1. PROJECT BACKGROUND

Applied Pavement Technology, Inc. (APTech) has teamed with Coffman Associates (Coffman), assisted by Garver, to update the Pavement Management Program (PMP) for both airside and select landside pavements at Corpus Christi International Airport (CCIA) for the City of Corpus Christi. Results and recommendations from this PMP will assist decision-makers with identifying maintenance and repair needs to efficiently and effectively manage the existing pavement infrastructure and will ensure compliance with Federal Aviation Administration (FAA) pavement inspection requirements for CCIA.

This update to the PMP was completed in accordance with the following FAA Advisory Circulars, ASTM International standards, and software:

- FAA Advisory Circular 150/5380-7B, *Airport Pavement Management Program* (FAA 2014a).
- FAA Advisory Circular 150/5380-6C, *Guidelines and Procedures for Maintenance of Airport Pavements* (FAA 2014b).
- ASTM D5340-20, *Standard Test Method for Airport Pavement Condition Index Surveys* (ASTM 2020a).
- ASTM D6433-20, *Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys* (ASTM 2020b).
- PAVER 7.1 pavement management software (USACE 2021).

During this update, APTech reviewed pavement records provided by the CCIA and Coffman, updated the network definition map and associated PAVER database, performed Pavement Condition Index (PCI) inspections, customized analysis inputs within PAVER, used the collected information to identify pavement maintenance and rehabilitation needs, and developed a recommended Capital Improvement Plan (CIP). Results and recommendations are presented in this report.

Overall, this PMP update includes approximately 8.2 million square feet of pavement. Of this, the majority is airfield pavement, including approximately 7.7 million square feet of runway, taxiway, apron, shoulder, and overrun pavement. The remainder, approximately 560,000 square feet, is roadway pavement. The included facilities are illustrated on the maps presented in Appendix C.

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2. PAVEMENT INVENTORY

APTech reviewed available pavement-related project records provided by CCIA and Garver to obtain the information required to populate pavement inventory and construction history details in PAVER and to develop the corresponding network definition map. Two separate networks were created using this information: one to capture the airfield pavements and another to capture the roadway pavements.

Network Definition

The pavement network is defined using the inventory information as unique branches, sections, and sample units. A branch is a single entity that serves a distinct function, such as a runway, which serves the primary use of allowing aircraft to take off and land. Each taxiway, apron, shoulder, overrun, and roadway also form a separate branch.

These branches are further divided into sections, which share common attributes, such as construction date, pavement cross section, traffic level, and performance.

To estimate the overall condition of a pavement section, each section is further subdivided into sample units. A statistically determined selection of these sample units is evaluated during the pavement inspection using a rate based on pavement type and number of sample units within a section. The collected information is extrapolated to predict the condition of each section as a whole.

The network definition map is provided in Appendix C. This map shows the location of the pavement areas included in this project and the division of these pavements into branches, sections, and sample units, aligning with details entered in PAVER. The map also identifies the sample units inspected during this project. Chapter 4 provides further information on how branches and sections are defined.

History

Construction of the Corpus Christi Airport began in 1958 after voters approved a $3.2 million bond referendum. The new $6 million airport opened in 1960. The current Hayden W. Head Terminal Building opened to the public in November 2002. In 2016, the U.S. Coast Guard built a large facility that included a large hangar and command center. The Passenger Terminal is currently undergoing a renovation that is scheduled to be completed in 2024.

The runways originally date from the late 1950s to the early 1960s. The runways have received multiple full-length overlays, most recently in 2005, for Runway 13/31 and 2008 for Runway 18/36. Additionally, northern extensions for each runway were completed in 2013-2015, during which time, many of the connecting taxiways were realigned. Large areas of the Terminal Apron and the East General Aviation Apron were reconstructed with new PCC pavement in phases between 2017 and 2022. The West General Aviation Apron was reconstructed with PCC in 2008. The northwestern half of Taxiway K was also reconstructed in 2018, at the same time as the U.S. Coast Guard Apron construction. Most recently, much of Taxiway B and the Taxiway B connecting taxiways received a mill and overlay in 2022.

Any pavement sections that did not have records or construction visible in aerial imagery were assigned a construction date of 1960 based on the airport's original construction. The available work history is provided in Appendix A, which corresponds with the data entered in PAVER.

Inventory Overview

The CCIA PMP includes a total of 8,216,295 square feet of pavement, including 7,656,589 square feet of airfield pavement defined by 106 pavement sections, plus another 559,706 square feet of roadway pavement defined by eighteen sections.

Figures 1 and 2 show a summary of the included pavement area by pavement type and use, respectively. Pavement types, as they correspond with PAVER and as used throughout this report, are defined as follows:

- AC (asphalt concrete) pavements consist of a new asphalt pavement generally placed on one or more base/subbase layers (no known older asphalt pavement exists under the surface).
- AAC (asphalt over asphalt concrete) pavements consist of an asphalt pavement with one or more asphalt overlays.
- PCC (portland cement concrete) pavements consist of a concrete layer over subgrade and/or prepared bases, which may be aggregate or stabilized.

