Pavement Evaluation/Maintenance Management Program 2019

Cottage Grove State Airport

Oregon

DEPARTMENT OF AVIATION

Pavement Evaluation/ Maintenance Management Program 2019

Pavement Consultants Inc.

Cottage Grove State Airport

Oregon Department of Aviation

2019 Pavement Evaluation / Maintenance Management Program

Final Report – Individual Airports
Functional Category 4, Central Climatic Zone

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Introduction

The Oregon Department of Aviation has been collecting pavement condition information at eligible airports since the mid-1980s. In January 1995 the Federal Aviation Administration (FAA) mandated that any airport sponsor receiving and/or requesting federal funds for pavement improvement projects must have implemented a pavement maintenance management program. Through the Department's system planning efforts, the airports included in the Department's Pavement Evaluation / Maintenance Management Program have been complying with the intent of the law since the mid-1980s, well ahead of the FAA mandate. The information collected during this study ensures that your airport continues to comply with the Federal mandate. The developed pavement maintenance management program, as it relates to an individual airport, is described in this report.

The Oregon Department of Aviation routinely provides information to airport owners and operators throughout the State that assists them in maintaining and operating their airports. The State addresses many issues as part of their planning process, one of which is to provide to each individual airport, on a three-year cycle, a report on pavement condition. Through the statewide study, pavement maintenance management programs for all eligible airports in the state are efficiently and economically completed through the Department of Aviation's Pavement Evaluation / Maintenance Management Program.

Each airport owner or operator makes frequent decisions about the timing and type of maintenance and repair activities that should be completed on their pavements to maintain acceptable surface condition and adequate load-carrying capacity. The pavement maintenance management program described in this document, and supplemented by the information contained in the attached report prepared specifically for your airport, will assist you in making necessary decisions about pavement maintenance and rehabilitation projects at your airport, and will ensure compliance with the Federal mandate.

To develop a pavement maintenance management program for each eligible airport, the Department of Aviation elected to conduct pavement evaluations (visual inspections), and to implement the PAVER pavement maintenance management software. These activities were completed as part of the Department's Continuous Aviation System Plan efforts. PAVER uses the evaluation results to efficiently identify pavements requiring maintenance and rehabilitation, and to establish project priorities. The software can also be used to assess overall pavement network condition, prepare and forecast the budgets required to maintain the network at an acceptable condition level, and identify required maintenance and rehabilitation activities.

The federally mandated pavement maintenance management program identifies five major requirements:

- **Pavement inventory**
- **Inspection schedule (detailed and monthly)**
- **Record keeping**
- **Information retrieval**
- **Program funding**

The approach taken to meet these program requirements for your airport is described in this report.

Pavement Inventory

The FAA-mandated Pavement Inventory requirement specifies that information about each piece of pavement at an airport be compiled. This information is to include, at a minimum: pavement location, pavement dimensions, pavement surface type, and last construction date. The process used to develop this information is discussed under "Records Review".

Additionally, information is collected about the pavements at an airport so its pavement network can be defined. After the pavement network is defined, pavement inspections can be completed and a pavement maintenance management program can be developed. The methodology for defining the pavement network follows the Records Review discussion.

Records Review

The first step in meeting FAA's pavement maintenance management program requirement is to develop a maintenance and construction history for all pavements at an airport. For more than 30 years the Oregon Department of Aviation has, for its eligible airports, been conducting pavement evaluations to determine existing condition. In 1991 Pavement Consultants Inc. began assisting the Department in their efforts to compile and update that information. The information collected was used to develop a pavement maintenance management program for each eligible airport as described in this report, and your attached individual airport report.

Previous State-sponsored projects identified pavement layout, pavement construction history and pavement condition at each eligible airport. During this inspection cycle these documents were reviewed, and follow-up inquiries on pavement construction history were directed to the Oregon Department of Aviation, the FAA, consultants and airport sponsors. Based on this review, pavement boundaries were identified at your airport and were placed on an AutoCAD-generated base map (see Figure 1 in your attached airport report). ***The established base map fulfills the FAA "Pavement Inventory" requirement for locating pavements, identifying their dimensions, and identifying pavement type and age.***

Network Definition

Once the pavement history at an airport has been compiled, individual pavement features can be identified, a process called network definition. These pavement features are defined on the basis of: primary use, construction history, and traffic pattern. Each airport is divided into features according to the guidelines contained in the current edition of ASTM International-Standard D5340, *Standard Test Method for Airport Condition Index Surveys*. The pavement features used in this project are defined as follows.

Network: Each eligible airport constitutes a separate pavement network.

Branch: A branch is any identifiable part of a pavement network that has a distinct function. Airfield pavements such as individual runways, taxiways and aprons are each considered to be a separate branch.

Section: A section is a subdivision of a branch and has consistent characteristics throughout its length or area. These characteristics include: pavement layer material type and thickness, construction history, traffic, and pavement condition. A section is the basic management unit of a pavement network, and is that portion of a branch over which a maintenance and rehabilitation project is likely to be completed.

Sample Unit: A sample unit is an arbitrarily defined portion of a pavement section that is used when performing detailed pavement inspections. It is the smallest subdivision in a pavement network. For flexible airport pavements such as asphalt concrete or surface treatment, sample units are about 5,000 square feet in area. For rigid (portland cement concrete) airport pavements, sample units typically include approximately 20 contiguous pavement slabs.

Beginning approximately 30 years ago, branches, sections and sample units were established for each eligible airport in the Oregon system. During this project, these divisions were reviewed and modified as required, based on changed conditions (new pavements, demolished pavements), or completion of any pavement-related maintenance and rehabilitation projects.

Branch and Section Names

Each pavement feature is assigned a name that allows it to be uniquely identified in the statewide airport system. Each branch name consists of a series of characters. The first character indicates the branch type: “R” for Runway, “T” for Taxiway, “A” for Apron or Helipad. The last two characters in the branch name identify the airport to which the branch belongs and were taken from the airport name. All branches for your airport carry this airport-specific two-letter identifier. The individual runway, taxiway, apron or helipad referenced is identified by characters located between the branch type (“R”, “T” or “A”) and your two-letter airport identifier. To the extent possible, these identifying characters were chosen to reflect the facility names you use. If the facility does not have a name it was assigned a number. In the case of runways, numbers are used that are the lower of the two runway numbers corresponding to compass bearing.

Located after a hyphen following the branch name are two- or three alpha-numeric characters. These characters identify the section within the branch. An example illustrating the naming convention is:

R03MC-01

which is the name for Runway 03/21, Myrtle Creek Municipal Airport, Section 01.

The branches, sections and sample units identified for your airport are shown on Figure 2 in your attached individual airport report.

Network Identifiers

Several designators are used to describe information about a particular airport included in the State System Plan. These designators include: network identification, zone, functional category, funding group, ownership and climatic region.

Network Identification

Each airport in the statewide system is assigned a unique network identifier (name). This name is typically the name of the city in which the airport is located. The network identification name for your airport can be found in the appendices attached to your airport report. This network identification name is assigned so that an individual airport or a group of airports contained in the statewide database can be selected for evaluation. The statewide database contains information for all eligible airports in the State.

Zone

Zones are used to allow individual airports within the statewide database to be separately selected for analysis. The FAA airport designator is used as the zone designator.

Functional Category

Each airport is assigned a functional category based on its classification within the State System Plan. Each airport is assigned a functional category of either 1, 2, 3, 4 or 5 in accordance with the criteria set forth in the System Plan. These categories correspond to the following airport types: commercial service, business or high activity general aviation, regional general aviation, community general aviation, and low activity general aviation, respectively. The category assigned to your airport is listed in the appendices attached to your airport report. This category assignment allows groups of airports in different functional categories to be separately evaluated.

Funding Group

Airports in the State are categorized as either NPIAS or non-NPIAS. NPIAS designated airports are eligible for project funding under the FAA's Airport Improvement Program (AIP). Being designated as NPIAS or non-NPIAS in the database allows the Department to evaluate funding alternatives for the State airport system.

Ownership

Airport ownership is designated as Public, State or Private. This designation allows the Department to evaluate funding allocations based on eligibility for State and/or Federal funding.

Climatic Region

Each airport in the statewide system is assigned to one of three climatic regions - eastern, central or coastal. Because climatic conditions can impact pavement performance, assigning airports to a climatic region allows pavement performance to be more accurately modeled, resulting in more accurate pavement condition forecasts.

Branch or Section Identifiers

Several designators are used to describe a branch or section's function, importance or construction. These characteristics are: branch use, pavement rank, and surface type.

Branch Use

Branch use identifies the primary use of each distinct pavement area. For each airport pavement included in this study, a branch use of "Runway", "Taxiway", "Apron" or "Helipad" is assigned, as appropriate.

Pavement Rank

Pavement rank refers to the relative importance assigned to multiple facilities having the same branch use. Each pavement section is assigned a rank of primary ("P"), secondary ("S") or tertiary ("T") as appropriate. As an example, an airport with two runways might rank the more heavily used runway as primary and the lesser-used runway as secondary. The pavement rank assigned to each pavement section at your airport can be found in the appendices attached to your individual airport report.

Surface Type

Each pavement section is assigned a surface type designator based on the type of surface material present. Throughout the State six (6) surface types were encountered: asphalt overlay over asphalt concrete (AAC), asphalt concrete (AC), asphalt overlay over portland cement concrete (APC), portland cement concrete (PCC), surface treatment (ST), and chip seal (X). The surface type assigned to each pavement section at your airport is provided in the report appended to this document. ***Surface type identification fulfills one of FAA's "Pavement Inventory" requirements.***

Structural and Construction History Data

Available construction records for each airport were obtained from the Oregon Department of Aviation, Federal Aviation Administration, consultants or airport sponsors. These records were reviewed to establish a last construction date for each pavement section. Additional information was requested from individual airport sponsors to update or clarify this information, as necessary. The last construction date and known construction history for each pavement section can be found on Figure 1 in your individual airport report. The last construction date is also identified in the reports found in the attached appendixes. For those pavement sections where information

was not available, a last construction date was assigned based on pavement condition. ***Last construction date identification fulfills the final FAA "Pavement Inventory" requirement.***

Field Verification

Information obtained through the records review and discussions with airport sponsors, Department of Aviation staff, FAA personnel and consultant staff was field-verified to ensure that each facility is accurately mapped and properly subdivided into branches and sections. Modifications to the maps, and/or branch and section divisions, were made as necessary wherever discrepancies in airport geometry, paving materials, or construction history were found during the visual inspections.

Inspection Schedule

The FAA's Pavement Maintenance Management Program guidelines require all airports seeking or receiving federal funds for pavement-related projects to complete both detailed and drive-by inspections. The guidelines require that detailed inspections be performed yearly, unless the inspections are conducted in accordance with the Pavement Condition Index methodology set forth in ASTM D5340, at which point detailed inspections are required once every three years. ***The Pavement Condition Index methodology is used to inspect Oregon's airports. Each airport is inspected on a three-year cycle thus complying with the FAA detailed inspection requirement.***

The drive-by inspections required by the FAA are to be completed monthly. These inspections are cursory inspections that are performed to detect any unexpected changes in pavement condition.

