FLORIDA DEPARTMENT OF TRANSPORTATION
AVIATION AND SPACEPORTS OFFICE

Statewide Airfield Pavement Management Program

Airport Pavement Evaluation Report

September 2017

FDOT

Marco Island Airport (MKY)
General Aviation Airport
District 1

FLP
OFFICE OF FREIGHT, LOGISTICS & PASSENGER OPERATIONS

Florida Department of Transportation

Statewide Airfield Pavement Management Program

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Statewide Airfield Pavement
Management Program

FDOT

Executive Summary

Executive Summary

Program Background

Airport airfield pavement infrastructure facilities represent a large capital investment in the Florida Airport System. Timely and appropriate maintenance and strategic rehabilitation are essential as repair costs increase significantly in proportion to deterioration. Airport pavement distresses can also contribute to the development of loose debris and decreased ride quality, which can be a safety concern for aircraft operations.

In 2016, the Florida Department of Transportation (FDOT) Aviation and Spaceports Office (ASO) selected Kimley-Horn and Associates, Inc. with subconsultants Airfield Pavement Management Systems, LLC and AVCON, Inc. to provide professional services in support of FDOT in the continued efforts of performing a system update to the Statewide Airfield Pavement Management Program (SAPMP). This work is to be completed from fiscal year 2016 through fiscal year 2019. The SAPMP has 95 public use airport facilities throughout the seven FDOT Districts that participate in the system update. The results of this system update for this specific airport are presented in this report and can be utilized by FDOT and the Federal Aviation Administration (FAA) to identify, prioritize, and schedule pavement maintenance, repair, and major rehabilitation projects.

Pavement condition was assessed utilizing the pavement condition index (PCI) methodology as defined in the FAA Advisory Circular ***150/5380-7B "Airport Pavement Management Program (PMP)"*** using the documented procedures set forth by ASTM ***D5340-12*** "***Standard Test Method for Airport Pavement Condition Index Surveys."***

Pavement deterioration, in accordance with the ASTM D5340-12, was characterized in terms of distinct distress types, severity level of distress, and quantity of distress. This information is utilized to calculate a PCI numeric that represents the overall condition of the pavement in a numeric index that ranges from 0 (a condition category of FAILED) to 100 (GOOD). The PCI methodology analyzes an overall measure of the pavement condition and provides an indication of the degree of maintenance, repair, or rehabilitation efforts that will be required to sustain functional pavement.

The tasks required for the system update at each participating airport consist of the following:

- Obtain recent and anticipated airfield pavement construction work data.
- Update airport airfield pavement system inventory records (construction history, identification, geometry, and facility classification).
- Perform PCI Survey Inspections at each participating airport.
- Update the FDOT SAPMP PAVER™ database system.
- Update the FDOT SAPMP GIS Airfield Navigation GPS enabled Maps.
- Update airfield pavement performance models and pavement condition forecasting.
- Identification of planning-level maintenance, repair, and major rehabilitation to address pavement needs based on functional PCI analysis.
- Development of planning-level opinion of probable construction costs for pavement rehabilitation.

Summary of Results

Pavement Condition Index (Latest Inspection)

Table E-1 Pavement Condition Index Summary (Last Inspection) – Section Level

Network ID	Branch Name	Branch Use	Section ID	Area (SF)	PCI	Condition Rating
MKY	RUNWAY 17-35	RUNWAY	6105	500,000	94	Good
MKY	TAXIWAY A	TAXIWAY	105	14,884	82	Satisfactory
MKY	TAXIWAY A	TAXIWAY	107	3,172	94	Good
MKY	TAXIWAY A	TAXIWAY	110	133,080	94	Good
MKY	TAXIWAY B	TAXIWAY	205	3,882	94	Good
MKY	TAXIWAY C	TAXIWAY	305	5,198	94	Good
MKY	TAXIWAY C	TAXIWAY	310	4,298	94	Good
MKY	TAXIWAY D	TAXIWAY	405	5,198	94	Good
MKY	TAXIWAY D	TAXIWAY	410	4,298	94	Good
MKY	NW APRON	APRON	4105	12,198	76	Satisfactory
MKY	NW APRON	APRON	4110	14,881	92	Good
MKY	NW APRON	APRON	4115	13,114	94	Good
MKY	NW APRON	APRON	4120	167,162	92	Good
MKY	NORTH APRON	APRON	4205	209,077	94	Good
MKY	NORTH APRON	APRON	4210	42,455	92	Good

Forecasted Pavement Condition Index 2018-2027

Table E-2 Pavement Condition Index Forecast 2018-2027

Network ID	Branch ID	Section ID	Last PCI	Forecasted PCI									
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
MKY	AP N	4205	94	92	91	89	87	86	84	83	81	80	78
MKY	AP N	4210	92	90	89	87	85	84	82	81	79	78	76
MKY	AP NW	4105	76	74	73	71	69	68	66	65	63	62	60
MKY	AP NW	4110	92	88	84	82	81	80	78	76	74	72	70
MKY	AP NW	4115	94	89	85	83	81	80	79	77	75	73	71
MKY	AP NW	4120	92	90	89	87	85	84	82	81	79	78	76
MKY	RW 17-35	6105	94	92	91	89	87	86	84	82	81	79	78
MKY	TW A	105	82	80	78	76	75	74	73	72	71	70	69
MKY	TW A	107	94	91	88	85	83	81	79	77	76	74	73
MKY	TW A	110	94	91	89	86	84	82	79	77	76	74	72
MKY	TW B	205	94	91	89	86	84	82	79	77	76	74	72
MKY	TW C	305	94	92	89	86	84	82	80	77	76	74	72
MKY	TW C	310	94	91	88	85	83	81	79	77	76	74	73
MKY	TW D	405	94	91	89	86	84	82	79	77	76	74	72
MKY	TW D	410	94	91	88	85	83	81	79	77	76	74	73

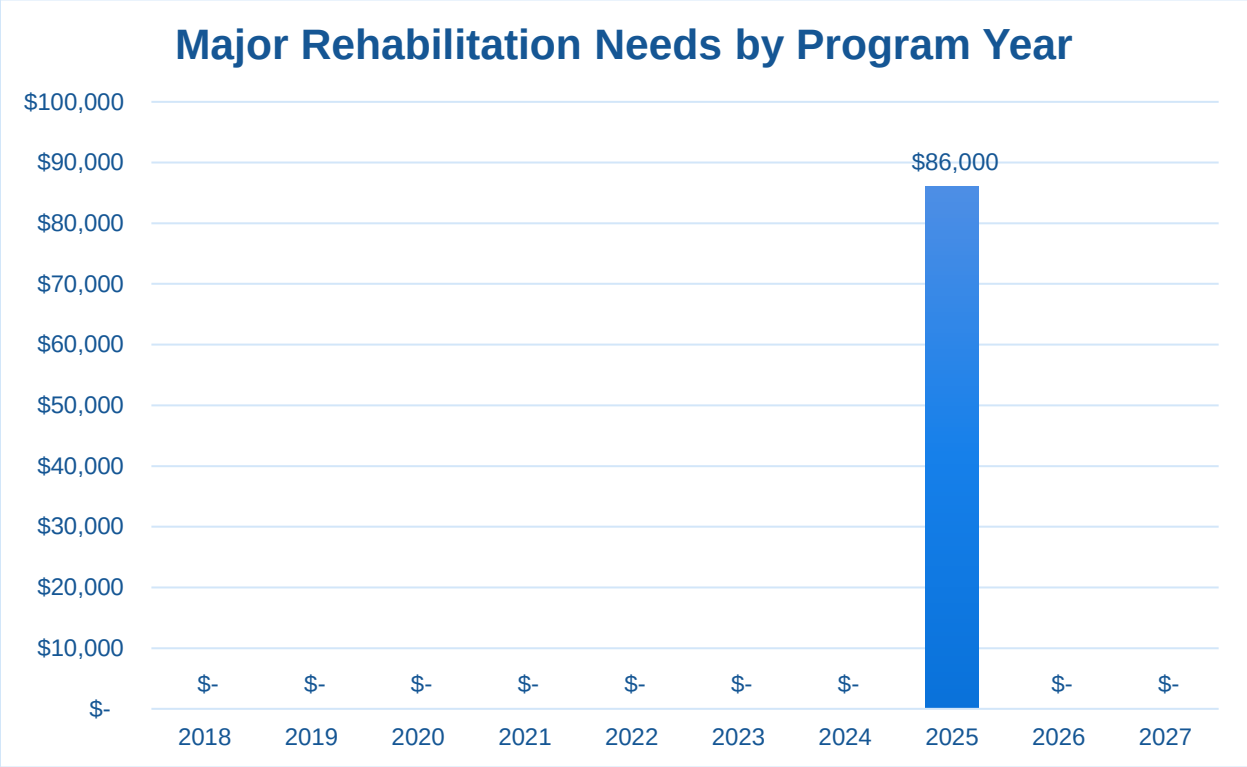
Major Rehabilitation Planning 2018-2027

Table E-3 Major Rehabilitation Planning 2018-2027

Program Year	Network ID	Branch ID	Section ID	Surface	Area (SF)	PCI Before	Rehabilitation Type	Planning Cost
2025	**MKY**	AP NW	4105	AC	12,198	63	AC Restoration	$ 86,000.00

**All planning cost values have been rounded to the nearest thousand-dollar.*

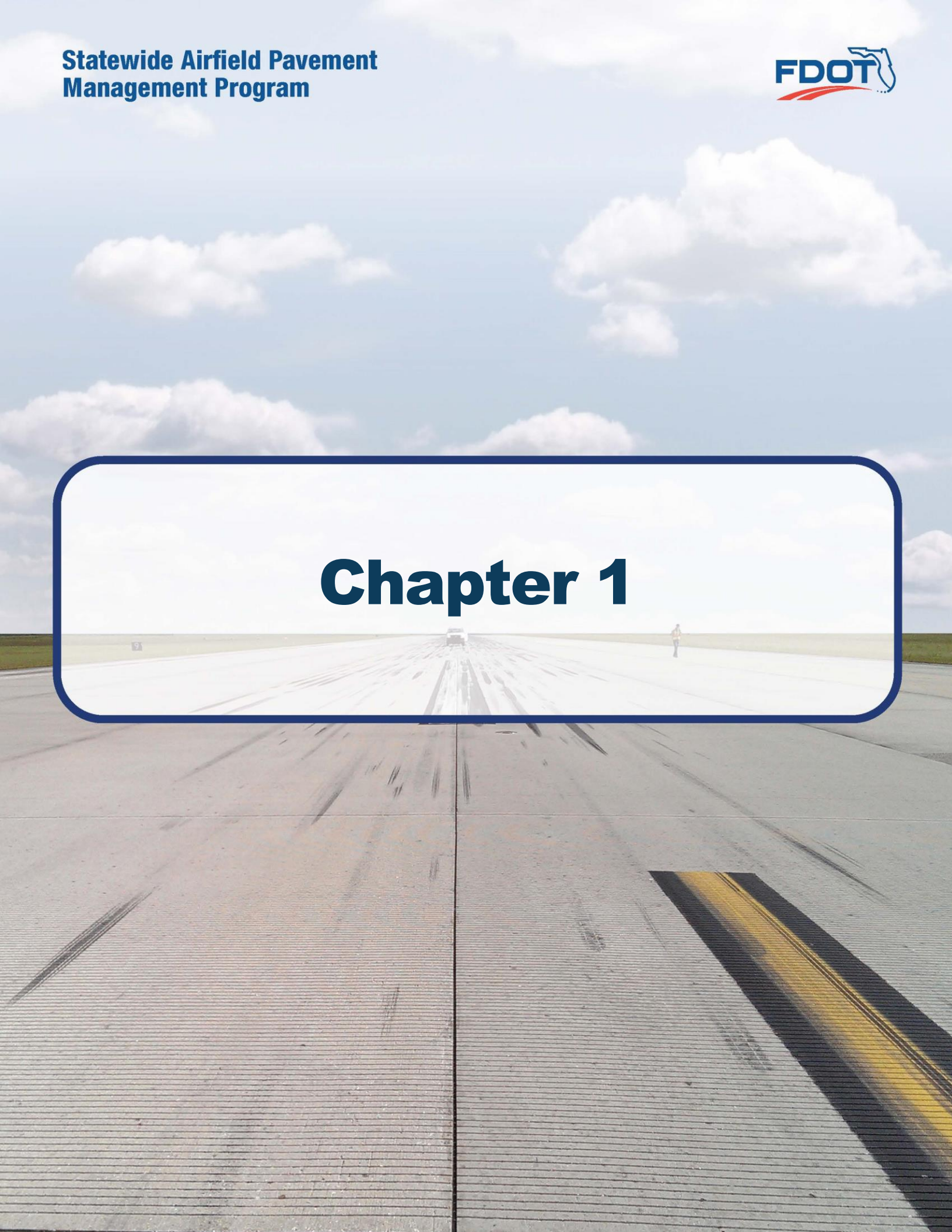
Figure E-4 Major Rehabilitation Planning Annual Budget 2018-2027



Summary of Marco Island Airport

Marco Island Airport was inspected in March 2017 – the overall weighted PCI value was 93, a condition rating of Good. The results of the maintenance, repair, and major rehabilitation analysis identified no localized M&R needs based on current conditions and a 10-Year major rehabilitation need of $86,000 based on forecasted conditions. There are no current major rehabilitation needs based on the latest inspection

Localized maintenance and repair identified within this report are categorized as preventive or stopgap; the FDOT SAPMP has defined maintenance policies based on FAA recommendations. Major rehabilitation is identified within the FDOT SAPMP as major construction activity that would result in an improvement or resetting of the pavement section's PCI to a value of 100. Such activities could include: mill and hot-mix asphalt overlay, rigid pavement repair and slab replacement, and full-depth reconstruction. It is recommended that the airport use this as a planning tool for future project development and prioritization – all localized maintenance and repair and major rehabilitation recommendations should be considered as planning-level only. All final localized maintenance, repair, and major rehabilitation is subject to change based on airport prioritization and further design-level evaluation.



Chapter 1

Chapter 1 – Introduction

1.1 Background

The State of Florida has 128 public airports of which 100 public-use airports are recognized as part of the Federal Aviation Administration's (FAA) National Plan of Integrated Airport Systems (NPIAS) that are vital to the Florida economy as well as the economy of the United States. The Florida Aviation System (FAS) provides opportunities for the State to capitalize on an increasingly global marketplace. Florida's system of commercial service and general aviation (GA) airports are important to businesses throughout the entire State. Air travel is essential to tourism, Florida's number one industry.

There are millions of square feet of pavement infrastructure that consists of runways, taxiways, aprons, ramps, and other areas of airports that are vital to the support and safety of aircraft operations. Timely pavement maintenance, repair and major rehabilitation of these pavements will support the airport in operating safely, efficiently, economically and without excessive down time.

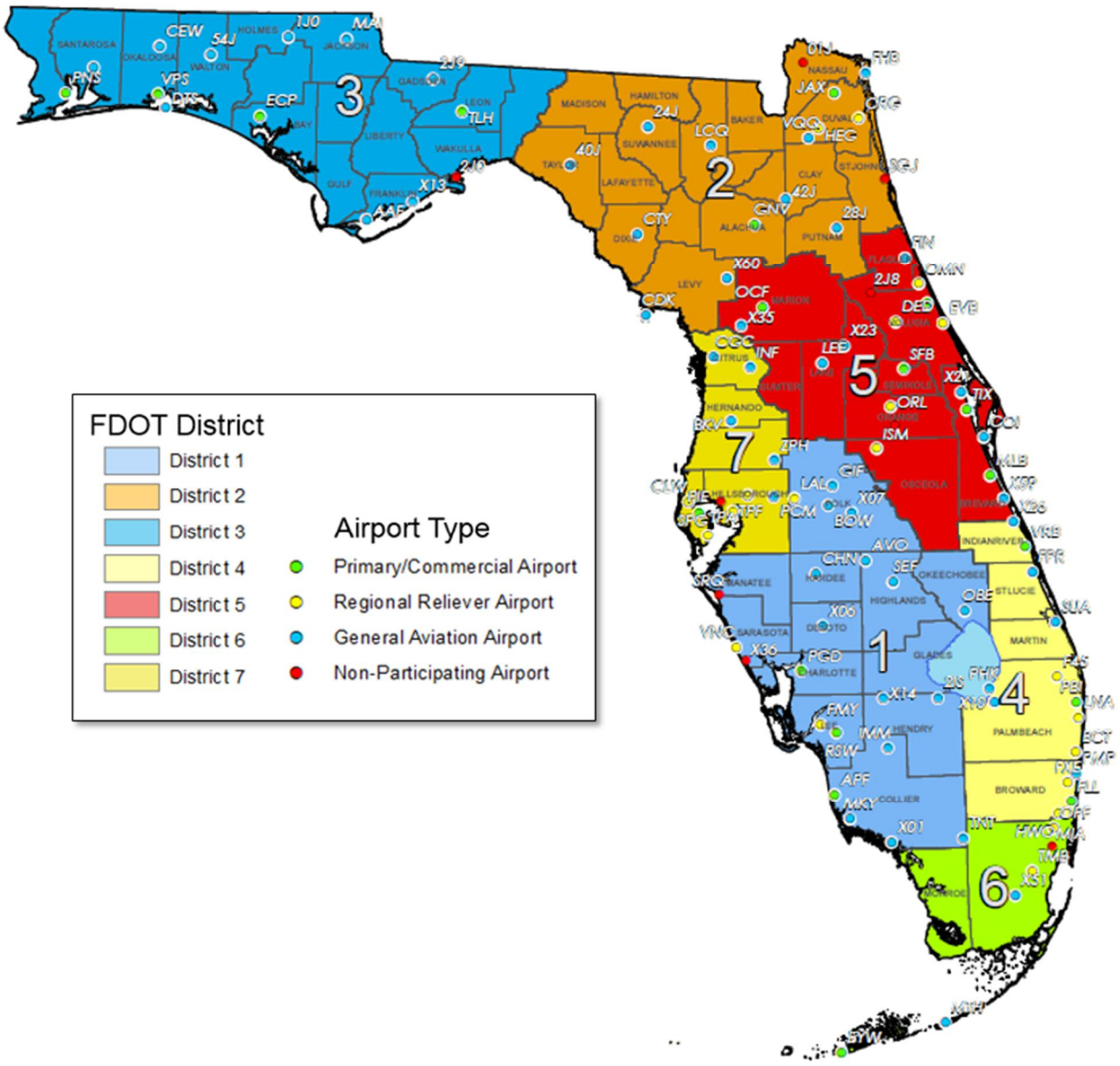
In general, adherence to the FAA Advisory Circulars are mandatory for all projects funded with federal grant monies through the Airport Improvement Program (AIP) and with revenue from the Passenger Facilities Charges (PFC) Program. Further information is detailed in FAA Grant Assurance No. 11 "Pavement Maintenance," No. 34 "Policies, Standards, and Specifications," and PFC Assurance No. 9 "Standards and Specifications." The Florida Department of Transportation (FDOT) performs the Statewide Airfield Pavement Management Program (SAPMP) System Updates for the benefit of participating public-use and publicly owned airports through the Aviation and Spaceports Office (ASO).

The SAPMP addresses the requirements of maintaining an effective pavement management program for the participating airports at the network level. Network-level management of pavement assets provides insight for short-term and long-term budget needs, understanding of the overall condition of the network (current and future), and pavement facilities that are subject for project consideration. A network-level evaluation can be supportive in the identification of maintenance, repair, and major rehabilitation needs and budgetary planning-level opinions of probable construction costs.

1.2 Statewide Airfield Pavement Management Program (SAPMP) Update 2016-2017

In 1992, the FDOT established the Statewide Airfield Pavement Management Program (SAPMP) to provide program managers, District Aviation and Spaceport Offices, and airport operators a system to proactively manage airport airfield pavement infrastructure within the Florida Aviation System. The SAPMP performs network-level Pavement Condition Index (PCI) survey inspections for airport facilities that are categorized as General Aviation (GA), Reliever (RL), and Commercial (PR). Currently, the program consists of 95 actively participating public-use airports with pavement facilities and provides users with comprehensive data to better manage pavement assets.

Figure 1.2 Florida Aviation System (Facilities with Pavement) and FDOT Districts



In 2016, the Florida Department of Transportation Aviation and Spaceports Office contracted Kimley-Horn and Associates, Inc. along with subconsultants Airfield Pavement Management Systems, LLC and AVCON, Inc. to provide professional services in support of FDOT in the continued efforts of performing a system update to the SAPMP. This work is to be completed from fiscal year 2016 through fiscal year 2019.

1.3 Organization

1.3.1 Florida Department of Transportation Aviation and Spaceports Office Program Manager

The FDOT Aviation and Spaceports Office (ASO) Aviation Engineering Manager serves as the Program Manager (ASO-PM) for the SAPMP. The ASO-PM monitors the work performed by the designated Consultant for the program. The ASO-PM has review and approval authority for each program task and manages the program's day-to-day details and pertinent updates.

The ASO-PM reports updates and milestones to the FDOT State Aviation and Spaceports Manager and Development Administrator.

1.3.2 Participating Florida Public-Use and Publicly Owned Airports

The airports are the end-user and beneficiary of the SAPMP. The SAPMP provides a specific Airport Pavement Evaluation Report that meets the requirements of the FAA Advisory Circular ***150/5380-7B "Airport Pavement Management Program (PMP)."*** Individual participating airports will be provided a final Airport Pavement Evaluation Report by the designated Consultant that is specific to each airport's airfield pavement condition index survey. The ASO-PM has full authority and final approval of each report prior to finalization. In advance of each PCI survey and prior to completion of each Airport Pavement Evaluation Report, participating airports are asked to provide the necessary record documentation for the proper analysis efforts. Relevant record documentation artifacts may consist of but are not limited to: Airport Layout Plans (ALP), Construction Bid Tabulations, As-Built Construction Drawings, Engineer's Reports, and/or field pavement inspection reports.

1.3.3 Florida Department of Transportation District Offices

The seven (7) FDOT District Offices, specifically the Aviation representatives (currently the Freight and Logistics personnel), provide essential support to the SAPMP update and the ASO-PM. Each District supports the SAPMP's on-going efforts by providing local construction cost information throughout the State. The construction cost information, typically consisting of plans and bid tabulations, are used as the basis of the development maintenance, repair, and major rehabilitation opinions of probable construction costs for planning purposes. Each District Office receives copies of individual Airport Pavement Evaluation Reports for the participating airport facilities located within their respective Districts.

1.3.4 Consultant

The Consultant, Kimley-Horn and Associates, Inc., provides technical and administrative support to the ASO-PM for the SAPMP update. The support consists of airfield pavement system inventory updates, performance of PCI Surveys in accordance with ASTM ***D5340-12*** "***Standard Test Method for Airport Pavement Condition Index Surveys,"*** evaluation and reporting of the pavement condition in accordance with the FAA Advisory Circular ***150/5380-7B "Airport Pavement Management Program (PMP)."***

The Consultant Team consists of Kimley-Horn, Airfield Pavement Management Systems, LLC., and AVCON, Inc.

A brief description of the general scope of work undertaken to update the SAPMP includes but is not limited to:

- **Research and evaluation of existing record documentation** was performed to identify construction projects that have taken place since the most recent major update of the SAPMP. This data is used to update the pavement inventory and network definition.
- **An update to the existing Network Definition Map** was made to reflect geometric changes, pavement composition updates, and section characterization. Furthermore, an update to the PCI Survey sample units were made to reflect the field investigation efforts.
- **A functional pavement evaluation with PCI Survey inspections** was completed on all airfield pavements maintained by the Airport. The PCI Survey procedure, as defined by ASTM D5340-12, was used as the basis of the functional pavement evaluation. For this specific evaluation, the sample units defined by prior studies were inspected as to better develop performance models for prediction curves. Pavement subject to construction or anticipated construction during scheduled PCI Survey inspection or within 2 years were omitted from inspection based on confirmation of airport personnel.
- **Condition Analysis** was performed based on the distress data observed, rated, measured, and recorded in accordance with the ASTM D5340-12 for the calculation of PCI values and ratings. The results of the current condition analysis were used in concert with the historic PCI Survey data and construction work history to develop performance models to forecast future PCI values for each section for a 10-year study duration.
- **Maintenance, Repair, and Rehabilitation Planning** was performed predicated on the results of the condition analysis with updated policies and planning-level unit costs. The policies, or M&R policies, have been updated to reflect standard practices for maintenance, repair, and major rehabilitation as defined by the FAA **AC *150/5380-6C “Guidelines and Procedures for Maintenance of Airport Pavements.”*** Planning-level unit costs were developed based on representative construction bid tabulations provided by participating airports. The bid tabulations consisted of limited airfield pavement construction projects that took place between 2009 and 2015 at participating airports.

1.4 Purpose of Airport Pavement Evaluation Report

The individual airport airfield pavement evaluation report discusses the work performed, a summary of findings, condition analysis results, and recommendations for maintenance, repair, and major rehabilitation (M&R) planning associated with the SAPMP system update. It also briefly describes the procedures used to ensure that the appropriate engineering and scientific standards of care, quality, budget, schedules, and safety requirements were implemented during the performance of this work.

The purpose of this Airfield Pavement Evaluation Report is to achieve the following:

- Describe the goals, procedures, and purpose of the SAPMP
- Provide a brief technical explanation of the pavement management methodology, standard practices, and objectives
- Analyze pavement distresses data for the determination of pavement conditions and for identification of airfield pavement maintenance, repair, and major rehabilitation needs based on functional PCI trends

The identification of rehabilitation needs has been determined at the planning level. Design-level investigation is recommended prior to developing construction-level design documents and budgets.

In compliance with FAA Grant Assurances 11 and 19; the FDOT SAPMP provides airports with airfield pavement evaluation reports in accordance with FAA **AC 150/5380-7B Airport Pavement Management Program (PMP)** and **AC 150/5380-6C Guidelines and Procedures for Maintenance of Airport Pavements**. The application of the results of a PCI survey are for planning purposes and are limited to the visual observation of deteriorated pavements in limited sampling; design-level investigation is recommended in accordance with the FAA procedures defined in **AC 5320-6F Airport Pavement Design and Evaluation** and **AC 150/5370-11B Use of Nondestructive Testing in the Evaluation of Airport Pavements**. The aforementioned ACs provide the design-level material properties of in-situ pavement and subgrade layers for the determination of appropriate rehabilitation actions. The FDOT Statewide Airfield Pavement Management Program is organized to provide airports with planning-level data and does not intend to preclude the responsible engineer in performing the appropriate level of investigation and analysis in determining the appropriate design details of a pavement rehabilitation. It would not be advisable to solely base design-level rehabilitation without the appropriate level of investigation and determination of pavement deterioration beyond that of a visual functional condition assessment.

1.5 History of the Program

In 1992, the FDOT implemented the SAPMP to understand the pavement conditions at public airports in the FAS, systematically update pavement infrastructure information, and assist airport operators with recommendations of pavement maintenance, repair, and major rehabilitation needs. The 1992 SAPMP implementation provided the FDOT and the participating airports valuable information for establishing and performing timely and appropriate pavement rehabilitation.

During the 1992-1993 implementation and again during the 1998-1999 updates; the SAPMP performed the development with proprietary software for pavement management system analysis. This development allowed for the creation of pavement management database file system populated with airport attributes and condition data. The pavement management database was used to establish maintenance, repair, and rehabilitation policies; consider planning-level unit costs; and develop recommendations for performing pavement maintenance. This system, known as AIRPAV, was initially developed during the 1992-1993 SAPMP implementation for the analysis of distress data. The AIRPAV system was used again in the 1998-1999 SAPMP update.

In 2004, the SAPMP system update included the review of the AIRPAV software compared to other industry available non-proprietary software packages. As a result of this review, MicroPAVER™ (currently known as PAVER™) was selected for implementation of the system update. MicroPAVER™ was developed by the U.S. Army Corps of Engineers Construction Engineering Research Laboratory for pavement management. Data from the 1998-1999 FDOT SAPMP update, which was built upon the initial 1992-1993 implementation of AIRPAV, was reviewed and converted to be compatible with the MicroPAVER™ system. This data conversion included all documented pavement facilities, classifications, types, histories, geometries, PCI condition data and pertinent attributes gathered from airport feedback at the time. This information was used to develop the inventory of each participating airport's pavement facilities in a consistent format. This was the development of Airfield Pavement Network Definition Exhibits. These inventory exhibits visually depicted the branch, section, and sample units that were based upon the pavement construction history and composition information provided by each airport.

In the 2006-2008 system update, the SAPMP was updated again with continued use of the MicroPAVER™ system. Based on the distress data collected, a maintenance repair and major rehabilitation planning program was developed for each airport. As part of this SAPMP update, the procedures for the inspection and the collection of the pavement distress data were documented, and an interactive website (http://www.dot.state.fl.us/aviation/pavement.shtm) was established for input of data.

In the 2010-2012 system update, the SAPMP was updated using new global positioning system (GPS) integrated technology to digitally collect pavement distress data. Interactive geographic information system (GIS) map files were developed from updated Airfield Pavement Network Definition Exhibits to aid pavement condition inspectors in the collection of sample distress data. The data collected was utilized to develop pavement performance models to predict future pavement PCI values and make recommendations for major rehabilitation.

In the 2013-2015 system update, the SAPMP integrated PAVER™ and FieldInspector™ with the use of GPS and GIS capable field tablets. Furthermore, the update included continued adherence to the ASTM ***D5340-12*** "***Standard Test Method for Airport Pavement Condition Index Surveys."*** The ASTM update consisted of refinement of distress definition types and deduction values for select asphalt concrete and Portland Cement Concrete distresses.

1.6 Federal Aviation Administration (FAA)

Currently, airports participating in the Airport Improvement Program (AIP) Grant Program are required by the FAA to develop and implement a pavement maintenance program to be eligible for funding (FAA Advisory Circular ***150/5380-6C "Guidelines and Procedures for Maintenance of Airport Pavements"*** and ***150/5380-7B "Airport Pavement Management Program (PMP)"***). This program requires detailed inspection of airfield pavement conditions by trained personnel. The inspections are required to be performed at least once a year using the PASER method or every three years if the pavement is inspected as defined by the PCI survey procedure in accordance with the ASTM ***D5340-12*** "***Standard Test Method for Airport Pavement Condition Index Surveys."***

In general, adherence to the Advisory Circulars are mandatory for all projects funded with federal grant monies through the AIP program and with revenue from the Passenger Facilities Charges (PFC) Program. Further information is detailed in FAA Grant Assurance No. 11 "Pavement Maintenance," No. 34 "Policies, Standards, and Specifications," and PFC Assurance No. 9 "Standards and Specifications."