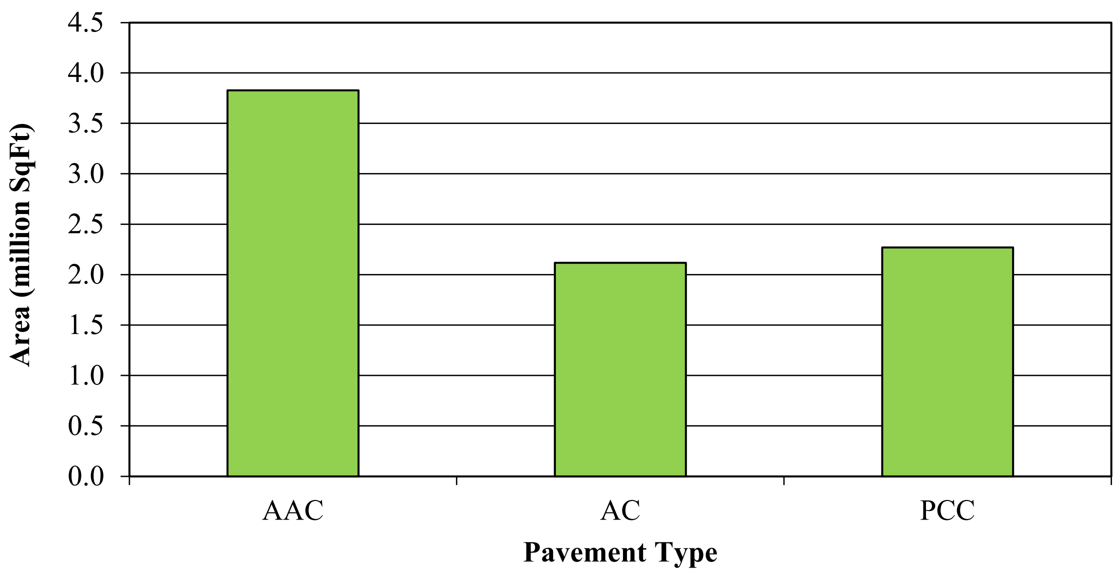

Figure 1. Pavement area distributed by pavement type.

As illustrated in these figures, the majority of the inspected pavement consists of AAC pavement, which represents approximately 47 percent of the area. The remaining area consists of 26 percent AAC pavement and 28 percent PCC pavement. Taxiways make up the largest portion of the pavement, representing 29 percent of the total area. Following the taxiways are the aprons and runways, which represent 26 percent and 25 percent of the total area, respectively. The runway shoulders and overruns make up 7 percent and 6 percent of the total pavement area, respectively. The inspected roadways at CCIA make up 7 percent of the total pavement area.

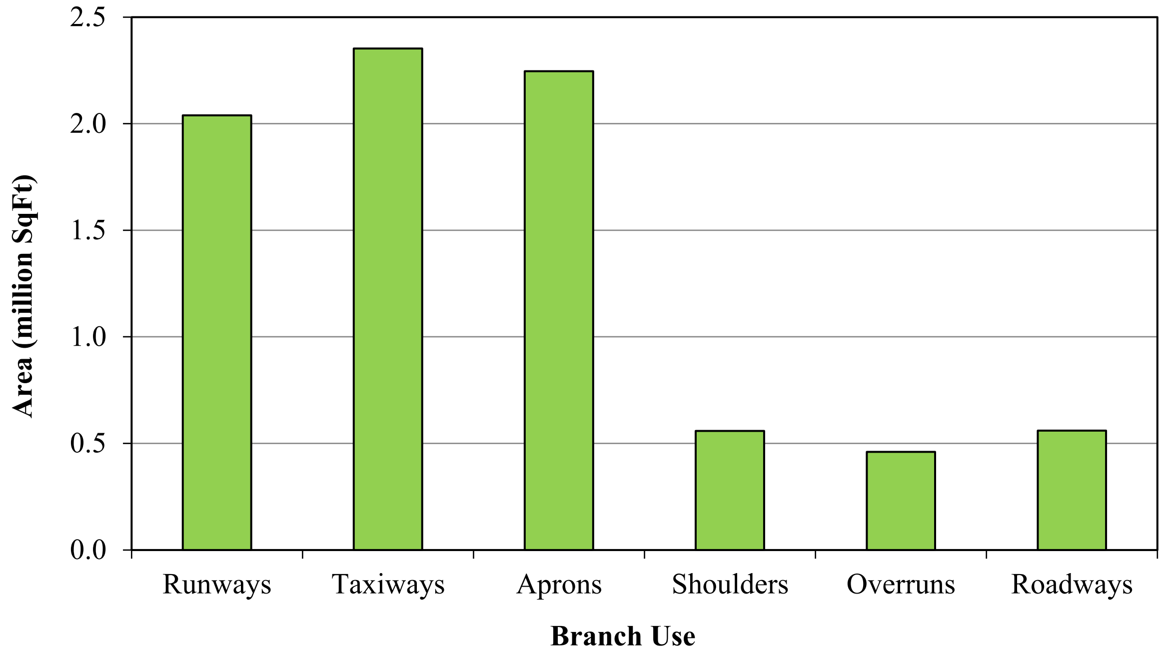

Figure 2. Total pavement area distributed by use.

Figure 3 summarizes the distribution of pavement age for the pavement infrastructure. As illustrated, the largest single age group of sections is between 16 and 20 years old, reflecting large rehabilitation projects within the runways, Taxiway B, and the Terminal Apron within that time frame.