A description of the detailed inspection methodology, as well as an approach to completing the monthly drive-by inspections, is provided below.

Detailed Inspection

Methodology

Pavement Condition Index (PCI) surveys were performed in May 2019 for all airports included in this year's project. The surveys were performed using the Pavement Condition Index (PCI) methodology developed by the U.S. Army Corps of Engineers, and outlined in the current edition of ASTM D-5340, *Standard Test Method for Airport Condition Index Surveys*. This document defines distress types, severity levels, and methods for measuring and recording distresses.

The PCI procedure was developed to collect data that would provide engineers and managers with a numerical value indicating overall pavement condition, and that would reflect both pavement structural integrity and surface operational condition. The procedure was designed to be highly repeatable and was found to be well-correlated with the judgment of experienced pavement engineers.

A PCI survey is performed by measuring the amount and severity of certain defined distresses (defects) observed in a sample unit. Table 1 lists both the asphalt concrete and portland cement concrete pavement distress types considered in the PCI method, and also identifies their most common cause (load, climate/durability, other) as assigned by the PAVER software. Load-related distresses are apparent where the pavement has been over-stressed by traffic loads applied to its surface. Climate/durability-related distresses arise due to exposure to the environment. Other-related distresses are caused by actions not related to load or climate such as fuel spills or construction deficiencies.

Table 1. Pavement Condition Index Distress Types and Related Causes.

Asphalt Concrete		Portland Cement Concrete	
Pavement Distress	**Related Cause**	**Pavement Distress**	**Related Cause**
Alligator Cracking	Load	Blow-Up	Climate/Durability
Bleeding	Other	Corner Break	Load
Block Cracking	Climate/Durability	Cracks: Longitudinal, Transverse, and Diagonal	Load
Corrugation	Other	Durability ("D") Crack	Climate/Durability
Depression	Other	Joint Seal Damage	Climate/Durability
Jet Blast Erosion	Other	Patching, Small	Other
Joint Reflection Cracking	Climate/Durability	Patching, Large and Utility Cuts	Other
Longitudinal and Transverse Cracking	Climate/Durability	Popouts	Other
Oil Spillage	Other	Pumping	Other
Patching and Utility Cut Patching	Climate/Durability	Scaling, Map Cracking, Crazing	Other
Polished Aggregate	Other	Settlement or Faulting	Other
Raveling	Climate/Durability	Shattered Slab / Intersecting Cracks	Load
Rutting	Load	Shrinkage Cracks	Other
Shoving	Other	Spalling (Longitudinal and Transverse Joint)	Other
Slippage Cracking	Other	Spalling (Corner)	Other
Swell	Other	Alkali Silica Reaction (ASR)	Other
Weathering	Climate/Durability		

To obtain a statistically reliable PCI for a given pavement section it is not necessary to inspect all sample units in that section. A pre-determined number of randomly chosen sample units are selected for inspection based on the total number of sample units in the section. The sampling rates used during this study are shown in Table 2. The sampling rates contained in Table 2 result in data that are reliable at a 92 percent confidence level.

Table 2. Selection of Number of Sample Units to Inspect.

Flexible Pavement		Rigid Pavement	
N	n	N	n
1	1	1	1
2 - 3	2	2	2
4 - 6	3	3 - 4	3
7 - 13	4	5 - 6	4
14 - 38	5	7 - 8	5
39 +	6	9 - 11	6
		12 - 14	7
		15 - 19	8
		20 - 27	9
		28 - 38	10
		39 - 58	11
		59 - 104	12
		105 - 313	13
		314 +	14

Where: N = Total number of sample units in a pavement section
n = Number of sample units to be surveyed

Pavement Condition Index Calculation

To calculate a PCI for a given sample unit, each distress type observed is assigned a deduct value based on its density (frequency of occurrence) in that sample area, and its severity. All deducts are summed and subsequently adjusted (corrected) for the number of different distresses found. This corrected deduct value is subtracted from 100, the PCI for a "perfect" pavement, to arrive at a PCI for that particular sample unit. The PCI for a pavement section is the area-weighted average PCI value of all sample units evaluated in that section. Pavement Condition Ratings (PCRs) are associated with ranges of PCI values.

The color-coded Figure 3 in your attached individual airport report shows the PCRs and their associated PCI ranges, as well as the pavement condition at your airport in May 2019.

Monthly Drive-By Inspection

As part of the FAA-mandated pavement maintenance management program, a monthly drive-by inspection is required. This inspection is intended to identify abrupt changes in condition occurring since the last monthly inspection, and to record any maintenance activities completed during the previous month. This inspection can easily be accomplished by driving your airport and noting any changes or maintenance performed on the form provided in Figure 1. Each drive-by inspection must note the date the inspection was completed, and record any maintenance performed since the last inspection. These records must be kept on-file for five years.

Figure 1. Monthly Drive-By Inspection Form.

Airport: _____

Date: _____

Inspector: _____

Branch*	Section*	Distresses Observed	Maintenance Performed Since Last Inspection

* Refer to the "Airport Layout, Dimensions and Pavement Cross-Sections" or "Pavement Branch, Section and Sample Unit Layout" figures in your airport report.

Record Keeping and Data Retrieval

The FAA pavement maintenance management program requires that compiled records be kept for five years. To facilitate record keeping and data retrieval at the State level, the PAVER pavement maintenance management software was implemented. PAVER provides the Oregon Department of Aviation with a method for storing data and generating reports.

PAVER was developed by the U.S. Army Construction Engineering Research Laboratory (USA-CERL). The program uses the guidelines contained in the current edition of ASTM D5340 as its basis. The current version, Version 7.0.6, is a Windows-based program that can store pavement condition information, as well as construction and maintenance history information. Using the data stored in the PAVER database the user has many capabilities, including: evaluating current condition, predicting future condition, determining maintenance and rehabilitation needs, scheduling future inspections, and preparing budget estimates.

The statewide database containing the information for all evaluated airports was updated during this project. Information for each individual airport can easily be extracted from the statewide database. The database allows required records to be stored indefinitely, thus meeting the FAA requirement that records be maintained for a five-year period. Additionally, the software allows data to be retrieved quickly and efficiently.

After data were entered into the State's PAVER database for each inspected airport, the software was used to analyze the stored data and to generate useful reports. The reports described in Table 3 were generated for your airport and are provided as appendices to your individual airport report.

Table 3. PAVER Reports.

Report Name	Report Description
Branch Condition	Lists information about each branch, including: network identification, branch identification, name, use, number of sections, total branch area and the average and area-weighted average PCI for the entire branch.
Section Condition	Provides information about each section, including: branch identification and section number, last construction date, surface type, use, rank, section area, last inspection date, age of pavement at last inspection and the PCI at the last inspection.
Network Maintenance	Applies the stored distress maintenance policy to the pavement network and identifies the type and cost of routine maintenance required across the entire network. Information in this report is listed by section.
Re-Inspection	Summarizes the distress data collected during the most recent inspection and provides the PCI for each sample unit inspected, as well as summary information about the section.

Pavement Condition Prediction

To allow future pavement condition to be predicted, data collected throughout the State were used to generate "performance curves". The curves were developed based on surface type, use, airport functional category and climatic region. These curves (models) are used to predict future pavement condition by assuming the behavior of an individual pavement section is similar to the behavior of the pavement sections used to generate the "performance curve". Figures 2 through 9 show the “performance curves” used to model pavements in your airport’s functional category and climatic region.

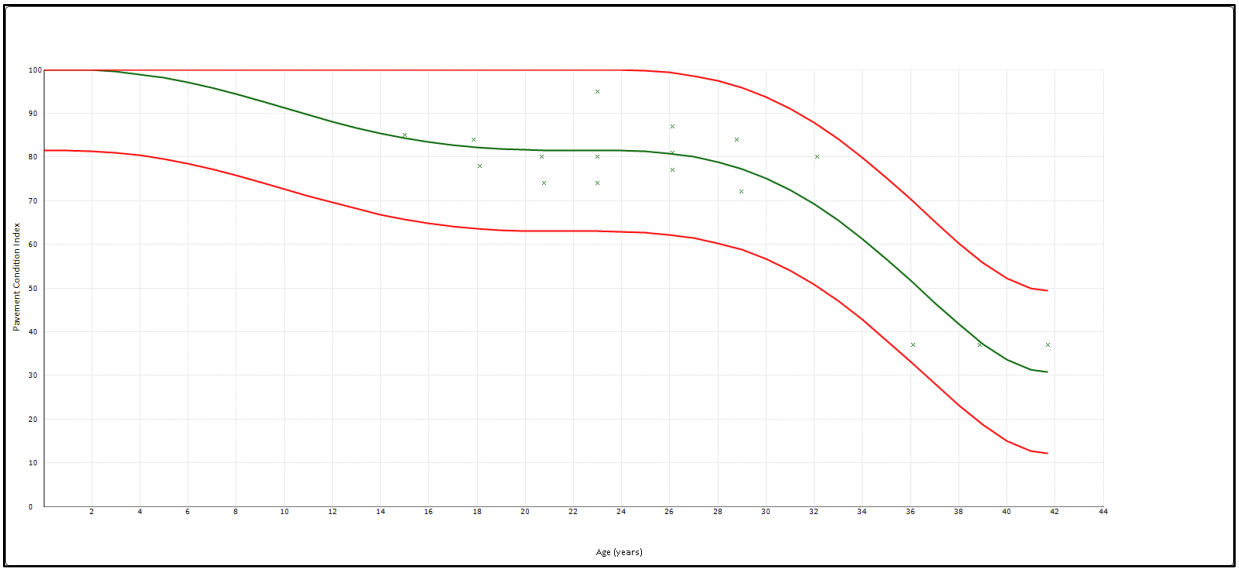


Figure 2. Performance Curve for Category 4 AAC Aprons – Central Oregon.