1.7 FDOT SAPMP Objectives and Components

The FDOT SAPMP is a program that provides the FAS support in implementing and/or maintaining a network-level Pavement Management Program in a consistent and regularly scheduled manner.

In accordance with FAA AC***150/5380-7B "Airport Pavement Management Program (PMP)"*** an effective Pavement Management Program consists of a system that achieves specific objectives. The FDOT SAPMP objectives are as follows:

1.7.1 Program Objectives

1 A systematic means for collecting and storing information regarding existing pavement structure and condition.
2 An objective and repeatable system for evaluating pavement condition.
3 Procedures for predicting future pavement condition.
4 Procedures for modeling both past and future pavement performance conditions.
5 Procedures to determine the budget requirements to meet management objectives, such as the maintenance, repair, and major rehabilitation budget required to keep a pavement at a specified PCI level or the budget required to improve to target PCI level.
6 Procedures for formulating and prioritizing maintenance, repair, and major rehabilitation projects.

The objectives are accomplished by the following components:

1.7.2 Program Components

A. Database
B. Pavement Inventory
C. Pavement Structure
D. Pavement Work History
E. Pavement Condition Data

F. Pavement Performance Modeling for the Prediction/Forecast of PCI
G. Maintenance, Repair, and Major Rehabilitation Policies and Budget Simulation

A well-maintained network-level pavement management program may provide airport staff a better understanding of the airfield pavement performance for developing and planning for specific maintenance, repair, and major rehabilitation projects. The understanding of specific distress types and severities will assist the airport in addressing pavement maintenance and repair with the appropriate treatments as defined by the FAA Advisory Circular ***150/5380-6C "Guidelines and Procedures for Maintenance of Airport Pavements."*** The development of projects with an understanding of system inventory, deterioration details, and pavement condition forecasts may assist airport staff in developing practical rehabilitation actions and budgets. Furthermore, the understanding of pavements' past performance and forecasted condition may assist airport staff in addressing pavement rehabilitation in a timely and cost-effective manner. **Figure 1.7-1 Typical Pavement Condition Life Cycle**, which is based on the FAA Advisory Circular ***150/5380-7B "Airport Pavement Management Program (PMP)."*** **Figure 1.7-1 Typical Pavement Condition Life Cycle**, depicts a general duration of a pavement section and identifies the ideal condition to perform rehabilitative treatments at an optimal cost rather than allowing significant increase in rate of deterioration that would result in increased costs.

Figure 1.7-1 Typical Pavement Condition Life Cycle

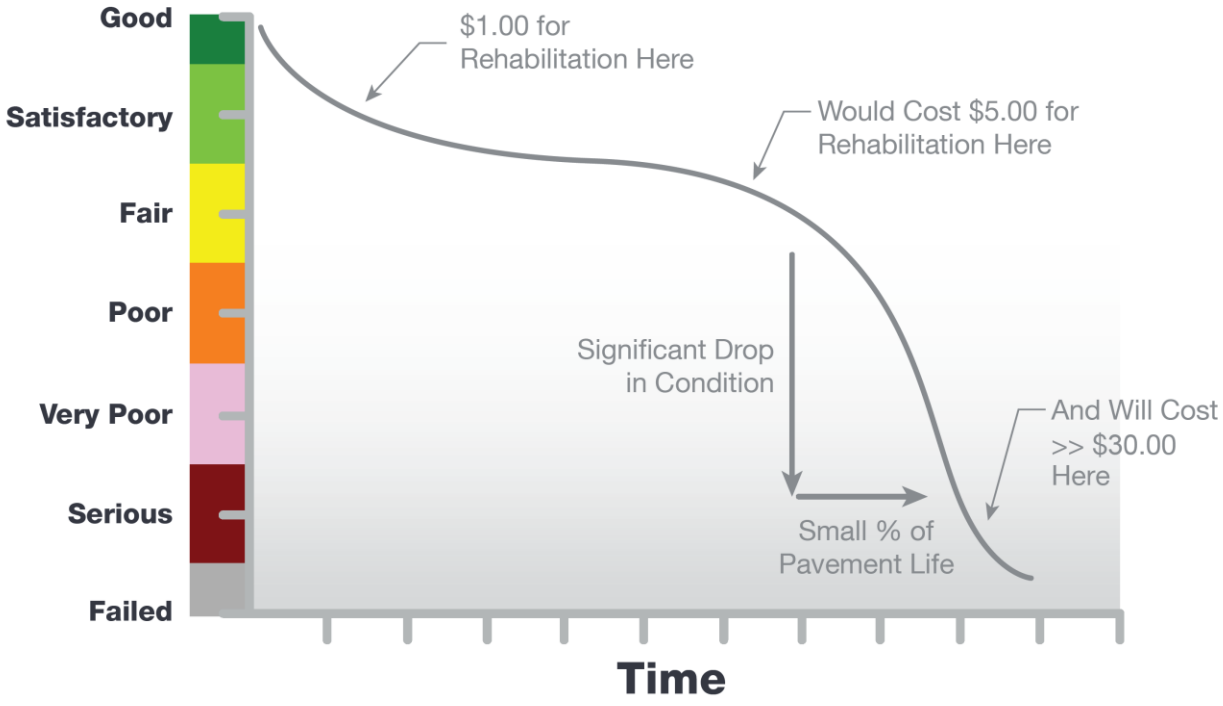
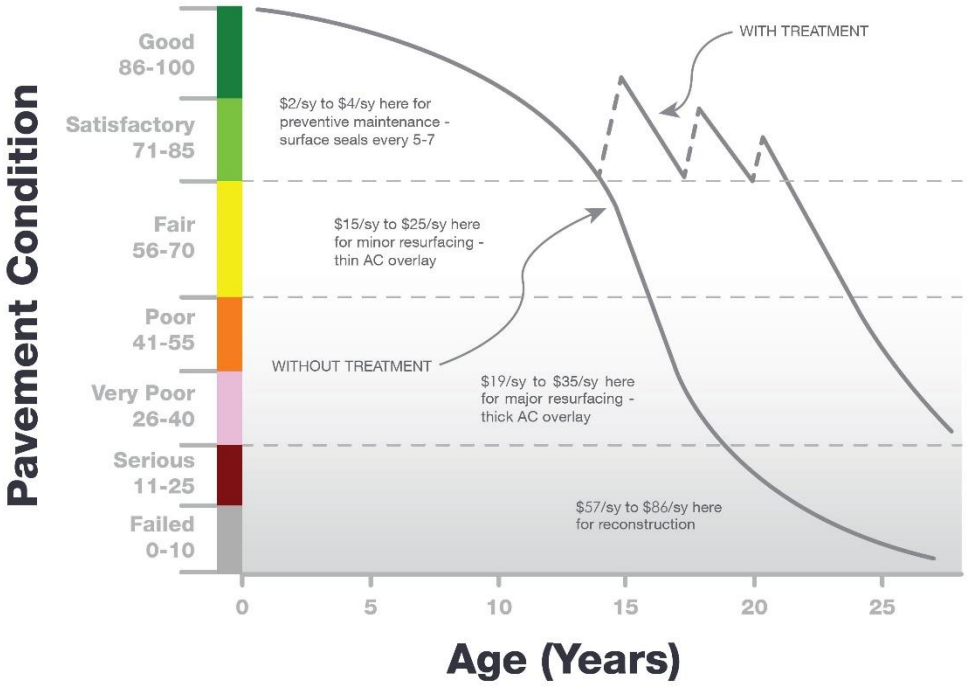


**Figure is for conceptual purposes only – unit costs are not specific to airfield pavements (AC vs PCC).*

Figure 1.7-2 General Pavement Treatments by Condition Range depicts generic flexible asphalt concrete (AC) pavement treatments that are effective at specific condition ranges. This graphic is a general concept and will vary based on pavement surface type and overall

composition. The intent is to convey various treatment types that would be effective based on the condition of the pavement along the deterioration model.

Figure 1.7-2 General Pavement Treatments by Condition Range



Pavement maintenance, repair, and major rehabilitation would be quite anticipatory if all pavements behaved as depicted in **Figures 1.7-1 and 1.7-2**, however pavement condition performance vary significantly based on several factors. Factors that contribute to a pavement section's condition and deterioration performance may include: functional design life, material type, material construction quality, climatic conditions, aircraft loading type and frequency, non-aircraft loading type and frequency, maintenance history, subgrade conditions, and other infrastructure in the vicinity. The list of factors is not all-inclusive of all factors that may contribute to a pavement's life cycle, it is intended to clarify that unique conditions certainly will affect a pavement's deterioration.

Figures 1.7-3 and Figure 1.7-4 depict visual conditions of pavement facilities, for both AC and PCC respectively, with approximated PCI ranges and corresponding repair and rehabilitation measures.

Figure 1.7-3 Flexible Asphalt Concrete

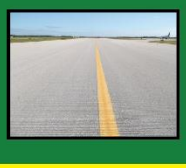
	PCI Range	Representative PCI	Representative Pavement Surface	Rehabilitation Activities
Routine Maintenance	86-100	90		Pavements with PCI values above 85, or 'Good', may require periodic joint/crack sealing and local patching.
Pavement Preservation	65-85	70		Pavements with PCI conditions ranging from 'Fair' to 'Satisfactory' may require surface treatments (seal coat), thin overlays, and/or joint/crack sealing.
Major Rehabiliation	40-64	50		Pavements that have deteriorated below a PCI 65, or within the range of 'Very Poor' to 'Fair' conditions, may require major rehabilitation such as pavement mill and overlay or partial full-depth reconstruction.
Major Reconstruction	0-39	15		Pavements that have deteriorated below a PCI 40, or within the range of 'Failed' to 'Very Poor' conditions, may require major reconstruction.

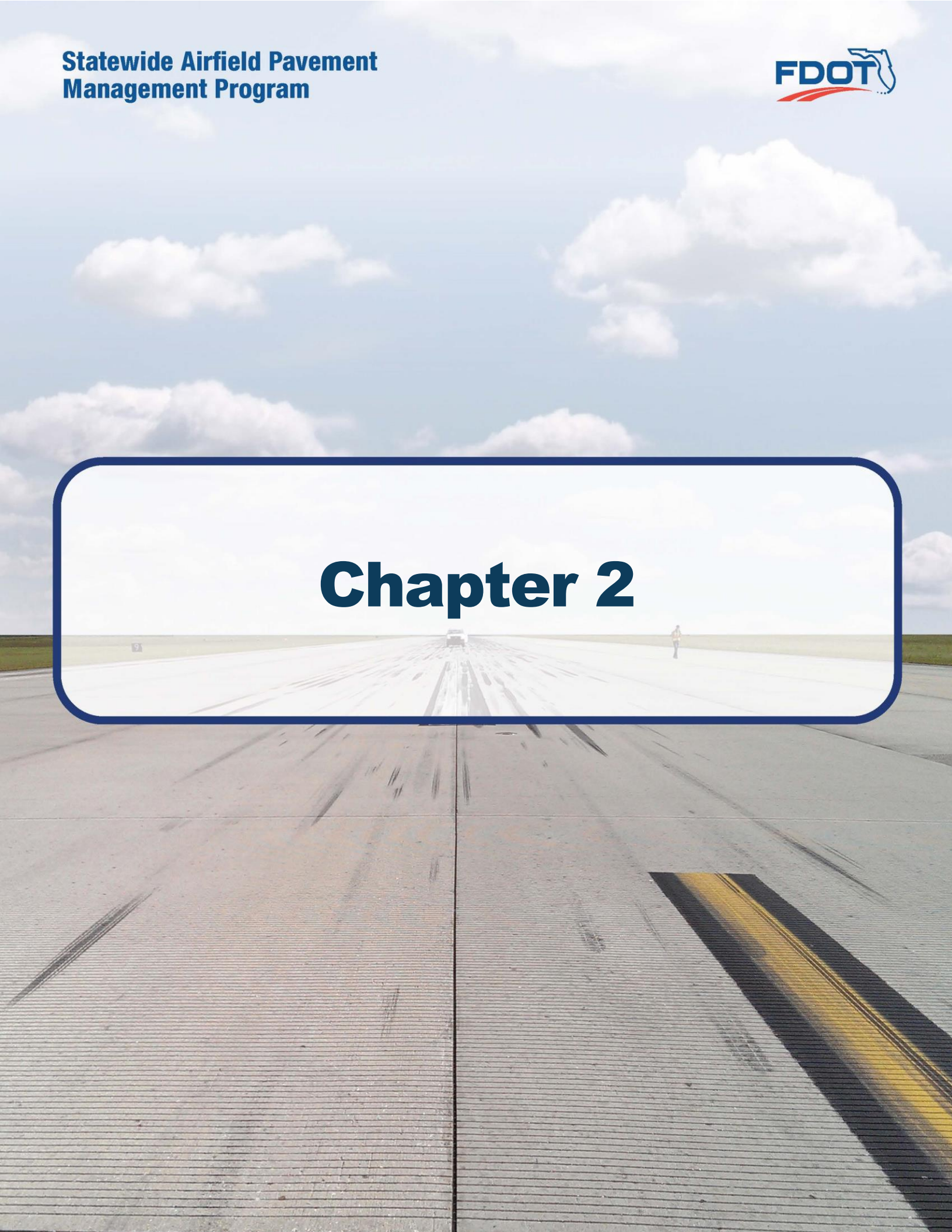
Figure 1.7-4 Rigid Portland Cement Concrete

	PCI Range	Representative PCI	Representative Pavement Surface	Rehabilitation Activities
Routine Maintenance	86-100	90		Pavements with PCI values above 85, or 'Good', may require periodic joint/crack sealing and local patching.
Pavement Preservation	65-85	70		Pavements with PCI conditions ranging from 'Fair' to 'Satisfactory' may require patches and/or joint/crack sealing.
Major Rehabiliation	40-64	50		Pavements that have deteriorated below a PCI 65, or within the range of 'Very Poor' to 'Fair' conditions may require major rehabilitation such as slab replacement and PCC restoration activity.
Major Reconstruction	0-39	15		Pavements that have deteriorated below a PCI 40, or within the range of 'Failed' to 'Very Poor' conditions, may require major reconstruction.

1.8 References

The following reference documents were referenced as specific guidelines and procedures for maintaining airport pavements; establishing an effective pavement maintenance program; and identifying specific pavement distresses, probable causes of distresses, inspection guidelines, and recommended methods of repair:

- ASTM D5340-12 “Standard Test Method for Airport Pavement Condition Index Surveys.”
- FAA Advisory Circular 150/5380-7B 150/5380-7B “Airport Pavement Management Program.”
- FAA Advisory Circular 150/5380-6C “Guidelines and Procedures for Maintenance of Airport Pavements.”
- FAA Advisory Circular 150/5320-6F “Airport Pavement Design and Evaluation.”
- Department of the Air Force, Air Force Civil Engineer Center “Engineering Technical Letter (ETL) 14-3: Preventive Maintenance Plan (PMP) for Airfield Pavements.”
- Unified Facilities Criteria (UFC) 3-260-16FA 16 “Airfield Pavement Condition Survey Procedures Pavements.”
- Unified Facilities Criteria (UFC) 3-260-03 “Airfield Pavement Evaluation.”
- Pavement Management for Airports, Roads, and Parking Lots 2nd Edition, M.Y. Shahin.



Chapter 2

Chapter 2 – Methodology

An effective pavement management program incorporates the regular collection of pavement condition information and communication of information to appropriate sponsors. This chapter of the report defines the specific methods utilized as part of the SAPMP System Update to meet the requirements of an effective pavement management system as defined by the FAA Advisory Circular ***150/5380-7B "Airport Pavement Management Program (PMP)."***

2.1 Airfield Pavement Database

The SAPMP program has historically utilized PAVER™ (formerly MicroPAVER™); the current update has maintained the use of the PAVER™ 7.0 version of the software. The PAVER™ software application was developed by the U.S. Army Construction Engineering Research Laboratory sponsored by the FAA, Federal Highway Administration, U.S. Army, U.S. Air Force, and the U.S. Navy to meet the objectives of an effective pavement management system. The SAPMP consists of a network-level database of the airport's airfield pavement facilities that are part of the program. PAVER™ can achieve the following pavement management objectives: a manageable inventory system, the analysis of the current condition of pavements in accordance with the ASTM D5340, the development of pavement performance models to forecast conditions, and the development of maintenance, repair, and major rehabilitation recommendations based on budgetary scenarios.

PAVER™ inventory management is based on a tiered organizational structure that consists of networks, branches, and sections, with the section being the smallest unit of management. Critical elements of an effective pavement management program are maintained within the network-level PAVER™ database. These elements typically consist of pavement inventory characteristics, pavement structure, work history, historic condition records, and analytical customization.

The SAPMP System Update consisted of the conversion of the previous database from a PAVER™ version 6.5 to a version 7.0.

2.2 Airfield Pavement System Inventory

An airfield pavement system inventory typically maintains the location of all runways, taxiways, and aprons; geometric characteristics; type of pavement structure, year of construction and/or last major rehabilitation; and general composition details of the pavement.

The pavement inventory for an airport's airfield is an assembly of pavement infrastructure information that builds an inventory of branches and sections that codifies the airport's airfield pavement network. General geometry characteristics, estimated length, width, functional classification, pavement surface type, and operational function are among the characteristics identified at this initial phase in the pavement management process. The development of a pavement inventory that reasonably reflects the airport's airfield pavement facilities that are maintained by the airport provides a defined scope of the inspection and analysis efforts. As in the past, the SAPMP scope of work is specific to the airport-maintained airfield pavements as defined in the field network definition exhibits presented to current airport personnel.

A critical input to the pavement system inventory and network definition in the development of the SAPMP update is the date of last major rehabilitation/construction performed on the pavement assets that would set the asset at a PCI of 100 and a condition rating of Good. The airport provided a limited combination of record drawings, reports, and staff input that was pertinent information in developing the construction history of the airport's pavements from inception. Major rehabilitation/construction activities performed in the last 24-months or anticipated in the next 24-months are assumed to restore the PCI to 100. These activities include; pavement overlay, mill and replace, mill and overlay, new construction, and/or complete reconstruction.

Aerial imagery was obtained through the FDOT Surveying & Mapping Office's *Aerial Photo Look Up System (APLUS)*. This spatially projected imagery was utilized with computer-aided drafting software (AutoCAD) in concert with geographical information system software (ArcGIS) to develop a planning-level representative model that reasonably reflects the pavement assets at the airport.

2.2.1 Pavement Management Program Network Definition Terminology

There are several terms that are common in the communication of the results of the SAPMP System Update, these terms are defined as follows:

Pavement Network

A pavement network is a logical unit for organizing pavements into a structure for pavement management. A network will typically consist of one or more pavement *branches*, which are typically comprised of one or many pavement *sections*. The network is the starting point of the hierarchy of pavement management organization. For example, a network can be all the pavements within an airport's airfield or all the pavements in a statewide program. For the FDOT SAPMP, a network represents an individual airport's airfield pavement facilities maintained by the airport.

The SAPMP System Update consists of research and evaluation of existing record documentation for the participating airports' airfield facilities. The pavement network is typically limited to the pavement facilities subject to aircraft use that is also maintained by the airport owner and eligible for public funding.

Pavement Branch

A pavement branch, also known as a facility, is a logical unit of generally identifiable pavement of a network with distinct functional classification. For example, within an airfield each runway, taxiway, or apron is considered a branch. A branch must consist of at least one section.

Pavement Section

A pavement section, also known as a feature, is the most specific management unit when considering the application and selection of maintenance, repair, and/or major rehabilitation treatments on an area of pavement within a branch. Each branch consists of at least one section, but may consist of more if pavement feature characteristics are distinct throughout the branch. Characteristics considered when subdividing branches into sections include, but are not limited to: pavement structure, type, age, condition, and function; traffic composition and frequency (current and future); geometric location; construction history; and other related

infrastructure features (e.g. drainage). A pavement section is defined as a subordinate of a pavement branch, which is a subordinate of a "parent" pavement network.

Pavement Sample Unit

A pavement sample unit is a subdivision of a pavement section that has a standard size range: twenty (20) continuous slabs (±8 slabs) for Portland Cement Concrete (PCC) pavement and 5,000 contiguous square feet (±2,000 ft^2) for flexible asphalt concrete (AC) or porous friction course pavements.

Table 2.2.1 Airfield Pavement Database Network Definition Terminology

PMS Network Level	Common Definition	Airport Example
Network	Overall pavement assets maintained by the Airport	"Tallahassee International Airport – Airfield Pavements"
Branch Name	Commonly defined asset name as established by Airport and by use	"Runway 18-36"
Branch ID	Codified shorthand name for commonly defined asset established for database identification	"RW 18-36" RW, Branch Use, "Runway" 18-36, Runway Facility
Section ID	Codified identification for pavement asset that is distinct by the following: • Pavement Composition • Construction Work History • Aircraft Traffic • Condition Records	"6105"
Sample Unit	A numeric identification of an area of pavement (5,000±2,000 SF of AC or 20±8 slabs of PCC) that has been inspected in accordance with ASTM D5340-12.	"300"

2.3 Airfield Pavement Structure

2.3.1 Pavement Structure Types

Airport airfield pavements are constructed to provide adequate support for the loads imposed by aircraft and produce a firm, stable, smooth, all-year, all-weather surface free of debris or other particles that may be blown or dislocated by propeller wash or jet blast. Typical pavement planning and design requires coordination of factors that include but are not limited to; subgrade conditions, material layer types, aircraft fleet mix (type, frequency, and traffic growth), and functional use. A pavement structure is composed of constructed layers that consist of subgrade, subbase, base course, structural courses, and surfaces courses. For the FDOT SAPMP, two major pavement structure types are classified for evaluation and analysis: Flexible Asphalt Concrete Surface and Rigid Portland Cement Concrete Surface. Additionally, Composite Structures known as Whitetopping Pavements are also present at limited airports within the Florida Airports System; these unique pavement structures are evaluated separately.

Flexible Asphalt Concrete Surface

A pavement comprised of aggregate mixture with an asphalt cement binder. The FDOT SAPMP consists of three (3) asphalt concrete surface types: Asphalt Concrete (AC), Asphalt Concrete Overlaid on Asphalt Concrete (AAC), and Asphalt Concrete Overlaid on Portland Cement Concrete (APC).

Asphalt Concrete (AC)

A flexible pavement section consisting of aggregate mixture with asphalt cement binder layered on engineered base course material that is layered on subbase and subgrade soil material.

Asphalt Concrete Overlaid on Asphalt Concrete (AAC)

A flexible pavement section consisting of aggregate mixture with asphalt cement binder layered on an existing flexible AC pavement section. Flexible airfield pavement sections are AAC when a pavement rehabilitation consists of a pavement milling operation and a resurfacing of asphalt layers; or a direct overlay of asphalt concrete without surface preparation.

Asphalt Concrete Overlaid on Portland Cement Concrete (APC)

A flexible pavement section consisting of aggregate mixture with asphalt cement binder layered on an existing Rigid PCC pavement section. This unique pavement composition may result in distinct pavement distress manifestations known as reflective joint cracking.

Rigid Portland Cement Concrete Surface

A pavement comprised of aggregate mixture with a Portland Cement binder. The FDOT SAPMP recognizes Portland Cement Concrete (PCC) as the primary rigid pavement section.

Portland Cement Concrete (PCC)

A rigid pavement section composed of Portland cement concrete placed on a granular or treated base course that is supported on a compacted subgrade. The concrete surface must provide a texture of nonskid qualities, prevent the infiltration of surface water into the subgrade, and provide structural support to the airplanes. Rigid pavement construction requires the layout of appropriately designed joint spacing.

Composite Structure – Whitetopping Pavement

A composite pavement comprised of relatively thin Portland Cement Concrete overlaid on an existing flexible asphalt concrete pavement structure. There are three (3) types of Whitetopping Pavements; Conventional (WHT), Thin (TWT), and Ultra-Thin (UTW).

Conventional Whitetopping (WHT)

A composite pavement structure consisting of a modified PCC overlaid on an existing flexible AC pavement section area. The modified PCC layer is typically greater than 6-inches in thickness.

Thin Whitetopping (TWT)

A composite pavement structure consisting of a modified PCC overlaid on an existing flexible asphalt concrete pavement section. The modified PCC layer is typically between 4 and 6 inches in thickness.

Ultra-Thin Whitetopping (UTW)

A composite pavement structure consisting of a modified PCC overlaid on an existing flexible asphalt concrete pavement section. The Portland Cement Concrete layer is typically between 2 and 4 inches in thickness.

2.4 Airfield Pavement Work History

2.4.1 Airfield Pavement Record Keeping

It is strongly recommended that airports maintain records of all airfield construction and maintenance related to the pavement facilities. A history of all maintenance and repair performed and its associated costs (construction and soft costs) can provide valuable information on the effectiveness of various treatments on pavements. An airport should maintain detailed records of maintenance (routine, emergency, and proactive) activities. The records should consist of the following:

1. Location and Limits of Work.
2. Types and Severity of Distresses Repaired.
3. Type of Work.
4. Cost of Work.
5. Supporting Documents (contract documents, construction drawings, specifications, bid tabulations, repair product, photograph records, etc.).

2.5 Airfield Pavement Traffic

A pavement section is typically designed to meet the needs of the user (airlines, air cargo, general aviation, and/or military) in providing a safe, smooth, operational surface. Pavement deterioration generally occurs gradually through increased roughness and/or fatigue cracking caused by successive and heavy aircraft traffic.

This study does not consist of a study or analysis of each individual airport's airfield aircraft fleet mix or traffic operations. However, it is strongly recommended that airports incorporate the requirements of FAA Advisory Circular ***150/5320-6F Airport Pavement Design and Evaluation*** when developing design-level rehabilitation activities. The AC provides guidance on incorporation of aircraft traffic fleet mix data.

2.6 Airfield Pavement Condition Index (PCI) Survey

2.6.1 PCI Survey Methodology

In adherence to the FAA Advisory Circular ***150/5380-7B "Airport Pavement Management Program (PMP),"*** the FDOT SAPMP utilizes the PCI Survey Method of inspection to collect pavement distress data and analyze the condition. The PCI Survey Inspection procedure is a visual statistical sampling of pavements for recording primary distress types (e.g. cracking and deformation), associated severities, and quantities as defined by the ASTM D5340-12. This effort is the primary means of obtaining and recording pavement distress data. The survey inspection consists primarily of visual inspection of pavement surfaces for signs of distress and deterioration resulting from loading (aircraft) and environmental influences.

A visual pavement condition survey provides an indication of the cause and rate of deterioration of a pavement section from a functional point of view and can be an indicator of structural distress. The functional condition analysis assesses the rating of the operational surface. A visual PCI Survey Inspection does not predict the remaining structural life of a pavement section, or its ability to support loads. The functional condition determined by the PCI method

can provide a cost-effective means to plan for pavement rehabilitation projects. The timely application of pavement rehabilitation may lead to the extension of functional life of individual pavement sections. This method varies from structural evaluation; functional condition is limited to visually observed distresses and indicative modes of pavement deterioration. A formal structural evaluation analyzes subsurface conditions, material characteristics, and qualitative pavement structure attributes. A structural evaluation may consist of; subsurface geotechnical exploration, falling weight deflectometer testing, petrographic testing, material coring, and/or flexural testing.

2.6.2 Pavement Distress Types

For each section, the severity and quantity of defined distresses are recorded and then analyzed in accordance with the ASTM D5340-12 standard. The standard identifies 17 distinct flexible asphalt concrete distress types and 16 distinct rigid Portland Cement Concrete distress types.

Table 2.6.2-1 (a) Pavement Distress Types – Flexible Asphalt Concrete-Surfaced Airfields

Distress	Common Distress Mechanisms
Alligator Cracking	Load / Fatigue
Bleeding	Construction Quality/ Mix Design
Block Cracking	Climate / Age
Corrugation	Load / Construction Quality
Depression	Load / Subsurface
Jet Blast	Aircraft
Joint Reflection - Cracking	Climate / Subsurface Pavement / Traffic Load
Longitudinal/Transverse Cracking	Climate / Construction Quality
Oil Spillage	Aircraft / Vehicle
Patching	Utility / Pavement Repair / Age
Polished Aggregate	Repeated Traffic Loading
Raveling	Climate / Age
Rutting	Load / Fatigue
Shoving	PCC Pavement Growth / Movement
Slippage Cracking	Load / Pavement Bond / Mix Design
Swelling	Climate / Subsurface
Weathering	Climate / Age

Table 2.6.2-1 (b) Pavement Distresses Possible Causes – Flexible Asphalt Concrete-Surfaced Airfields

Classification by Possible Causes			
Load	Climate / Durability	Moisture / Drainage	Others
• Alligator Cracking • Corrugation • Depression • Patching of Load-based distress • Polished Aggregate • Rutting • Slippage Cracking	• Bleeding • Block Cracking • Joint Reflection Cracking • L/T Cracking • Patching of climate / durability-caused distresses • Shoving from PCC • Raveling • Weathering • Swelling	• Alligator Cracking • Depression • Patching of moisture / drainage caused distress • Swelling • Raveling • Weathering	• Oil Spillage • Jet Blast Erosion • Polished Aggregate

Table 2.6.2-1 (c) Pavement Distresses Possible Effects – Flexible Asphalt Concrete-Surfaced Airfields

Classification by Possible Effects			
Roughness	Skid / Hydroplaning Potential	FOD Potential	Rate of Deterioration and Maintenance Requirements
• Corrugation • Depression • Rutting • Shoving of asphalt pavement • Swelling • Raveling • Weathering	• Bleeding • Depression • Polished Aggregate • Rutting	• Block Cracking • Joint Reflection Cracking • L/T Cracking • Slippage Cracking	• All Distresses

Table 2.6.2-2 (a) Pavement Distresses – Rigid Portland Cement Concrete-Surfaced Airfields

Distress	Common Distress Mechanisms
Blowup	Climate / ASR
Corner Break	Load Repetition / Curling Stresses
Linear Cracking	Load Repetition / Curling Stresses / Shrinkage Stresses
Durability Cracking	Freeze-Thaw Cycling
Joint Seal Damage	Material Deterioration / Construction Quality / Age
Small Patch	Pavement Repair
Large Patch/Utility Cut	Utility / Pavement Repair
Popout	Freeze-Thaw Cycling / ASR / Material Quality
Pumping	Load Repetition / Poor Joint Sealant
Scaling	Construction Quality / Freeze-Thaw Cycling
Faulting	Subgrade Quality / ASR / Inadequate Load Transfer
Shattered Slab	Overloading
Shrinkage Cracking	Construction Quality / Climate
Joint Spalling	Load Repetition / Infiltration of Incompressible Material / Deterioration of Dowel (Load Transfer) Bars
Corner Spalling	Load Repetition / Infiltration of Incompressible Material / Deterioration of Dowel (Load Transfer) Bars
Alkali-Silica Reaction (ASR)	Construction Quality / Climate / Chemical Reaction

Table 2.6.2-2 (b) Pavement Distresses Possible Causes – Rigid Portland Cement Concrete-Surfaced Airfields

Classification by Possible Causes			
Load	Climate / Durability	Moisture / Drainage	Others
• Corner Break • Shattered Slab • L/T/D Cracking • Pumping • Patching of Load-associated distress • Spalling	• Blowup • "D" Cracking • Joint Seal Damage • Popouts • Scaling • Patch of Climate/Durability-associated distress • Shrinkage Cracking • Spalling • L/T/D Cracking	• Corner Break • Shattered Slab • Pumping • Patching of Moisture/Drainage-associated distress	• Settlement / Faulting

Table 2.6.2-2 (c) Pavement Distresses Possible Effects – Rigid Portland Cement Concrete-Surfaced Airfields

Classification by Possible Effects			
Roughness	Skid / Hydroplaning Potential	FOD Potential	Rate of Deterioration and Maintenance Requirements
• Blowup • Corner Break • L/T/D Cracking • Shattered Slab • Settlement / Faulting • Spalling	• Settlement / Faulting • Spalling	• Corner Break • L/T/D Cracking • "D" Cracking • Joint Seal Damage • Shattered Slab • Popouts • Scaling	• All distresses

2.6.3 PCI Survey Inspection Procedures

Inspection Sampling Rate

The FDOT SAPMP performs PCI Survey Inspections on sample units defined in the previous update. The sample units are subject to change at the discretion of the inspection personnel and/or to major pavement rehabilitation treatments. Furthermore, access to the sample units based on accessibility or impacts to operations may affect the overall sampling rate effort at each airport. The following **Tables 2.6.3 (a) and (b)** define the sampling criteria used by the FDOT SAPMP. A higher sampling rate may be utilized to achieve a greater statistical confidence should the airport have the available resources to perform PCI Survey Inspections independent of the FDOT SAPMP.