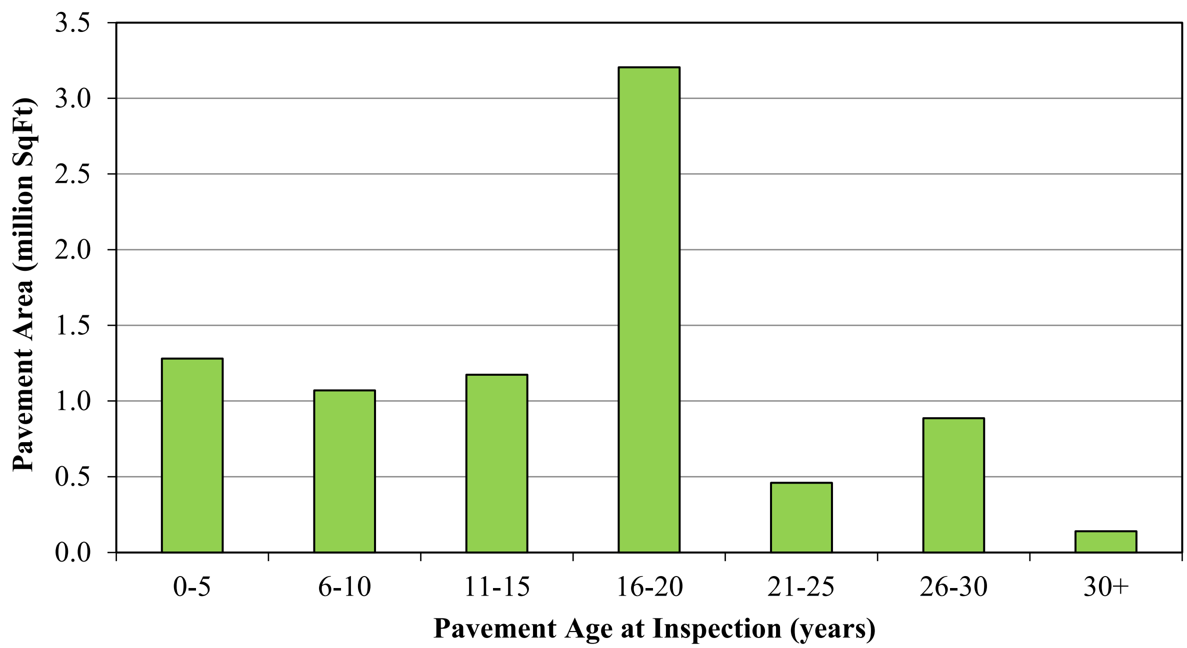

Figure 3. Airfield pavement area distributed by age.

Inventory Summary

APTech reviewed available pavement-related project records provided by CCIA and Garver to develop the PAVER database and corresponding network definition map. Two separate networks were created using this information: one to capture the airfield pavements and another to capture the roadway pavements. The CCIA PMP includes approximately 8.2 million square feet of pavement, including nearly 7.7 million square feet of airfield pavement defined by 106 pavement sections, and almost 560,000 square feet of roadway pavement defined by eighteen sections. The majority of the paved surface consists of AAC and AC pavement (73 percent), followed by PCC pavement (28 percent). Taxiways make up the largest portion of the pavement (29 percent), followed by aprons (27 percent), and runways (25 percent). The inspected roadways at CCIA make up 7 percent of the total area.

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3. PAVEMENT CONDITION

This chapter provides an introduction to the PCI inspection procedure and the results of the visual pavement condition inspections for CCIA. APTech performed the pavement inspections during February 2024.

Pavement Condition Inspection Procedure

The pavement inspections were conducted using the PCI procedure documented in the aforementioned FAA Advisory Circulars and ASTM standards. The PCI procedure is the standard used by the aviation industry to visually assess pavement condition, providing engineers with a consistent, objective, and repeatable tool to represent the overall pavement condition. During a PCI inspection, visible signs of deterioration within a selected sample unit are recorded and analyzed, as are distress type, severity, and quantity.

In conducting PCI inspections, each facility (e.g., runway, taxiway, apron, overrun, shoulder and roadway) is subdivided into discrete sections as previously described. Each section is then divided into sample units, from which a subset of sample units is selected for detailed inspection. APTech applied the sampling interval provided in Tables 1 and 2 to the airfield and landside pavement, respectively, which has been established to provide an acceptable level of accuracy.

The PCI rating is a numerical measure of the existing condition of the pavement based on the distresses observed on the pavement surface. The results provide an indication of the structural integrity and functional capabilities of the pavement yet are only an indirect indicator of the overall condition of the pavement since only the surface of the pavement is examined. Nevertheless, the PCI does provide an objective basis for determining maintenance and rehabilitation needs and for establishing priorities in the face of constraints. Furthermore, the results of repeated PCI monitoring over time can be used to determine the rate of deterioration and to estimate the time at which certain rehabilitation measures may be needed.

Table 1. Airfield inspection sampling rate.

PCC Pavements		AC-surfaced Pavements	
Total Number of Sample Units in Pavement Section (N)	**Number of Sample Units Inspected (n)**	**Total Number of Sample Units in Pavement Section (N)**	**Number of Sample Units Inspected (n)**
1 – 3	all	1 – 3	all
4	3	4	3
5 – 7	4	5 – 9	4
8 – 10	5	10 – 20	5
11 – 16	6	21 – 30	6
17 – 28	7	31 – 70	7
29 – 64	8	>70	10%, but ≤ 17
65 – 90	9		
> 90	10%, but ≤ 32		

Table 2. Landside inspection sampling rate.

PCC Pavements		AC-surfaced Pavements	
Total Number of Sample Units in Pavement Section (N)	**Number of Sample Units Inspected (n)**	**Total Number of Sample Units in Pavement Section (N)**	**Number of Sample Units Inspected (n)**
1 – 3	all	1 – 3	all
4 - 7	3	4 - 9	3
8 – 16	4	10 – 20	4
17 – 28	5	21 – 30	5
29 – 64	6	31 – 70	6
65 – 90	7	71 – 150	7
91 – 150	8	151 - 200	8
151 – 200	9	>70	9
> 200	10		

The PCI scale ranges from a value of 0 (representing a pavement in a completely FAILED condition) to a value of 100 (representing a pavement with no distress), as illustrated in Figures 7 and 8. In general terms, pavements in SATISFACTORY to GOOD condition that are not exhibiting significant amounts of load-related distress will benefit from preventive maintenance actions, such as joint and crack sealing and patching. Pavements with a PCI between 40 and 70 (i.e., FAIR to POOR condition) are more likely candidates for major rehabilitation activities, such as PCC repairs or an overlay, although preventive maintenance may still be beneficial. Often, when the PCI is less than 40, reconstruction is the most viable alternative due to substantial deterioration of the pavement structure. These guidelines are general PCI thresholds associated with level of work need. Agencies can finetune when work activities are appropriate, as further discussed in Chapter 4.