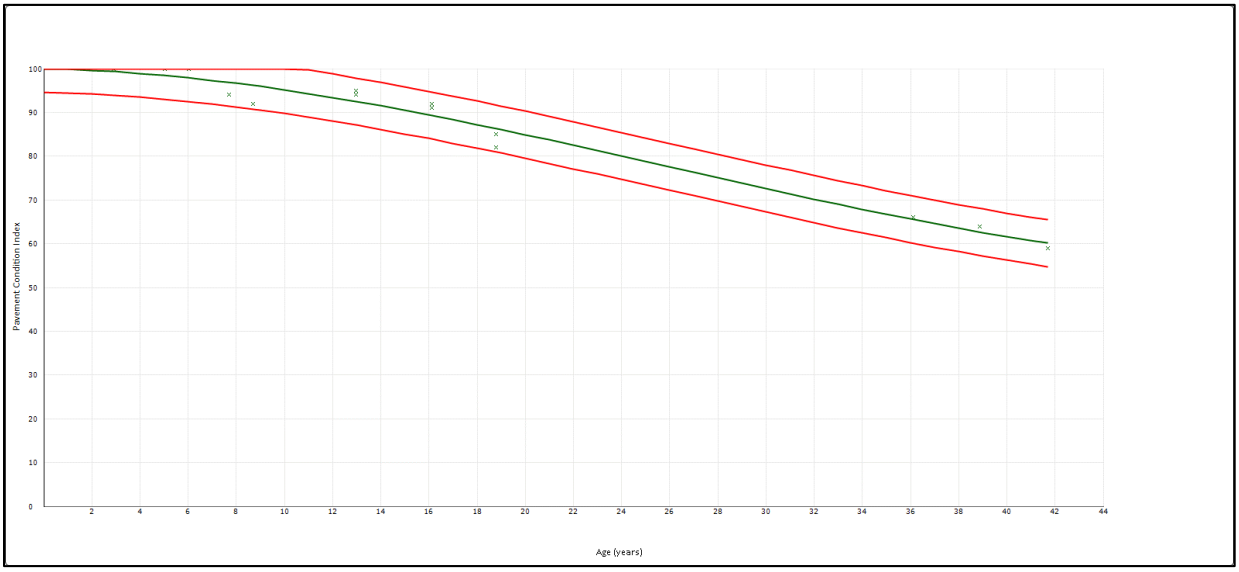


Figure 3. Performance Curve for Category 4 AAC Runways – Central Oregon.

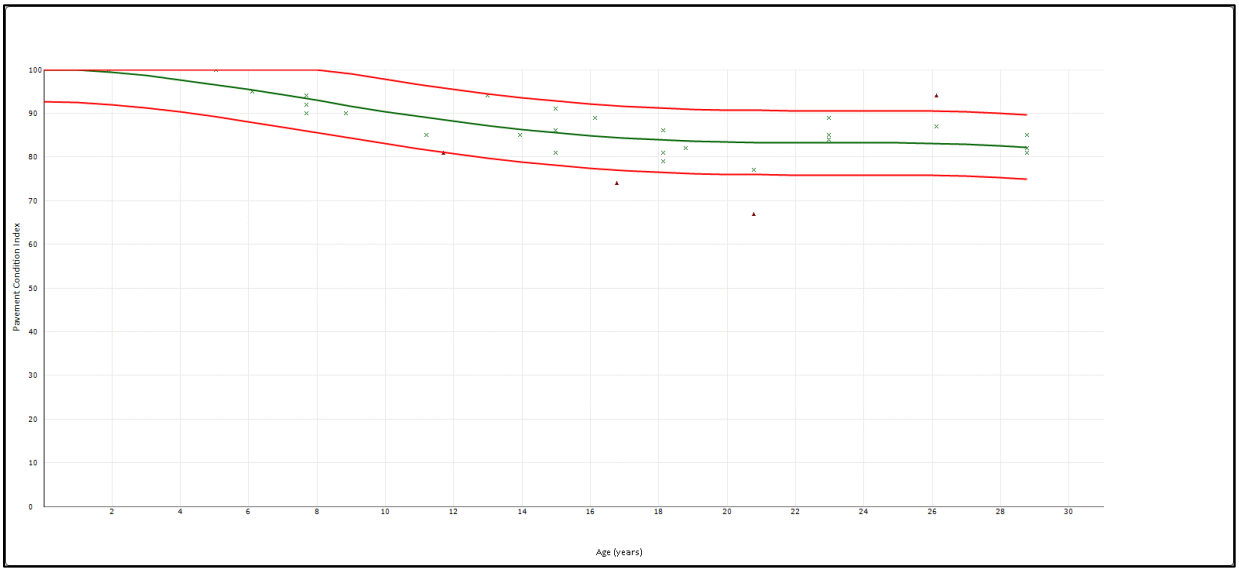


Figure 4. Performance Curve for Category 4 AAC Taxiways – Central Oregon.

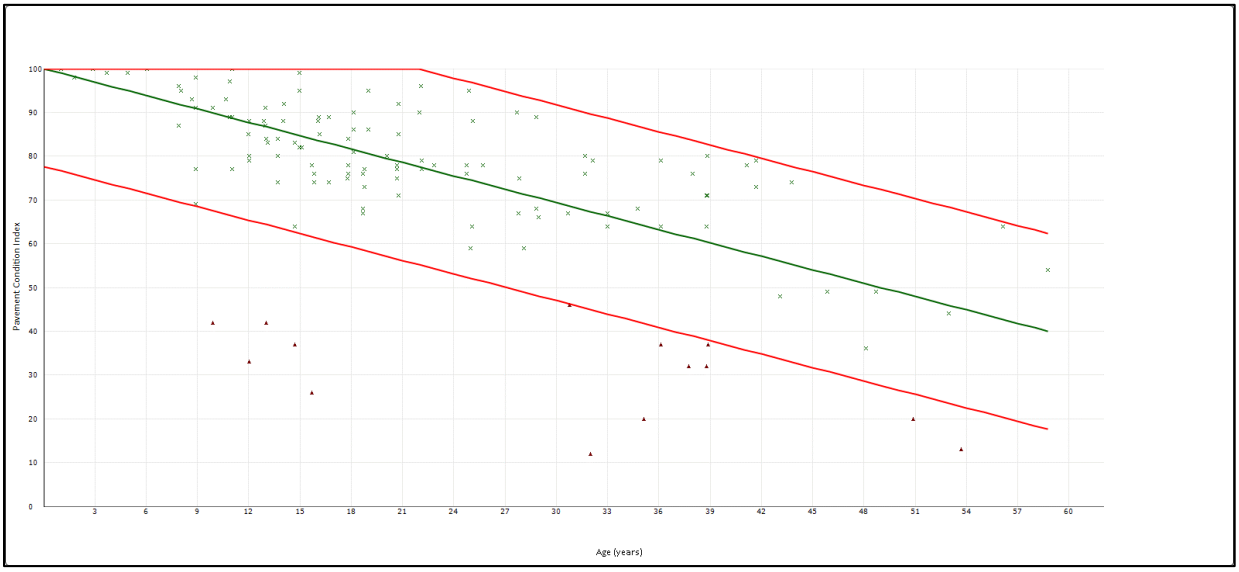


Figure 5. Performance Curve for Category 4 AC Aprons – Central Oregon.

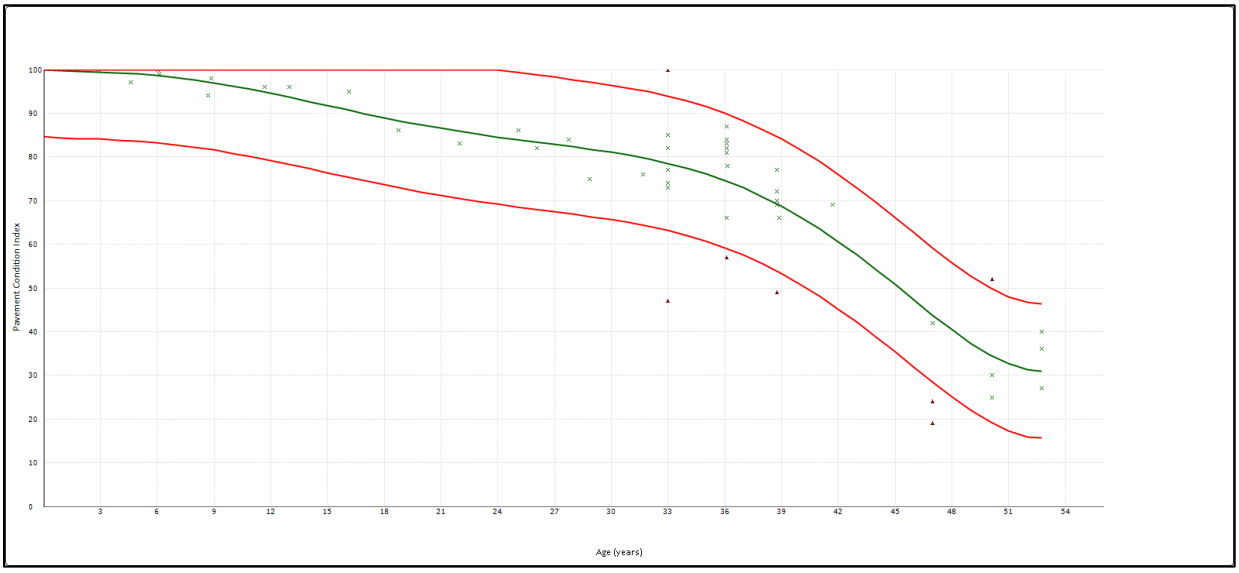


Figure 6. Performance Curve for Category 4 AC Runways – Central Oregon.

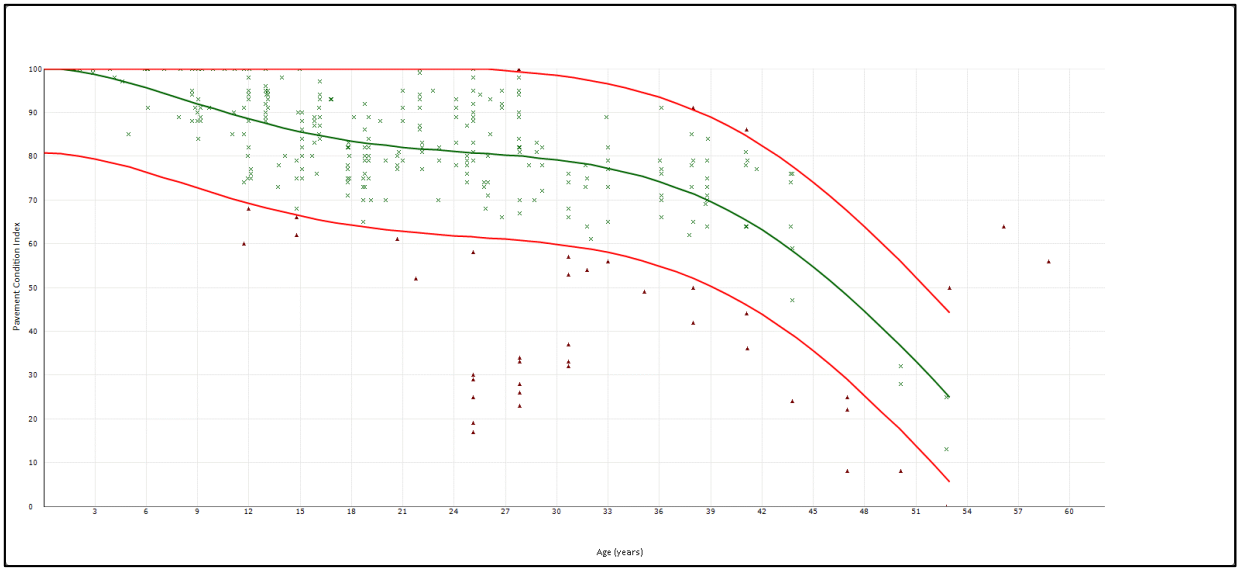


Figure 7. Performance Curve for Category 4 AC Taxiways – Central Oregon.