Table 2.6.3 (a) Recommended Sample Rate Schedule for Flexible Asphalt Concrete

Number of Total Sample Units in Section	Sample Units to Inspect	
	Runways	Taxiways, Aprons, and Others
1 - 4	1	1
5 - 10	2	1
11 - 15	3	2
16 - 30	5	3
31 - 40	7	4
41 - 50	8	5
51 or more	20% but ≤20	10% but ≤10

Table 2.6.3 (b) Recommended Sample Rate Schedule for Rigid Portland Cement Concrete

Number of Total Sample Units in Section	Sample Units to Inspect	
	Runways	Taxiways, Aprons, and Others
1 - 3	1	1
4 - 6	2	1
7 - 10	3	2
11 - 15	4	2
16 - 20	5	3
21 - 30	7	3
31 - 40	8	4
41 - 50	10	5
51 or more	20% but ≤20	10% but ≤10

2.6.4 Updates to the ASTM D5340-12

Airfield pavement distresses and conditions were surveyed in accordance with the methods outlined in FAA Advisory Circular 150/5380-6C and ASTM D5340-12. These procedures define distress type, severity, and quantity for sampling areas within each defined pavement section area to analyze and determine the PCI value and condition rating. During the 2013-2015 System Update, the incorporation of the significant chances to the ASTM D5340 (version D5340-12) resulted in an adjusted pavement condition indices on pavement sections subject to the distress types updated. Furthermore, the revision of the PCI deduction curves and the separation of distress types from the original, such as Weathering and Raveling, have in select cases increased the PCI value of the section without any rehabilitation performed.

Flexible Asphalt Concrete Pavement Distress Updates

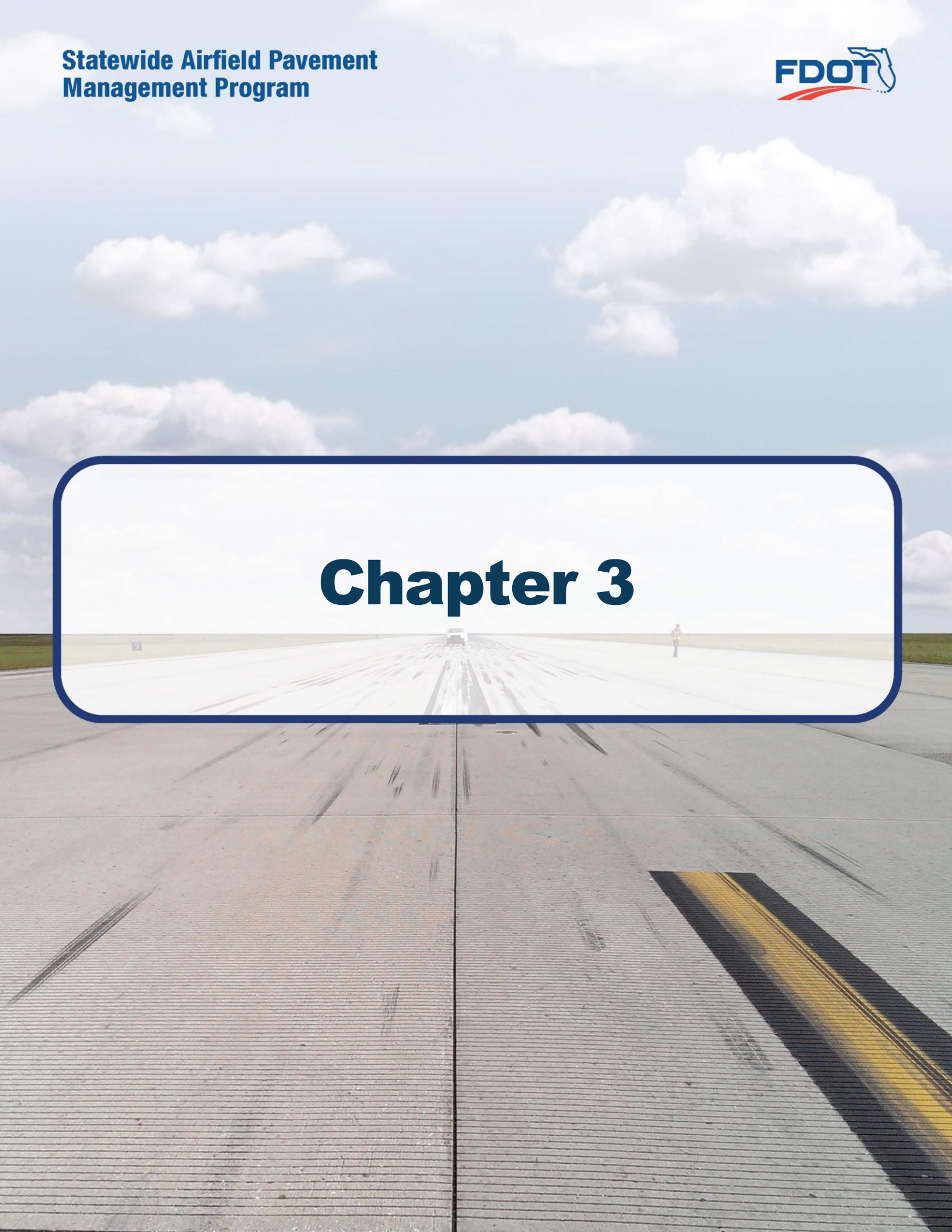
The previous methodology which featured “(52) Weathering and Raveling” distress has been separated into two distresses “(52) Raveling” and “(57) Weathering.” Previously, areas that were recorded as “Weathering and Raveling” were considered as one distress with a high deduction. Based on the updated methodology, in certain situations where “Weathering” only exists and does not meet the definition of “Raveling,” the PCI deduction is not as high as the former “Weathering and Raveling.” Therefore, areas identified only as “(57) Weathering” based on current ASTM standards, which were previously identified as “(52) Weathering and Raveling,” may be subject to an improvement in PCI. In instances where pavement PCI has increased due to this update, it is not due to an improvement in actual condition, however indicative of the adjusted distress deterioration effects.

Rigid Portland Cement Concrete Pavement Distress Updates

The previous methodology defined “(70) Scaling” as a distress that consisted of surface deterioration caused by construction defects, material defects, and environmental factors. The distress included *Alkali-Silica Reaction*, also known as ASR. The current methodology has separated Alkali-Silica Reaction as a distress identified as “(76) Alkali-Silica Reaction / ASR.” As a result the previous “(70) Scaling” numerical deduction contribution to the PCI has been reduced. Previous inspections that recorded “(70) Scaling,” and currently do not exhibit “(76) Alkali-Silica Reactivity / ASR” may potentially see an increase in PCI. Additionally, “(73) Shrinkage Cracks” has been redefined as “(73) Shrinkage Cracking”. Shrinkage Cracking is characterized in two forms; drying shrinkage and plastic shrinkage. Drying shrinkage occurs over time as moisture leaves the pavement, it develops when hardened pavement continues to shrink as excess water not needed for cement hydration evaporates. It forms when subsurface resistance to the shrinkage is present and may extend through the entire depth of the slab. Plastic shrinkage develops when there is rapid loss of water in the surface of recently placed pavement or can form from over finishing/overworking of the pavement during construction. These shrinkage cracks appear as a series of inter-connected hairline cracks, or pattern cracking, and are often observed throughout the majority of the slab surface. This condition is also referred to as map cracking or crazing.

Table 2.6.4 Summary of Updates to ASTM D5340-12

Distress Updates to Reflect ASTM 5340-12				
Use and Surface Type	**Updated Distress**	**Former Distress in Prior to 5340-10**	**Deduction Curve**	**Potential Effect**
AC/AAC/ APC Airfield	(52) Raveling - Low	(52) Weathering and Raveling - Low	No Change	N/A
	(52) Raveling - Medium	(52) Weathering and Raveling - Medium	No Change	N/A
	(52) Raveling - High	(52) Weathering and Raveling - High	No Change	N/A
	(57) Weathering - Low	N/A – was part of 'Weathering and Raveling'	New	Increase in PCI with no maintenance
	(57) Weathering - Medium	N/A – was part of 'Weathering and Raveling'	New	Increase in PCI with no maintenance
	(57) Weathering - High	N/A – was part of 'Weathering and Raveling'	New	Increase in PCI with no maintenance
PCC Airfield	(70) Scaling - Low	(70) Scaling, Map Cracking, and Crazing - Low	New	Increase in PCI with no maintenance
	(70) Scaling - Medium	(70) Scaling, Map Cracking, and Crazing - Medium	New	Increase in PCI with no maintenance
	(70) Scaling - High	(70) Scaling, Map Cracking, and Crazing - High	New	Increase in PCI with no maintenance
	(76) Alkali Silica Reaction – Low	N/A – was part of 'Scaling, Map Cracking, and Crazing'	New	Increase in PCI with no maintenance
	(76) Alkali Silica Reaction – Medium	N/A – was part of 'Scaling, Map Cracking, and Crazing'	New	Increase in PCI with no maintenance
	(76) Alkali Silica Reaction – High	N/A – was part of 'Scaling, Map Cracking, and Crazing'	New	Increase in PCI with no maintenance
	(73) Shrinkage Cracking	(73) Shrinkage Cracking	No Change	Prior distress types identified as 'Scaling, Map Cracking, and Crazing' may now be identified as 'Shrinkage Cracking'



Chapter 3

Chapter 3 – Airfield Pavement System Inventory

A significant element of an effective airfield pavement management system is the appropriate record keeping of changes due to construction or operational use of the pavement facilities. This chapter discusses the inventory data collected from the airport and summarizes network-level characteristics of the airport's airfield pavements. At the start of each FDOT SAPMP System Update, all airports are asked to review the existing Airfield Pavement Network Definition exhibit for accuracy. Furthermore, participating airports are asked to provide documentation for any recent or anticipated construction related to their airfield pavements.

3.1 Airfield Pavement Network Information

3.1.1 Previous and/or Anticipated Airfield Pavement Construction

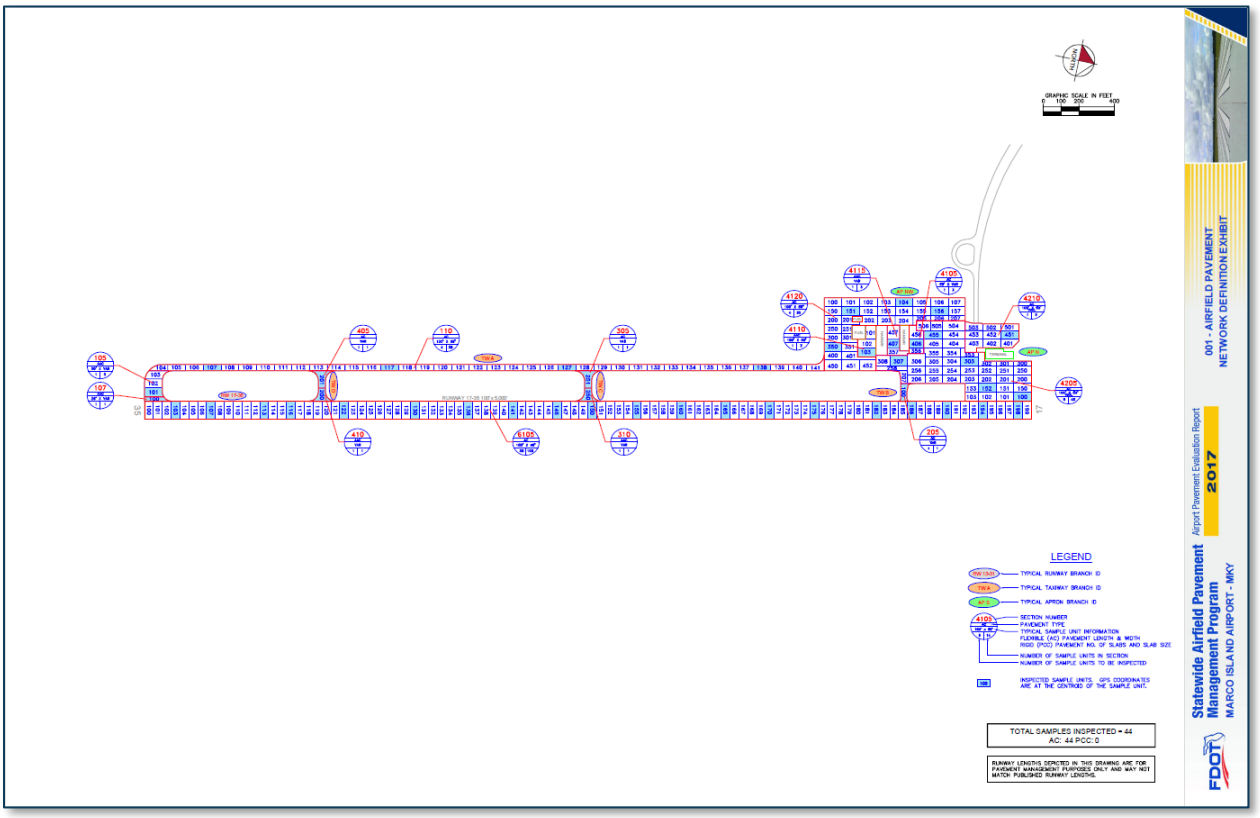
Based on information provided by the airport, the following **Table 3.1.1** summarizes the airfield pavement construction projects that have been incorporated into the SAPMP database system since the 2013-2015 System Update. **Figure 3.1.1-1** and **Figure 3.1.1-2** provides an inset view of the 2017 Airfield Pavement Network Definition Exhibit and the 2017 Airfield Pavement System Inventory Exhibits that depict the updated network details for the airport reflected in the PAVER Database. Large format exhibits are referenced in **Appendix C Technical Exhibits**.

Table 3.1.1 Previous and/or Anticipated Airfield Pavement Construction

Year	General Work Description
2014	**RW 17-35** - Reconstruction: 4" P-401, 6" P-211, 12" P-160
	TW A, TW B, TW C, TW D - Reconstruction: 4" P-401, 6" P-211, 12" P-160
	AP N - Reconstruction: 4" P-401, 6" P-211, 12" P-160

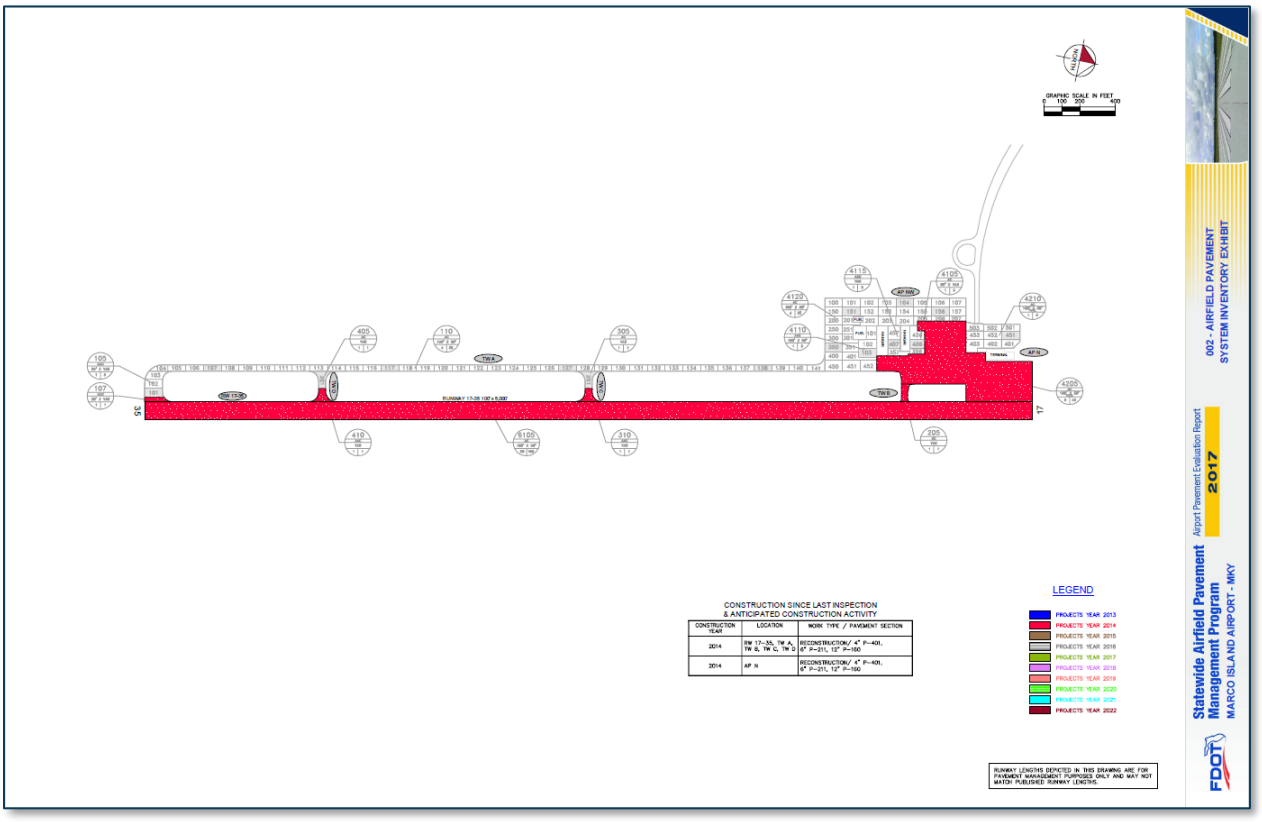
The airport provided a limited combination of record drawings, reports, and staff input that was pertinent information in developing the construction history of the airport's pavements from inception. Major rehabilitation/construction activities performed in the last 24-months or anticipated in the next 24-months are assumed to restore the PCI to 100. These activities include: pavement overlay, mill and replace, mill and overlay, new construction, and/or complete reconstruction. These pavements were not formally subject to a PCI Survey and actual conditions may vary. Furthermore, any localized maintenance or repair performed that would improve the PCI will be considered in the condition analysis, if performed within inspection areas.

Figure 3.1.1-1 2017 Airfield Pavement Network Definition Exhibit



The Airfield Pavement Network Definition Exhibit provides details to the PCI Survey inspection efforts. The exhibit identifies the pavement facilities, surface type, section definition, and sample unit delineation.

Figure 3.1.1-2 2017 Airfield Pavement System Inventory Exhibit

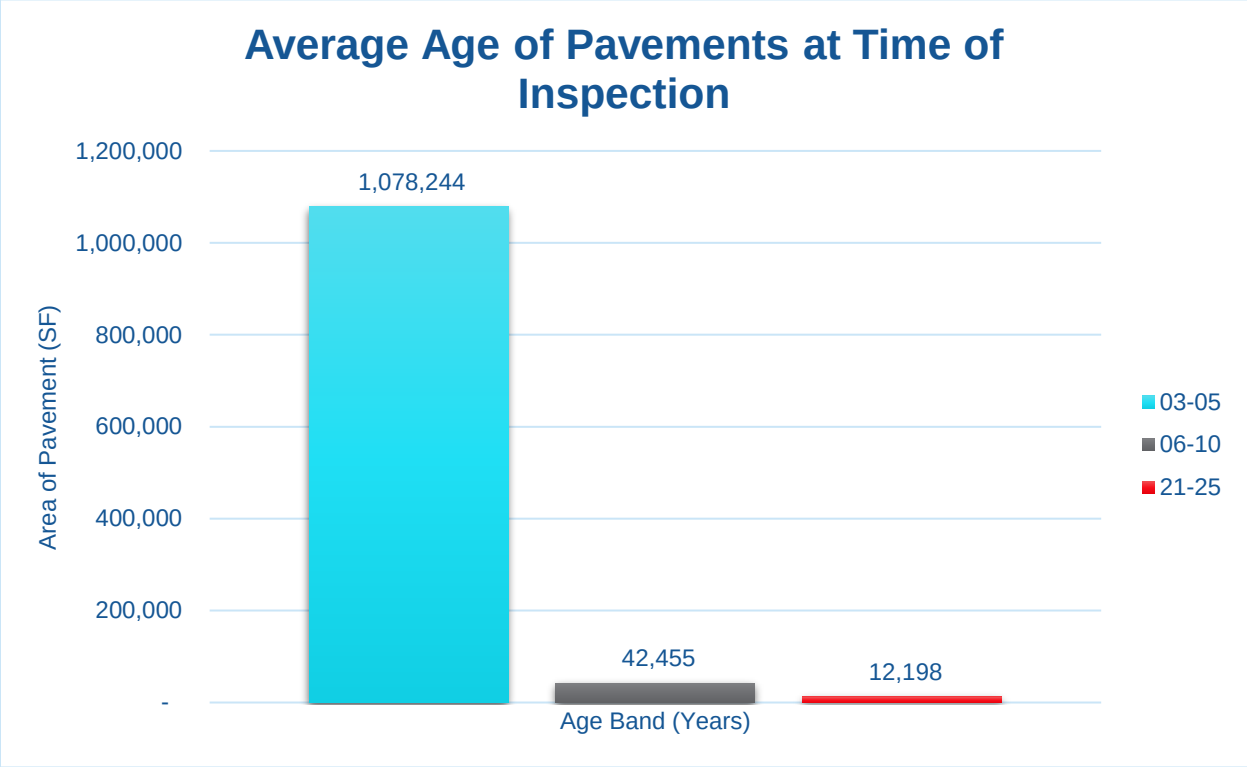


The Airfield Pavement System Inventory Exhibit provides details to the work history updates communicated by the Airport. The Exhibit provides the approximate limits of recent and/or anticipated construction on the airfield pavement facilities. The limits are based on documentation provided by the Airport and, if constructed, observed in the field.

3.1.2 Estimated Pavement Age

Standard pavement design practice considers a design life of a 20-year period. Design inputs typically require subgrade soil conditions, pavement section layer material characteristics, and anticipated loading (aircraft fleet mix) for the design-life period. Based on the review of the historic airfield pavement construction, **Figure 3.1.2** summarizes the average age of the pavement sections since any major construction activity has occurred during the PCI Survey inspection. This is intended to be a rough estimate based on interpretation of the limited data available at the time of report.

Figure 3.1.2 Average Age of Pavements at Inspection

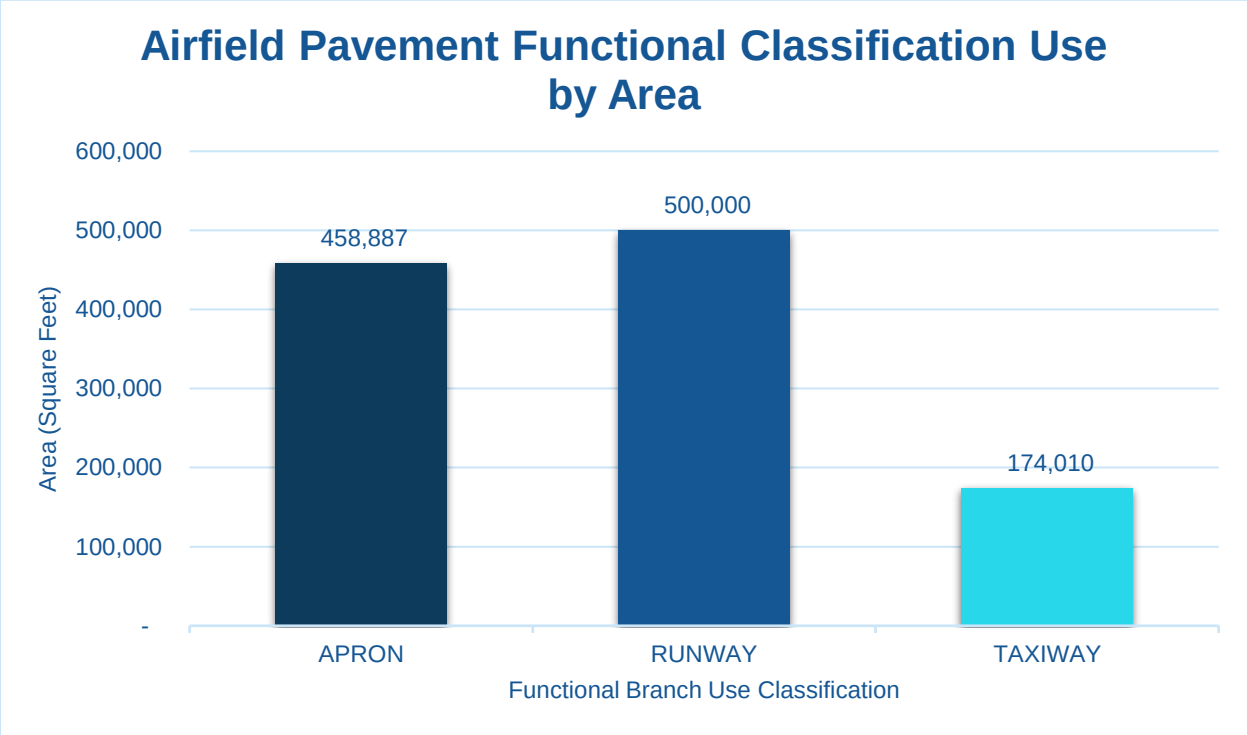


The estimation of the pavement age is based on information requested and provided by participating airports. Additionally, data collected in the prior system updates since 1992 have been relied upon.

3.1.3 Functional Use Classification

Pavements are subject to varying aircraft loading patterns based on utilization and overall operations. For this SAPMP Update, the following categories of airfield functional use have been identified and associated with the following possible pavement branch facilities: Apron, Runway, Taxiway, and Taxilane. **Figure 3.1.3** summarizes the identified pavements' functional use by area in square feet. The pavement areas reviewed exclude shoulder pavement facilities.

Figure 3.1.3 Airfield Pavement Functional Classification Use by Area



3.1.4 Pavement Surface Type

The airfield pavement facility surface types within the SAPMP include four common types of pavement: Portland cement concrete (PCC), asphalt concrete (AC), asphalt concrete overlaid on asphalt concrete (AAC), and asphalt concrete overlaid on Portland cement concrete (APC).

Based on the record documentation incorporated within the SAPMP database throughout the years, the pavement surface types have been assigned to the various pavement sections in accordance to its work history composition. The following **Figures 3.1.4 (a) and (b)** summarize the applicable pavement types observed at this specific airport's airfield.