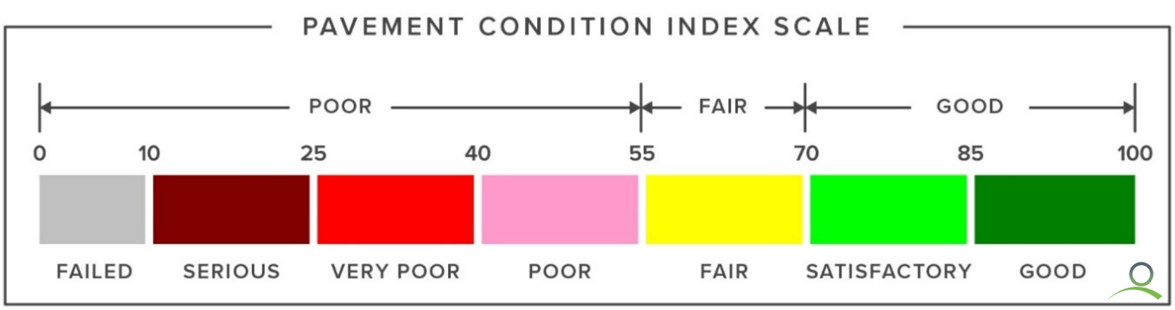

Figure 7. PCI rating scale.

Although PCI ratings can be used as a general guideline for identifying the repair type, examining the individual distresses measured during the inspection is often more useful in assessing the cause(s) of deterioration. The PCI procedure divides distresses into three categories based on the expected cause of the distress. By knowing the cause(s) of the pavement deterioration, appropriate repair and rehabilitation alternatives can be identified.

Typical AC Pavement Surface	Typical PCC Pavement Surface	PCI
		100
		75
		45

Figure 8. Visual interpretation of PCIs.

The three categories of distress types are load related, climate related, and those due to other causes, with the distresses for each pavement type categorized in Tables 3 and 4 as they are defined in PAVER. Load-related distresses are defined as being caused by aircraft or vehicular traffic and may provide an indication of a structural deficiency. Climate-related distresses often signify the presence of aged and/or environment-susceptible material and include durability-related issues such as durability cracking (commonly referred to as D-cracking). Tables 5 through 8 further describe the types of distress evaluated during a PCI inspection.

Table 3. Airfield distress types by primary distress category, as defined in PAVER.

Pavement Type	Pavement Distress Category		
	Load Related	**Climate Related**	**Other**
AC-Surfaced Airfield Pavements	• Alligator (Fatigue) Cracking • Rutting	• Block Cracking • Joint Reflection Cracking • Longitudinal and Transverse (L&T) Cracking • Patching • Raveling • Weathering	• Bleeding • Corrugation • Depression • Jet Blast Erosion • Oil Spill Damage • Polished Aggregate • Shoving • Slippage Cracking • Swelling
AC-Surfaced Roadway Pavements	• Alligator Cracking • Edge Cracking • Pothole • Rutting	• Block Cracking • Joint Reflection Cracking • Longitudinal and Transverse (L&T) Cracking • Raveling • Weathering	• Bleeding • Bumps and Sags • Corrugation • Depression • Lane Shoulder Drop-off • Patching/Utility Cut • Polished Aggregate • Railroad Crossing • Shoving • Slippage Cracking • Swelling
PCC Airfield Pavements	• Corner Break • Longitudinal, Transverse, and Diagonal (LTD) Cracking • Shattered Slab	• Blow-Up • Durability Cracking • Joint Seal Damage	• Alkali-Silica Reactivity (ASR) • Patching, Small and Large • Popouts • Pumping • Scaling • Settlement/Faulting • Shrinkage Cracking • Spalling, Joint and Corner

Table 5. PCI distress types for airfield AC-surfaced pavements.

Distress Type	Probable Cause of Distress	Feasible Maintenance Strategies
Alligator Cracking	Fatigue failure of the asphalt concrete surface under repeated traffic loading.	If localized, patch. If extensive, major rehabilitation.
Bleeding	Excessive amounts of asphalt cement or tars in the mix and/or low air void content.	If extensive, spread heated sand, roll, and sweep. Other options include grinding/milling surface or remove and replace.
Block Cracking	Shrinkage of the asphalt concrete and daily temperature cycling; it is not load associated.	If low severity, crack seal and/or surface treatment. At higher severities, consider rehabilitation.
Corrugation	Traffic action combined with an unstable pavement layer.	If localized, mill. If extensive, remove and replace.
Depression	Settlement of the foundation soil or can be “built up” during construction.	Patch.
Jet Blast Erosion	Bituminous binder has been burned or carbonized	Patch.
Joint Reflection Cracking	Located above PCC joints, caused by movement of the underlying slab due to thermal and moisture changes.	At low and medium severity, crack seal. At higher severities, especially if extensive, consider patching.
L&T Cracking	Poorly constructed paving lane joint, shrinkage of the AC surface due to low temperatures or hardening of the asphalt, or reflective crack caused by cracks in an underlying concrete slab.	At low and medium severity, crack seal. At higher severities, especially if extensive, consider patching.
Oil Spill Damage	Deterioration or softening of the pavement surface caused by the spilling of oil, fuel, or other solvents.	Patch.
Patching	N/A	Replace patch if deteriorated.
Polished Aggregate	Repeated traffic applications.	Aggregate seal coat, groove, or mill and overlay.
Raveling	Aggregate particle loss. Asphalt binder may have hardened significantly, leading to loss of adhesion to coarse aggregate.	Patch if isolated. If extensive at medium/high severity, consider surface treatment, otherwise consider major rehabilitation.
Rutting	Usually caused by consolidation or lateral movement of the materials due to traffic loads.	Patch medium and high severity levels, if localized. If extensive, consider major rehabilitation.
Shoving	Where concrete pavements adjoin flexible pavements, concrete “growth” may shove the asphalt pavement.	Mill or patch as needed.
Slippage Cracking	Low strength surface mix or poor bond between the surface and next layer of pavement structure.	Patch.
Swelling	Usually caused by frost action or by swelling soil.	Patch if localized. Major rehabilitation if extensive.
Weathering	Asphalt binder and fine aggregate loss. Asphalt binder has hardened or worn away.	If extensive, consider surface treatment.