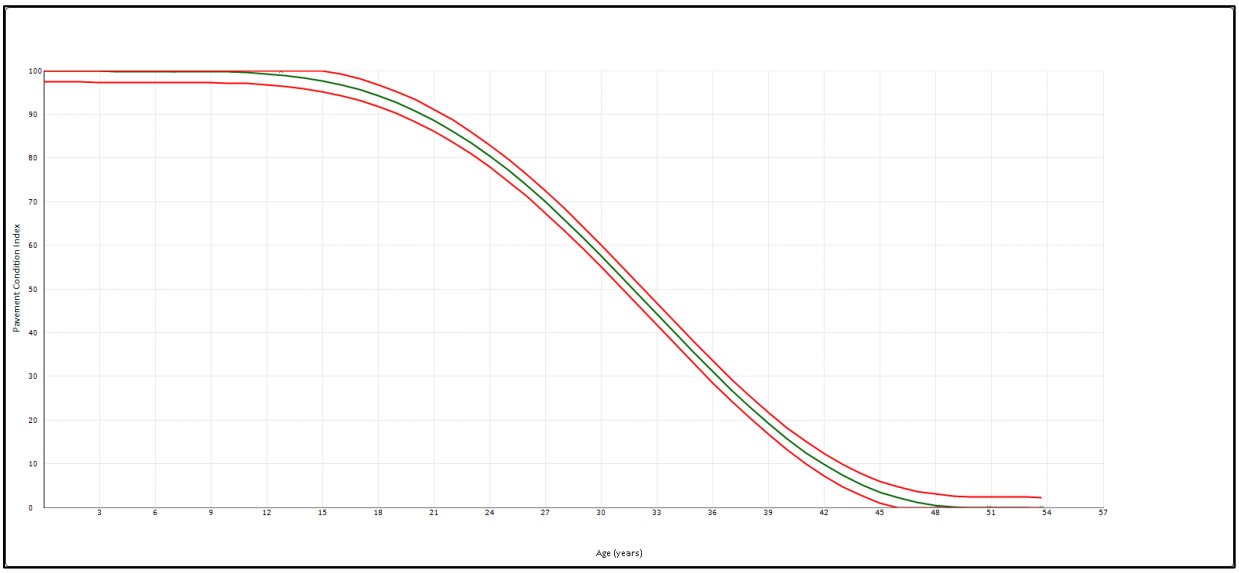


Figure 8. Performance Curve for Category 4 PCC Aprons – Central Oregon.

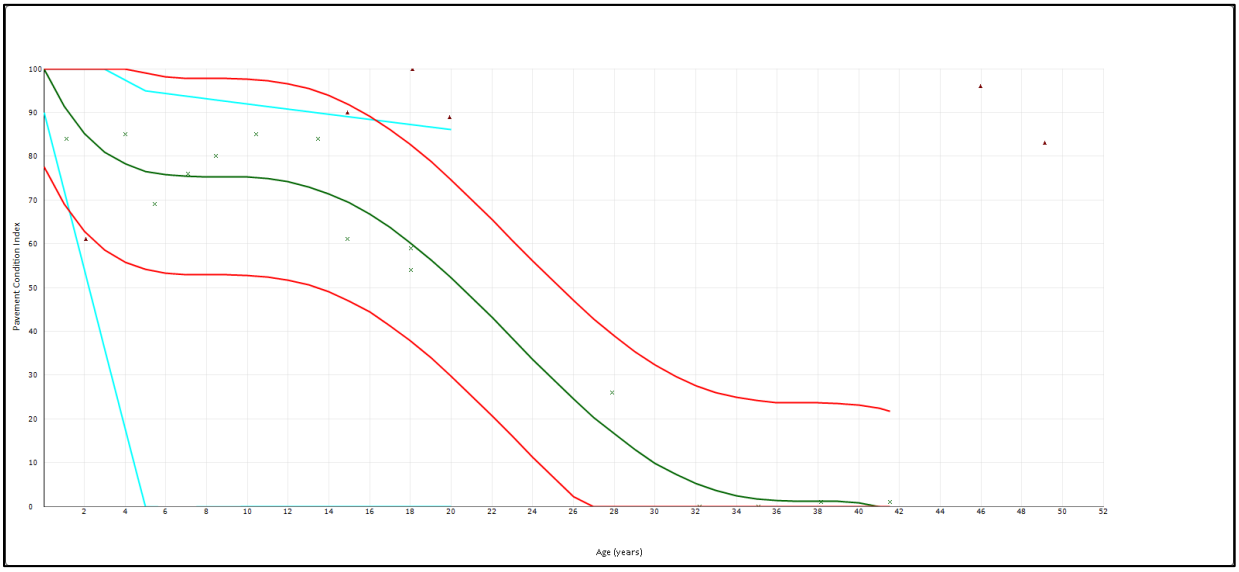


Figure 9. Performance Curve for Category 4 ST Taxiways – Central Oregon.

Typical Maintenance Requirements

The PAVER-generated M&R Plan Report was used to identify when pavement maintenance and rehabilitation projects are required for a given pavement section, and what repair type is most appropriate. The repair strategies evaluated were:

- Reconstruction (pavements with Pavement Condition Indices less than 40).
- Overlay flexible pavements (runways with Pavement Condition Indices between 40 and 60, taxiways between 40 and 55, aprons between 40 and 50, and pavements exhibiting significant load-related distress with PCIs above the critical PCI).
- Global maintenance (fog seal, slurry seal or thin (2 inch) overlay) applied on a user-specified interval of 6 years for a fog seal, 6 years for a slurry seal, and 10 years for an overlay, unless the Pavement Condition Index (PCI) is above 90, at which point the global maintenance will be scheduled when the PCI falls to 90 or below. The global maintenance type recommended is based on the distress types observed in the section during the visual inspections.
- Routine maintenance, such as crack sealing and patching.

The M&R Plan Report was generated for a 5-year period beginning in June 2020. Included in the work plan are estimated costs for each recommended project. The costs are estimated by applying a unit cost for the recommended activity to the square foot area of the pavement section. The unit costs include adjustments for engineering and administration, mobilization, restriping and contingency. The unit costs used to develop the work plan activity cost are shown in Table 4. The recommended work plan for your airport is provided in your attached individual airport report.

Table 4. Unit Costs for the Various Work Plan Activities.

Activity	Unit	Unit Cost
Fog Seal	SF	$0.19
Slurry Seal	SF	$0.31
2” Asphalt Concrete Overlay	SF	$2.50
2” – 3” AC Mill and Replace	SF	$3.00 - $4.50
Reconstruction	SF	$5.70 - $9.10

Your Airport Report

COTTAGE GROVE 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

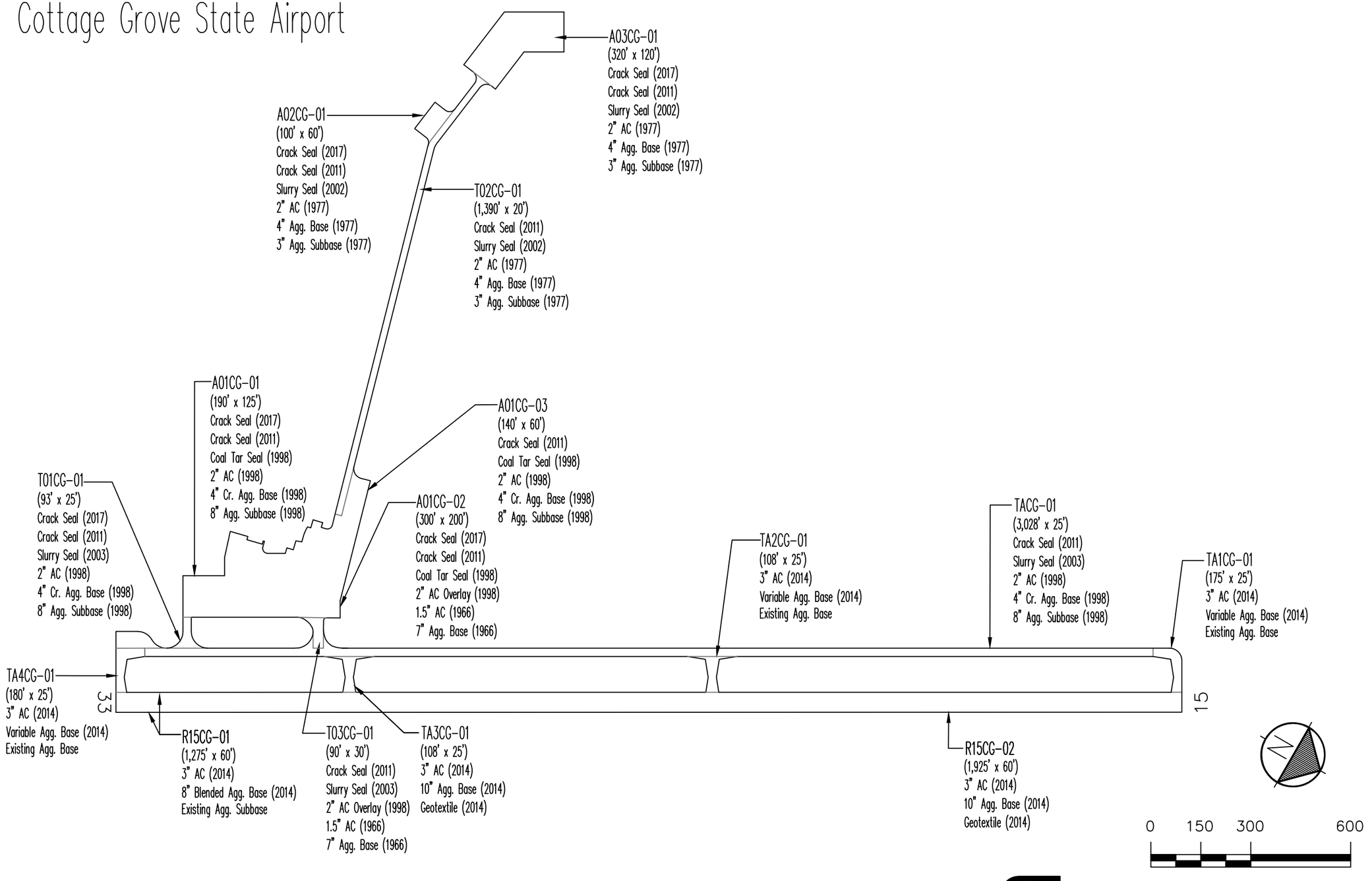
To determine how your pavements were constructed and their age, a records review was conducted. Figure CG-1 shows the records review results. This figure identifies pavement boundaries, dimensions, pavement layer types, thicknesses and dates of construction. The most recent construction date for each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