Figure 3.1.4 (a) Pavement Surface Type by Area (SF)

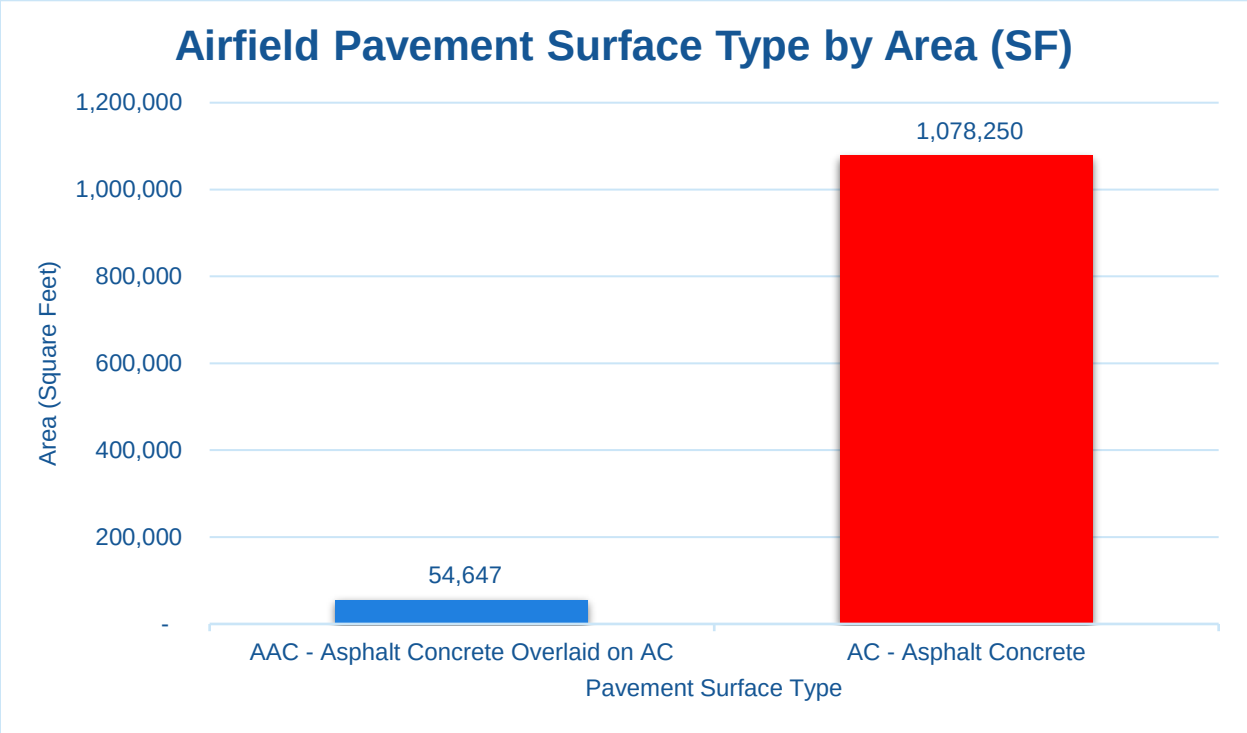
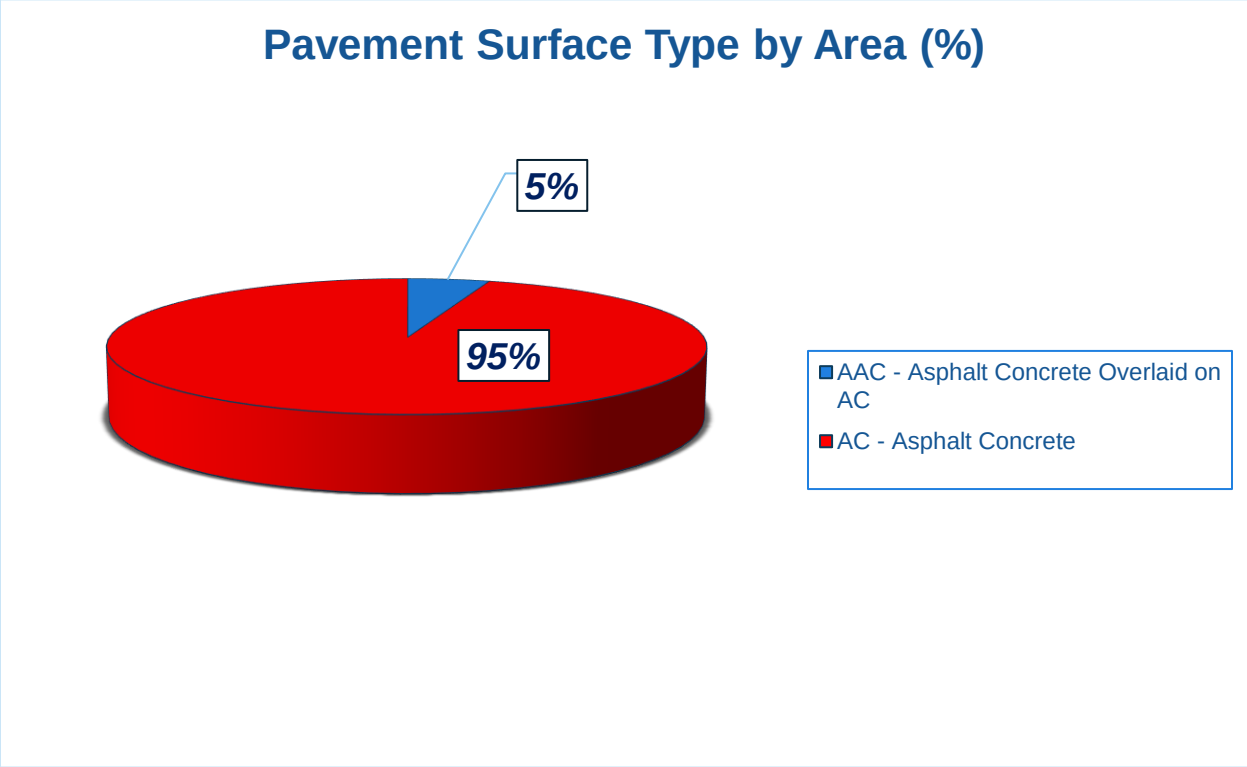


Figure 3.1.4 (b) Pavement Surface Type by Area (%)



3.1.5 Pavement System Inventory Details

The following **Table 3.1.5** displays the section-level details assembled as part of this update. The section-level details are based on the record documentation provided by the airports to FDOT and from SAPMP System Updates. The details assembled rely on the accuracy and the adequacy of data provided; however, it should be noted that characteristics such as pavement areas may be based on aerial interpretation of spatially projected imagery. The accuracy of data is presented with the intention of a network planning-level document; should the airport elect to perform rehabilitation work, it is recommended that further investigation be performed at the project level for construction purposes.

In summary, the scope of the pavement inventory update resulted in the updating of select existing pavement geometry and the development of an AutoCAD model with spatial projection for use within GIS. **Appendix A** includes the Airfield Pavement Network Definition Exhibit and the Airfield Pavement System Inventory Exhibit which visually summarize the results of the Airfield Pavement System Inventory analysis and reporting.

Table 3.1.5 Pavement System Inventory Details

Network ID	Branch Name	Branch ID	Branch Use	Section ID	Length (FT)	Width (FT)	Area (SF)	Surface Type	Est. Last Construction Date
MKY	NORTH APRON	AP N	APRON	4205	878	232	209,077	AC	10/1/2014
MKY	NORTH APRON	AP N	APRON	4210	300	135	42,455	AC	1/1/2010
MKY	NW APRON	AP NW	APRON	4105	179	91	12,198	AC	1/1/1996
MKY	NW APRON	AP NW	APRON	4110	90	199	14,881	AAC	1/11/2012
MKY	NW APRON	AP NW	APRON	4115	179	40	13,114	AAC	1/11/2012
MKY	NW APRON	AP NW	APRON	4120	794	152	167,162	AC	1/11/2012
MKY	RUNWAY 17-35	RW 17-35	RUNWAY	6105	5000	100	500,000	AC	10/1/2014
MKY	TAXIWAY A	TW A	TAXIWAY	105	173	100	14,884	AAC	1/11/2012
MKY	TAXIWAY A	TW A	TAXIWAY	107	100	30	3,172	AAC	10/1/2014
MKY	TAXIWAY A	TW A	TAXIWAY	110	3731	35	133,080	AC	1/11/2012
MKY	TAXIWAY B	TW B	TAXIWAY	205	100	46	3,882	AC	10/1/2014
MKY	TAXIWAY C	TW C	TAXIWAY	305	130	40	5,198	AC	1/11/2012
MKY	TAXIWAY C	TW C	TAXIWAY	310	110	40	4,298	AAC	10/1/2014
MKY	TAXIWAY D	TW D	TAXIWAY	405	130	40	5,198	AC	1/11/2012
MKY	TAXIWAY D	TW D	TAXIWAY	410	110	40	4,298	AAC	10/1/2014

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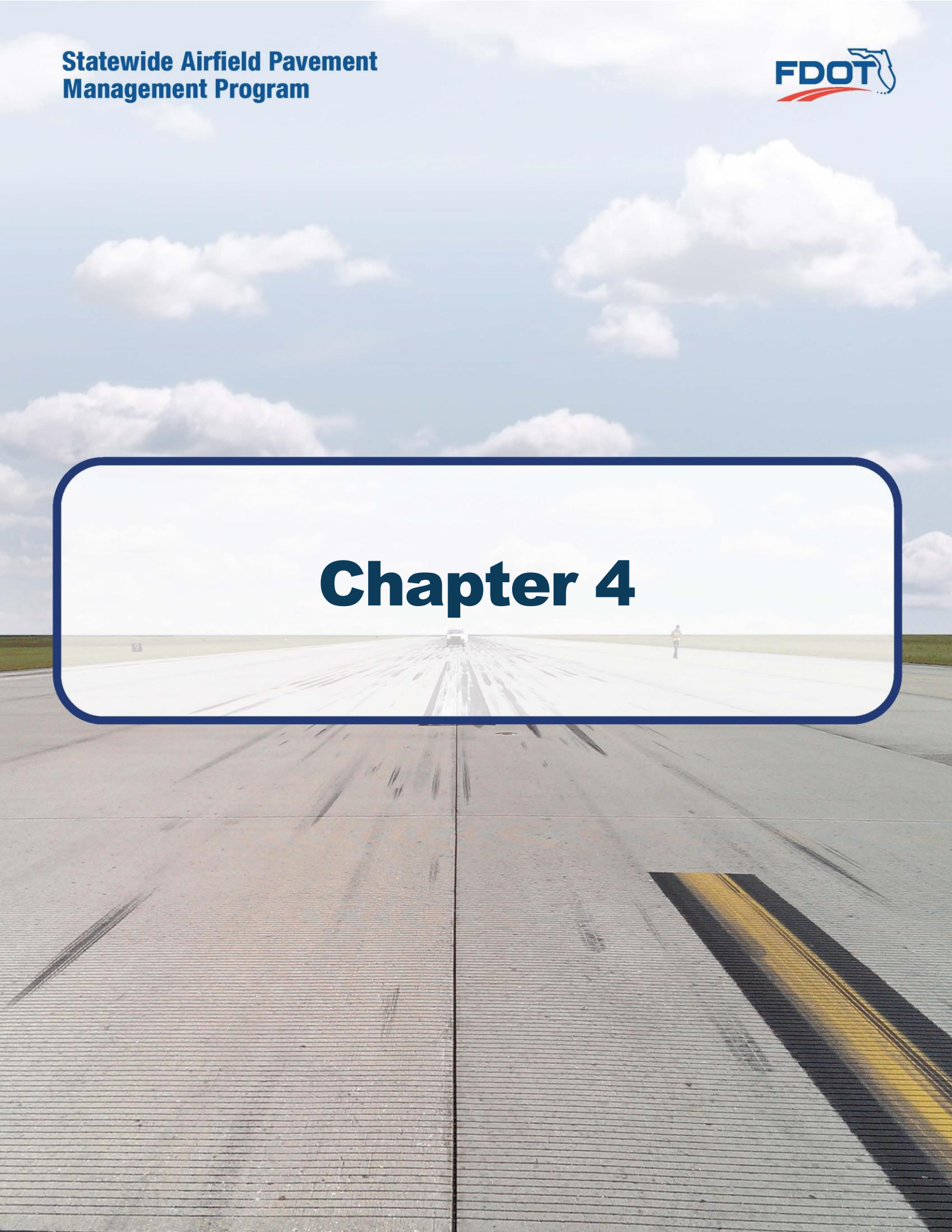


Chapter 4

Chapter 4 – Airfield Pavement Condition

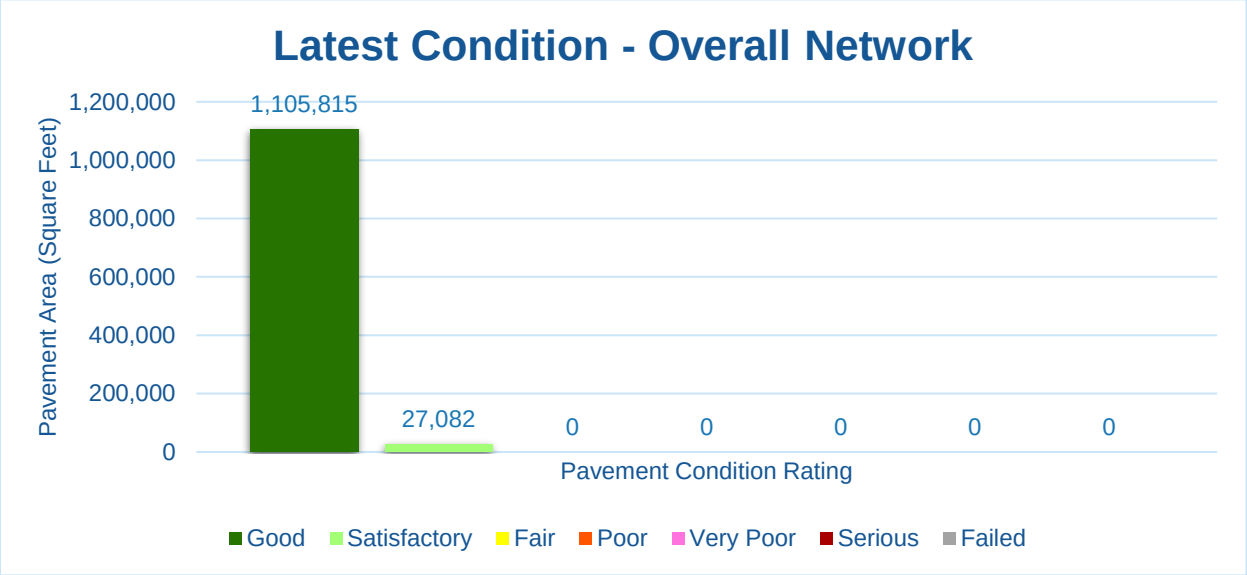
The examination of specific distress types (with causes attributed to load, climate, or other defined distress mechanism), determination of the severity of distress, and determination of the quantity of distress manifestation are required in the computation of a PCI value. The PCI provides valuable information that can be used to determine the existing condition of the pavement, possible cause of the pavement deterioration, and eventually aid in the planning of the rehabilitation of pavements. It should be noted that the PCI method of pavement condition evaluation is strictly a visual and functional evaluation. Further evaluation of the pavement condition may be necessary for design and/or project-level determination of pavement rehabilitation.

4.1 Airfield Pavement Condition Index (Latest Inspection)

4.1.1 Network-Level Analysis

The following **Figure 4.1.1** summarizes the network-level pavement condition analysis based on the most recent PCI Survey inspection results.

Figure 4.1.1 Latest Condition – Overall Network



4.1.2 Branch-Level Analysis

The following **Figures 4.1.2 (a) through (c)** summarize the branch-level pavement condition analysis based on the most recent PCI Survey inspection results; the following Figures provide overall branch-level conditions by branch use.

Figure 4.1.2 (a) Latest Condition – Runway Pavements

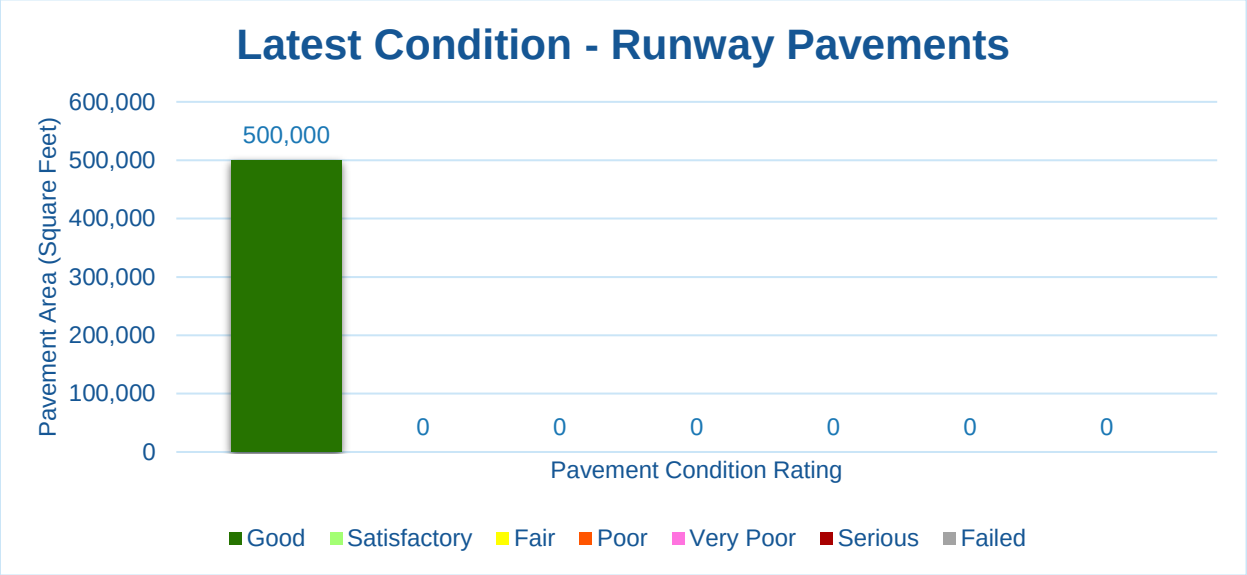


Figure 4.1.2 (b) Latest Condition – Taxiway Pavements

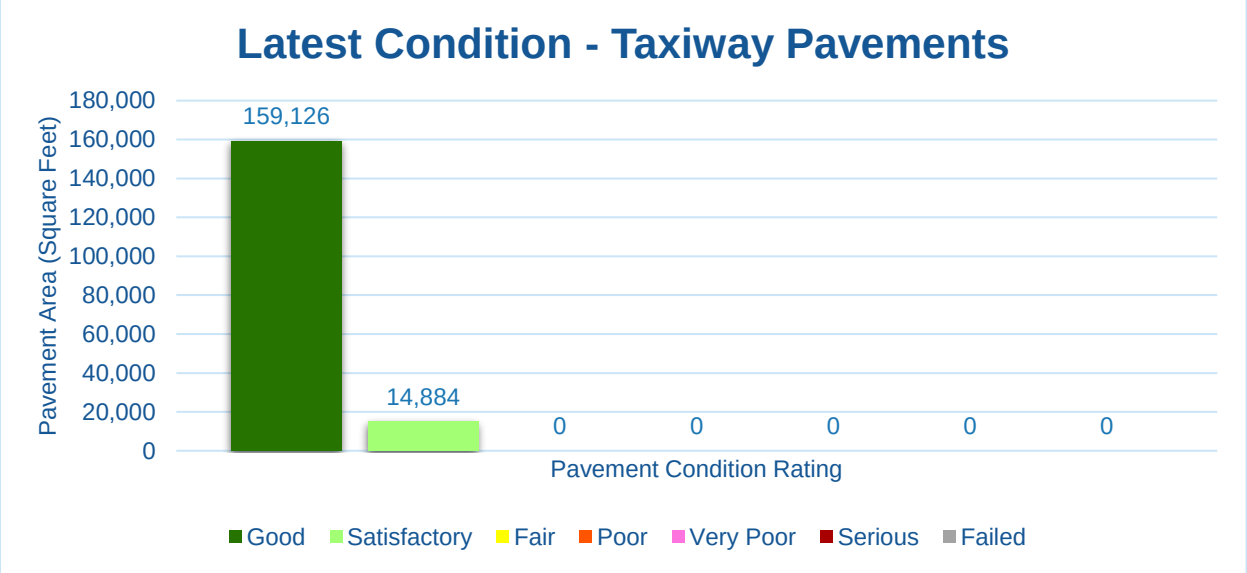
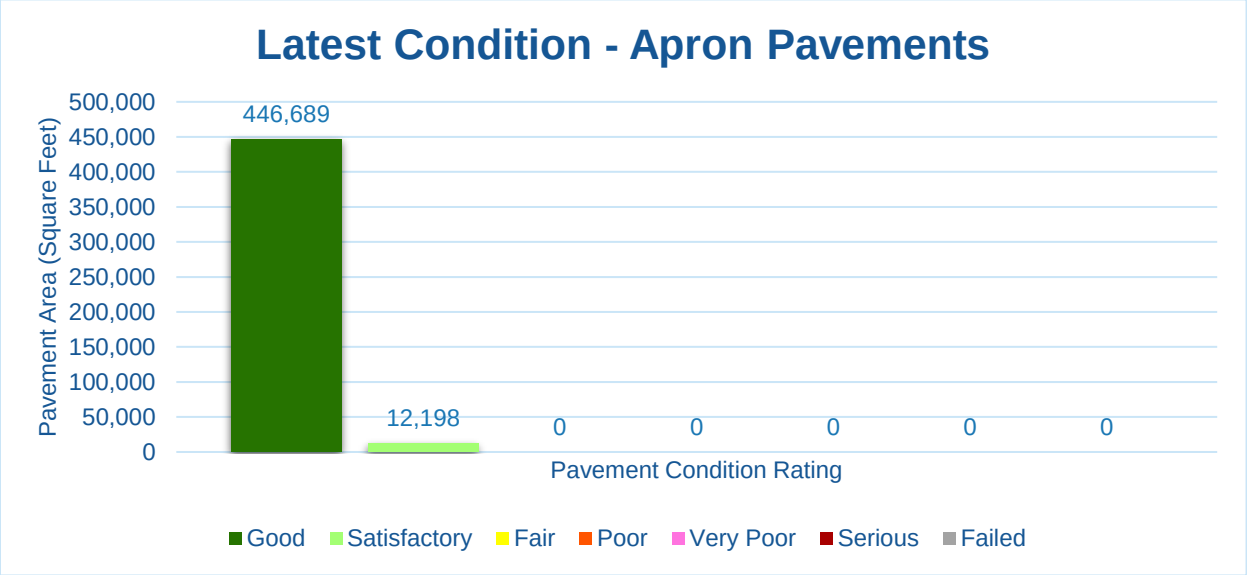


Figure 4.1.2 (c) Latest Condition – Apron Pavements



4.1.3 Section-Level Analysis

The following **Table 4.1.3** provides details for each pavement section of its area-weighted average PCI and the percent of distress which is related to load, climate, or other factors. The amount of distress attributed to the various causes provides insight into maintenance, repair, and rehabilitation needs. Load-related distress indicates that pavements are reaching the end of their structural design life, and for those pavements exhibiting a significant amount of these distress types, rehabilitation should be planned to strengthen or reconstruct the pavement. **Appendix C Technical Exhibits** provides a technical exhibit that graphically depicts the PCI values and ratings determined from this SAPMP System Update.

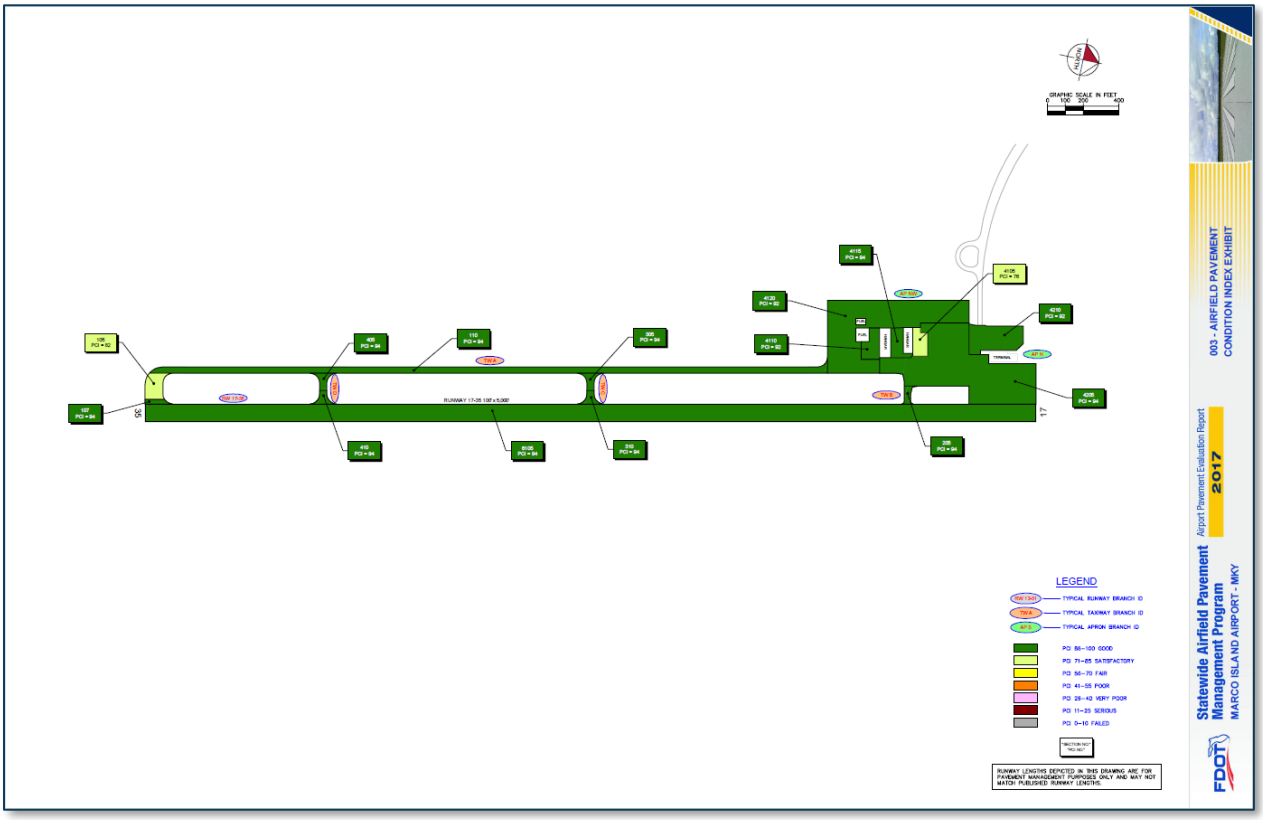
Any pavement facilities subject to pavement construction within the past 2 years or anticipated for construction within the next year may have been omitted from inspection. Pavement subject to major rehabilitation will be set to a PCI of 100.

Table 4.1.3 Latest Pavement Condition Index Summary

Network ID	Branch ID	Branch Name	Branch Use	Section ID	Area (SF)	Surface	PCI	PCI Rating	PCI Pct Climate	PCI Pct Load	PCI Pct Other	Sample Units Inspected	Total Sample Units in Section
MKY	AP N	NORTH APRON	APRON	4205	209,077	AC	94	Good	100%	0%	0%	5	43
MKY	AP N	NORTH APRON	APRON	4210	42,455	AC	92	Good	100%	0%	0%	1	9
MKY	AP NW	NW APRON	APRON	4105	12,198	AC	76	Satisfactory	100%	0%	0%	1	3
MKY	AP NW	NW APRON	APRON	4110	14,881	AAC	92	Good	100%	0%	0%	1	3
MKY	AP NW	NW APRON	APRON	4115	13,114	AAC	94	Good	100%	0%	0%	1	3
MKY	AP NW	NW APRON	APRON	4120	167,162	AC	92	Good	100%	0%	0%	4	35
MKY	RW 17-35	RUNWAY 17-35	RUNWAY	6105	500,000	AC	94	Good	100%	0%	0%	20	100
MKY	TW A	TAXIWAY A	TAXIWAY	105	14,884	AAC	82	Satisfactory	100%	0%	0%	1	3
MKY	TW A	TAXIWAY A	TAXIWAY	107	3,172	AAC	94	Good	100%	0%	0%	1	1
MKY	TW A	TAXIWAY A	TAXIWAY	110	133,080	AC	94	Good	100%	0%	0%	4	38
MKY	TW B	TAXIWAY B	TAXIWAY	205	3,882	AC	94	Good	100%	0%	0%	1	1
MKY	TW C	TAXIWAY C	TAXIWAY	305	5,198	AC	94	Good	100%	0%	0%	1	1
MKY	TW C	TAXIWAY C	TAXIWAY	310	4,298	AAC	94	Good	100%	0%	0%	1	1
MKY	TW D	TAXIWAY D	TAXIWAY	405	5,198	AC	94	Good	100%	0%	0%	1	1
MKY	TW D	TAXIWAY D	TAXIWAY	410	4,298	AAC	94	Good	100%	0%	0%	1	1

Figure 4.1.3 is an inset view of the 2017 Airfield Pavement Condition Index Exhibit that visually represents the results of the latest PCI Survey inspection. A large format exhibit is located in **Appendix C Technical Exhibits.**

Figure 4.1.3 2017 Airfield Pavement Condition Index Exhibit



4.2 Summary of Pavement Condition Evaluation Results

4.2.1 Network-Level Observations

The field PCI Survey performed at Marco Island Airport (MKY) was started and completed on 03/13/2017. The resulting overall average area-weighted PCI value was 93 representing a condition rating of Good. Marco Island Airport is served solely by Runway 17-35 which is 100-ft wide and 5,000-ft long.

Based on the FAA 5010 Report as of 07/24/2017 the Airport has reported 20,000 operations for 12 months ending 10/07/2015.

4.2.2 Branch-Level Observations

The following branch-level observations are intended to be an overall summary of select pavement facilities identified during the PCI Survey; further detail at the section and sample-level may be referenced for all pavements assessed as part of this System Update. The branch-level observations discussed are limited to select branches based on use and condition.

Runway 17-35

Runway 17-35 consists of 1 section constructed of AC. The last construction year for Runway 17-35 was 2014. The average area-weighted PCI for Runway 17-35 is 94 representing a Good condition rating. The pavement distresses observed were related to Climate distress classifications. Distresses observed in Runway 17-35 consist of Weathering.

Taxiway A

Taxiway A consists of 3 sections constructed of AC and AAC. The last construction years range from 2012 to 2014. The average area-weighted PCI for Taxiway A is 92 representing a Good condition rating. The pavement distresses observed were related to Climate distress classifications. Distresses observed in Taxiway A consist of Longitudinal & Transverse Cracking and Weathering.

Northwest Apron

Northwest Apron consists of 4 sections constructed of AC and AAC. The last construction years range from 1996 to 2012. The average area-weighted PCI for Northwest Apron is 91 representing a Good condition rating. The pavement distresses observed were related to Climate distress classifications. Distresses observed in Northwest Apron consist of Longitudinal & Transverse Cracking, Patching, and Weathering.

Figure 4.2.2 Pavement Condition Summary by Facility Use

Facility Use	Average Area-Weighted PCI	Condition Rating
Runway	94	Good
Taxiway	92	Good
Apron	92	Good

4.3 Forecasted Pavement Conditions

4.3.1 Performance Models and Prediction Curves

Pavement Performance Models are developed from the distress data and historic construction records collected for the SAPMP. This data is consolidated in a database and organized by inspection/construction date, pavement type, age, and pavement use. The pavement Performance Models are used to develop broad Prediction Curves, alternatively known as deterioration curves or family curves. These Prediction Curves are utilized to developed forecasted PCI values based on historic trends and statistical models.

4.3.2 Branch-Level Pavement Condition Forecast

The following **Figures 4.3.2 (a) through (c)** depict the branch-level pavement condition forecast by Branch Use (Runway, Taxiway, and/or Apron). The forecasted conditions are for a 10-year duration starting in January 2018 through January 2027.