Table 6. Distress descriptions for roadway AC-surfaced pavements.

Distress Type	Probable Cause of Distress	Typical Maintenance Strategies
Alligator Cracking	Fatigue failure of the asphalt concrete surface under repeated traffic loading.	If localized, patch. If extensive, major rehabilitation.
Bleeding	Excessive amounts of asphalt cement or tars in the mix and/or low air void content.	If extensive, spread heated sand, roll, and sweep. Other options include grinding/ milling surface or remove and replace.
Block Cracking	Shrinkage of the asphalt concrete and daily temperature cycling; it is not load associated.	If low severity, crack seal and/or surface treatment. At higher severity levels, consider rehabilitation.
Bumps and Sags	Buckling or bulging of underlying PCC slabs, frost heave, or infiltration and buildup of material in a crack in combination with traffic loading.	Mill or patch as needed.
Corrugation	Traffic action combined with an unstable pavement layer.	If localized, mill. If extensive, remove and replace.
Depression	Settlement of the foundation soil or can be “built up” during construction.	Patch.
Edge Cracking	Moisture- or frost-weakened base or subgrade near the edge of the pavement that can be accelerated by traffic.	At low and medium severity, crack seal. At high severity, especially if extensive, consider patching.
Joint Reflection Cracking	Located above PCC joints, caused by movement of the underlying slab due to thermal and moisture changes.	At low and medium severity, crack seal. At high severity, especially if extensive, consider patching.
Lane Shoulder Drop-off	Shoulder erosion, shoulder settlement, or building up of the roadway (or parking lot) without adjusting the shoulder level.	Leveling patch.
L&T Cracking	Poorly constructed paving lane joint, shrinkage of the AC surface due to low temperatures or hardening of the asphalt, or reflective crack caused by cracks in an underlying concrete slab.	At low and medium severity, crack seal. At high severity, especially if extensive, consider patching.
Patching	Repair of a previous distress.	Replace patch if deteriorated.
Polished Aggregate	Repeated traffic applications.	Aggregate seal coat, groove, or mill and overlay.
Pothole	Traffic loading over frost- or moisture-weakened base or subgrade. Poor bonding conditions can also contribute.	Patch.
Railroad Crossing	Depressions or bumps around or between tracks, or both, affecting ride quality.	Patch.
Raveling	Aggregate particle loss. Asphalt binder may have hardened significantly, leading to loss of adhesion to coarse aggregate.	Patch if isolated. If extensive at medium or high severity, consider surface treatment; otherwise consider major rehabilitation.

Table 6. Distress descriptions for landside AC-surfaced pavements (continued).

Distress Type	Probable Cause of Distress	Typical Maintenance Strategies
Rutting	Usually caused by consolidation or lateral movement of the materials due to traffic loads.	Patch medium and high severity levels, if localized. If extensive, consider major rehabilitation.
Shoving	Where concrete pavements adjoin flexible pavements, concrete "growth" may shove the asphalt pavement.	Mill or patch as needed.
Slippage Cracking	Low strength surface mix or poor bond between the surface and next layer of pavement structure.	Patch.
Swelling	Usually caused by frost action or by swelling soil.	Patch if localized. Major rehabilitation if extensive.
Weathering	Asphalt binder and fine aggregate loss. Asphalt binder has hardened or worn away.	If extensive, consider surface treatment.

Table 6. PCI distress types for airfield PCC pavements.

Distress Type	Probable Cause of Distress	Feasible Maintenance Strategies
ASR	Chemical reaction between alkalis and certain reactive silica minerals causing expansion.	Patch, if isolated. Slab replacement if extensive.
Blow-Up	Incompressible materials in joints.	Patch. Slab replacement if severe.
Corner Break	Load repetition combined with loss of support and curling stresses.	Seal cracks at low severity. Patch if severe.
LTD Cracking	Combination of load repetition, curling stresses, and shrinkage stresses.	Seal cracks. At high severity, may need patch or slab replacement.
Durability Cracking	Concrete's inability to withstand environmental factors such as freeze-thaw cycles.	Patch if isolated. At higher severities, if extensive, slab replacement.
Joint Seal Damage	Stripping of joint sealant, extrusion of joint sealant, weed growth, hardening of the filler (oxidation, loss of bond to the slab edges, or absence of sealant in joint).	Replace joint sealant.
Patching, Small and Large	N/A	Replace patch if deteriorated.
Popouts	Freeze-thaw action in combination with expansive aggregates.	Monitor.
Pumping	Poor drainage and poor joint/crack sealant.	Seal cracks and joints. Undersealing is an option if voids have developed. Establish good drainage.
Scaling	Overfinishing of concrete, improper construction, freeze-thaw cycles, or poor aggregate.	At low severity levels, monitor. At medium and high severity levels, patch or slab replacement.
Settlement/Faulting	Upheaval or consolidation.	At higher severity levels, leveling patch or grind to restore smooth ride.
Shattered Slab	Load repetition.	Slab replacement.
Shrinkage Cracking	Moisture loss or drying of the pavement surface during setting and curing of the concrete; overfinishing of the concrete.	Monitor.
Spalling, Joint and Corner	Excessive stresses at the joint caused by infiltration of incompressible materials or traffic loads; weak concrete at joint combined with traffic loads.	Patch.

The PCI is also evaluated in terms of the percent of deducts (from a PCI of 100) that are due to each category (i.e., load-related, climate-related, and other). For example, consider a pavement section that has a PCI of 60 (i.e., 40 deduct points); if 20 of those deduct points are due to load-related distress, then 50 percent of the deduct points are associated with structural deterioration, suggesting that traffic loading is strongly affecting the performance of the pavement. Identifying the causes of the pavement deterioration allows for more appropriate repair and rehabilitation alternatives to be identified.