Drawing Date: June 2019

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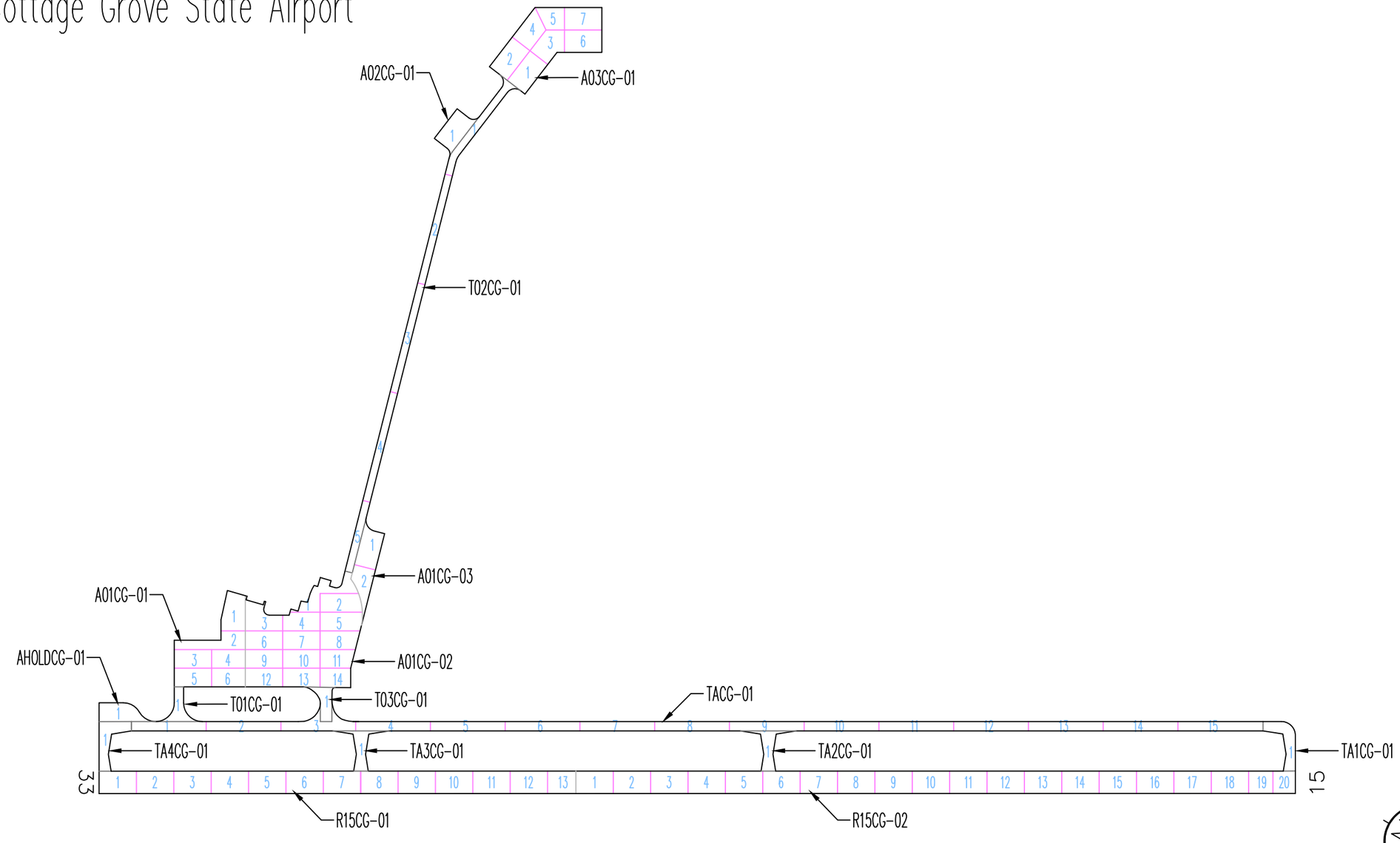
Figure CG-2. Pavement Branch, Section and Sample Unit Layout. Cottage Grove State Airport



Drawing Date: June 2019

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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 CG-3.

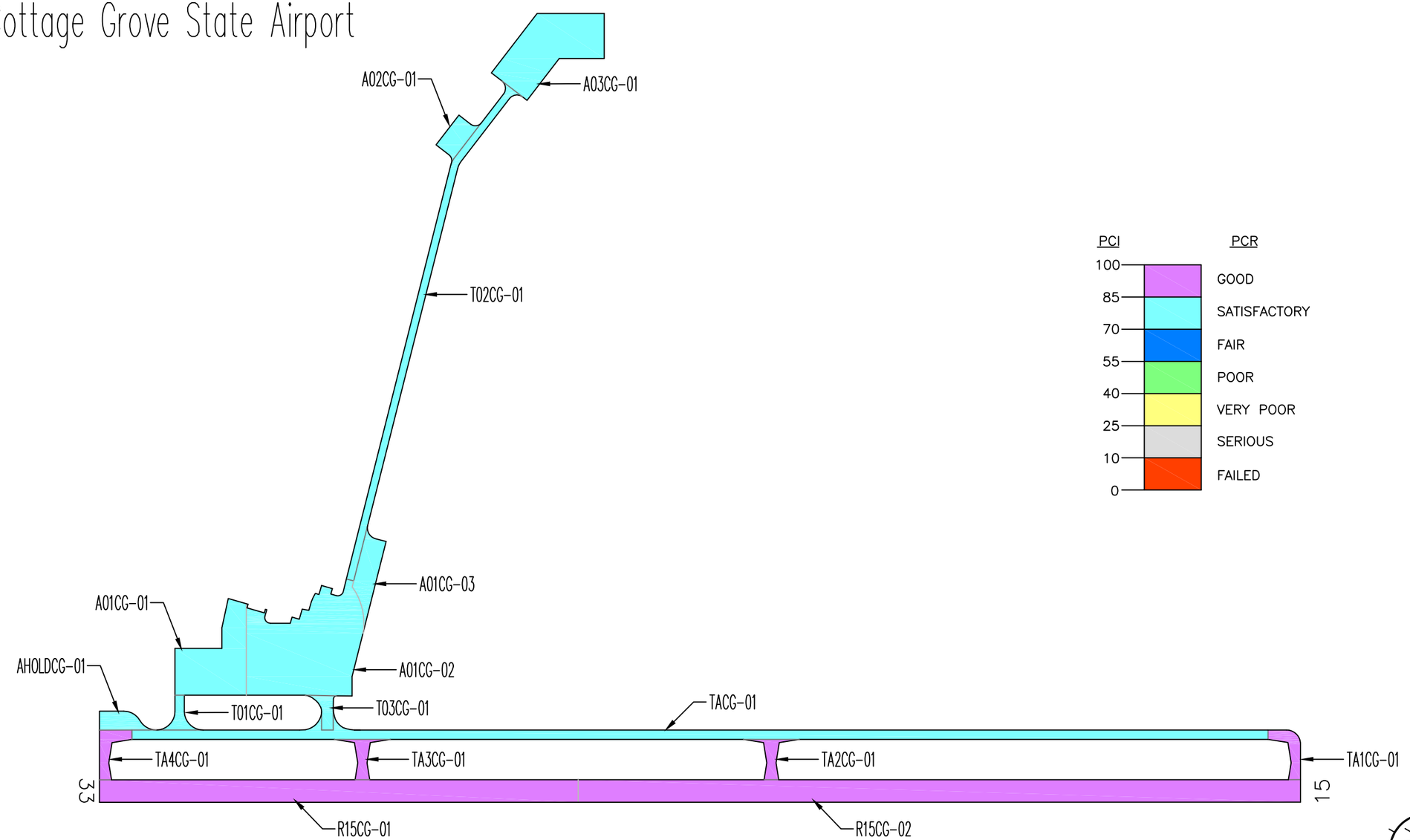
Table 1. Past, Present and Future Pavement Condition Indices.

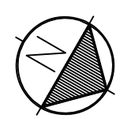
Branch	Section	Inspections			Forecast	
		2013*	2016	2019	2024	2029
A01CG	1	---	76	78	73	68
A01CG	2	---	84	80	69	46
A01CG	3	---	78	75	70	65
A02CG	1	---	71	73	68	63
A03CG	1	---	80	79	74	69
AHOLDCG	1	---	84	77	72	67
R15CG	1	---	100	97	93	88
R15CG	2	---	100	97	93	88
T01CG	1	---	82	78	73	63
T02CG	1	---	84	77	71	59
T03CG	1	---	80	80	77	71
TA1CG	1	---	100	97	91	86
TA2CG	1	---	100	97	91	86
TA3CG	1	---	100	97	91	86
TA4CG	1	---	100	97	91	86
TACG	1	---	83	77	71	59

* Cottage Grove Airport was not inspected in 2013.

Section PCIs at Cottage Grove State Airport range from a low of 73 (a PCR of "Satisfactory") to a high of 97 (a PCR of "Good"). The area-weighted average PCI for all airport pavements is 86, corresponding to an overall PCR of "Good". Figure CG-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 2016. Cottage Grove State Airport was not inspected in 2013.

Figure CG-3. Pavement Condition in May 2019. Cottage Grove State Airport





0 150 300 600

Drawing Date: June 2019

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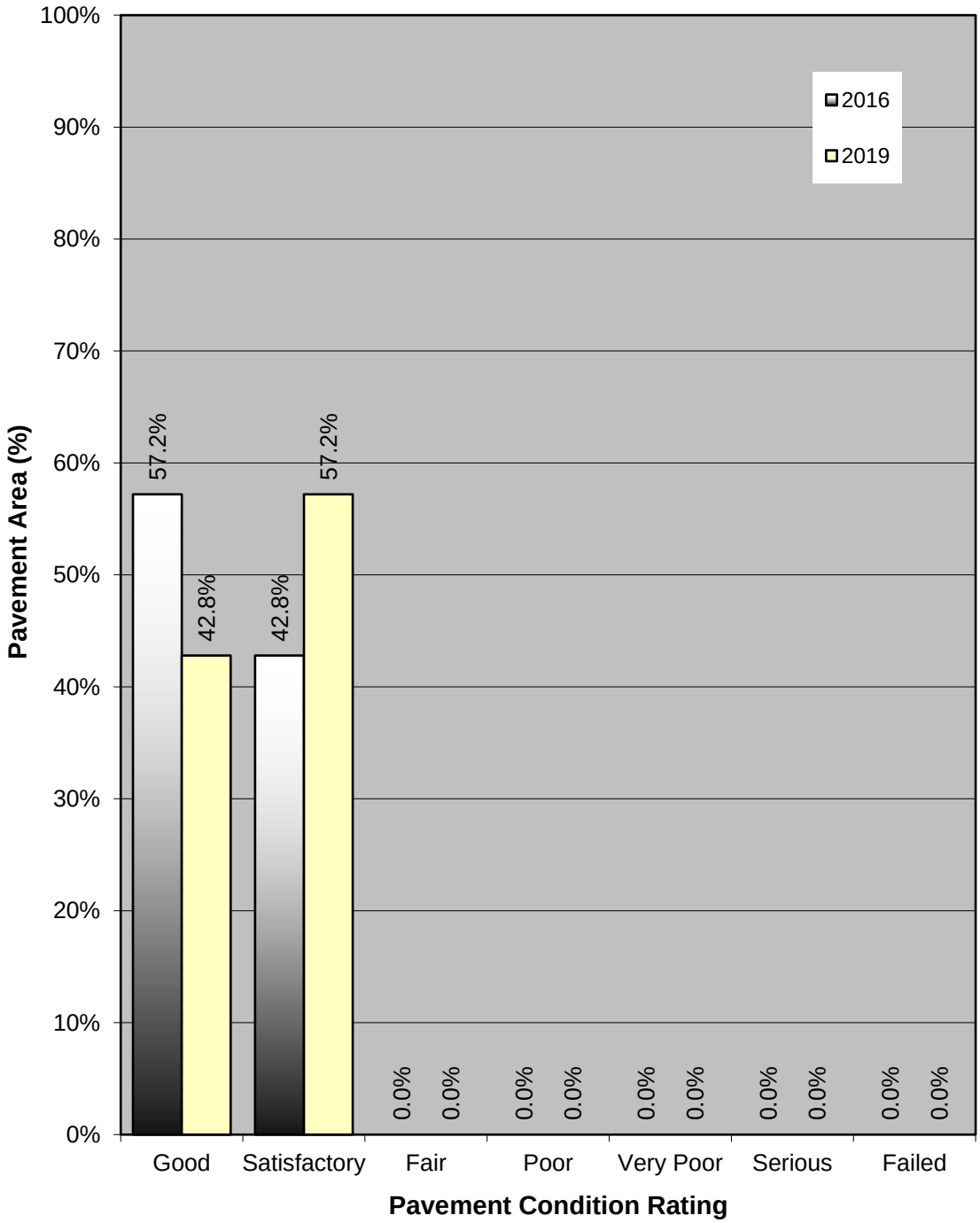
Figure CG-4. Pavement Condition Distribution
Cottage Grove State Airport



