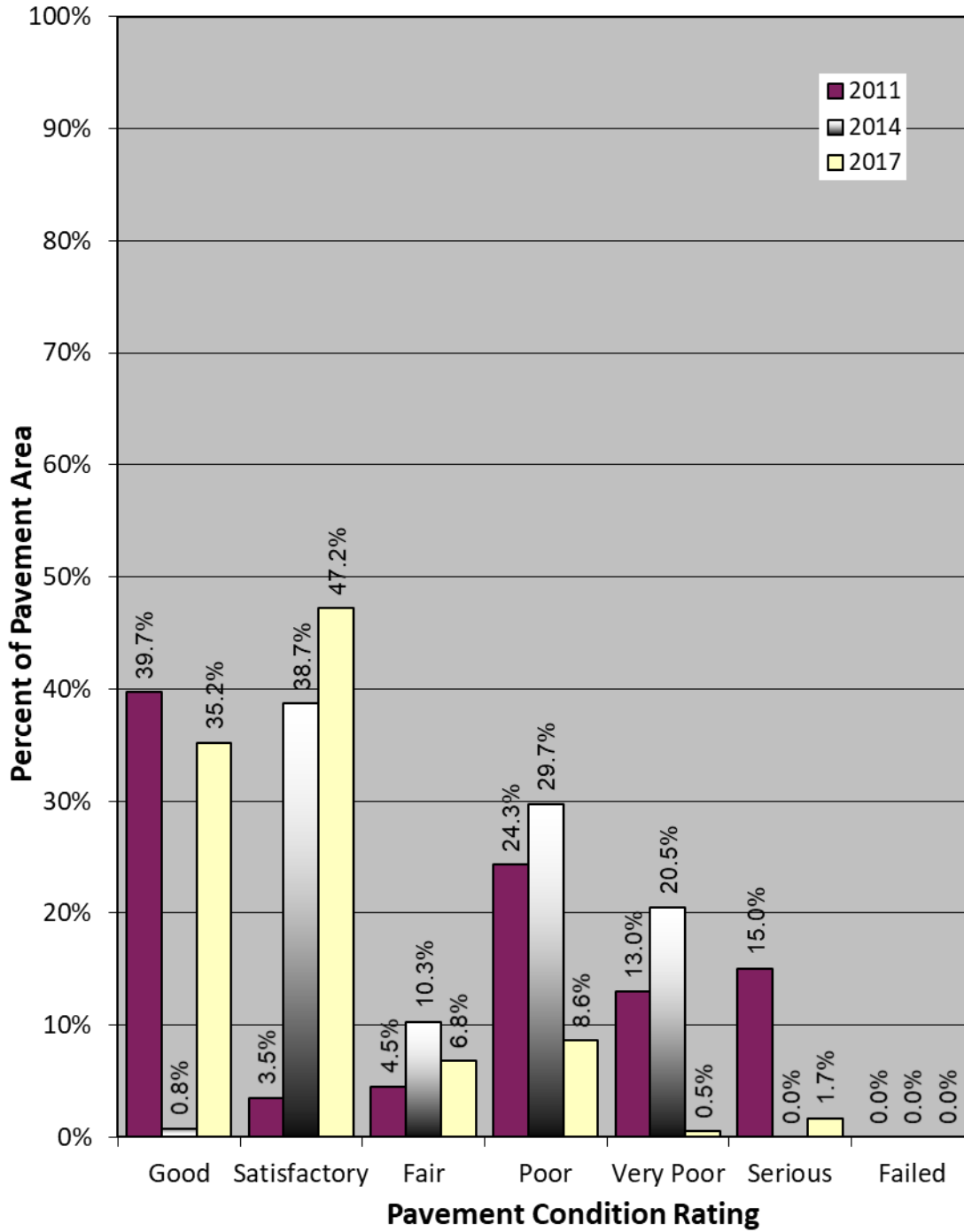
A graphical representation of the projected PCIs listed in Table 1 is shown in Figure HE-5.