The loss in PCI over time (i.e., the pavement's rate of deterioration) is another relevant factor when evaluating the performance of a pavement. Low deterioration rates indicate a more durable pavement structure, whereas high deterioration rates may indicate a less durable pavement structure or one that is not performing as expected. Pavements that are exhibiting high deterioration rates should be closely examined to determine the cause.

Pavement Condition Inspection Results

The overall area-weighted PCI of the entire CCIA pavement network is 80. The area-weighted PCI of the airfield pavement network is 82, while the area-weighted PCI of the landside pavement network is 66. A map summarizing the 2024 PCI results by section is included as Figure C-2 in Appendix C. The colors within the figures included throughout this chapter represent the PCI condition category corresponding with those defined in Figure 7.

While overall, the CCIA pavements are in SATISFACTORY condition, PCIs of individual sections range from 29 to 100. Figures 9 and 10 show the PCI results from the 2024 inspection of CCIA pavements distributed by pavement type and use, respectively.

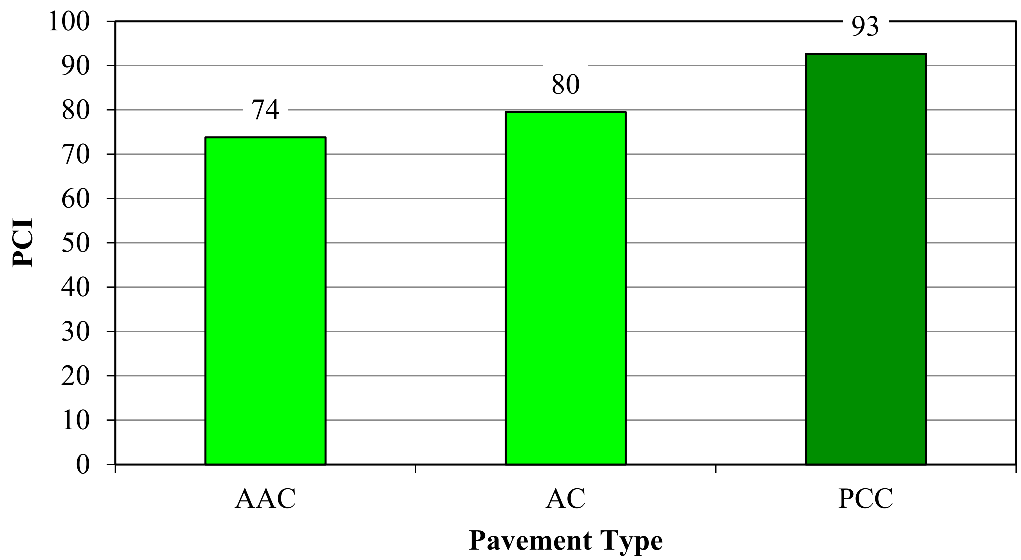

Figure 9. PCI results by pavement type.

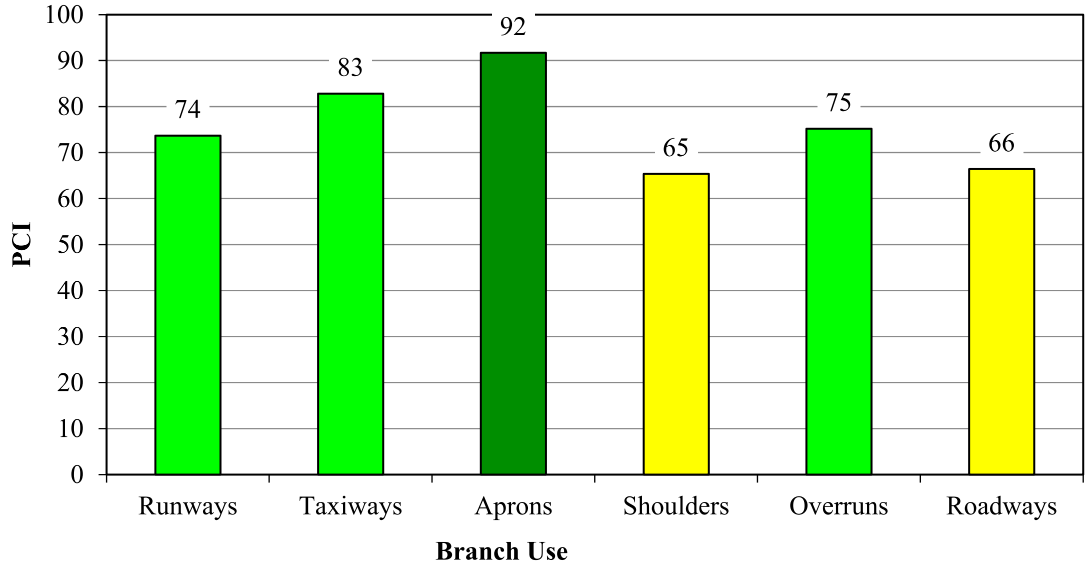

Figure 10. PCI results by use.

As shown in Figure 9, the PCC pavement is in the best condition, with an area-weighted PCI of 93. Most of the PCC pavement is located within the Terminal Apron, which has undergone numerous rehabilitation and expansion projects since 2015. The overall, weighted condition of the AC and AAC pavements at CCIA is SATISFACTORY, with PCIs of 74 and 80, respectively.

As shown in Figure 10, the area-weighted PCIs across the various facilities at CCIA range from FAIR to GOOD condition. Runways and taxiways are in similar condition, with PCIs of 74 and 83, respectively. The aprons are in better condition, with a weighted condition of 92, due to rehabilitation in the past ten years. The condition of the runway shoulders and overruns ranges from FAIR to SATISFACTORY, with weighted PCIs of 65 and 75, respectively. The roadways at CCIA are in FAIR condition, with an area-weighted PCI of 66.