The primary distresses observed during the inspection were longitudinal and transverse cracking and weathering, with isolated occurrences of patching and alligator cracking.

A graphical representation of the projected PCIs listed in Table 1 is shown in Figure CG-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 quantity of localized maintenance is needed:

- 6,150 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 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 CG-6.

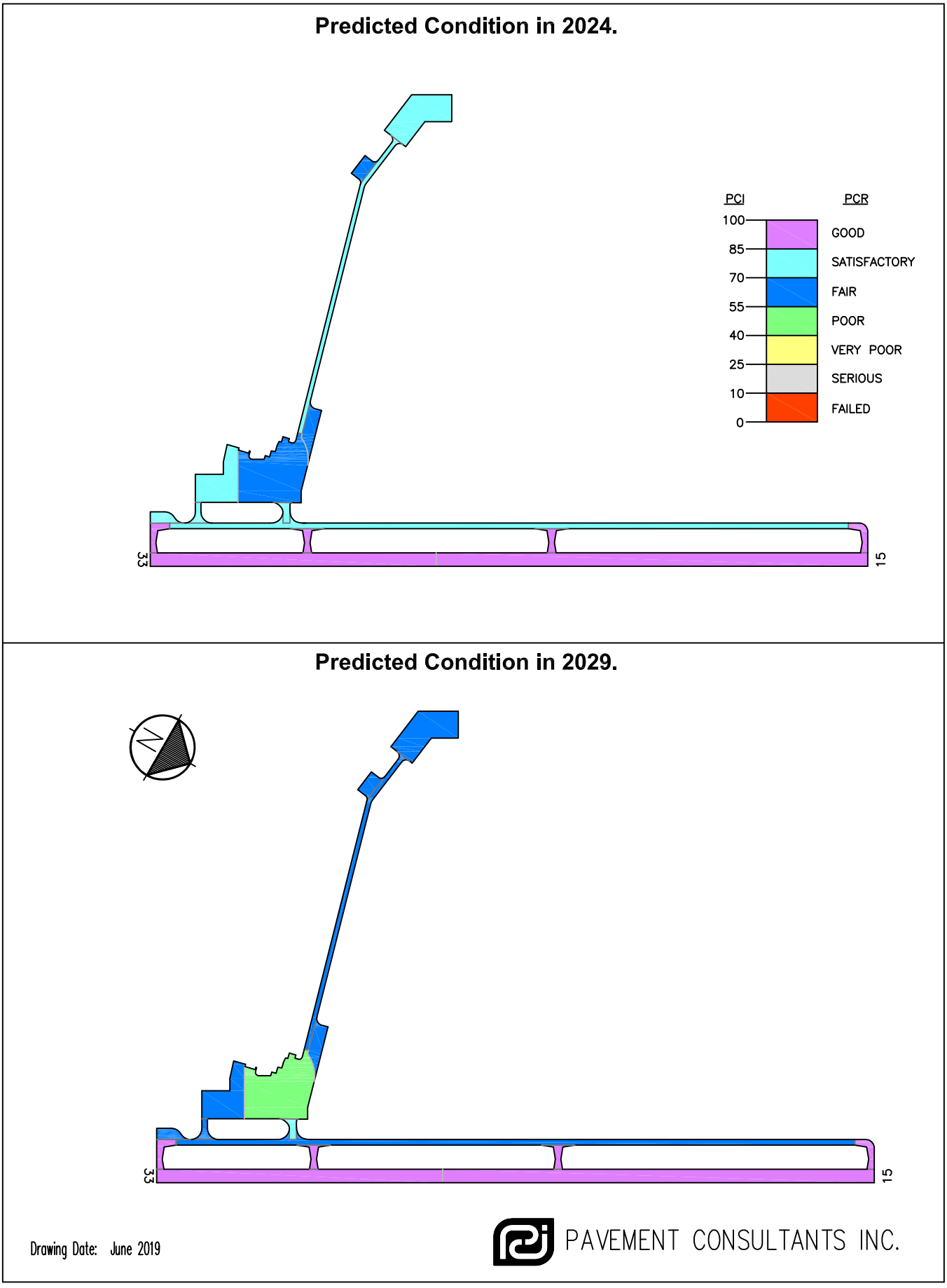


Figure CG-5. Future Pavement Condition.

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

Year	Branch	Section	Action	Area (sf)	Unit Cost ($/sf)	Total Cost ($)
2020	A01CG	01	Slurry Seal	31,396	$0.31	$9,733
2020	A01CG	02	Slurry Seal	72,768	$0.31	$22,558
2020	A01CG	03	Slurry Seal	10,514	$0.31	$3,259
2020	A02CG	01	Slurry Seal	6,136	$0.31	$1,902
2020	A03CG	01	Slurry Seal	38,347	$0.31	$11,888
2020	AHOLDCG	01	Slurry Seal	5,424	$0.31	$1,681
2020	T01CG	01	Slurry Seal	3,385	$0.31	$1,049
2020	T02CG	01	Slurry Seal	28,174	$0.31	$8,734
2020	T03CG	01	Slurry Seal	3,366	$0.31	$1,043
2020	TACG	01	Slurry Seal	82,275	$0.31	$25,505
					2020 Total	**$87,353**
					5-Year Total	**$87,353**

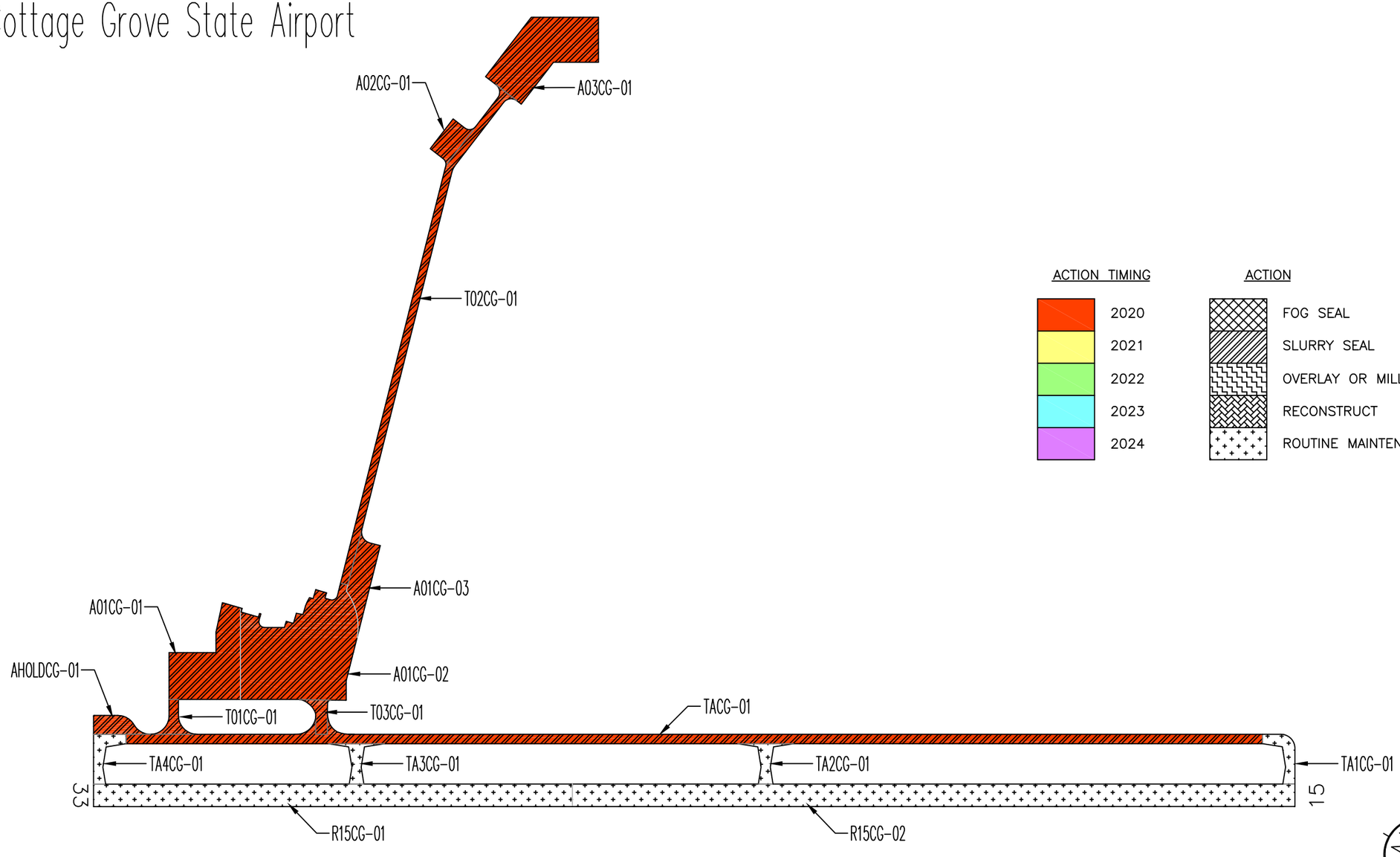
If the global maintenance and/or rehabilitation activities recommended in Table 2 are not completed, the localized maintenance activities identified in the Network Maintenance Report (Appendix 3) for that section should be done. Additionally, for those sections not listed in Table 2 as requiring global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

Figure CG-6. Five-Year Pavement Management Plan.
Cottage Grove State Airport



Drawing Date: June 2019

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Appendix 1
Branch Condition Report