Figure 4.3.2 (a) Forecasted Runway Pavement Performance

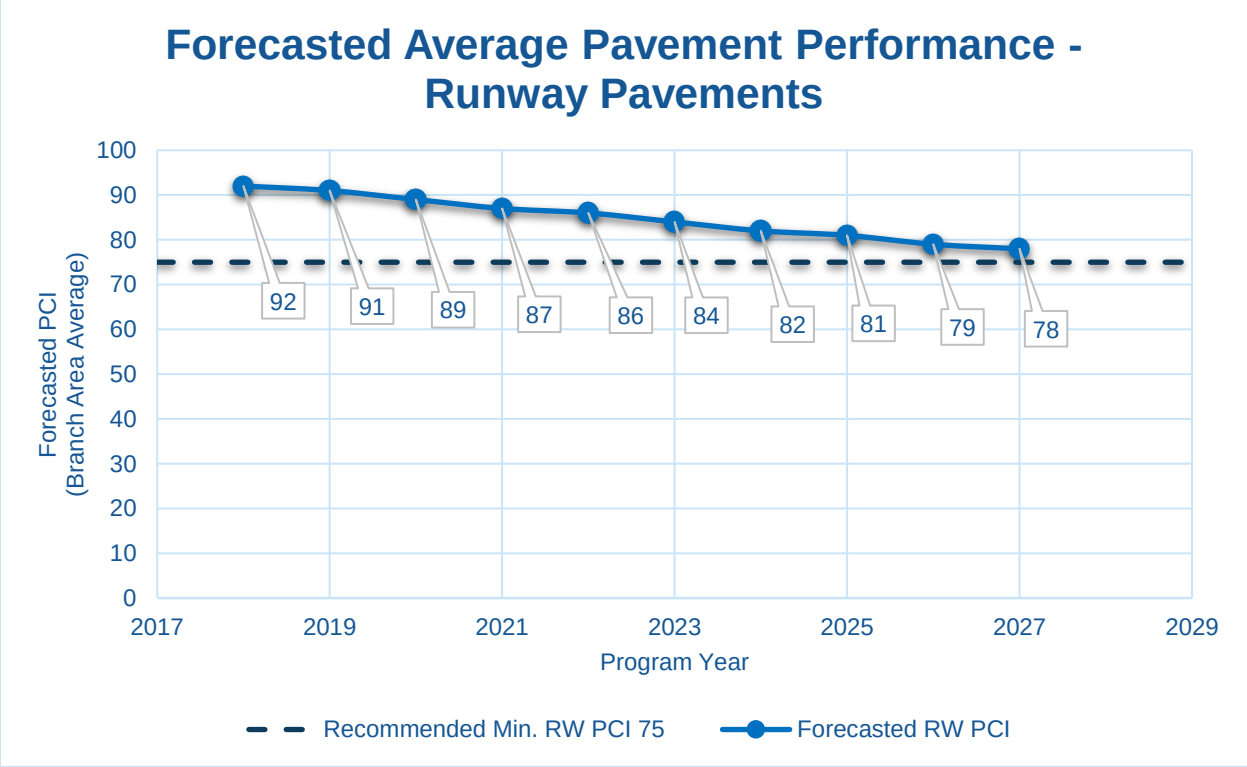


Figure 4.3.2 (b) Forecasted Taxiway Pavement Performance

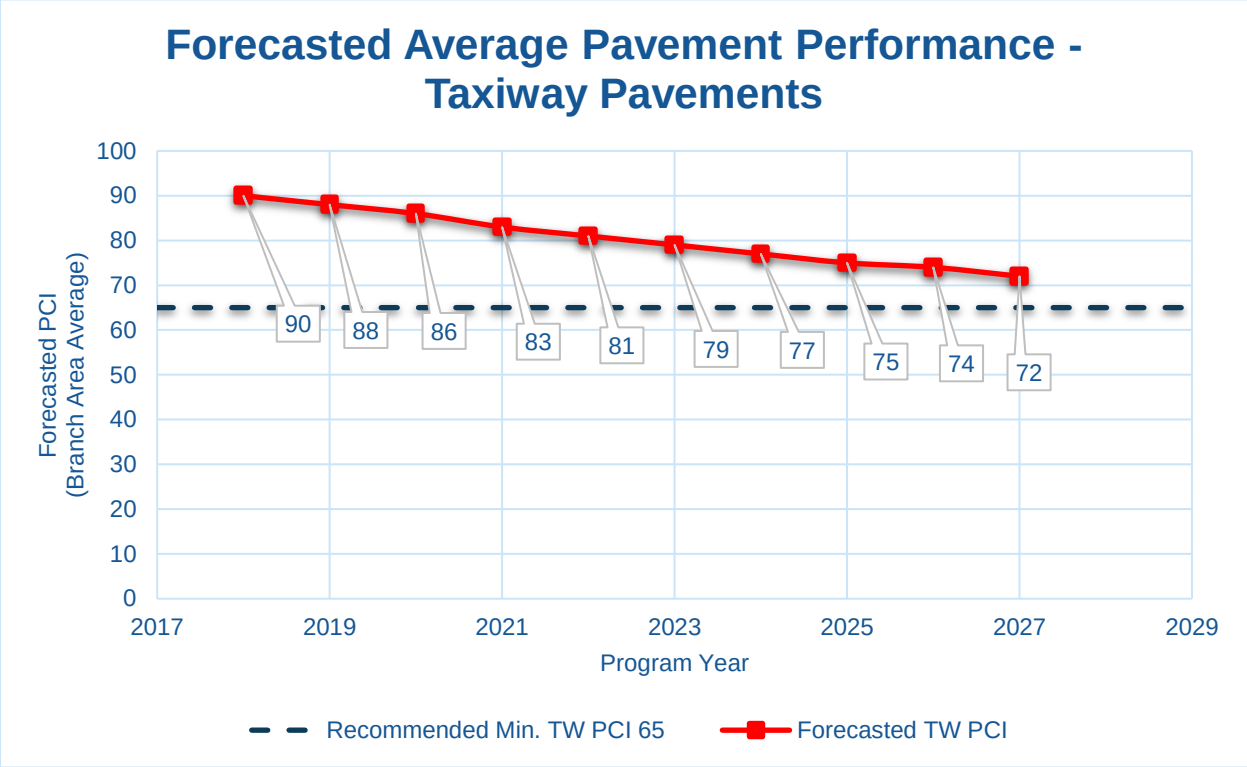
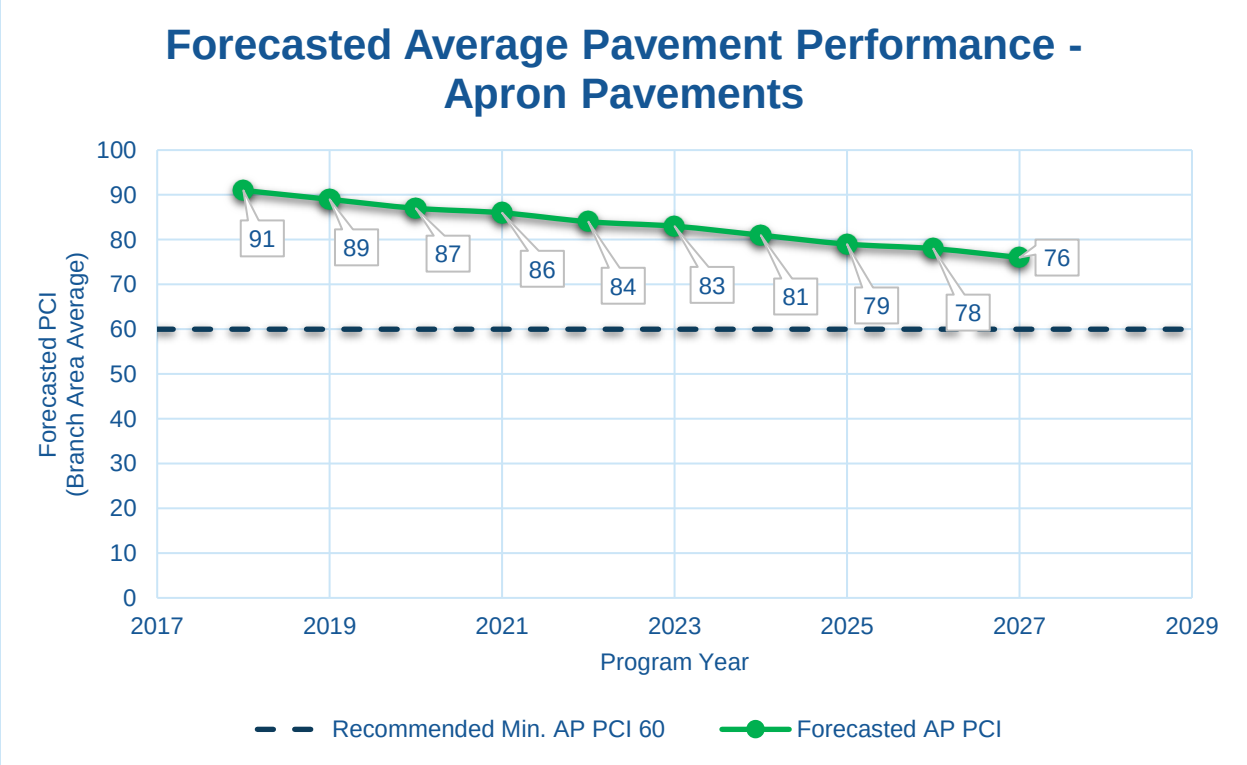


Figure 4.3.2 (c) Forecasted Apron Pavement Performance



4.3.3 Section-Level Pavement Condition Forecast

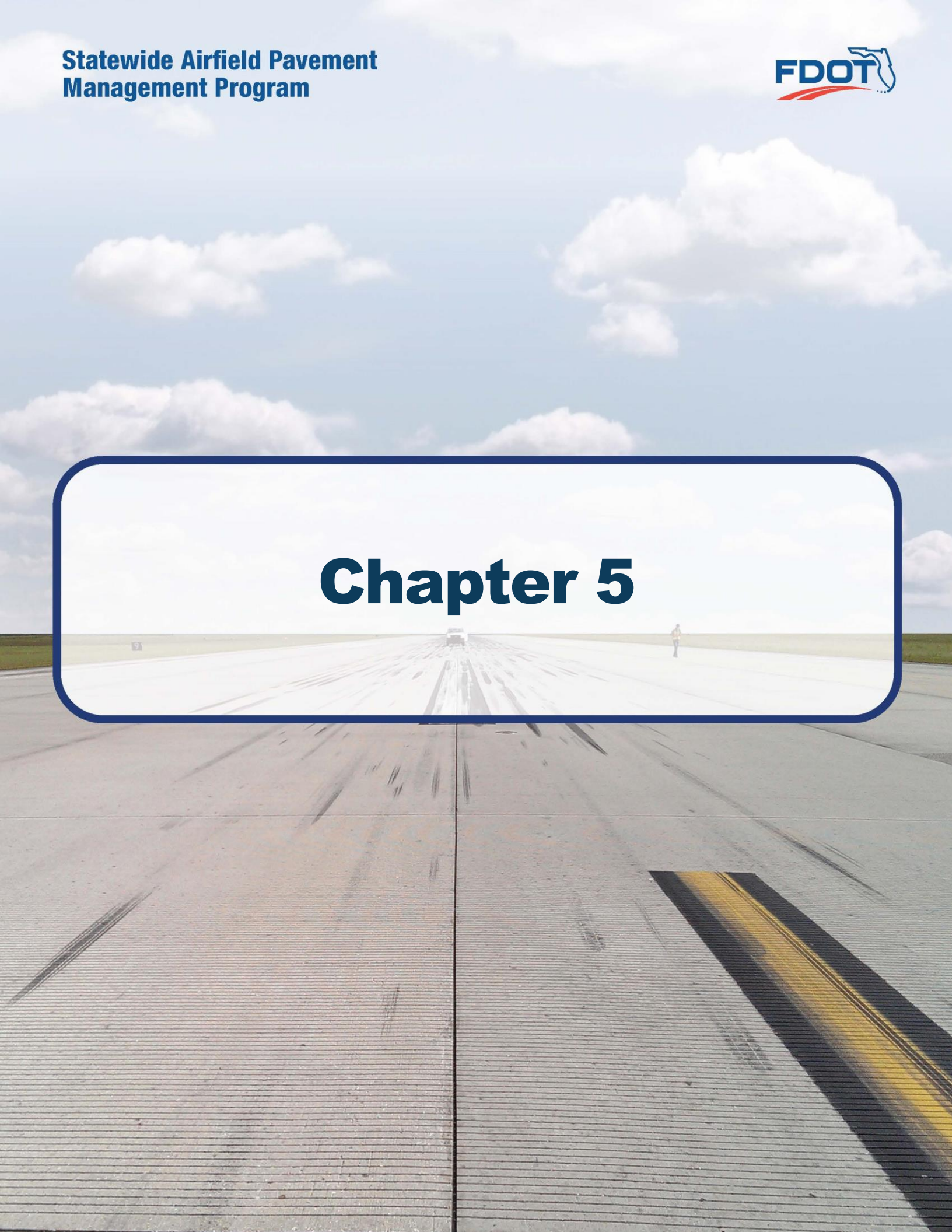
The following **Table 4.3.3** provides detail to the forecasted PCI values for each section inspected. Please note the forecasted Branch- and Section-Level PCI's are for planning purposes and are subject to the sensitivities in changes in traffic and maintenance frequency. Airport staff should perform annual visual condition assessments to maintain recent understanding of pavement conditions.

Table 4.3.3 Forecasted PCI 2018-2027

Network ID	Branch ID	Section ID	Last PCI	Forecasted PCI									
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
MKY	AP N	4205	94	92	91	89	87	86	84	83	81	80	78
MKY	AP N	4210	92	90	89	87	85	84	82	81	79	78	76
MKY	AP NW	4105	76	74	73	71	69	68	66	65	63	62	60
MKY	AP NW	4110	92	88	84	82	81	80	78	76	74	72	70
MKY	AP NW	4115	94	89	85	83	81	80	79	77	75	73	71
MKY	AP NW	4120	92	90	89	87	85	84	82	81	79	78	76
MKY	RW 17-35	6105	94	92	91	89	87	86	84	82	81	79	78
MKY	TW A	105	82	80	78	76	75	74	73	72	71	70	69
MKY	TW A	107	94	91	88	85	83	81	79	77	76	74	73
MKY	TW A	110	94	91	89	86	84	82	79	77	76	74	72
MKY	TW B	205	94	91	89	86	84	82	79	77	76	74	72
MKY	TW C	305	94	92	89	86	84	82	80	77	76	74	72
MKY	TW C	310	94	91	88	85	83	81	79	77	76	74	73
MKY	TW D	405	94	91	89	86	84	82	79	77	76	74	72
MKY	TW D	410	94	91	88	85	83	81	79	77	76	74	73

4.3.4 Forecasted PCI Considerations

As FDOT continues to update the SAPMP with future PCI Survey inspections and assembly of airfield pavement construction work history, the performance models will be further refined. With the refinement of additional PCI and work history data points, the forecasting of pavement conditions will continue to better reflect the performance trends of airfield pavements in the Florida Airports System. Forecasted or predicted pavement conditions for the airport are intended for planning purposes only. Design-level recommendations for pavement rehabilitation and/or reconstruction will require the appropriate application of the procedures defined in FAA ***AC 150/5320-6F Airport Pavement Design and Evaluation*** and ***AC 150/5370-11B Use of Nondestructive Testing in the Evaluation of Airport Pavements*** to determine structural and/or functional conditions at the time of project.



Chapter 5

Chapter 5 – Localized Maintenance and Repair Planning

General Maintenance and Rehabilitation (M&R) methods are characterized under three broad categories: localized maintenance and repair, global treatments, and major rehabilitation.

- **Localized Maintenance and Repair** includes patching and crack sealing.
- **Global Treatments** includes surface seals and rejuvenators (flexible pavements).
- **Major Rehabilitation** includes overlays, significant slab replacement, and reconstruction.

This chapter discusses the FDOT SAPMP Localized Maintenance and Repair Planning approach. Proactive localized maintenance and repair, specifically preservation, is highly recommended to the airports. However, it is certainly recognized that once pavements have deteriorated below a certain condition, the facility would benefit from a more substantial rehabilitation in lieu of localized efforts. Chapter 6 Major Rehabilitation Planning discusses the addressing of pavements through timely rehabilitation once it has deteriorated below a critical PCI where localized repairs may not be as cost effective.

5.1 Localized Maintenance and Repair

Localized maintenance and repair is best applied as a conservation measure and is oftentimes applied to slow the rate of deterioration of distress pavements; however, may be applied as a temporary corrective measure in isolated areas. Localized maintenance and repair can be applied either as a safety (“stopgap”) measure or preventive measure. Example distress types subject to localized preventive maintenance and repair may consist of low-severity longitudinal and transverse cracking and low-severity weathering. In many cases however, localized stopgap repair is applied as a safety measure to address high-severity distress manifestations when major rehabilitation is not funded for a given section with a PCI value below critical PCI. Some agencies may elect to define both types; preventative and stopgap, as localized maintenance.

Localized Stopgap/Safety Maintenance and Repair

Localized Stopgap or Safety Maintenance and Repair is defined as the localized distress repair needed to keep pavements operational in a safe condition. These activities are typically applied to high-severity distresses or distresses affecting operational activities. Typical pavement section PCIs will range from 0 to 65.

Localized Preventive Maintenance and Repair

Localized Preventive Maintenance and Repair is defined as distress maintenance activities performed with the primary objective of slowing the rate of deterioration. These activities typically include crack sealing and patching. Typical pavement section PCIs will be above 65.

5.2 Localized Maintenance and Repair Policy

The resulting Localized Maintenance and Repair recommendations are identified based on the policy defined in **Table 5.2.1** and **Table 5.2.2**, for flexible asphalt concrete and rigid Portland cement concrete pavements, respectively. The activities identified were based on the research of practical pavement treatments in consideration of the FAA ***AC 150/5380-6C "Guidelines and Procedures for Maintenance of Airport Pavements"*** and the ***FDOT Airfield Pavement Distress Repair Manual.*** Additionally, the ***Engineering Technical Letter (ETL) 14-3: Preventive Maintenance Plan (PMP) for Airfield Pavements*** was referenced for conservative application of pavement treatments. The Localized Maintenance and Repair Policy and associated planning-level unit costs were developed in consideration of a network-level analysis – it is strictly intended to provide a glimpse of the condition of the airport pavements with a limited PCI survey effort.

The developed Localized Maintenance and Repair Policy and associated planning-level unit costs were based on a statewide consideration of pavement treatments and review of state construction costs for both Airfield Pavements and from the FDOT Historical Cost Information archives. Furthermore, a consideration of limited repair quantities was factored in the determination of conservative planning-level unit costs. The identified Localized maintenance activities for both preventive and stopgap activities are based on a statewide network approach; project-specific evaluation and maintenance quantities should be developed prior to any construction.

Table 5.2-1 Localized Maintenance and Repair – Flexible Asphalt Concrete

Distress	Severity	Description	Code	Work Type	Work Unit
41	Low	ALLIGATOR CR	FDOT-PA-AF	FDOT - PATCHING - AC FULL DEPTH	SqFt
41	Medium	ALLIGATOR CR	FDOT-PA-AF	FDOT - PATCHING - AC FULL DEPTH	SqFt
41	High	ALLIGATOR CR	FDOT-PA-AF	FDOT - PATCHING - AC FULL DEPTH	SqFt
42	N/A	BLEEDING	FDOT-MO-PV	FDOT - MONITOR	N/A
43	Low	BLOCK CR	FDOT-MO-PV	FDOT - MONITOR	N/A
43	Medium	BLOCK CR	FDOT-CS-AC	FDOT - CRACK SEALING - AC	Ft
43	High	BLOCK CR	FDOT-PA-AP	FDOT - PATCHING - AC PARTIAL DEPTH	SqFt
44	Low	CORRUGATION	FDOT-ML-AC	FDOT - MILLING - AC	SqFt
44	Medium	CORRUGATION	FDOT-ML-AC	FDOT - MILLING - AC	SqFt
44	High	CORRUGATION	FDOT-PA-AF	FDOT - PATCHING - AC FULL DEPTH	SqFt
45	Low	DEPRESSION	FDOT-PA-AF	FDOT - PATCHING - AC FULL DEPTH	SqFt
45	Medium	DEPRESSION	FDOT-PA-AF	FDOT - PATCHING - AC FULL DEPTH	SqFt
45	High	DEPRESSION	FDOT-PA-AF	FDOT - PATCHING - AC FULL DEPTH	SqFt
46	High	JET BLAST	FDOT-PA-AP	FDOT - PATCHING - AC PARTIAL DEPTH	SqFt
46	N/A	JET BLAST	FDOT-PA-AP	FDOT - PATCHING - AC PARTIAL DEPTH	SqFt
47	Low	JT REF. CR	FDOT-MO-PV	FDOT - MONITOR	N/A
47	Medium	JT REF. CR	FDOT-CS-AC	FDOT - CRACK SEALING - AC	Ft
47	High	JT REF. CR	FDOT-CS-AC	FDOT - CRACK SEALING - AC	Ft

Distress	Severity	Description	Code	Work Type	Work Unit
48	Low	L & T CR	FDOT-MO-PV	FDOT - MONITOR	N/A
48	Medium	L & T CR	FDOT-CS-AC	FDOT - CRACK SEALING - AC	Ft
48	High	L & T CR	FDOT-CS-AC	FDOT - CRACK SEALING - AC	Ft
49	N/A	OIL SPILLAGE	FDOT-PA-AP	FDOT - PATCHING - AC PARTIAL DEPTH	SqFt
50	Low	PATCHING	FDOT-MO-PV	FDOT - MONITOR	N/A
50	Medium	PATCHING	FDOT-PA-AF	FDOT - PATCHING - AC FULL DEPTH	SqFt
50	High	PATCHING	FDOT-PA-AF	FDOT - PATCHING - AC FULL DEPTH	SqFt
51	N/A	POLISHED AG	FDOT-SS-LO	FDOT - SURFACE SEAL	SqFt
52	Low	RAVELING	FDOT-SS-LO	FDOT - SURFACE SEAL	SqFt
52	Medium	RAVELING	FDOT-PA-AP	FDOT - PATCHING - AC PARTIAL DEPTH	SqFt
52	High	RAVELING	FDOT-PA-AP	FDOT - PATCHING - AC PARTIAL DEPTH	SqFt
53	Low	RUTTING	FDOT-MO-PV	FDOT - MONITOR	N/A
53	Medium	RUTTING	FDOT-PA-AF	FDOT - PATCHING - AC FULL DEPTH	SqFt
53	High	RUTTING	FDOT-PA-AF	FDOT - PATCHING - AC FULL DEPTH	SqFt
54	Low	SHOVING	FDOT-MO-PV	FDOT - MONITOR	N/A
54	Medium	SHOVING	FDOT-ML-AC	FDOT - MILLING - AC	SqFt
54	High	SHOVING	FDOT-PA-AF	FDOT - PATCHING - AC FULL DEPTH	SqFt
55	N/A	SLIPPAGE CR	FDOT-PA-AP	FDOT - PATCHING - AC PARTIAL DEPTH	SqFt
56	Low	SWELLING	FDOT-MO-PV	FDOT - MONITOR	N/A
56	Medium	SWELLING	FDOT-PA-AF	FDOT - PATCHING - AC FULL DEPTH	SqFt
56	High	SWELLING	FDOT-PA-AF	FDOT - PATCHING - AC FULL DEPTH	SqFt
57	Low	WEATHERING	FDOT-MO-PV	FDOT - MONITOR	N/A
57	Medium	WEATHERING	FDOT-SS-LO	FDOT - SURFACE SEAL	SqFt
57	High	WEATHERING	FDOT-PA-AP	FDOT - PATCHING - AC PARTIAL DEPTH	SqFt

Table 5.2-2 Localized Maintenance and Repair – Rigid Portland Cement Concrete

Distress	Severity	Description	Code	Work Type	Work Unit
61	Low	BLOW-UP	FDOT-PA-PP	FDOT - PATCHING - PCC PARTIAL DEPTH	SqFt
61	Medium	BLOW-UP	FDOT-PA-PF	FDOT - PATCHING - PCC FULL DEPTH	SqFt
61	High	BLOW-UP	FDOT-SL-PC	FDOT - SLAB REPLACEMENT - PCC	SqFt
62	Low	CORNER BREAK	FDOT-CS-PC	FDOT - CRACK SEALING - PCC	Ft
62	Medium	CORNER BREAK	FDOT-PA-PF	FDOT - PATCHING - PCC FULL DEPTH	SqFt
62	High	CORNER BREAK	FDOT-PA-PF	FDOT - PATCHING - PCC FULL DEPTH	SqFt
63	Low	LINEAR CR	FDOT-MO-PV	FDOT - MONITOR	N/A
63	Medium	LINEAR CR	FDOT-CS-PC	FDOT - CRACK SEALING - PCC	Ft
63	High	LINEAR CR	FDOT-PA-PP	FDOT - PATCHING - PCC PARTIAL DEPTH	SqFt

Distress	Severity	Description	Code	Work Type	Work Unit
64	Low	DURABIL. CR	FDOT-MO-PV	FDOT - MONITOR	N/A
64	Medium	DURABIL. CR	FDOT-PA-PF	FDOT - PATCHING - PCC FULL DEPTH	SqFt
64	High	DURABIL. CR	FDOT-SL-PC	FDOT - SLAB REPLACEMENT - PCC	SqFt
65	Low	JT SEAL DMG	FDOT-JS-PC	FDOT - JOINT SEAL - PCC	Ft
65	Medium	JT SEAL DMG	FDOT-JS-PC	FDOT - JOINT SEAL - PCC	Ft
65	High	JT SEAL DMG	FDOT-JS-PC	FDOT - JOINT SEAL - PCC	Ft
66	Low	SMALL PATCH	FDOT-MO-PV	FDOT - MONITOR	N/A
66	Medium	SMALL PATCH	FDOT-PA-PP	FDOT - PATCHING - PCC PARTIAL DEPTH	SqFt
66	High	SMALL PATCH	FDOT-PA-PP	FDOT - PATCHING - PCC PARTIAL DEPTH	SqFt
67	Low	LARGE PATCH	FDOT-MO-PV	FDOT - MONITOR	N/A
67	Medium	LARGE PATCH	FDOT-PA-PF	FDOT - PATCHING - PCC FULL DEPTH	SqFt
67	High	LARGE PATCH	FDOT-PA-PF	FDOT - PATCHING - PCC FULL DEPTH	SqFt
68	N/A	POPOUTS	FDOT-PO-FL	FDOT - POPOUT FILLER	SqFt
69	N/A	PUMPING	FDOT-SB-PC	FDOT – SLAB STABILIZATION - PCC	SqFt
70	Low	SCALING	FDOT-MO-PV	FDOT - MONITOR	N/A
70	Medium	SCALING	FDOT-PA-PP	FDOT - PATCHING - PCC PARTIAL DEPTH	SqFt
70	High	SCALING	FDOT-SL-PC	FDOT - SLAB REPLACEMENT - PCC	SqFt
71	Low	FAULTING	FDOT-MO-PV	FDOT - MONITOR	N/A
71	Medium	FAULTING	FDOT-GR-PP	FDOT - GRINDING (LOCALIZED)	Ft
71	High	FAULTING	FDOT-GR-PP	FDOT - GRINDING (LOCALIZED)	Ft
72	Low	SHAT. SLAB	FDOT-CS-PC	FDOT - CRACK SEALING - PCC	Ft
72	Medium	SHAT. SLAB	FDOT-SL-PC	FDOT - SLAB REPLACEMENT - PCC	SqFt
72	High	SHAT. SLAB	FDOT-SL-PC	FDOT - SLAB REPLACEMENT - PCC	SqFt
73	N/A	SHRINKAGE CR	FDOT-MO-PV	FDOT - MONITOR	N/A
74	Low	JOINT SPALL	FDOT-CS-PC	FDOT - CRACK SEALING - PCC	Ft
74	Medium	JOINT SPALL	FDOT-PA-PP	FDOT - PATCHING - PCC PARTIAL DEPTH	SqFt
74	High	JOINT SPALL	FDOT-PA-PP	FDOT - PATCHING - PCC PARTIAL DEPTH	SqFt
75	Low	CORNER SPALL	FDOT-CS-PC	FDOT - CRACK SEALING - PCC	Ft
75	Medium	CORNER SPALL	FDOT-PA-PP	FDOT - PATCHING - PCC PARTIAL DEPTH	SqFt
75	High	CORNER SPALL	FDOT-PA-PP	FDOT - PATCHING - PCC PARTIAL DEPTH	SqFt
76	Low	ASR	FDOT-MO-PV	FDOT - MONITOR	N/A
76	Medium	ASR	FDOT-PA-PF	FDOT - PATCHING - PCC FULL DEPTH	SqFt
76	High	ASR	FDOT-SL-PC	FDOT - SLAB REPLACEMENT - PCC	SqFt

Table 5.2-3 (a) Localized Repair Planning-Level Unit Costs – Flexible Asphalt Concrete

Code	Name	Cost	Units
FDOT-SS-LO	FDOT - SURFACE SEAL	$0.55	SqFt
FDOT-ML-AC	FDOT - MILLING - AC	$2.00	SqFt
FDOT-GR-PP	FDOT - GRINDING (LOCALIZED)	$2.00	Ft
FDOT-CS-AC	FDOT - CRACK SEALING - AC	$3.00	Ft
FDOT-MO-PV	FDOT - MONITOR	$0.00	SqFt
FDOT-PA-AF	FDOT - PATCHING - AC FULL DEPTH	$6.00	SqFt
FDOT-PA-AP	FDOT - PATCHING - AC PARTIAL DEPTH	$3.00	SqFt

Table 5.2-3 (b) Localized M&R Planning-Level Unit Costs – Rigid Portland Cement Concrete

Code	Name	Cost	Units
FDOT-PA-PF	FDOT - PATCHING - PCC FULL DEPTH	$100.00	SqFt
FDOT-SL-PC	FDOT - SLAB REPLACEMENT - PCC	$30.00	SqFt
FDOT-SB-PC	FDOT - SLAB STABILIZATION - PCC	$30.00	SqFt
FDOT-PA-PP	FDOT - PATCHING - PCC PARTIAL DEPTH	$72.00	SqFt
FDOT-PO-FL	FDOT - POPOUT FILLER	$0.05	SqFt
FDOT-GR-PP	FDOT - GRINDING (LOCALIZED)	$2.00	Ft
FDOT-CS-PC	FDOT - CRACK SEALING - PCC	$4.25	Ft
FDOT-MO-PV	FDOT - MONITOR	$0.00	N/A
FDOT-JS-PC	FDOT - JOINT SEAL - PCC	$2.75	Ft

**PCC Patching (Full Depth and Partial Depth) consider high-early-strength and high-performing repair material.*

5.3 Localized Maintenance and Repair Analysis and Recommendations

The SAPMP provides a planning-level estimation of Localized Maintenance and Repair based on the results of the latest PCI Survey Inspection performed at the airport. Based on the limited sample units inspected, a statistical extrapolation of distresses at the section level is used to estimate the quantities of recommended repair activities based on the policies defined in **5.2 Localized M&R Policy**. The PCI Survey Inspections did not consist of 100% inspection of all sample units; therefore, the section-level distress quantities used to estimate the Localized Maintenance and Repair needs are for conceptual planning purposes. The accuracy of the extrapolated distresses, and therefore work quantities, is subject to the amount of sample units inspected and the concentration of distress types observed in sample units. **Appendix B** provides the estimated Localized Maintenance and Repair based on this SAPMP's PCI Survey Inspection efforts. Localized Preventive Maintenance and Repair is typically applied to pavements that are in a condition at or above the Critical PCI of 65. Localized Stopgap Maintenance and Repair is typically applied to pavements that are below the Critical PCI of 65. It is recommended that airport staff evaluate the application of Localized Maintenance and Repair in concert with the planning of Major Rehabilitation efforts identified in Chapter 6 Major Rehabilitation Planning. Pavements with Stopgap recommendations that are subject to near-term Major Rehabilitation efforts may remove the need to perform localized maintenance efforts.