Of the over 8.2 million square feet of pavement included in the CCIA PMP, the majority (about 71 percent) of the pavement area is rated as GOOD or SATISFACTORY condition. Twenty-seven percent of the area is in FAIR condition, and the remainder (2 percent) is in POOR or VERY POOR condition. Figure 11 summarizes the PCI results by area.

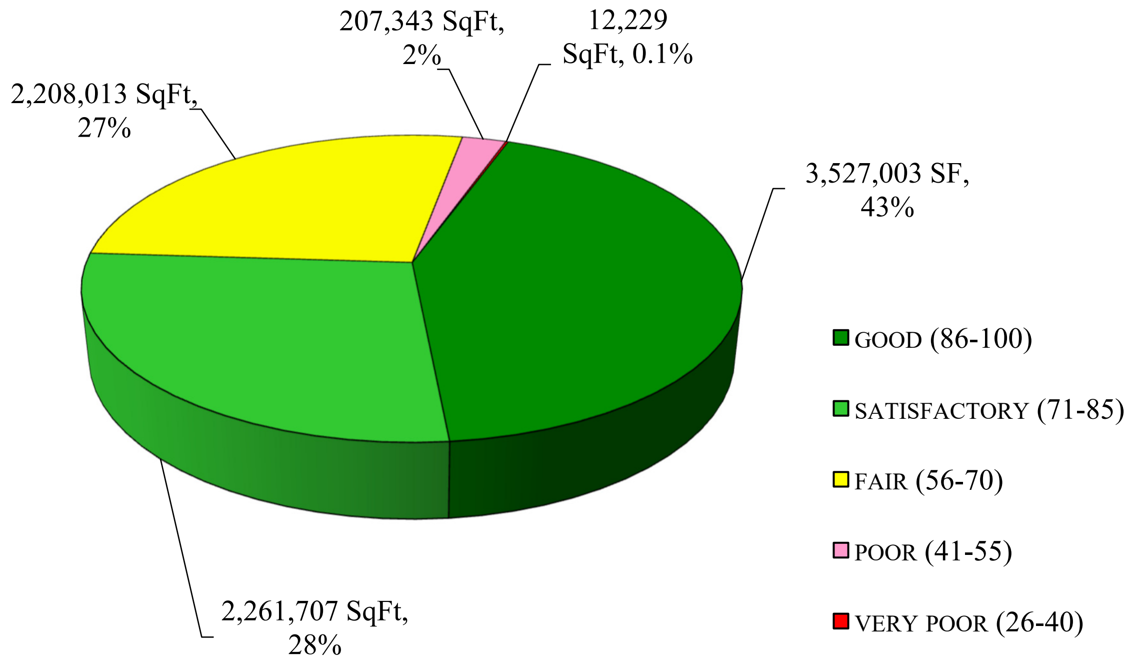

Figure 11. PCI rating category by area.

As previously mentioned, high deterioration rates can be an indication of problems, even when the condition of a particular section is still good. In general, a PCI deterioration rate is considered high if it is more than 2 points per year for PCC pavement or 3 points per year for AC-surfaced pavement. The deterioration rates since the last construction/rehabilitation are included in Table 9. High deterioration rates are shown in bold within the tables and discussed in this chapter.

Table 9. PCI results by section.

Branch	Section	Pavement Type	Section Area, SqFt	LCD	2024 PCI	Det Rate Since Last Const.	Percent Deducts Due To[1]:			Distress Types (Severity)[2]
							Load	Climate	Other	
PRK ARFF	ARFF-10	PCC	27,867	1991	48	1.6	40	15	45	ASR (L,M) Corner Spalling (L) Joint Seal Damage (H) Joint Spalling (L,M) Large Patch/Utility Cut (L) LTD Cracking (L) Shattered Slab (L,M) Shrinkage Cracking Small Patch (H)
RDGLASSON	20	AAC	22,163	2010	47	3.8	62	13	25	Alligator Cracking (L,M) L&T Cracking (L) Patching (L) Rutting (M) Weathering (M)
RDGLASSON	30	AAC	36,126	2010	46	3.9	89	10	1	Alligator Cracking (L,M) Patching (L) Rutting (M,H) Weathering (M)
RDGLASSON	40	AAC	4,076	2010	54	3.3	62	38	0	Alligator Cracking (L,M) Edge Cracking (L) L&T Cracking (L) Raveling (H) Rutting (H) Weathering (M,H)
RDHANGAR	10	AC	12,229	2004	29	3.6	85	15	0	Alligator Cracking (L,M) Edge Cracking (L,M,H) L&T Cracking (L) Raveling (H) Rutting (M,H) Weathering (M)
RDHANGAR	30	AC	2,538	2004	54	2.3	60	40	0	Alligator Cracking (M) L&T Cracking (L) Raveling (M) Weathering (L)

Table 9. PCI results by section (continued).