Branch Condition Report

Pavement Database: ODA_2019_Final

Branch ID	Number of Sections	Sum Section Length (Ft)	Avg Section Width (Ft)	True Area (SqFt)	Use	Average PCI	Standard Deviation PCI	Weighted Average PCI
A01CG	3	630.00	128.33	114,678.00	APRON	77.67	2.05	78.99
A02CG	1	100.00	60.00	6,136.00	APRON	73.00	0.00	73.00
A03CG	1	320.00	120.00	38,347.00	APRON	79.00	0.00	79.00
AHOLDCG	1	151.00	50.00	5,424.00	APRON	77.00	0.00	77.00
R15CG	2	3,200.00	60.00	192,000.00	RUNWAY	97.00	0.00	97.00
T01CG	1	93.00	25.00	3,385.00	TAXIWAY	78.00	0.00	78.00
T02CG	1	1,390.00	20.00	28,174.00	TAXIWAY	77.00	0.00	77.00
T03CG	1	90.00	30.00	3,366.00	TAXIWAY	80.00	0.00	80.00
TA1CG	1	175.00	25.00	5,232.00	TAXIWAY	97.00	0.00	97.00
TA2CG	1	108.00	25.00	4,053.00	TAXIWAY	97.00	0.00	97.00
TA3CG	1	108.00	25.00	4,063.00	TAXIWAY	97.00	0.00	97.00
TA4CG	1	180.00	25.00	5,530.00	TAXIWAY	97.00	0.00	97.00
TACG	1	3,028.00	25.00	82,275.00	TAXIWAY	77.00	0.00	77.00

Pavement Database: ODA_2019_Final

Use Category	Number of Sections	Total Area (SqFt)	Arithmetic Average PCI	Average STD PCI	Weighted Average PCI
APRON	6	164585.002704229	77.00	2.38	78.71
RUNWAY	2	192000.00243238	97.00	0.00	97.00
TAXIWAY	8	136078.000759669	87.50	9.54	79.87
ALL	16	492663.005896278	84.75	9.63	86.16

Appendix 2
Section Condition Report

Pavement Database: ODA_2019_Final *NetworkId: Cottage*

Branch ID	Section ID	Last Const. Date	Surface	Use	Rank	Lanes	True Area (SqFt)	Last Inspection Date	Age At Inspection	PCI
A01CG	01	9/3/1998	AC	APRON	P	0	31,396.00	5/13/2019	21	78
A01CG	02	9/1/1998	AAC	APRON	P	0	72,768.00	5/13/2019	21	80
A01CG	03	9/3/1998	AC	APRON	P	0	10,514.00	5/13/2019	21	75
A02CG	01	9/3/1977	AC	APRON	S	0	6,136.00	5/13/2019	42	73
A03CG	01	9/3/1977	AC	APRON	S	0	38,347.00	5/13/2019	42	79
AHOLDCG	01	9/3/1998	AC	APRON	P	0	5,424.00	5/13/2019	21	77
R15CG	01	10/2/2014	AC	RUNWAY	P	0	76,500.00	5/13/2019	5	97
R15CG	02	10/3/2014	AC	RUNWAY	P	0	115,500.00	5/13/2019	5	97
T01CG	01	9/3/1998	AC	TAXIWAY	P	0	3,385.00	5/13/2019	21	78
T02CG	01	9/3/1977	AC	TAXIWAY	S	0	28,174.00	5/13/2019	42	77
T03CG	01	9/1/1998	AC	TAXIWAY	P	0	3,366.00	5/13/2019	21	80
TA1CG	01	10/2/2014	AC	TAXIWAY	P	0	5,232.00	5/13/2019	5	97
TA2CG	01	10/2/2014	AC	TAXIWAY	P	0	4,053.00	5/13/2019	5	97
TA3CG	01	10/3/2014	AC	TAXIWAY	P	0	4,063.00	5/13/2019	5	97
TA4CG	01	10/2/2014	AC	TAXIWAY	P	0	5,530.00	5/13/2019	5	97
TACG	01	9/3/1998	AC	TAXIWAY	P	0	82,275.00	5/13/2019	21	77

Section Condition Report (Summary)

Pavement Database: ODA_2019_Final

Age Category	Average Age at Inspection	Total Area (SqFt)	Number of Sections	Arithmetic Average PCI	Standard Deviation PCI	Weighted Average PCI
03-05	5	210,878.00	6	97.00	0.00	97.00
21-25	21	209,128.00	7	77.86	1.64	78.16
41-50	42	72,657.00	3	76.33	2.49	77.72
ALL	19	492,663.01	16	84.75	9.63	86.16

Appendix 3
Network Maintenance Report

Network Maintenance Report 2019
Cottage Grove State Airport

Network	Branch	Section	Distress Type	Severity	Work Description	Work Quantity	Work Unit	Unit Cost	Work Cost	Section Total Cost
Cottage	A01CG	01	Long. & Trans. Cracking	Medium	Crack Sealing - AC	758	Ft	$1.75	$1,326	$1,326
Cottage	A01CG	02	Long. & Trans. Cracking	Medium	Crack Sealing - AC	1,291	Ft	$1.75	$2,259	$2,259
Cottage	A01CG	03	Long. & Trans. Cracking	Medium	Crack Sealing - AC	330	Ft	$1.75	$578	$578
Cottage	A02CG	01	Long. & Trans. Cracking	Medium	Crack Sealing - AC	140	Ft	$1.75	$245	$245
Cottage	A03CG	01	Long. & Trans. Cracking	Medium	Crack Sealing - AC	815	Ft	$1.75	$1,426	$1,426
Cottage	AHOLDCG	01	Long. & Trans. Cracking	Medium	Crack Sealing - AC	170	Ft	$1.75	$298	$298
Cottage	T01CG	01	Long. & Trans. Cracking	Medium	Crack Sealing - AC	75	Ft	$1.75	$131	$131
Cottage	T02CG	01	Long. & Trans. Cracking	Medium	Crack Sealing - AC	401	Ft	$1.75	$701	$701
Cottage	T03CG	01	Long. & Trans. Cracking	Medium	Crack Sealing - AC	60	Ft	$1.75	$105	$105
Cottage	TACG	01	Long. & Trans. Cracking	Medium	Crack Sealing - AC	2,110	Ft	$1.75	$3,693	$3,693
									Total	$10,762

Appendix 4
Re-Inspection Report

Re-Inspection Report

ODA_2019_Final
Generated Date 6/6/2019

Network: Cottage **Name:** Cottage Grove State

Branch: A01CG **Name:** Apron 01 Cottage Grove **Use:** APRON **Area:** 114,678 SqFt

Section: 01 of 3 **From:** Taxiway 01 **To:** A01CG-02 **Last Const.:** 9/3/1998

Surface: AC **Family:** OR-Cat4-AC-Central-AP **Zone:** 61S **Category:** H **Rank:** P

Area: 31,396 SqFt **Length:** 190 Ft **Width:** 125 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 6 **Surveyed:** 3

Conditions: **PCI:** 78

Inspection Comments:

Sample Number: 03 **Type:** R **Area:** 5000.00 SqFt **PCI:** 77

Sample Comments:

48	L & T CR	L	120.00	Ft
48	L & T CR	M	130.00	Ft

Sample Number: 04 **Type:** R **Area:** 4500.00 SqFt **PCI:** 78

Sample Comments:

48	L & T CR	L	120.00	Ft
48	L & T CR	M	100.00	Ft

Sample Number: 05 **Type:** R **Area:** 5000.00 SqFt **PCI:** 78

Sample Comments:

48	L & T CR	L	120.00	Ft
48	L & T CR	M	120.00	Ft

Network: Cottage **Name:** Cottage Grove State

Branch: A01CG **Name:** Apron 01 Cottage Grove **Use:** APRON **Area:** 114,678 SqFt

Section: 02 of 3 **From:** Taxiway 02 **To:** Taxiway A3 **Last Const.:** 9/1/1998

Surface: AAC **Family:** OR-Cat4-AAC-Central-AP **Zone:** 61S **Category:** H **Rank:** P

Area: 72,768 SqFt **Length:** 300 Ft **Width:** 200 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 14 **Surveyed:** 5

Conditions: **PCI:** 80

Inspection Comments:

Sample Number: 06 **Type:** R **Area:** 5000.00 SqFt **PCI:** 85

Sample Comments:

48	L & T CR	L	150.00	Ft
48	L & T CR	M	30.00	Ft

Sample Number: 07 **Type:** R **Area:** 5000.00 SqFt **PCI:** 77

Sample Comments:

48	L & T CR	L	160.00	Ft
48	L & T CR	M	130.00	Ft

Sample Number: 10 **Type:** R **Area:** 5000.00 SqFt **PCI:** 79

Sample Comments:

48	L & T CR	L	120.00	Ft
48	L & T CR	M	100.00	Ft

Sample Number: 13 **Type:** R **Area:** 5018.00 SqFt **PCI:** 80

Sample Comments:

48	L & T CR	L	150.00	Ft
48	L & T CR	M	90.00	Ft

Sample Number: 14 **Type:** R **Area:** 4222.00 SqFt **PCI:** 80

Sample Comments:

48	L & T CR	L	120.00	Ft
48	L & T CR	M	80.00	Ft

Network: Cottage **Name:** Cottage Grove State

Branch: A01CG **Name:** Apron 01 Cottage Grove **Use:** APRON **Area:** 114,678 SqFt

Section: 03 of 3 **From:** A01CG-02 **To:** Taxiway 02 **Last Const.:** 9/3/1998

Surface: AC **Family:** OR-Cat4-AC-Central-AP **Zone:** 61S **Category:** H **Rank:** P

Area: 10,514 SqFt **Length:** 140 Ft **Width:** 60 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 2 **Surveyed:** 2

Conditions: **PCI:** 75

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 6019.00 SqFt **PCI:** 73

Sample Comments:

48	L & T CR	L	100.00	Ft
48	L & T CR	M	220.00	Ft

Sample Number: 02 **Type:** R **Area:** 4495.00 SqFt **PCI:** 78

Sample Comments:

48	L & T CR	L	200.00	Ft
48	L & T CR	M	110.00	Ft

Network: Cottage **Name:** Cottage Grove State

Branch: A02CG **Name:** Apron 02 Cottage Grove **Use:** APRON **Area:** 6,136 SqFt

Section: 01 of 1 **From:** Taxiway 02 **To:** End **Last Const.:** 9/3/1977

Surface: AC **Family:** OR-Cat4-AC-Central-AP **Zone:** 61S **Category:** H **Rank:** S

Area: 6,136 SqFt **Length:** 100 Ft **Width:** 60 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 73

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 6136.00 SqFt **PCI:** 73

Sample Comments:

48	L & T CR	L	200.00	Ft
48	L & T CR	M	140.00	Ft
41	ALLIGATOR CR	L	30.00	SqFt

Network: Cottage **Name:** Cottage Grove State

Branch: A03CG **Name:** Apron 03 Cottage Grove **Use:** APRON **Area:** 38,347 SqFt

Section: 01 of 1 **From:** Taxiway 02 **To:** End **Last Const.:** 9/3/1977

Surface: AC **Family:** OR-Cat4-AC-Central-AP **Zone:** 61S **Category:** H **Rank:** S