The following **Table 5.3-1** summarizes the anticipated Localized Maintenance and Repair efforts based on the PCI Survey Inspection efforts performed at this airport as part of this SAPMP System Update. The following table depicts planning-level costs rounded to the nearest ten dollars.

Table 5.3-1 Summary of Airport Localized M&R Planning Cost and Quantity at Network Level

Work Description	Work Category	Rough Estimate of Work Quantity	Work Units	Planning Material Cost
NO ANTICIPATED LOCALIZED MAINTENANCE AND REPAIR COSTS				

The following **Table 5.3-2** provides further breakdown of the anticipated planning-level cost at the section level for the pavements exhibiting distresses that would benefit from Localized M&R. The table shows the approximate improved "End Condition" of the section after the application of Localized M&R. The following table depicts planning-level costs rounded to the nearest ten dollars.

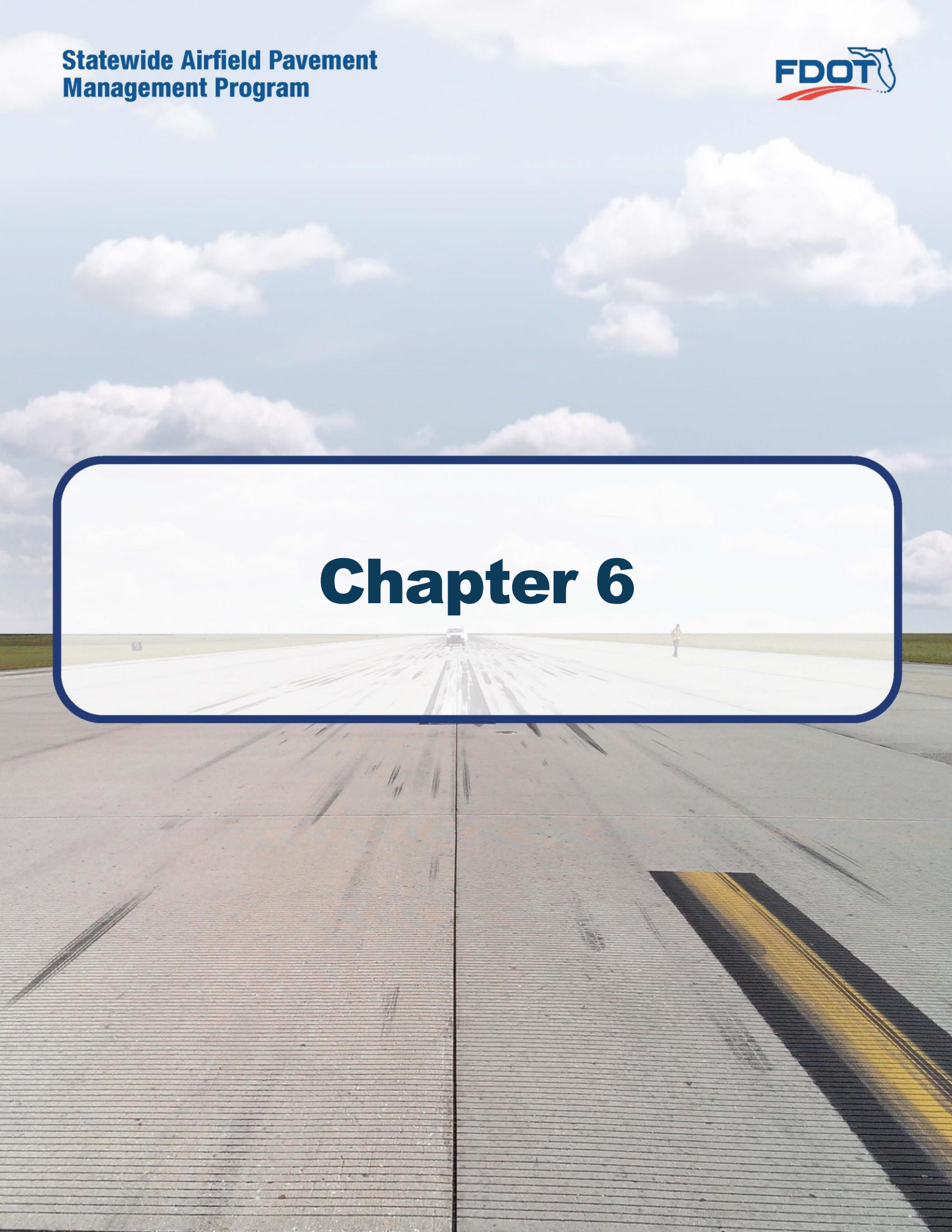
Table 5.3-2 Summary of Airport Localized M&R Planning Cost and Quantity at Section Level

Network ID	Branch ID	Section ID	Area (SF)	Start Condition	End Condition	Cost
MKY	AP N	4205	209,077	94	94	$ -
MKY	AP N	4210	42,455	92	92	$ -
MKY	AP NW	4105	12,198	76	76	$ -
MKY	AP NW	4110	14,881	92	92	$ -
MKY	AP NW	4115	13,114	94	94	$ -
MKY	AP NW	4120	167,162	92	92	$ -
MKY	RW 17-35	6105	500,000	94	94	$ -
MKY	TW A	105	14,884	82	82	$ -
MKY	TW A	107	3,172	94	94	$ -
MKY	TW A	110	133,080	94	94	$ -
MKY	TW B	205	3,882	94	94	$ -
MKY	TW C	305	5,198	94	94	$ -
MKY	TW C	310	4,298	94	94	$ -
MKY	TW D	405	5,198	94	94	$ -
MKY	TW D	410	4,298	94	94	$ -

The following **Table 5.3-3** provides a summary of the anticipated planning-level costs for Localized Preventive Maintenance and Repair and Localized Stopgap Maintenance and Repair. The following table depicts planning-level costs rounded to the nearest ten dollars.

Table 5.3-3 Summary of Localized Maintenance

Work Category	Cost	
Preventive	$	0
Stopgap	$	0
Planning-Level Localized M&R Needs =	***$***	***0***



Chapter 6

Chapter 6 – Major Rehabilitation Planning

6.1 Major Rehabilitation

Major rehabilitation is recommended to correct or improve structural deficiencies and/or functional deterioration for pavement sections within a network. Often, when pavements are subject to significant changes in the aircraft fleet mix (frequency and type), major rehabilitation is required to provide a pavement section to meet the traffic demand. Major rehabilitation is recommended when a pavement section falls below the Critical PCI value that is defined during the system customization or if a pavement section has a significant observation of load-related distress. Observation of any load-related distress potentially indicates that the section may be structurally deficient or that the aircraft loads being applied to the pavement section are different than what the section was designed for. **Figures 6.1-1 and 6.1-2** depict the decision process for major rehabilitation project identification with the assumption of available funds. Should funding be unavailable for pavement sections in need of major rehabilitation, the airport may elect to apply the appropriate localized stopgap repair.

Figure 6.1-1 Major Rehabilitation Planning Decision Diagram, PCI ≤ Critical PCI

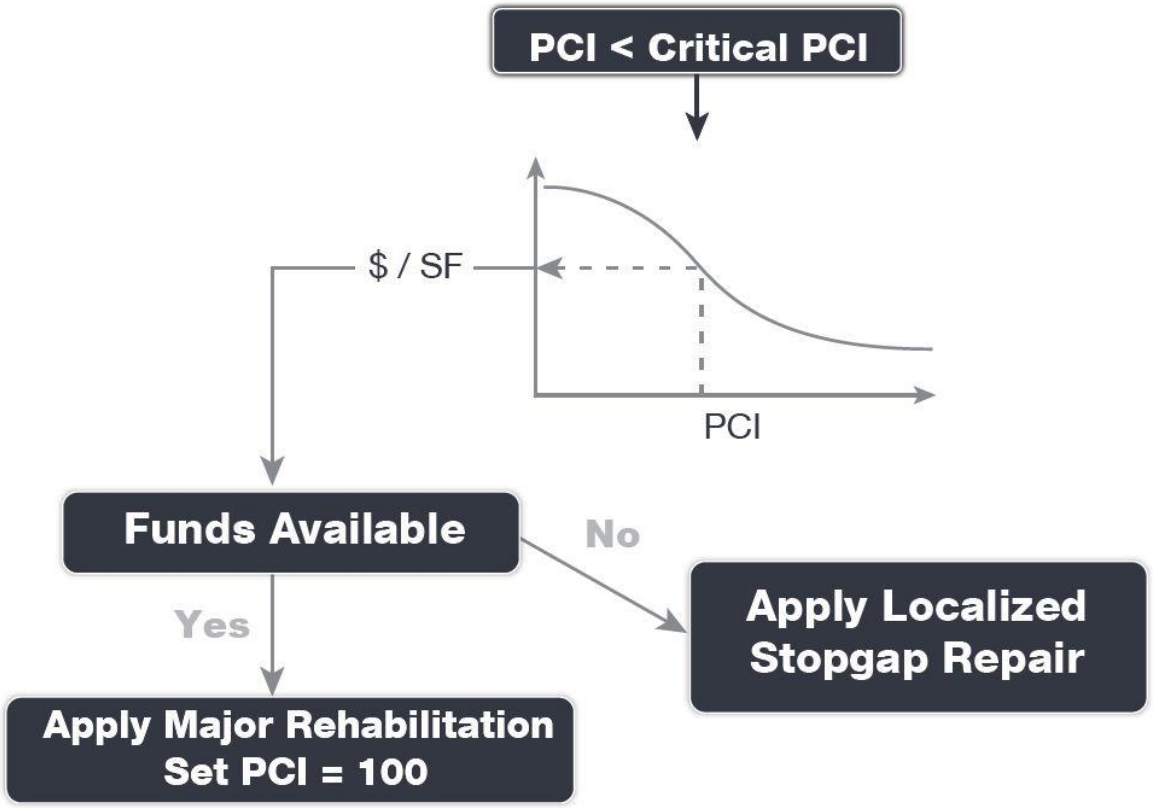
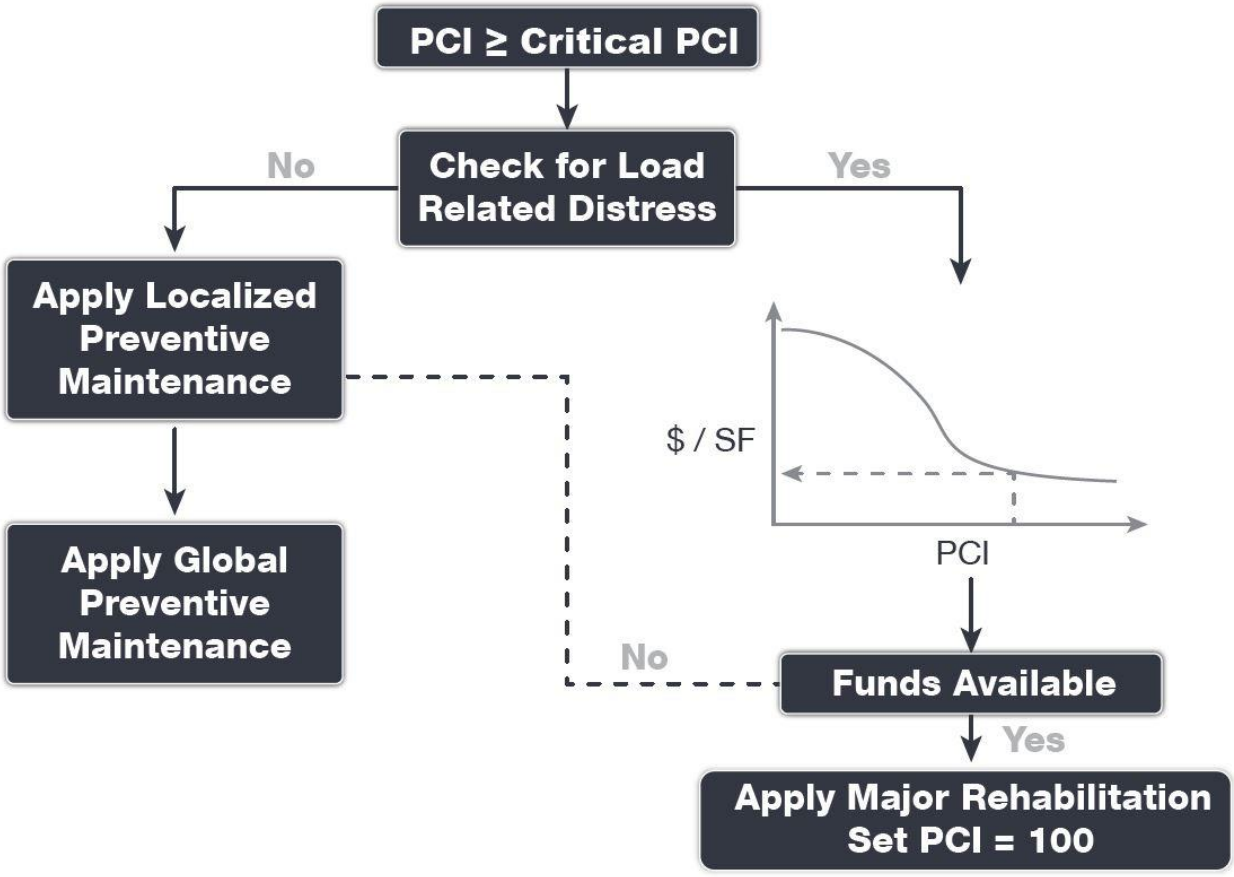


Figure 6.1-2 Major Rehabilitation Planning Decision Diagram, PCI > Critical PCI



6.1.1 Critical PCI

For the FDOT SAPMP the development of a major rehabilitation program is based on the Critical PCI concept. The ***Critical PCI*** concept assumes that it is more cost-effective to maintain pavements above, rather than below their critical PCI. It is assumed that once a pavement section deteriorates to the Critical PCI value that it is more cost-effective to complete a major rehabilitation project rather than continuing to apply preventive maintenance. This method includes defining the Critical PCI and introducing major rehabilitation work types.

Identification of annual and long-range Major Rehabilitation work plans are typically based on the Critical PCI concept. The Critical PCI is defined as the PCI value at which the rate of loss (deterioration) increases with time, or the cost of applying localized maintenance and repair increases or is not effective. A Critical PCI is usually within a range of 55 and 70; the following procedure is standard approach in developing a specific Critical PCI:

1. Develop a pavement performance model and refine a prediction model for the pavements considered.
2. Select a localized maintenance and repair policy to be used in developing a work plan.
3. Apply the selected localized policy to the pavement sections for a range of PCI.
4. Compute the unit cost per area for each PCI range.
5. Plot the cost versus the PCI.
6. Determine the Critical PCI based on the point where the cost is insignificant.

The FDOT SAPMP defines the Critical PCI at 65 – this is based on the historic trends in pavement performance and Statewide planning efforts.

6.1.2 FDOT Recommended Minimum Service-Level PCI

The FDOT has recommended ***Minimum Service-Level PCI*** for airports' airfield pavements based on the following characteristics; airport type within FDOT SAPMP, branch use, and expected aircraft operations. For the purposes of Major Rehabilitation, the Critical PCI is typically the threshold condition that triggers major construction, however it is recommended that the airports maintain the Minimum Service-Level PCI with a combination of Localized Maintenance and Repair and timely Major Rehabilitation. **Table 6.1.2** summarizes the FDOT Recommended Minimum Service-Level PCI.

Table 6.1.2 FDOT Recommended Minimum Service-Level PCI

Branch Use	FDOT Recommended PCI	Additional Consideration
Runway	75	Aircraft Fleet Mix Changes Primary Runway
Taxiway / Taxilane	65	Aircraft Fleet Mix Changes Expected Operations
Aprons / Run-Ups / Ramps	60	Ground Service Equipment Non-Aircraft Operations (e.g. fueling)

6.2 Major Rehabilitation Policy

6.2.1 Major Rehabilitation Pavement Section Development

The review of the existing as-built record documentation within the participating airports' archives was used as the basis of the conceptual pavement design sections. Refinement of the pavement section layers was performed in consideration of the FAA ***AC 150/ 5320-6F "Airport Pavement Design and Evaluation."*** It should be noted that no subsurface geotechnical investigation, ALTA/ACSM Survey, topographic survey, utilities survey, environmental, or site specific air traffic study(s) have been utilized in the development of the design criteria. No warranty or assurance is implied in this document for final design nor construction for any airfield pavements discussed within this report. The following **Tables 6.2.1 (a) and (b)** provide details on the conceptual pavement sections developed for this study.

Major rehabilitation is divided into two policy categories as part of this program: Full-Depth Reconstruction (Reconstruction) and Intermediate-Level Major Rehabilitation (Restoration). Based on the pavement type, the general categories are defined as AC Reconstruction and AC Restoration for AC, AAC, and APC flexible pavement types and PCC Reconstruction and PCC Restoration for PCC rigid pavement types. The pavement sections have been based on the average GA Airport Type requirements; no pavement design has been performed in accordance with AC 150/5320-6F for the determined conceptual sections.

Table 6.2.1 (a) Conceptual Pavement Section for Major Rehabilitation – Flexible Asphalt Concrete

Rehabilitation Type	General Aviation (GA) Airport
AC Restoration *Combination of asphalt pavement milling and overlay with 25% of the areas subject to full-depth reconstruction.* **PCI = 41 to 65**	**75% Mill and Overlay** P-101 AC Milling (2") P-603 Bituminous Tack P-401 (HMA) (2") **25% AC Reconstruction** P-101 Pavement Removal P-152 Subgrade (12") P-211 Base (6") P-602 Bituminous Prime P-603 Bituminous Tack P-401 HMA (2") *Excludes any paved shoulder features.*
AC Reconstruction *Full-depth asphalt pavement section reconstruction.* **PCI = 40 or less**	P-101 Pavement Removal P-152 Subgrade (12") P-211 Base (6") P-602 Bituminous Prime P-603 Bituminous Tack P-401 HMA (2") *Excludes any paved shoulder features.*

Table 6.2.1 (b) Conceptual Pavement Section for Major Rehabilitation – Rigid Portland Cement Concrete

Rehabilitation Type	General Aviation (GA) Airport
PCC Restoration *Restoration of PCC pavement with a combination of crack sealing, joint seal replacement, and replacement of 25% of slab panels.* **PCI = 41 to 65**	P-101 Pavement Removal P-605 Joint Seal Repair P-152 Subgrade (6”) P-211 Base (if needed, typical) (6”) P-501 Rigid PCC (10”) *Select Slabs (25%) **Crack Seal and Limited Patching
PCC Reconstruction *Full-depth rigid pavement section reconstruction.* **PCI = 40 or less**	P-101 Pavement Removal P-605 Joint Seal Repair P-152 Subgrade (6”) P-211 Base (6”) P-501 Rigid PCC (10”)

The identification of rehabilitation needs and conceptual pavement sections have been determined at the planning level. Design-level investigation is recommended prior to developing construction-level design documents and budgets.

In compliance with FAA Grant Assurances 11 and 19, the FDOT SAPMP provides airports with airfield pavement evaluation reports in accordance with **FAA AC 150/5380-7B Airport Pavement Management Program (PMP)** and **AC 150/5380-6C Guidelines and Procedures for Maintenance of Airport Pavements**. The application of the results of a PCI survey are for planning purposes and are limited to the visual observation of deteriorated pavements in limited sampling; design-level investigation is recommended in accordance with the FAA procedures defined in **AC 5320-6F Airport Pavement Design and Evaluation** and **AC 150/5370-11B Use of Nondestructive Testing in the Evaluation of Airport Pavements**. The aforementioned ACs provide the design-level material properties of in-situ pavement and subgrade layers for the determination of appropriate rehabilitation actions. The FDOT SAPMP is organized to provide airports with planning-level data and does not intend to preclude the responsible engineer in performing the appropriate level of investigation and analysis in determining the appropriate design details of a pavement rehabilitation. It would not be advisable to solely base design-level rehabilitation without the appropriate level of investigation and determination of pavement deterioration beyond that of a visual functional condition assessment.

6.2.2 Major Rehabilitation Planning-Level Unit Costs

Planning-level opinion of probable construction unit costs developed for this System Update was based on archived bid tabulations and records from airfield pavement projects provided by participating airports. A review of cost trends and cost factors have been incorporated to assist airports in planning for project budgets. Neither FDOT nor the Consultant Team has control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable construction costs

provided herein are based on the information known to FDOT at this time and represent only the Consultant Team's judgment as a design professional familiar with the construction industry. This report cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable construction costs.

Table 6.2.2 General Aviation Major Rehabilitation Planning-Level Unit Cost by Pavement Type

Rehabilitation Type	PCI Range	Flexible Asphalt Concrete Cost Per SF		Rigid Portland Cement Concrete Cost per SF	
Restoration	41 to 65	$	7.00	$	10.00
Reconstruction	0 to 40	$	9.00	$	15.00

Planning-level opinion of probable construction unit costs consider factors for non-pavement improvements, QA/QC testing, and administrative costs.

6.3 Major Rehabilitation Needs

The objective of the major pavement rehabilitation needs analysis is to provide planning-level projects within an airport's airfield pavement network. Major rehabilitation activities are recommended when a pavement section has deteriorated below the Critical PCI value, a point at which localized maintenance and repair activities may not be the most cost-effective solution. In addition, major rehabilitation is also recommended when the Section PCI is at or above the Critical PCI but the section has significant load-related PCI distresses. Identification of rehabilitation needs is done at the Airfield Pavement Network Definition's section level. This however does not limit the airport from further refining limits of project planning areas.

Major rehabilitation is identified within the FDOT SAPMP as major construction activity that would result in an improvement or resetting of the pavement section's PCI to a value of 100. Major rehabilitation recommendations (AC Restoration, AC Reconstruction, PCC Restoration, and PCC Reconstruction) should be considered as planning-level only. Additional design-level investigation in accordance to the FAA Advisory Circulars will be required. Recommendations identified within this planning document do not imply final design.

6.3.1 10-Year Unconstrained Budget Major Rehabilitation Needs

An unconstrained budget (unlimited budget) is performed for a 10-year duration to identify pavement rehabilitation needs based on current or forecasted PCI values deteriorating below the Critical PCI. FDOT recognizes airports are constrained by budgets and does not intend to convey an unrealistic approach of addressing pavement rehabilitation. The intent of the 10-Year Major Rehabilitation Needs analysis is to identify pavements that will warrant rehabilitation. It is highly recommended that airport staff utilize this information in support of the development of a practical Capital Improvement Program based on priorities, further design/project-level investigation, and budgetary constraints. The following **Table 6.3.1** summarizes all identified section-level major rehabilitation needs forecasted for the next 10-year period. It should be noted that the following table depicts planning-level costs and have been rounded for planning purposes.

Table 6.3.1 10-Year Major Rehabilitation Needs

Program Year	Network ID	Branch ID	Section ID	Surface	Area (SF)	PCI Before	Rehabilitation Type	Planning Cost
2025	**MKY**	AP NW	4105	AC	12,198	63	AC Restoration	$ 86,000.00

**All values have been rounded to the nearest thousand-dollar.*

The following **Figure 6.3.1-1** summarizes the section-level major rehabilitation needs for a 10-year period between 2018 and 2027. **Figure 6.3.1-2** provides an inset view of Airfield Pavement Major Rehabilitation Exhibit, a large format exhibit is located in **Appendix C Technical Exhibits**. The exhibit graphically depicts the Major Rehabilitation Needs with rounded costs.

Figure 6.3.1-1 10-Year Major Rehabilitation Needs by Program Year

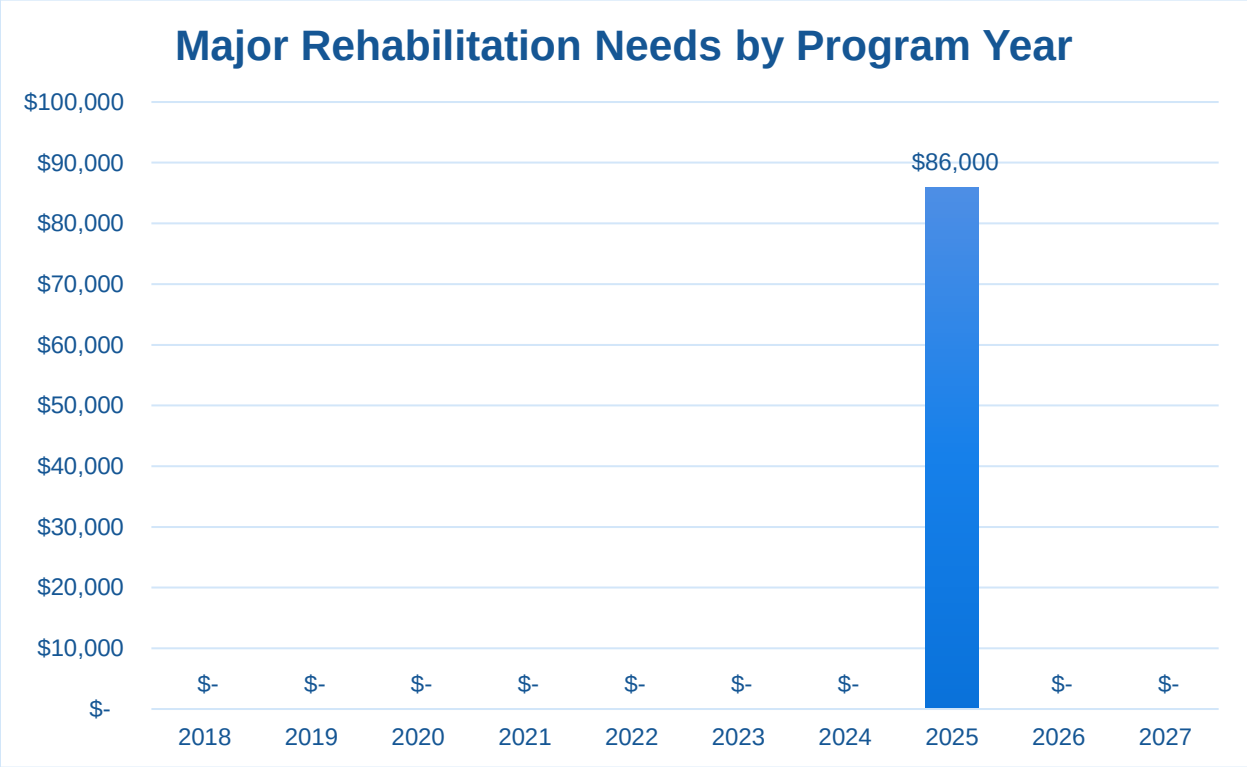
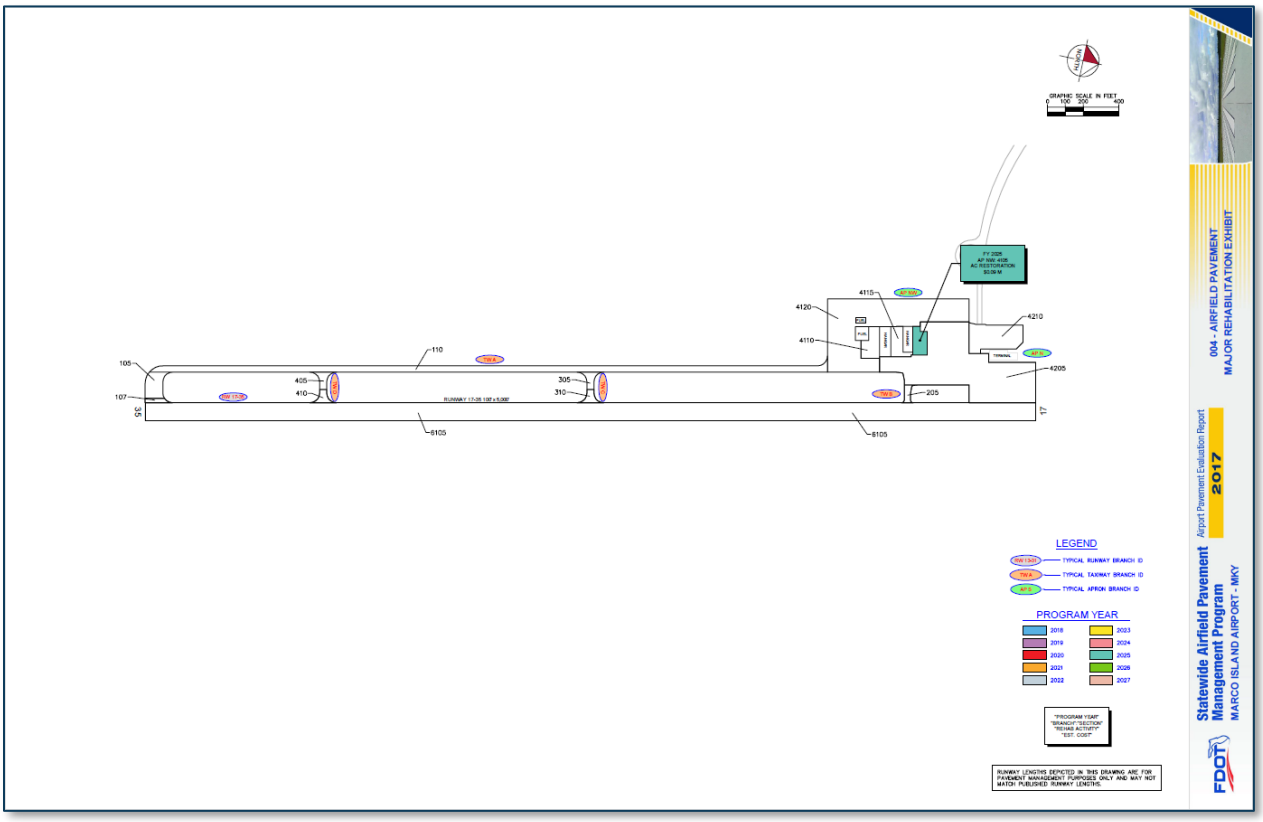
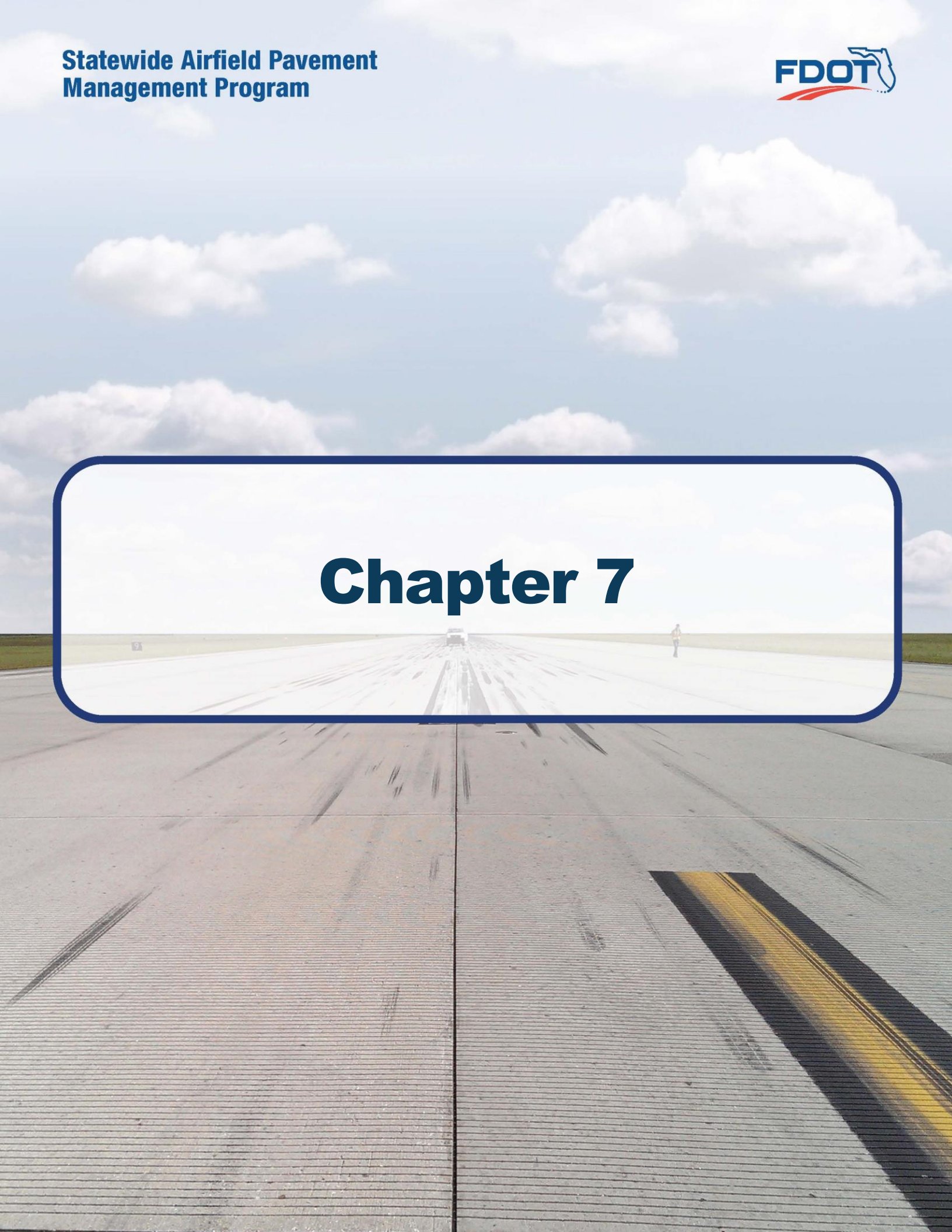


Figure 6.3.1-2 10-Year Major Rehabilitation Needs by Program Year Exhibit





Chapter 7

Chapter 7 – Conclusion

7.1 Recommendations

7.1.1 Continued PCI Survey Inspections

It is recommended that the airport continue to perform regularly scheduled PCI Survey inspections in accordance with the ASTM D5340-12 (or latest edition) to monitor the condition of the airfield pavement facilities.