RECOMMENDATIONS

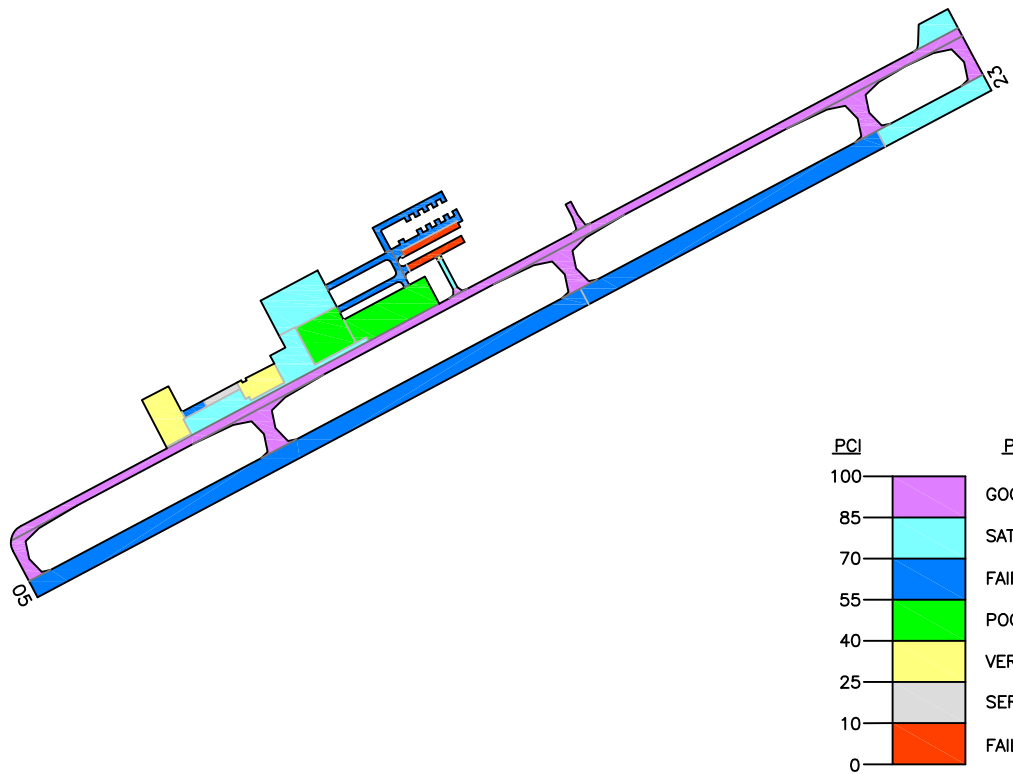
Data collected during the visual condition survey were used by the PAVER software to generate the Network Maintenance Report contained in Appendix 3. This report identifies, for each pavement section, the recommended localized maintenance activities (i.e.-crack sealing, patching) that should be completed 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:

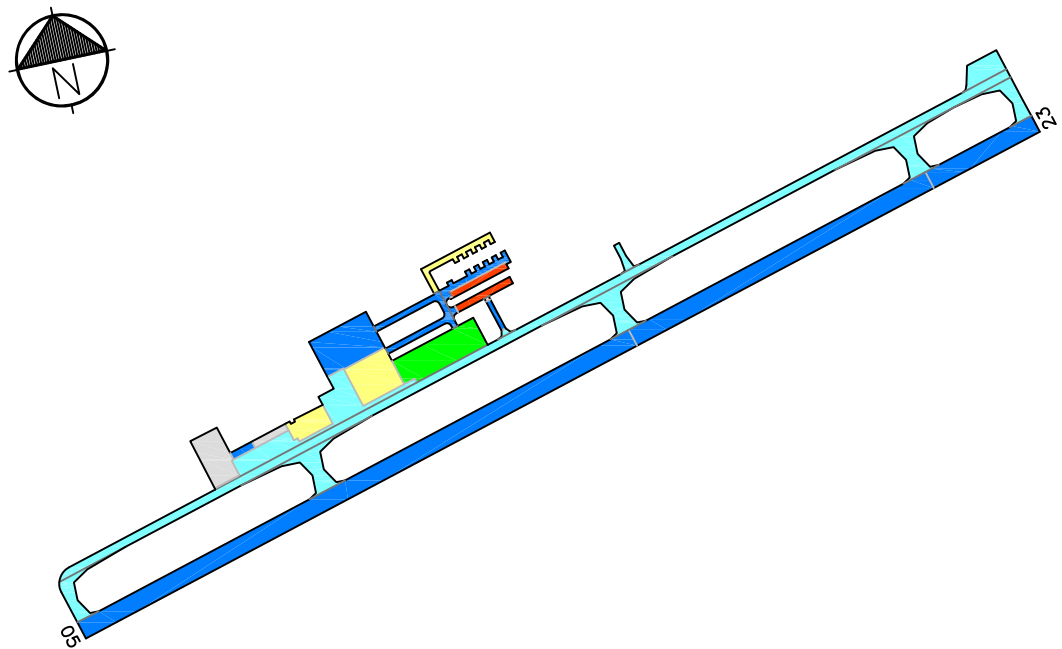
**Figure HE-4. Distribution of Pavement Condition
Hermiston Municipal Airport**



Predicted Condition in 2022.



Predicted Condition in 2027.



Drawing Date: June 2017

Figure HE-5. Future Pavement Condition.

- 29,722 linear feet of asphalt concrete crack sealing
- 508 square feet of deep (full-depth) asphalt concrete patching
- 7,648 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 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 HE-6.