Area: 38,347 SqFt **Length:** 320 Ft **Width:** 120 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 7 **Surveyed:** 4

Conditions: **PCI:** 79

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 6000.00 SqFt **PCI:** 79

Sample Comments:

48	L & T CR	L	180.00	Ft
48	L & T CR	M	130.00	Ft

Sample Number: 02 **Type:** R **Area:** 6000.00 SqFt **PCI:** 79

Sample Comments:

48	L & T CR	L	200.00	Ft
48	L & T CR	M	130.00	Ft

Sample Number: 06 **Type:** R **Area:** 6000.00 SqFt **PCI:** 79

Sample Comments:

48	L & T CR	L	140.00	Ft
48	L & T CR	M	130.00	Ft

Sample Number: 07 **Type:** R **Area:** 6000.00 SqFt **PCI:** 79

Sample Comments:

48	L & T CR	L	160.00	Ft
48	L & T CR	M	120.00	Ft

Network: Cottage **Name:** Cottage Grove State

Branch: AHOLDCG **Name:** Hold Apron Cottage Grove **Use:** APRON **Area:** 5,424 SqFt

Section: 01 of 1 **From:** Taxiway A4 **To:** End **Last Const.:** 9/3/1998

Surface: AC **Family:** OR-Cat4-AC-Central-AP **Zone:** 61S **Category:** H **Rank:** P

Area: 5,424 SqFt **Length:** 151 Ft **Width:** 50 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 77

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 5424.00 SqFt **PCI:** 77

Sample Comments:

48	L & T CR	L	50.00	Ft
48	L & T CR	M	170.00	Ft

Network: Cottage **Name:** Cottage Grove State

Branch: R15CG **Name:** Runway 15/33 Cottage Grove **Use:** RUNWAY **Area:** 192,000 SqFt

Section: 01 of 2 **From:** Taxiway A4 **To:** R15CG-02 **Last Const.:** 10/2/2014

Surface: AC **Family:** OR-Cat4-AC-Central-RW **Zone:** 61S **Category:** H **Rank:** P

Area: 76,500 SqFt **Length:** 1,275 Ft **Width:** 60 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 13 **Surveyed:** 4

Conditions: **PCI:** 97

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 6000.00 SqFt **PCI:** 97

Sample Comments:

57 WEATHERING L 1500.00 SqFt

Sample Number: 04 **Type:** R **Area:** 6000.00 SqFt **PCI:** 97

Sample Comments:

57 WEATHERING L 1500.00 SqFt

Sample Number: 08 **Type:** R **Area:** 6000.00 SqFt **PCI:** 97

Sample Comments:

57 WEATHERING L 1500.00 SqFt

Sample Number: 12 **Type:** R **Area:** 6000.00 SqFt **PCI:** 97

Sample Comments:

57 WEATHERING L 1500.00 SqFt

Network: Cottage **Name:** Cottage Grove State

Branch: R15CG **Name:** Runway 15/33 Cottage Grove **Use:** RUNWAY **Area:** 192,000 SqFt

Section: 02 of 2 **From:** R15CG-01 **To:** TA1CG **Last Const.:** 10/3/2014

Surface: AC **Family:** OR-Cat4-AC-Central-RW **Zone:** 61S **Category:** H **Rank:** P

Area: 115,500 SqFt **Length:** 1,925 Ft **Width:** 60 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 20 **Surveyed:** 5

Conditions: **PCI:** 97

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 6000.00 SqFt **PCI:** 97

Sample Comments:

57 WEATHERING L 1500.00 SqFt

Sample Number: 06 **Type:** R **Area:** 6000.00 SqFt **PCI:** 97

Sample Comments:

57 WEATHERING L 1500.00 SqFt

Sample Number: 11 **Type:** R **Area:** 6000.00 SqFt **PCI:** 97

Sample Comments:

57 WEATHERING L 1500.00 SqFt

Sample Number: 15 **Type:** R **Area:** 6000.00 SqFt **PCI:** 97

Sample Comments:

57 WEATHERING L 1500.00 SqFt

Sample Number: 20 **Type:** R **Area:** 3595.00 SqFt **PCI:** 97

Sample Comments:

57 WEATHERING L 900.00 SqFt

Network: Cottage **Name:** Cottage Grove State

Branch: T01CG **Name:** Taxiway 01 Cottage Grove **Use:** TAXIWAY **Area:** 3,385 SqFt

Section: 01 of 1 **From:** Apron 01 **To:** Taxiway A **Last Const.:** 9/3/1998

Surface: AC **Family:** OR-Cat4-AC-Central-TW **Zone:** 61S **Category:** H **Rank:** P

Area: 3,385 SqFt **Length:** 93 Ft **Width:** 25 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 78

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 3382.00 SqFt **PCI:** 78

Sample Comments:

48	L & T CR	L	75.00	Ft
48	L & T CR	M	75.00	Ft

Network: Cottage **Name:** Cottage Grove State

Branch: T02CG **Name:** Taxiway 02 Cottage Grove **Use:** TAXIWAY **Area:** 28,174 SqFt

Section: 01 of 1 **From:** Apron 01 **To:** Apron 03 **Last Const.:** 9/3/1977

Surface: AC **Family:** OR-Cat4-AC-Central-TW **Zone:** 61S **Category:** H **Rank:** S

Area: 28,174 SqFt **Length:** 1,390 Ft **Width:** 20 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 5 **Surveyed:** 3

Conditions: **PCI:** 77

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 6275.00 SqFt **PCI:** 80

Sample Comments:

48	L & T CR	L	170.00	Ft
48	L & T CR	M	50.00	Ft
57	WEATHERING	L	6275.00	SqFt

Sample Number: 04 **Type:** R **Area:** 6000.00 SqFt **PCI:** 76

Sample Comments:

48	L & T CR	L	110.00	Ft
48	L & T CR	M	100.00	Ft
57	WEATHERING	L	6000.00	SqFt

Sample Number: 05 **Type:** R **Area:** 3900.00 SqFt **PCI:** 74

Sample Comments:

48	L & T CR	L	180.00	Ft
48	L & T CR	M	80.00	Ft
57	WEATHERING	L	3900.00	SqFt

Network: Cottage **Name:** Cottage Grove State

Branch: T03CG **Name:** Taxiway 03 Cottage Grove **Use:** TAXIWAY **Area:** 3,366 SqFt

Section: 01 of 1 **From:** Apron 01 **To:** TACG **Last Const.:** 9/1/1998

Surface: AC **Family:** OR-Cat4-AC-Central-TW **Zone:** 61S **Category:** H **Rank:** P

Area: 3,366 SqFt **Length:** 90 Ft **Width:** 30 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 80

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 3366.00 SqFt **PCI:** 80

Sample Comments:

48	L & T CR	L	120.00	Ft
48	L & T CR	M	60.00	Ft

Network: Cottage **Name:** Cottage Grove State

Branch: TA1CG **Name:** Taxiway A1 Cottage Grove **Use:** TAXIWAY **Area:** 5,232 SqFt

Section: 01 of 1 **From:** R15CG **To:** TACG **Last Const.:** 10/2/2014

Surface: AC **Family:** OR-Cat4-AC-Central-TW **Zone:** 61S **Category:** H **Rank:** P

Area: 5,232 SqFt **Length:** 175 Ft **Width:** 25 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 97

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 5232.00 SqFt **PCI:** 97

Sample Comments:

57	WEATHERING	L	1308.00	SqFt

Network: Cottage **Name:** Cottage Grove State

Branch: TA2CG **Name:** Taxiway A2 Cottage Grove **Use:** TAXIWAY **Area:** 4,053 SqFt

Section: 01 of 1 **From:** Taxiway A **To:** Runway 15/33 **Last Const.:** 10/2/2014

Surface: AC **Family:** OR-Cat4-AC-Central-TW **Zone:** 61S **Category:** H **Rank:** P

Area: 4,053 SqFt **Length:** 108 Ft **Width:** 25 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 97

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 4053.00 SqFt **PCI:** 97

Sample Comments:

57	WEATHERING	L	1014.00	SqFt

Network: Cottage **Name:** Cottage Grove State

Branch: TA3CG **Name:** Taxiway A3 Cottage Grove **Use:** TAXIWAY **Area:** 4,063 SqFt

Section: 01 of 1 **From:** R15CG **To:** TACG **Last Const.:** 10/3/2014

Surface: AC **Family:** OR-Cat4-AC-Central-TW **Zone:** 61S **Category:** H **Rank:** P

Area: 4,063 SqFt **Length:** 108 Ft **Width:** 25 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 97

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 4063.00 SqFt **PCI:** 97

Sample Comments:

57	WEATHERING	L	1015.00	SqFt

Network: Cottage **Name:** Cottage Grove State

Branch: TA4CG **Name:** Taxiway A4 Cottage Grove **Use:** TAXIWAY **Area:** 5,530 SqFt

Section: 01 of 1 **From:** R15CG **To:** TACG **Last Const.:** 10/2/2014

Surface: AC **Family:** OR-Cat4-AC-Central-TW **Zone:** 61S **Category:** H **Rank:** P

Area: 5,530 SqFt **Length:** 180 Ft **Width:** 25 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 97

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 5530.00 SqFt **PCI:** 97

Sample Comments:

57	WEATHERING	L	1015.00	SqFt

Network: Cottage **Name:** Cottage Grove State

Branch: TACG **Name:** Taxiway A Cottage Grove **Use:** TAXIWAY **Area:** 82,275 SqFt

Section: 01 of 1 **From:** TA4CG **To:** TA1CG **Last Const.:** 9/3/1998

Surface: AC **Family:** OR-Cat4-AC-Central-TW **Zone:** 61S **Category:** H **Rank:** P

Area: 82,275 SqFt **Length:** 3,028 Ft **Width:** 25 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Section Comments:

Last Insp. Date: 5/13/2019 **TotalSamples:** 15 **Surveyed:** 5

Conditions: **PCI:** 77

Inspection Comments:

Sample Number: 01 **Type:** R **Area:** 5000.00 SqFt **PCI:** 72

Sample Comments:

50	PATCHING	L	200.00	SqFt
48	L & T CR	L	200.00	Ft
48	L & T CR	M	132.00	Ft

Sample Number: 04 **Type:** R **Area:** 5000.00 SqFt **PCI:** 71

Sample Comments:

48	L & T CR	L	200.00	Ft
48	L & T CR	M	216.00	Ft

Sample Number: 08 **Type:** R **Area:** 5000.00 SqFt **PCI:** 76

Sample Comments:

48	L & T CR	M	224.00	Ft

Sample Number: 12 **Type:** R **Area:** 5000.00 SqFt **PCI:** 82

Sample Comments:

48	L & T CR	L	200.00	Ft
48	L & T CR	M	50.00	Ft

Sample Number: 15 **Type:** R **Area:** 5692.00 SqFt **PCI:** 82

Sample Comments:

48	L & T CR	L	228.00	Ft
48	L & T CR	M	37.00	Ft