Branch	Section	Pavement Type	Section Area, SqFt	LCD	2024 PCI	Det Rate Since Last Const.	Percent Deducts Due To[1]: Load	Climate	Other	Distress Types (Severity)[2]
RDINTL	10	AC	2,193	1990	54	1.4	0	100	0	L&T Cracking (L) Raveling (H) Weathering (M)
RDINTL	20	AAC	39,106	2010	63	2.7	81	19	0	Alligator Cracking (L) Edge Cracking (L) L&T Cracking (L) Rutting (L,M) Weathering (M)
RDINTL	50	AAC	39,777	2010	49	3.6	79	21	0	Alligator Cracking (L) L&T Cracking (L,M) Rutting (L,M,H) Weathering (L,M)
RDINTL	60	AC	3,340	1990	52	1.4	5	95	0	Alligator Cracking (L) L&T Cracking (L) Raveling (H) Weathering (M)
RDPINSON	10	AC	41,115	1978	47	1.2	62	17	21	Alligator Cracking (L,M) L&T Cracking (L) Patching (L) Rutting (H) Weathering (M,H)
RWY 18-36	10-2	AAC	95,242	2008	63	2.3	0	100	0	L&T Cracking (L,M) Weathering (L,M)
RWY 18-36	20-2	AAC	94,873	2008	62	2.4	0	100	0	L&T Cracking (L,M) Raveling (H) Weathering (L,M)
RWY ARFF	ARFF-10	PCC	16,787	1991	54	1.4	23	17	60	ASR (L) Corner Break (L) Corner Spalling (L,M) Faulting/Settlement (L) Joint Seal Damage (H) Joint Spalling (H) Large Patch/Utility Cut (L) LTD Cracking (L) Shrinkage Cracking

Table 9. PCI results by section (continued).

Branch	Section	Pavement Type	Section Area, SqFt	LCD	2024 PCI	Det Rate Since Last Const.	Percent Deducts Due To[1]:			Distress Types (Severity)[2]
							Load	Climate	Other	
SHRWY13-31	S-10-1	AC	143,793	2005	57	2.3	54	46	0	Alligator Cracking (L,M) L&T Cracking (L)
SHRWY13-31	S-10-2	AC	15,647	2005	65	1.9	48	52	0	Alligator Cracking (L) L&T Cracking (L)
SHRWY13-31	S-20	AC	22,732	2005	58	2.2	38	62	0	Alligator Cracking (L) L&T Cracking (L,M)
SHRWY13-31	S-30	AC	32,447	2005	62	2.0	46	54	0	Alligator Cracking (L,M) L&T Cracking (L,M)
SHRWY13-31	S-40	AC	48,712	2005	58	2.2	29	70	1	Alligator Cracking (L) Depression (L) L&T Cracking (L,M) Patching (L)
SHRWY18-36	S-30	AC	33,673	2012	61	3.3	43	57	0	Alligator Cracking (L) L&T Cracking (L,M) Patching (L)
TWY A	A-20	AAC	139,286	1994	61	1.3	15	85	0	Alligator Cracking (L) L&T Cracking (L,M) Raveling (H)
TWY E	E-10	AAC	84,128	2008	62	2.4	40	58	2	Alligator Cracking (L) L&T Cracking (L,M) Swelling (L)
TWY F	F-20	AC	130,002	1996	60	1.4	0	93	7	Depression (L) L&T Cracking (L,M) Raveling (H) Swelling (L)
TWY G	G-10	AC	60,860	1996	60	1.4	0	72	28	Depression (M) L&T Cracking (L,M) Patching (L) Raveling (H) Swelling (L,M)
TWY K	K-10	AC	69,155	1996	57	1.5	14	64	22	Alligator Cracking (L) L&T Cracking (L,M,H) Raveling (H) Swelling (L,M)

Table 9. PCI results by section (continued).

Branch	Section	Pavement Type	Section Area, SqFt	LCD	2024 PCI	Det Rate Since Last Const.	Percent Deducts Due To[1]:			Distress Types (Severity)[2]
							Load	Climate	Other	
TWY M	M-10	AC	18,494	1990	59	1.2	14	86	0	Alligator Cracking (L) L&T Cracking (L,M) Raveling (H) Weathering (M)
TWY P	P-10	AAC	11,361	1992	49	1.6	0	86	14	L&T Cracking (L) Patching (L) Raveling (H) Swelling (L) Weathering (M)

[1] Corresponding to the categories presented in Table 3.

[2] L&T Cracking = longitudinal and transverse cracking; LTD Cracking = longitudinal, transverse, and diagonal cracking (or linear cracking); bleeding, oil spill damage, polished aggregate, popouts, pumping, and shrinkage cracking do not have a severity level.

[3] Section has a high deterioration rate (greater than 3 PCI points per year for AC-surfaced pavements or greater than 2 PCI points per year for PCC pavements).

Of the 124 sections inspected, 20 sections (13 percent of the area) have 2024 PCIs below their critical value (the condition at which rehabilitation should be considered), set at a value of 65 for runways and taxiways, 60 for aprons, and 55 for runway shoulder and overrun pavements, as discussed in Chapter 4. The sections below the critical PCI include the keel of Runway 18/36 sections 10-2, and 20-2, as well as portions of Taxiways A, E, F, G, K, M, and P. The PCC pavements at the Fire/ Rescue Facility are also below their critical value.

Of the 18 landside pavement sections, 9 sections (29 percent of the area) have 2024 PCIs below their critical value, set at a value of 55 for roadways, again, as further discussed in Chapter 4. The sections that have fallen below their critical PCIs include parts of Glasson Drive, Hangar Road, International Blvd., as well as the entirety of Pinson Drive.

Sections with PCIs below or predicted to fall below the established critical PCIs within the next 5 years are identified in the "unlimited funding" analysis (presented in Chapter 5) and are included in the recommended CIP.

Pavement Condition Summary

This chapter summarizes the results and observations of the pavement condition inspections that APTech completed during February of 2024 at CCIA. The CCIA pavement network contains slightly over 8.2 million square feet and has an overall area-weighted PCI of 80. The area-weighted PCI of the airfield pavement is 82 based on 106 pavement sections covering an area of approximately 7.7 million square feet. The area-weighted PCI for the landside network is 66 based on 18 pavement sections covering an area of approximately 560,000 square feet.

The majority (about 71 percent) of the pavement area at CCIA is rated as being in GOOD or SATISFACTORY condition. Slightly over a quarter of the area (27 percent) is in FAIR condition and the remainder (2 percent) is in POOR or VERY POOR condition.
Some of the pavements at CCIA need maintenance or rehabilitation. Specific conditions identified during the pavement inspections are discussed in this chapter with recommendations discussed in the chapters that follow.