A high priority should be considered for continuous maintenance record keeping and re-inspection of all the airport's maintained pavement facilities to ensure continued safe aircraft operations. A series of scheduled periodic inspections must be carried out for an effective maintenance program. Re-inspection of pavements should be scheduled in a timely manner to ensure that all areas, particularly those that may not come under day-to-day observation, are thoroughly evaluated and reported.

7.1.2 Localized Maintenance and Repair

While deterioration of the pavements due to usage and exposure to the environment cannot be completely prevented, applying timely and effective maintenance efforts can slow the anticipated rate of deterioration. Lack of adequate and timely maintenance is the significant factor in pavement deterioration.

It is recommended that airport sponsors coordinate with their respective Airport Maintenance staff and Airport Engineer when developing project-level maintenance and repair efforts.

7.1.3 Major Rehabilitation

Chapter 6 – Major Rehabilitation Planning identified major pavement rehabilitation project needs from 2018-2027. The identification of the rehabilitation needs was performed at the section level for manageable project areas with the assumption of an unconstrained budget scenario. Given the uncertainty in the airport-specific budget information and prioritization goals, the unconstrained budget scenario was performed to evaluate the worst-case scenario and identify all the inspected pavements' needs in a 10-year period. Certainly, it is understood that most airports are faced with constrained budgets; further evaluation of projects based on prioritization, operational criticality, funding availability, and practicality is recommended.

7.1.4 Pavement Management System

The following recommendations are made to fully implement an effective pavement management program for the airport:

- Develop a detailed preventive maintenance program for the airport.
- Further refine and implement the identified 10-year major rehabilitation needs.
- Maintain detailed records on pavement maintenance, construction, and inspection.
- Maintain records on major pavement construction projects (year, scope, cost, and construction documents).

7.2 Supporting Documents

001 – Airfield Pavement Network Definition Exhibit

The Airfield Pavement Network Definition Exhibit is located in **Appendix C Technical Exhibits**. The exhibit depicts the airfield layout in a manner that defines the airfield pavement infrastructure as branches, sections, and sample units in accordance with the ASTM D5340-12. The exhibit is intended for planning purposes only – further detail on facilities can be found on the Airport's adopted Airport Layout Plan. Detailed characteristics are tabulated in **Appendix A Pavement Analysis Tables.**

002 – Airfield Pavement System Inventory Exhibit

The Airfield Pavement System Inventory Exhibit in is located in **Appendix C Technical Exhibits**. The exhibit depicts any recent and/or anticipated construction activity within the airfield pavement facilities reported by airport staff. The exhibit is intended to schematically identify the pavement limits of works and general work description. The information reported on the ***Airport Response Form*** provided by each participating airport was used as the basis of the changes; furthermore, changes are confirmed at the airport with airport staff during the in-brief and debrief meeting.

003 – Airfield Pavement Condition Index Exhibit

The Airfield Pavement Condition Index Exhibit is located in **Appendix C Technical Exhibits**. The exhibit is a visual summary of the latest conditions calculated from the results of the PCI Survey performed at the airport. The analysis of the distresses surveyed in accordance with the ASTM D5340-12 (referenced in **Appendix E Inspection Distress Details**) were analyzed using PAVER™ software to determine PCI values. The PCI values are identified in the exhibit and graphically represented using the standard ASTM D5340-12 colors for condition rating categories.

004 – Airfield Pavement Major Rehabilitation Exhibit

The Airfield Pavement Major Rehabilitation Exhibit is located in **Appendix C Technical Exhibits**. The exhibit has been prepared based on the section condition analysis, pavement condition forecasts, and major rehabilitation needs analysis. The exhibit graphically depicts the inventory with the associated rehabilitation type activity, program year, and the planning-level costs. The area limits, rehabilitation type, and planning-level costs should not be considered a design-level recommendation. A tabulation of the 10-Year Major Rehabilitation is located in **Appendix B Airfield Pavement Localized Maintenance and Repair and Major Rehabilitation.**

Inspection Photograph Documentation

Representative field conditions from the PCI Survey are documented with digital photographs located in **Appendix D Inspection Photograph Documentation.** Select photographs are provided with limited caption on the distresses observed – the Appendix does not contain photographs for every sample unit.

7.3 Conclusion

The FDOT SAPMP Update Phase 1 2016-2017 was completed for the airport on behalf of the FDOT ASO in accordance with the Advisory Circulars ***150/5380-7B "Airport Pavement Management Program (PMP)"*** and ***150/5380-6C "Guidelines and Procedures for Maintenance of Airport Pavements."*** FDOT's implementation of the SAPMP has assisted public airports with this requirement in performing PCI survey inspections and analysis in accordance with the ASTM ***D5340-12*** "***Standard Test Method for Airport Pavement Condition Index Surveys."***

Appendix A

Airfield Pavement Analysis Tables

Table A-1 Pavement System Inventory Details

Network ID	Branch Name	Branch ID	Branch Use	Section ID	Length (FT)	Width (FT)	Area (SF)	Surface Type	Est. Last Construction Date
MKY	NORTH APRON	AP N	APRON	4205	878	232	209,077	AC	10/1/2014
MKY	NORTH APRON	AP N	APRON	4210	300	135	42,455	AC	1/1/2010
MKY	NW APRON	AP NW	APRON	4105	179	91	12,198	AC	1/1/1996
MKY	NW APRON	AP NW	APRON	4110	90	199	14,881	AAC	1/11/2012
MKY	NW APRON	AP NW	APRON	4115	179	40	13,114	AAC	1/11/2012
MKY	NW APRON	AP NW	APRON	4120	794	152	167,162	AC	1/11/2012
MKY	RUNWAY 17-35	RW 17-35	RUNWAY	6105	5000	100	500,000	AC	10/1/2014
MKY	TAXIWAY A	TW A	TAXIWAY	105	173	100	14,884	AAC	1/11/2012
MKY	TAXIWAY A	TW A	TAXIWAY	107	100	30	3,172	AAC	10/1/2014
MKY	TAXIWAY A	TW A	TAXIWAY	110	3731	35	133,080	AC	1/11/2012
MKY	TAXIWAY B	TW B	TAXIWAY	205	100	46	3,882	AC	10/1/2014
MKY	TAXIWAY C	TW C	TAXIWAY	305	130	40	5,198	AC	1/11/2012
MKY	TAXIWAY C	TW C	TAXIWAY	310	110	40	4,298	AAC	10/1/2014
MKY	TAXIWAY D	TW D	TAXIWAY	405	130	40	5,198	AC	1/11/2012
MKY	TAXIWAY D	TW D	TAXIWAY	410	110	40	4,298	AAC	10/1/2014

Table A-2 Pavement Condition Index Summary (Last Inspection) – Section Level

Network ID	Branch Name	Branch Use	Section ID	Area (SF)	PCI	Condition Rating
MKY	RUNWAY 17-35	RUNWAY	6105	500,000	94	Good
MKY	TAXIWAY A	TAXIWAY	105	14,884	82	Satisfactory
MKY	TAXIWAY A	TAXIWAY	107	3,172	94	Good
MKY	TAXIWAY A	TAXIWAY	110	133,080	94	Good
MKY	TAXIWAY B	TAXIWAY	205	3,882	94	Good
MKY	TAXIWAY C	TAXIWAY	305	5,198	94	Good
MKY	TAXIWAY C	TAXIWAY	310	4,298	94	Good
MKY	TAXIWAY D	TAXIWAY	405	5,198	94	Good
MKY	TAXIWAY D	TAXIWAY	410	4,298	94	Good
MKY	NW APRON	APRON	4105	12,198	76	Satisfactory
MKY	NW APRON	APRON	4110	14,881	92	Good
MKY	NW APRON	APRON	4115	13,114	94	Good
MKY	NW APRON	APRON	4120	167,162	92	Good
MKY	NORTH APRON	APRON	4205	209,077	94	Good
MKY	NORTH APRON	APRON	4210	42,455	92	Good

Table A-3 Forecasted PCI 2018-2027

Network ID	Branch ID	Section ID	Last PCI	Forecasted PCI									
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
MKY	AP N	4205	94	92	91	89	87	86	84	83	81	80	78
MKY	AP N	4210	92	90	89	87	85	84	82	81	79	78	76
MKY	AP NW	4105	76	74	73	71	69	68	66	65	63	62	60
MKY	AP NW	4110	92	88	84	82	81	80	78	76	74	72	70
MKY	AP NW	4115	94	89	85	83	81	80	79	77	75	73	71
MKY	AP NW	4120	92	90	89	87	85	84	82	81	79	78	76
MKY	RW 17-35	6105	94	92	91	89	87	86	84	82	81	79	78
MKY	TW A	105	82	80	78	76	75	74	73	72	71	70	69
MKY	TW A	107	94	91	88	85	83	81	79	77	76	74	73
MKY	TW A	110	94	91	89	86	84	82	79	77	76	74	72
MKY	TW B	205	94	91	89	86	84	82	79	77	76	74	72
MKY	TW C	305	94	92	89	86	84	82	80	77	76	74	72
MKY	TW C	310	94	91	88	85	83	81	79	77	76	74	73
MKY	TW D	405	94	91	89	86	84	82	79	77	76	74	72
MKY	TW D	410	94	91	88	85	83	81	79	77	76	74	73

Network: MARCO ISLAND AI **Branch:** AP N NORTH APRON **Section:** 4205 **Surface:** AC

L.C.D.: 10/1/2014 **Use:** APRON **Rank:** P **Length:** 878.00 (Ft) **Width:** 232.00 (Ft) **True Area:** 209,077.00 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
10/1/2014	CR-AC	Complete Reconstruction - AC	0.00	0.00	☑	4" P-401; 6" P-211; 12" P-160
1/1/1975	IMPORTED	BUILT	0.00	0.00	☑	EST 1975 AC

Network: MARCO ISLAND AI **Branch:** AP N NORTH APRON **Section:** 4210 **Surface:** AC

L.C.D.: 1/1/2010 **Use:** APRON **Rank:** P **Length:** 300.00 (Ft) **Width:** 135.00 (Ft) **True Area:** 42,455.00 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
1/1/2010	NU-IN	New Construction - Initial	0.00	0.00	☑	

Network: MARCO ISLAND AI **Branch:** AP NW NW APRON **Section:** 4105 **Surface:** AC

L.C.D.: 1/1/1996 **Use:** APRON **Rank:** P **Length:** 179.35 (Ft) **Width:** 90.94 (Ft) **True Area:** 12,198.00 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
1/1/1996	IMPORTED	BUILT	0.00	0.00	☑	EST 1996 AC PAVEMENT

Network: MARCO ISLAND AI **Branch:** AP NW NW APRON **Section:** 4110 **Surface:** AAC

L.C.D.: 1/11/2012 **Use:** APRON **Rank:** P **Length:** 90.00 (Ft) **Width:** 199.00 (Ft) **True Area:** 14,881.00 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
1/11/2012	ML-OV	MILL and OVERLAY	0.00	0.00	☑	4" AC; 12" Limerock; 12" Stabilized
1/1/1996	NU-IN	New Construction - Initial	0.00	0.00	☑	

Network: MARCO ISLAND AI **Branch:** AP NW NW APRON **Section:** 4115 **Surface:** AAC

L.C.D.: 1/11/2012 **Use:** APRON **Rank:** P **Length:** 178.91 (Ft) **Width:** 40.00 (Ft) **True Area:** 13,114.00 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
1/11/2012	ML-OV	MILL and OVERLAY	0.00	0.00	☑	4" AC; 12" Limerock; 12" Stabilized
1/1/1996	NU-IN	New Construction - Initial	0.00	0.00	☑	

Network: MARCO ISLAND AI **Branch:** AP NW NW APRON **Section:** 4120 **Surface:** AC

L.C.D.: 1/11/2012 **Use:** APRON **Rank:** S **Length:** 794.28 (Ft) **Width:** 152.53 (Ft) **True Area:** 167,162.00 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
1/11/2012	NU-IN	New Construction - Initial	0.00	0.00	☑	4" P-401, 12" P-211, 12" P-152

Network: MARCO ISLAND AI **Branch:** RW 17-35 RUNWAY 17-35 **Section:** 6105 **Surface:** AC

L.C.D.: 10/1/2014 **Use:** RUNWAY **Rank:** P **Length:** 5,000.00 (Ft) **Width:** 100.00 (Ft) **True Area:** 500,000.00 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
10/1/2014	CR-AC	Complete Reconstruction - AC	0.00	0.00	☑	4" P-401; 6" P-211; 12" P-160
1/1/1976	IMPORTED	BUILT	0.00	3.00	☑	1976: 3" AC ON 7" SOIL-CEMENT

Network: MARCO ISLAND AI **Branch:** TW A TAXIWAY A **Section:** 105 **Surface:** AAC
L.C.D.: 1/11/2012 **Use:** TAXIWAY **Rank:** P **Length:** 172.50 (Ft) **Width:** 100.00 (Ft) **True Area:** 14,884.00 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
1/11/2012	ML-OV	MILL and OVERLAY	0.00	0.00	☑	4" AC; 12" Limerock; 12" Stabilized
1/1/1976	IMPORTED	BUILT	0.00	3.00	☑	1976: 3" AC ON 7" SOIL-CEMENT

Network: MARCO ISLAND AI **Branch:** TW A TAXIWAY A **Section:** 107 **Surface:** AAC
L.C.D.: 10/1/2014 **Use:** TAXIWAY **Rank:** P **Length:** 100.00 (Ft) **Width:** 30.00 (Ft) **True Area:** 3,172.00 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
10/1/2014	ML-OV	MILL and OVERLAY	0.00	0.00	☑	
1/11/2012	ML-OV	MILL and OVERLAY	0.00	0.00	☑	4" AC; 12" Limerock; 12" Stabilized
1/1/1976	IMPORTED	BUILT	0.00	3.00	☑	1976: 3" AC ON 7" SOIL-CEMENT

Network: MARCO ISLAND AI **Branch:** TW A TAXIWAY A **Section:** 110 **Surface:** AC
L.C.D.: 1/11/2012 **Use:** TAXIWAY **Rank:** P **Length:** 3,731.00 (Ft) **Width:** 35.00 (Ft) **True Area:** 133,080.00 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
1/11/2012	NU-IN	New Construction - Initial	0.00	4.00	☑	4" P-401, 12" P-211, 12" P-152

Network: MARCO ISLAND AI **Branch:** TW B TAXIWAY B **Section:** 205 **Surface:** AC
L.C.D.: 10/1/2014 **Use:** TAXIWAY **Rank:** P **Length:** 100.00 (Ft) **Width:** 46.00 (Ft) **True Area:** 3,882.00 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
10/1/2014	CR-AC	Complete Reconstruction - AC	0.00	0.00	☑	4" P-401; 6" P-211; 12" P-160
1/1/1960	IMPORTED	BUILT	0.00	0.00	☑	EST 1960 PCC

Network: MARCO ISLAND AI **Branch:** TW C TAXIWAY C **Section:** 305 **Surface:** AC
L.C.D.: 1/11/2012 **Use:** TAXIWAY **Rank:** S **Length:** 130.00 (Ft) **Width:** 40.00 (Ft) **True Area:** 5,198.00 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
1/11/2012	NU-IN	New Construction - Initial	0.00	0.00	☑	4" P-401, 12" P-211, 12" P-211

Network: MARCO ISLAND AI **Branch:** TW C TAXIWAY C **Section:** 310 **Surface:** AAC
L.C.D.: 10/1/2014 **Use:** TAXIWAY **Rank:** S **Length:** 110.00 (Ft) **Width:** 40.00 (Ft) **True Area:** 4,298.00 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
10/1/2014	ML-OV	MILL and OVERLAY	0.00	0.00	☑	
1/11/2012	NU-IN	New Construction - Initial	0.00	0.00	☑	4" P-401, 12" P-211, 12" P-211

Network: MARCO ISLAND AI **Branch:** TW D TAXIWAY D **Section:** 405 **Surface:** AC
L.C.D.: 1/11/2012 **Use:** TAXIWAY **Rank:** S **Length:** 130.00 (Ft) **Width:** 40.00 (Ft) **True Area:** 5,198.00 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
1/11/2012	NU-IN	New Construction - Initial	0.00	0.00	☑	4" AC; 12" Limerock; 12" Stabilized

Network: MARCO ISLAND AI **Branch:** TW D TAXIWAY D **Section:** 410 **Surface:** AAC
L.C.D.: 10/1/2014 **Use:** TAXIWAY **Rank:** S **Length:** 110.00 (Ft) **Width:** 40.00 (Ft) **True Area:** 4,298.00 (SqFt)

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
10/1/2014	ML-OV	MILL and OVERLAY	0.00	0.00	☑	
1/11/2012	NU-IN	New Construction - Initial	0.00	0.00	☑	4" AC; 12" Limerock; 12" Stabilized

Summary:

Work Description	Section Count	Area Total (SqFt)	Thickness Avg (in)	Thickness STD (in)
BUILT	6	743,213.00	1.50	1.50
Complete Reconstruction - AC	3	712,959.00	0.00	0.00
MILL and OVERLAY	7	57,819.00	0.00	0.00
New Construction - Initial	9	389,684.00	0.44	1.26

Branch Condition Report

Pavement Database: FDOT

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
AP N	2	1,178.00	183.50	251,532.00	APRON	93.00	1.00	93.66
AP NW	4	1,242.54	120.62	207,355.00	APRON	88.50	7.26	91.19
RW 17-35	1	5,000.00	100.00	500,000.00	RUNWAY	94.00	0.00	94.00
TW A	3	4,003.50	55.00	151,136.00	TAXIWAY	90.00	5.66	92.82
TW B	1	100.00	46.00	3,882.00	TAXIWAY	94.00	0.00	94.00
TW C	2	240.00	40.00	9,496.00	TAXIWAY	94.00	0.00	94.00
TW D	2	240.00	40.00	9,496.00	TAXIWAY	94.00	0.00	94.00

Use Category	Number of Sections	Total Area (SqFt)	Arithmetic Average PCI	Average STD PCI	Weighted Average PCI
APRON	6	458887.000140271	90.00	6.32	92.54
RUNWAY	1	500000.000152838	94.00	0.00	94.00
TAXIWAY	8	174010.000053191	92.50	3.97	92.97
ALL	15	1132897.0003463	91.60	5.12	93.25

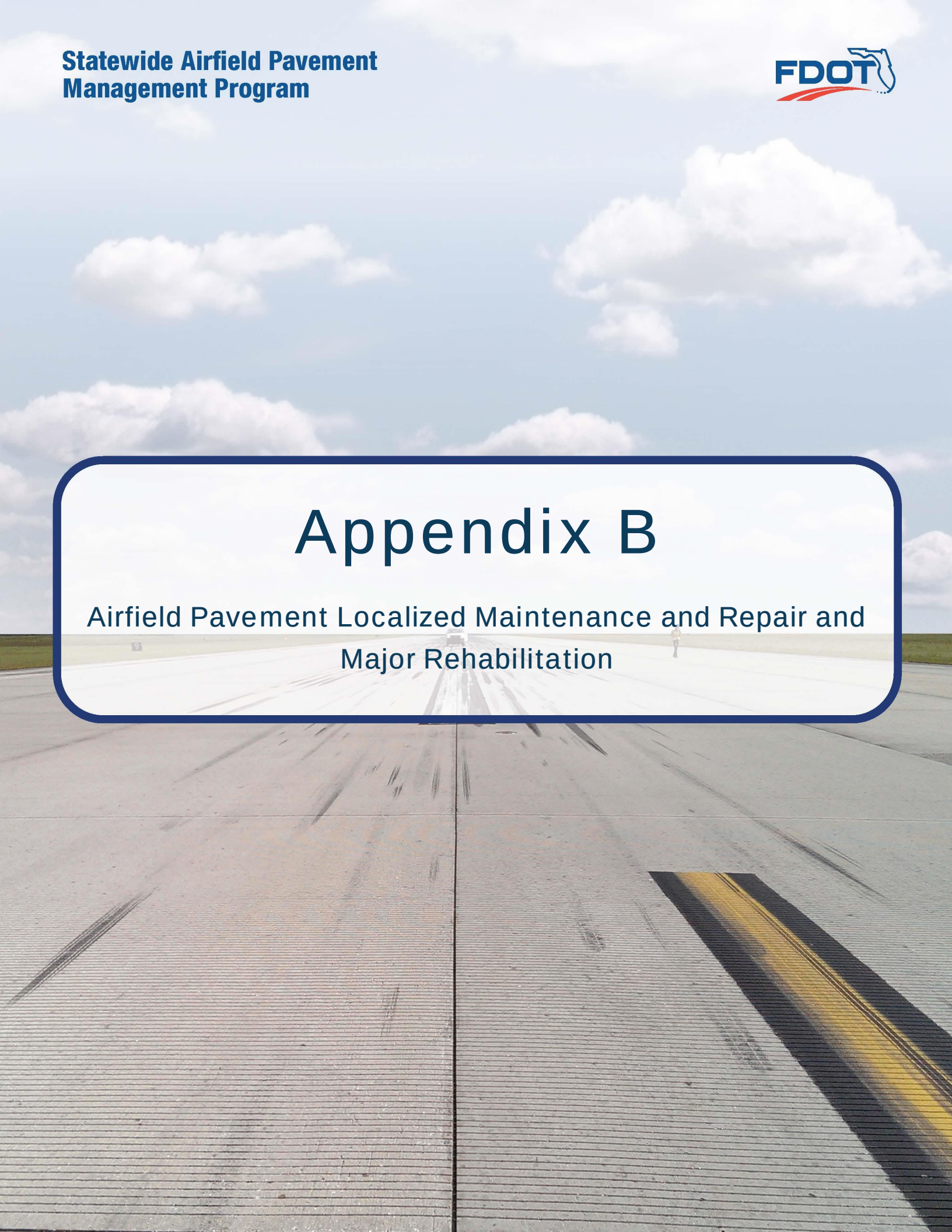
Pavement Database: FDOT ***NetworkId: MKY***

Branch ID	Section ID	Last Const. Date	Surface	Use	Rank	Lanes	True Area (SqFt)	Last Inspection Date	Age At Inspection	PCI
AP N	4205	10/1/2014	AC	APRON	P	0	209,077.00	3/13/2017	3	94
AP N	4210	1/1/2010	AC	APRON	P	0	42,455.00	3/13/2017	7	92
AP NW	4105	1/1/1996	AC	APRON	P	0	12,198.00	3/13/2017	21	76
AP NW	4110	1/11/2012	AAC	APRON	P	0	14,881.00	3/13/2017	5	92
AP NW	4115	1/11/2012	AAC	APRON	P	0	13,114.00	3/13/2017	5	94
AP NW	4120	1/11/2012	AC	APRON	S	0	167,162.00	3/13/2017	5	92
RW 17-35	6105	10/1/2014	AC	RUNWAY	P	0	500,000.00	3/13/2017	3	94
TW A	105	1/11/2012	AAC	TAXIWAY	P	0	14,884.00	3/13/2017	5	82
TW A	107	10/1/2014	AAC	TAXIWAY	P	0	3,172.00	3/13/2017	3	94
TW A	110	1/11/2012	AC	TAXIWAY	P	0	133,080.00	3/13/2017	5	94
TW B	205	10/1/2014	AC	TAXIWAY	P	0	3,882.00	3/13/2017	3	94
TW C	305	1/11/2012	AC	TAXIWAY	S	0	5,198.00	3/13/2017	5	94
TW C	310	10/1/2014	AAC	TAXIWAY	S	0	4,298.00	3/13/2017	3	94
TW D	405	1/11/2012	AC	TAXIWAY	S	0	5,198.00	3/13/2017	5	94
TW D	410	10/1/2014	AAC	TAXIWAY	S	0	4,298.00	3/13/2017	3	94

Section Condition Report (Summary)

Pavement Database: FDOT

Age Category	Average Age at Inspection	Total Area (SqFt)	Number of Sections	Arithmetic Average PCI	Standard Deviation PCI	Weighted Average PCI
03-05	4	1,078,244.00	13	92.77	3.19	93.50
06-10	7	42,455.00	1	92.00	0.00	92.00
21-25	21	12,198.00	1	76.00	0.00	76.00
ALL	5	1,132,897.00	15	91.60	5.12	93.25



Appendix B

Airfield Pavement Localized Maintenance and Repair and Major Rehabilitation

Table B-1 Localized Maintenance and Repair Needs based on Current Condition

Network ID	Branch ID	Section ID	Distress Code	Description	Severity	Distress Qty	Distress Unit	Percent Distress	Work Description	Work Qty	Work Unit	Unit Cost	Work Cost
NO ANTICIPATED LOCALIZED MAINTENANCE AND REPAIR COSTS													

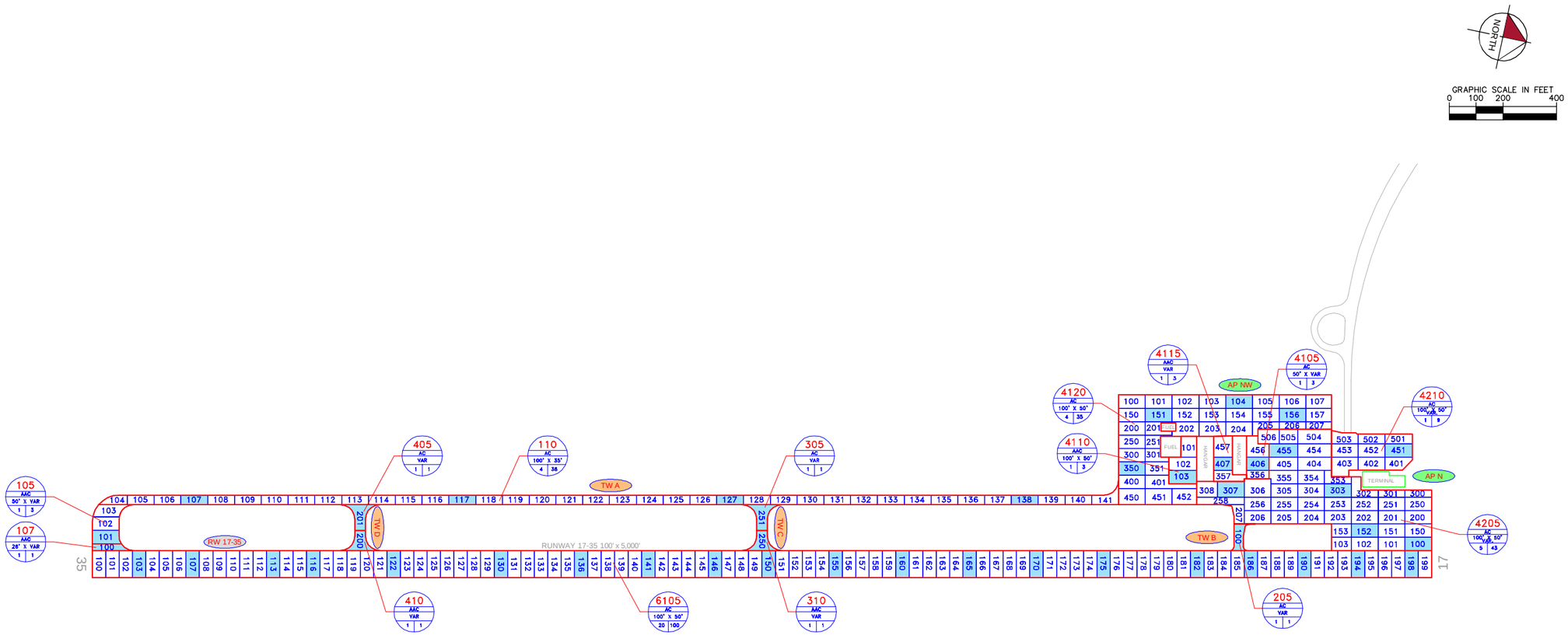
Table B-2 10-Year Major Rehabilitation Planning Needs at Section Level

Program Year	Network ID	Branch ID	Section ID	Surface	Area (SF)	PCI Before	Rehabilitation Type	Planning Cost
2025	**MKY**	AP NW	4105	AC	12,198	63	AC Restoration	$ 86,000.00

Statewide Airfield Pavement Management Program

Appendix C

Technical Exhibits



LEGEND

- RW 13-31 — TYPICAL RUNWAY BRANCH ID
- TW A — TYPICAL TAXIWAY BRANCH ID
- AP S — TYPICAL APRON BRANCH ID
- 4105 AC 100' x 50' 5 | 14
  - SECTION NUMBER
  - PAVEMENT TYPE
  - TYPICAL SAMPLE UNIT INFORMATION
    FLEXIBLE (AC) PAVEMENT LENGTH & WIDTH
    RIGID (PCC) PAVEMENT NO. OF SLABS AND SLAB SIZE
  - NUMBER OF SAMPLE UNITS IN SECTION
  - NUMBER OF SAMPLE UNITS TO BE INSPECTED
- 100 — INSPECTED SAMPLE UNITS. GPS COORDINATES ARE AT THE CENTROID OF THE SAMPLE UNIT.