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

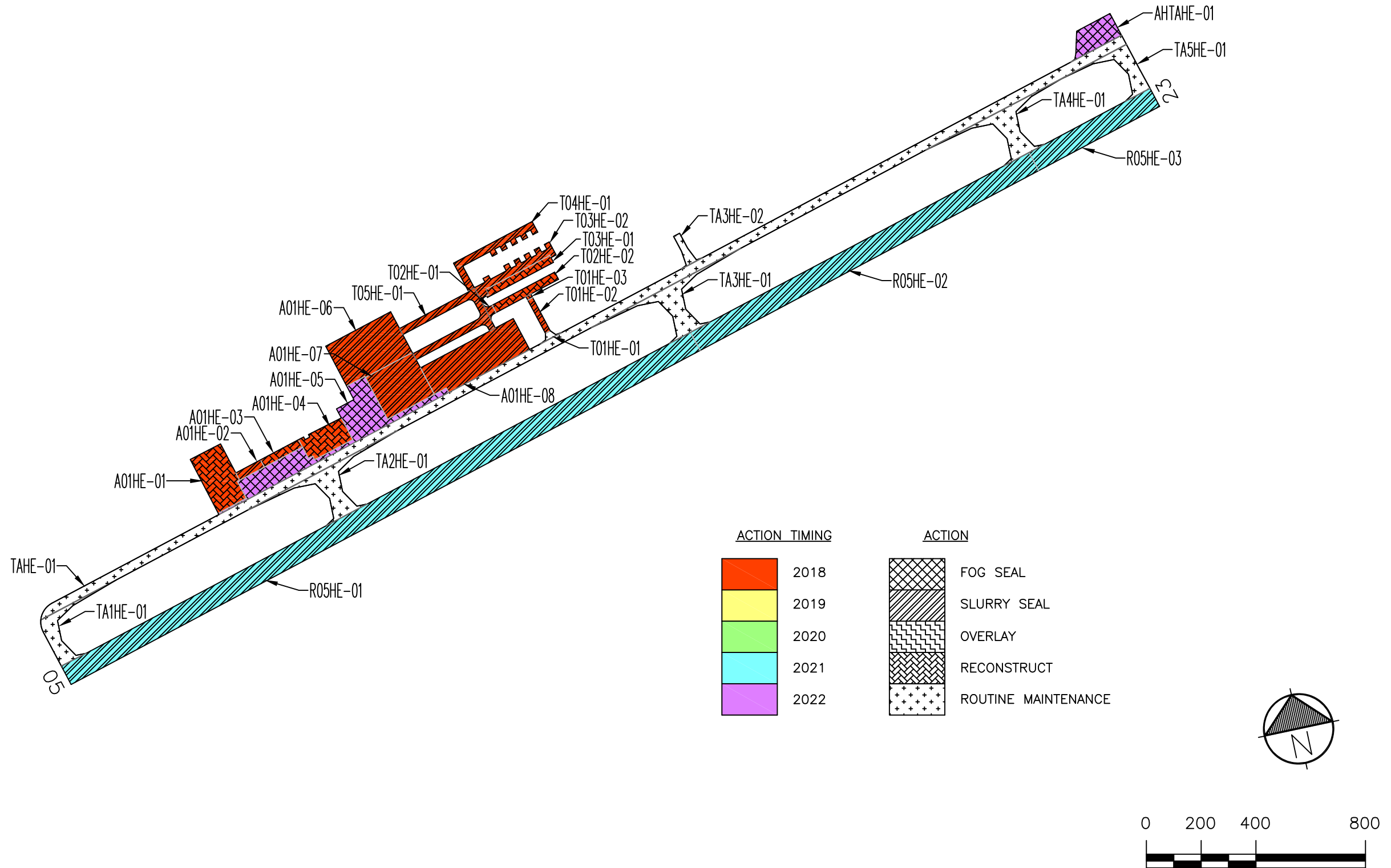
Year	Branch	Section	Action	Area (sf)	Unit Cost (\$/sf)	Total Cost (\$)
2018	A01HE	01	3" AC over 6" Crushed Aggregate Base over 6" Aggregate Subbase	26,895	\$7.95	\$213,815
2018	A01HE	02	Slurry Seal	3,092	\$0.31	\$959
2018	A01HE	03	3" AC over 6" Crushed Aggregate Base over 6" Aggregate Subbase	4,761	\$7.95	\$37,850
2018	A01HE	04	3" AC over 6" Crushed Aggregate Base over 6" Aggregate Subbase	15,502	\$7.95	\$123,241
2018	A01HE	06	Slurry Seal	44,994	\$0.31	\$13,948
2018	A01HE	07	Slurry Seal	33,512	\$0.31	\$10,389
2018	A01HE	08	Slurry Seal	48,209	\$0.31	\$14,945
2018	T01HE	02	Slurry Seal	2,740	\$0.31	\$849
2018	T01HE	03	3" AC over 6" Crushed Aggregate Base over 6" Aggregate Subbase	311	\$7.95	\$2,472
2018	T02HE	01	Slurry Seal	974	\$0.31	\$302

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

Year	Branch	Section	Action	Area (sf)	Unit Cost (\$/sf)	Total Cost (\$)
2018	T02HE	02	3" AC over 6" Crushed Aggregate Base over 6" Aggregate Subbase	7,756	\$7.95	\$61,660
2018	T03HE	01	3" AC over 6" Crushed Aggregate Base over 6" Aggregate Subbase	7,544	\$7.95	\$59,975
2018	T03HE	02	Slurry Seal	11,391	\$0.31	\$3,531
2018	T04HE	01	Slurry Seal	12,307	\$0.31	\$3,815
2018	T05HE	01	Slurry Seal	18,580	\$0.31	\$5,760
2018 Total						\$553,511
2021	R05HE	01	Slurry Seal	195,000	\$0.31	\$60,450
2021	R05HE	02	Slurry Seal	105,000	\$0.31	\$32,550
2021	R05HE	03	Slurry Seal	37,500	\$0.31	\$11,625
2021 Total						\$104,625
2022	A01HE	05	Fog Seal	52,443	\$0.19	\$9,964
2022	AHTAHE	01	Fog Seal	14,807	\$0.19	\$2,813
2022 Total						\$12,777
TOTAL						\$670,913

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 HE-6. Five-Year Pavement Management Plan.
Hermiston Municipal Airport



Drawing Date: July 2017

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.