TOTAL SAMPLES INSPECTED = 44
AC: 44 PCC: 0

RUNWAY LENGTHS DEPICTED IN THIS DRAWING ARE FOR PAVEMENT MANAGEMENT PURPOSES ONLY AND MAY NOT MATCH PUBLISHED RUNWAY LENGTHS.

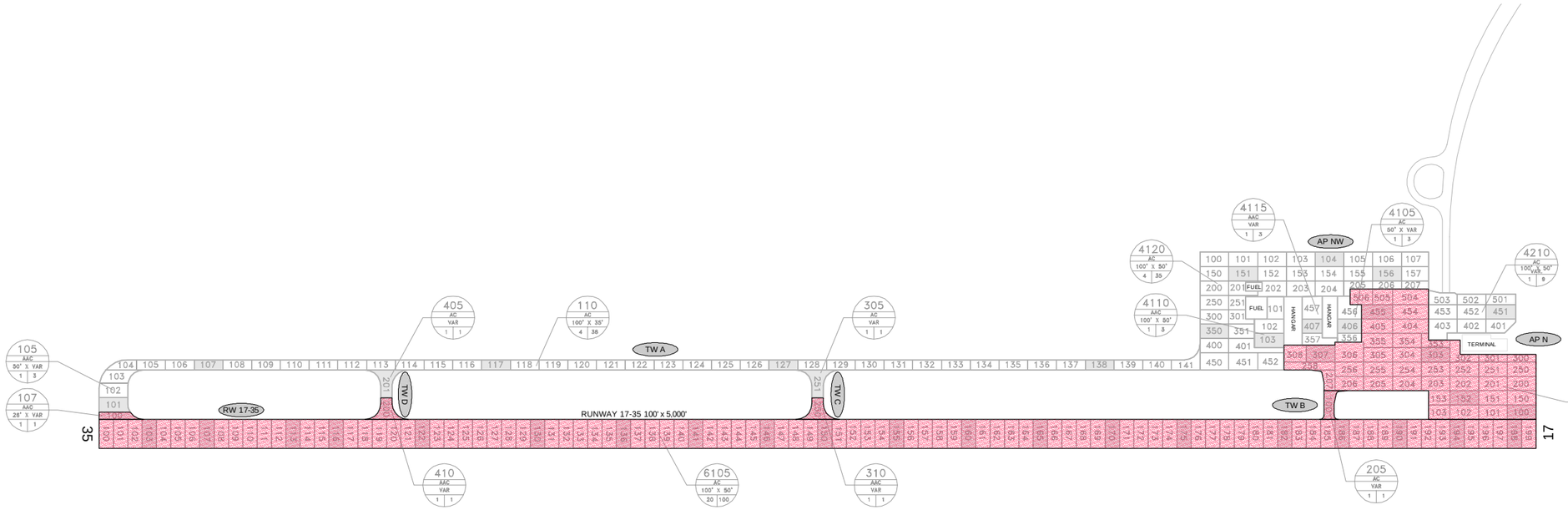
001 - AIRFIELD PAVEMENT
NETWORK DEFINITION EXHIBIT

Airport Pavement Evaluation Report 2017

Statewide Airfield Pavement Management Program

MARCO ISLAND AIRPORT - MKY

FDOT



CONSTRUCTION SINCE LAST INSPECTION
& ANTICIPATED CONSTRUCTION ACTIVITY

CONSTRUCTION YEAR	LOCATION	WORK TYPE / PAVEMENT SECTION
2014	RW 17–35, TW A, TW B, TW C, TW D	RECONSTRUCTION/ 4" P–401, 6" P–211, 12" P–160
2014	AP N	RECONSTRUCTION/ 4" P–401, 6" P–211, 12" P–160

LEGEND

- PROJECTS YEAR 2013
- PROJECTS YEAR 2014
- PROJECTS YEAR 2015
- PROJECTS YEAR 2016
- PROJECTS YEAR 2017
- PROJECTS YEAR 2018
- PROJECTS YEAR 2019
- PROJECTS YEAR 2020
- PROJECTS YEAR 2021
- PROJECTS YEAR 2022

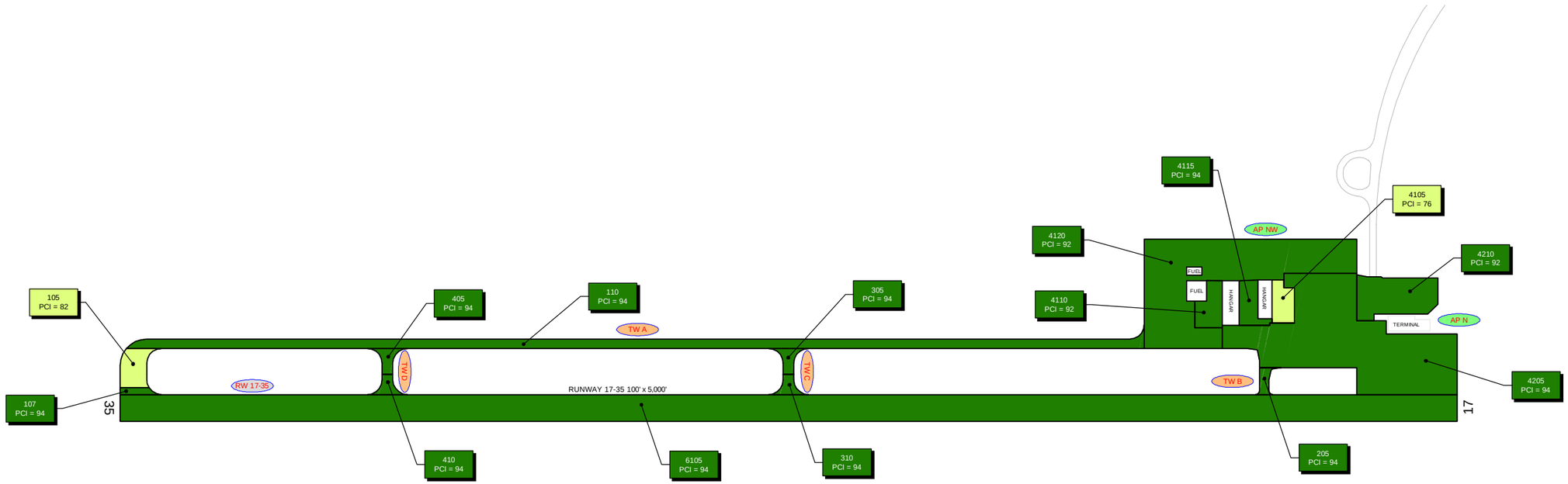
RUNWAY LENGTHS DEPICTED IN THIS DRAWING ARE FOR PAVEMENT MANAGEMENT PURPOSES ONLY AND MAY NOT MATCH PUBLISHED RUNWAY LENGTHS.

002 - AIRFIELD PAVEMENT
SYSTEM INVENTORY EXHIBIT

Airport Pavement Evaluation Report 2017

Statewide Airfield Pavement Management Program
MARCO ISLAND AIRPORT - MKY

FDOT



LEGEND

- RW 13-31 — TYPICAL RUNWAY BRANCH ID
- TW A — TYPICAL TAXIWAY BRANCH ID
- AP S — TYPICAL APRON BRANCH ID

- PCI 86–100 GOOD
- PCI 71–85 SATISFACTORY
- PCI 56–70 FAIR
- PCI 41–55 POOR
- PCI 26–40 VERY POOR
- PCI 11–25 SERIOUS
- PCI 0–10 FAILED

"SECTION NO."
"PCI NO."

RUNWAY LENGTHS DEPICTED IN THIS DRAWING ARE FOR PAVEMENT MANAGEMENT PURPOSES ONLY AND MAY NOT MATCH PUBLISHED RUNWAY LENGTHS.

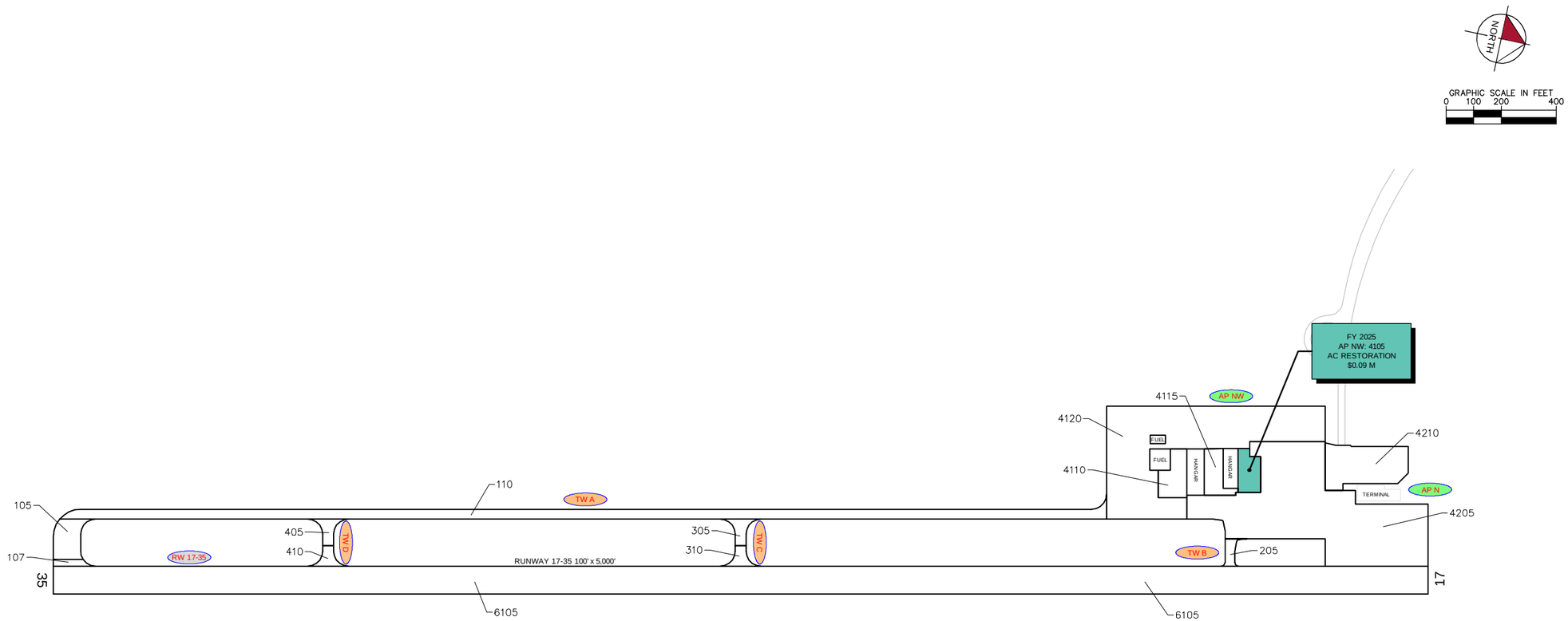
003 - AIRFIELD PAVEMENT CONDITION INDEX EXHIBIT

Airport Pavement Evaluation Report **2017**

Statewide Airfield Pavement Management Program

MARCO ISLAND AIRPORT - MKY

FDOT



LEGEND

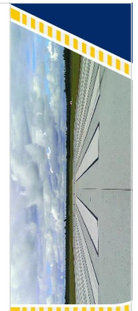
- RW 13-31 — TYPICAL RUNWAY BRANCH ID
- TW A — TYPICAL TAXIWAY BRANCH ID
- AP S — TYPICAL APRON BRANCH ID

PROGRAM YEAR

2018	2023
2019	2024
2020	2025
2021	2026
2022	2027

"PROGRAM YEAR"
"BRANCH":"SECTION"
"REHAB ACTIVITY"
"EST. COST"

RUNWAY LENGTHS DEPICTED IN THIS DRAWING ARE FOR PAVEMENT MANAGEMENT PURPOSES ONLY AND MAY NOT MATCH PUBLISHED RUNWAY LENGTHS.



004 - AIRFIELD PAVEMENT
MAJOR REHABILITATION EXHIBIT

Airport Pavement Evaluation Report 2017

Statewide Airfield Pavement Management Program

MARCO ISLAND AIRPORT - MKY

FDOT

Appendix D

Inspection Photograph Documentation

Runway 17-35, Section 6105, Sample Unit 194 – Low Severity (57) Weathering

Runway 17-35, Section 6105, Sample Unit 186 – Low Severity (57) Weathering

Runway 17-35, Section 6105, Sample Unit 146 – Low Severity (57) Weathering

Runway 17-35, Section 6105, Sample Unit 103 – Low Severity (57) Weathering

Taxiway A, Section 110, Sample Unit 107 – Low Severity (57) Weathering

Apron NW, Section 4120, Sample Unit 104 – Low Severity (48) Longitudinal and Transverse Cracking, Low Severity (57) Weathering

Apron N, Section 4205, Sample Unit 100 – Low Severity (57) Weathering

Apron NW, Section 4120, Sample Unit 155 (Not Inspected) – Medium Severity (45) Depression

Statewide Airfield Pavement Management Program

Appendix E

Inspection Distress Details

Re-Inspection Report

FDOT
Generated Date 8/7/2017

Network: MKY **Name:** MARCO ISLAND AIRPORT

Branch: AP N **Name:** NORTH APRON **Use:** APRON **Area:** 251,532 SqFt

Section: 4205 of 2 **From:** - **To:** - **Last Const.:** 10/1/2014

Surface: AC **Family:** C9N59-GA-AP-AC **Zone:** **Category:** **Rank:** P

Area: 209,077 SqFt **Length:** 878 Ft **Width:** 232 Ft

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

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

Section Comments:

Work Date: 1/1/1975 **Work Type:** BUILT **Code:** IMPORTED **Is Major M&R:** True

Work Date: 10/1/2014 **Work Type:** Complete Reconstruction - AC **Code:** CR-AC **Is Major M&R:** True

Last Insp. Date: 3/13/2017 **TotalSamples:** 43 **Surveyed:** 5

Conditions: **PCI:** 94

Inspection Comments:

Sample Number: 100 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 152 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 303 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 307 **Type:** R **Area:** 5862.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5862.00 SqFt

Sample Number: 455 **Type:** R **Area:** 5400.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5400.00 SqFt

Network: MKY **Name:** MARCO ISLAND AIRPORT

Branch: AP N **Name:** NORTH APRON **Use:** APRON **Area:** 251,532 SqFt

Section: 4210 of 2 **From:** - **To:** - **Last Const.:** 1/1/2010

Surface: AC **Family:** C9N59-GA-AP-AC **Zone:** **Category:** **Rank:** P

Area: 42,455 SqFt **Length:** 300 Ft **Width:** 135 Ft

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

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

Section Comments:

Work Date: 1/1/2010 **Work Type:** New Construction - Initial **Code:** NU-IN **Is Major M&R:** True

Last Insp. Date: 3/13/2017 **TotalSamples:** 9 **Surveyed:** 1

Conditions: **PCI:** 92

Inspection Comments:

Sample Number: 451 **Type:** R **Area:** 5164.00 SqFt **PCI:** 92

Sample Comments:

48	L & T CR	L	3.00	Ft
57	WEATHERING	L	5164.00	SqFt

Network: MKY **Name:** MARCO ISLAND AIRPORT

Branch: AP NW **Name:** NW APRON **Use:** APRON **Area:** 207,355 SqFt

Section: 4105 of 4 **From:** - **To:** - **Last Const.:** 1/1/1996

Surface: AC **Family:** C9N59-GA-AP-AC **Zone:** **Category:** **Rank:** P

Area: 12,198 SqFt **Length:** 179 Ft **Width:** 91 Ft

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

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

Section Comments:

Work Date: 1/1/1996 **Work Type:** BUILT **Code:** IMPORTED **Is Major M&R:** True

Last Insp. Date: 3/13/2017 **TotalSamples:** 3 **Surveyed:** 1

Conditions: **PCI:** 76

Inspection Comments:

Sample Number: 406 **Type:** R **Area:** 4147.00 SqFt **PCI:** 76

Sample Comments:

48	L & T CR	L	20.00	Ft
50	PATCHING	L	429.00	SqFt
57	WEATHERING	L	3718.00	SqFt

Network: MKY **Name:** MARCO ISLAND AIRPORT

Branch: AP NW **Name:** NW APRON **Use:** APRON **Area:** 207,355 SqFt

Section: 4110 of 4 **From:** - **To:** - **Last Const.:** 1/11/2012

Surface: AAC **Family:** C9N59-GA-AP-AAC-APC **Zone:** **Category:** **Rank:** P

Area: 14,881 SqFt **Length:** 90 Ft **Width:** 199 Ft

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

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

Section Comments:

Work Date: 1/1/1996 **Work Type:** New Construction - Initial **Code:** NU-IN **Is Major M&R:** True

Work Date: 1/11/2012 **Work Type:** MILL and OVERLAY **Code:** ML-OV **Is Major M&R:** True

Last Insp. Date: 3/13/2017 **TotalSamples:** 3 **Surveyed:** 1

Conditions: **PCI:** 92

Inspection Comments:

Sample Number: 103 **Type:** R **Area:** 5171.00 SqFt **PCI:** 92

Sample Comments:

48	L & T CR	L	4.00	Ft
57	WEATHERING	L	5171.00	SqFt

Network: MKY **Name:** MARCO ISLAND AIRPORT

Branch: AP NW **Name:** NW APRON **Use:** APRON **Area:** 207,355 SqFt

Section: 4115 of 4 **From:** - **To:** - **Last Const.:** 1/11/2012

Surface: AAC **Family:** C9N59-GA-AP-AAC-APC **Zone:** **Category:** **Rank:** P

Area: 13,114 SqFt **Length:** 179 Ft **Width:** 40 Ft

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

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

Section Comments:

Work Date: 1/1/1996 **Work Type:** New Construction - Initial **Code:** NU-IN **Is Major M&R:** True

Work Date: 1/11/2012 **Work Type:** MILL and OVERLAY **Code:** ML-OV **Is Major M&R:** True

Last Insp. Date: 3/13/2017 **TotalSamples:** 3 **Surveyed:** 1

Conditions: **PCI:** 94

Inspection Comments:

Sample Number: 407 **Type:** R **Area:** 3500.00 SqFt **PCI:** 94

Sample Comments:

57	WEATHERING	L	3500.00	SqFt

Network: MKY **Name:** MARCO ISLAND AIRPORT

Branch: AP NW **Name:** NW APRON **Use:** APRON **Area:** 207,355 SqFt

Section: 4120 of 4 **From:** - **To:** - **Last Const.:** 1/11/2012

Surface: AC **Family:** C9N59-GA-AP-AC **Zone:** **Category:** **Rank:** S

Area: 167,162 SqFt **Length:** 794 Ft **Width:** 153 Ft

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

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

Section Comments:

Work Date: 1/11/2012 **Work Type:** New Construction - Initial **Code:** NU-IN **Is Major M&R:** True

Last Insp. Date: 3/13/2017 **TotalSamples:** 35 **Surveyed:** 4

Conditions: **PCI:** 92

Inspection Comments:

Sample Number: 104 **Type:** R **Area:** 5000.00 SqFt **PCI:** 91

Sample Comments:

48	L & T CR	L	9.00	Ft
57	WEATHERING	L	5000.00	SqFt

Sample Number: 151 **Type:** R **Area:** 5000.00 SqFt **PCI:** 90

Sample Comments:

48	L & T CR	L	19.00	Ft
57	WEATHERING	L	5000.00	SqFt

Sample Number: 156 **Type:** R **Area:** 5000.00 SqFt **PCI:** 92

Sample Comments:

48	L & T CR	L	5.00	Ft
57	WEATHERING	L	5000.00	SqFt

Sample Number: 350 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57	WEATHERING	L	5000.00	SqFt

Network: MKY **Name:** MARCO ISLAND AIRPORT

Branch: RW 17-35 **Name:** RUNWAY 17-35 **Use:** RUNWAY **Area:** 500,000 SqFt

Section: 6105 of 1 **From:** - **To:** - **Last Const.:** 10/1/2014

Surface: AC **Family:** C9N59-GA-RW-AC **Zone:** **Category:** **Rank:** P

Area: 500,000 SqFt **Length:** 5,000 Ft **Width:** 100 Ft

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

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

Section Comments:

Work Date: 1/1/1976 **Work Type:** BUILT **Code:** IMPORTED **Is Major M&R:** True

Work Date: 10/1/2014 **Work Type:** Complete Reconstruction - AC **Code:** CR-AC **Is Major M&R:** True

Last Insp. Date: 3/13/2017 **TotalSamples:** 100 **Surveyed:** 20

Conditions: **PCI:** 94

Inspection Comments:

Sample Number: 103 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 107 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 113 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 116 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 122 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 130 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 136 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 141 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 146 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 150 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 155 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 160 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 165 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 170 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 175 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 182 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 186 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 190 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 194 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Sample Number: 198 **Type:** R **Area:** 5000.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 5000.00 SqFt

Network: MKY **Name:** MARCO ISLAND AIRPORT

Branch: TW A **Name:** TAXIWAY A **Use:** TAXIWAY **Area:** 151,136 SqFt

Section: 105 of 3 **From:** - **To:** - **Last Const.:** 1/11/2012

Surface: AAC **Family:** C9N59-GA-TW-AAC-APC **Zone:** **Category:** **Rank:** P

Area: 14,884 SqFt **Length:** 173 Ft **Width:** 100 Ft

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

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

Section Comments:

Work Date: 1/1/1976 **Work Type:** BUILT **Code:** IMPORTED **Is Major M&R:** True

Work Date: 1/11/2012 **Work Type:** MILL and OVERLAY **Code:** ML-OV **Is Major M&R:** True

Last Insp. Date: 3/13/2017 **TotalSamples:** 3 **Surveyed:** 1

Conditions: **PCI:** 82

Inspection Comments:

Sample Number: 101 **Type:** R **Area:** 5077.00 SqFt **PCI:** 82

Sample Comments:

48	L & T CR	L	213.00	Ft
57	WEATHERING	L	5077.00	SqFt

Network: MKY **Name:** MARCO ISLAND AIRPORT

Branch: TW A **Name:** TAXIWAY A **Use:** TAXIWAY **Area:** 151,136 SqFt

Section: 107 of 3 **From:** - **To:** - **Last Const.:** 10/1/2014

Surface: AAC **Family:** C9N59-GA-TW-AAC-APC **Zone:** **Category:** **Rank:** P

Area: 3,172 SqFt **Length:** 100 Ft **Width:** 30 Ft

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

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

Section Comments:

Work Date: 1/1/1976	**Work Type:** BUILT	**Code:** IMPORTED	**Is Major M&R:** True
Work Date: 1/11/2012	**Work Type:** MILL and OVERLAY	**Code:** ML-OV	**Is Major M&R:** True
Work Date: 10/1/2014	**Work Type:** MILL and OVERLAY	**Code:** ML-OV	**Is Major M&R:** True

Last Insp. Date: 3/13/2017 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 94

Inspection Comments:

Sample Number: 100 **Type:** R **Area:** 3172.00 SqFt **PCI:** 94

Sample Comments:

57	WEATHERING	L	3172.00	SqFt

Network: MKY **Name:** MARCO ISLAND AIRPORT

Branch: TW A **Name:** TAXIWAY A **Use:** TAXIWAY **Area:** 151,136 SqFt

Section: 110 of 3 **From:** - **To:** - **Last Const.:** 1/11/2012

Surface: AC **Family:** C9N59-GA-TW-AC **Zone:** **Category:** **Rank:** P

Area: 133,080 SqFt **Length:** 3,731 Ft **Width:** 35 Ft

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

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

Section Comments:

Work Date: 1/11/2012 **Work Type:** New Construction - Initial **Code:** NU-IN **Is Major M&R:** True

Last Insp. Date: 3/13/2017 **TotalSamples:** 38 **Surveyed:** 4

Conditions: **PCI:** 94

Inspection Comments:

Sample Number: 107 **Type:** R **Area:** 3500.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 3500.00 SqFt

Sample Number: 117 **Type:** R **Area:** 3500.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 3500.00 SqFt

Sample Number: 127 **Type:** R **Area:** 3500.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 3500.00 SqFt

Sample Number: 138 **Type:** R **Area:** 3500.00 SqFt **PCI:** 94

Sample Comments:

57 WEATHERING L 3500.00 SqFt

Network: MKY **Name:** MARCO ISLAND AIRPORT

Branch: TW B **Name:** TAXIWAY B **Use:** TAXIWAY **Area:** 3,882 SqFt

Section: 205 of 1 **From:** - **To:** - **Last Const.:** 10/1/2014

Surface: AC **Family:** C9N59-GA-TW-AC **Zone:** **Category:** **Rank:** P

Area: 3,882 SqFt **Length:** 100 Ft **Width:** 46 Ft

Slabs: 9 **Slab Length:** 29 Ft **Slab Width:** 29 Ft **Joint Length:** 170 Ft

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

Section Comments:

Work Date: 1/1/1960 **Work Type:** BUILT **Code:** IMPORTED **Is Major M&R:** True

Work Date: 10/1/2014 **Work Type:** Complete Reconstruction - AC **Code:** CR-AC **Is Major M&R:** True

Last Insp. Date: 3/13/2017 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 94

Inspection Comments:

Sample Number: 100 **Type:** R **Area:** 3882.00 SqFt **PCI:** 94

Sample Comments:

57	WEATHERING	L	3882.00	SqFt

Network: MKY **Name:** MARCO ISLAND AIRPORT

Branch: TW C **Name:** TAXIWAY C **Use:** TAXIWAY **Area:** 9,496 SqFt

Section: 305 of 2 **From:** - **To:** - **Last Const.:** 1/11/2012

Surface: AC **Family:** C9N59-GA-TW-AC **Zone:** **Category:** **Rank:** S

Area: 5,198 SqFt **Length:** 130 Ft **Width:** 40 Ft

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

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

Section Comments:

Work Date: 1/11/2012 **Work Type:** New Construction - Initial **Code:** NU-IN **Is Major M&R:** True

Last Insp. Date: 3/13/2017 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 94

Inspection Comments:

Sample Number: 251 **Type:** R **Area:** 5198.00 SqFt **PCI:** 94

Sample Comments:

57	WEATHERING	L	5198.00	SqFt

Network: MKY **Name:** MARCO ISLAND AIRPORT

Branch: TW C **Name:** TAXIWAY C **Use:** TAXIWAY **Area:** 9,496 SqFt

Section: 310 of 2 **From:** - **To:** - **Last Const.:** 10/1/2014

Surface: AAC **Family:** C9N59-GA-TW-AAC-APC **Zone:** **Category:** **Rank:** S

Area: 4,298 SqFt **Length:** 110 Ft **Width:** 40 Ft

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

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

Section Comments:

Work Date: 1/11/2012 **Work Type:** New Construction - Initial **Code:** NU-IN **Is Major M&R:** True

Work Date: 10/1/2014 **Work Type:** MILL and OVERLAY **Code:** ML-OV **Is Major M&R:** True

Last Insp. Date: 3/13/2017 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 94

Inspection Comments:

Sample Number: 250 **Type:** R **Area:** 4298.00 SqFt **PCI:** 94

Sample Comments:

57	WEATHERING	L	4298.00	SqFt

Network: MKY **Name:** MARCO ISLAND AIRPORT

Branch: TW D **Name:** TAXIWAY D **Use:** TAXIWAY **Area:** 9,496 SqFt

Section: 405 of 2 **From:** - **To:** - **Last Const.:** 1/11/2012

Surface: AC **Family:** C9N59-GA-TW-AC **Zone:** **Category:** **Rank:** S

Area: 5,198 SqFt **Length:** 130 Ft **Width:** 40 Ft

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

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

Section Comments:

Work Date: 1/11/2012 **Work Type:** New Construction - Initial **Code:** NU-IN **Is Major M&R:** True

Last Insp. Date: 3/13/2017 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 94

Inspection Comments:

Sample Number: 201 **Type:** R **Area:** 5198.00 SqFt **PCI:** 94

Sample Comments:

57	WEATHERING	L	5198.00	SqFt

Network: MKY **Name:** MARCO ISLAND AIRPORT

Branch: TW D **Name:** TAXIWAY D **Use:** TAXIWAY **Area:** 9,496 SqFt

Section: 410 of 2 **From:** - **To:** - **Last Const.:** 10/1/2014

Surface: AAC **Family:** C9N59-GA-TW-AAC-APC **Zone:** **Category:** **Rank:** S

Area: 4,298 SqFt **Length:** 110 Ft **Width:** 40 Ft

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

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

Section Comments:

Work Date: 1/11/2012 **Work Type:** New Construction - Initial **Code:** NU-IN **Is Major M&R:** True

Work Date: 10/1/2014 **Work Type:** MILL and OVERLAY **Code:** ML-OV **Is Major M&R:** True

Last Insp. Date: 3/13/2017 **TotalSamples:** 1 **Surveyed:** 1

Conditions: **PCI:** 94

Inspection Comments:

Sample Number: 200 **Type:** R **Area:** 4298.00 SqFt **PCI:** 94

Sample Comments:

57	WEATHERING	L	4298.00	SqFt