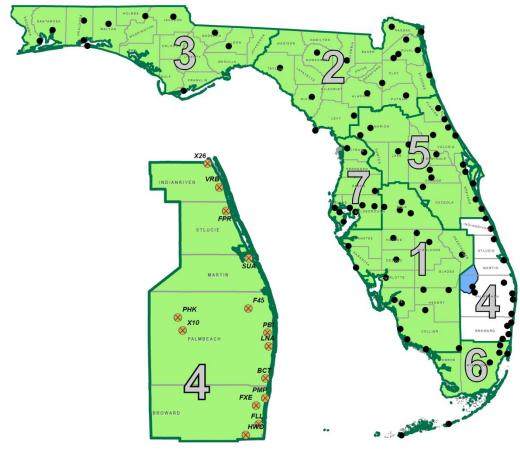


STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

# **AVIATION OFFICE**

# Statewide Airfield Pavement Management Program

**District 4 Report** 



June 2012

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### **EXECUTIVE SUMMARY**

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

In 2010, the FDOT Aviation Office selected a Consultant team consisting of Kimley-Horn and Associates, Inc. and their Subconsultants, AMEC, Penuel Consulting, LLC and All About Pavements, Inc., to provide services in support of FDOT in the continuing evaluation and updating of the existing SAPMP to be completed over fiscal years 2011 and 2012. Pavement condition surveys were performed for airside pavements for the following airports located in District 4:

- F45 North Palm Beach County General Aviation Airport
- FLL Fort Lauderdale-Hollywood International Airport
- FPR St. Lucie County International Airport
- FXE Fort Lauderdale Executive Airport
- HWO North Perry Airport
- LNA Palm Beach County Park Airport
- PBI Palm Beach International Airport
- PHK Palm Beach County Glades Airport
- PMP Pompano Beach Airport
- SUA Witham Field Airport
- VRB Vero Beach Municipal Airport
- X10 Belle Glade State Municipal Airport
- X26 Sebastian Municipal Airport

Boca Raton Airport, which is managed by the Boca Raton Airport Authority, had undergone a significant amount of pavement rehabilitation activity just prior to this FDOT SAPMP update and therefore was not inspected as part of this update.

District 4's overall PCI is at a 78, which corresponds to a 'Satisfactory' condition. **Table I: Condition Summary by Airport** below represents the results of the PCI inspection at each airport within the District. Average PCI values for the airports in District 4 ranged from 44 (Poor) to 100 (Good). Specific individual airport results are identified in individual airport reports provided to the airports. **Table II: Runway Condition Summary by Airport** indicates the PCI values for every runway within the District, grouped by airport. **Figure I-A: Runway Condition** graphically depicts the percentage of the District's runways below the FDOT Minimum PCI, and **Figure I-B: Runway Pavement Condition Comparison to FDOT Minimum PCI** shows the PCIs of the District's runways in comparison to the FDOT Minimum PCI.

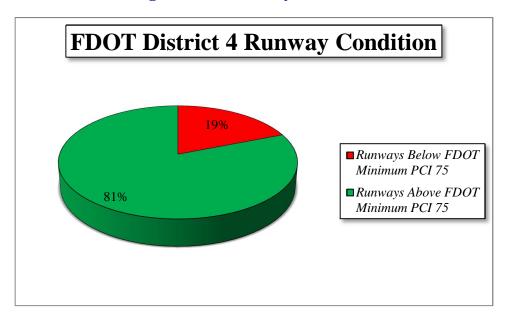
FAA Identifier	Airport Name	Type	Runway PCI	Taxiway PCI	Apron PCI	Overall PCI	Overall Condition Rating
BCT	Boca Raton Airport	RL	100	100	100	100	Good
F45	North Palm Beach County General Aviation Airport	RL	74	81	77	77	Satisfactory
FLL	Fort Lauderdale-Hollywood International Airport	PR	83	70	81	77	Satisfactory
FPR	St. Lucie County International Airport	GA	88	80	71	80	Satisfactory
FXE	Fort Lauderdale Executive Airport	RL	76	86	86	83	Satisfactory
HWO	North Perry Airport	RL	96	85	n/a	90	Good
LNA	Palm Beach County Park Airport	RL	89	89	61	78	Satisfactory
PBI	Palm Beach International Airport	PR	97	68	69	74	Satisfactory
РНК	Palm Beach County Glades Airport	GA	76	90	100	87	Good
PMP	Pompano Beach Airpark	GA	87	78	60	78	Satisfactory
SUA	Witham Field Airport	GA	79	75	64	72	Satisfactory
VRB	Vero Beach Municipal Airport	RL	77	76	61	70	Fair
X10	Belle Glade State Municipal Airport	GA	48	28	40	44	Poor
X26	Sebastian Municipal Airport	GA	84	74	85	82	Satisfactory
	District 4 Or	verall =	82	77	73	78	Satisfactory

# Table I: Condition Summary by Airport

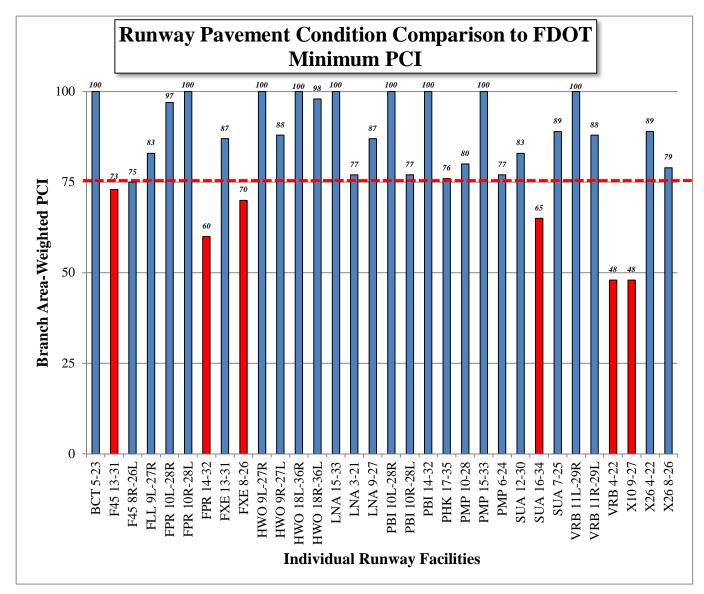
FAA Identifier	Airport Name	Airport Type	Runway Facility	Length	Width	Weighted Average PCI	Below Critical	Below FDOT
BCT	Boca Raton Airport	RL	5-23	6,276	150	100		
F45	North Palm Beach County General Aviation Airport	RL	13-31	4,300	75	73		Х
F45	North Palm Beach County General Aviation Airport	RL	8R-26L	4,300	100	75		
FLL	Fort Lauderdale-Hollywood International Airport	PR	9L-27R	9,000	150	83		
FPR	St. Lucie County International Airport	GA	10L-28R	4,000	75	97		
FPR	St. Lucie County International Airport	GA	10R-28L	6,492	150	100		
FPR	St. Lucie County International Airport	GA	14-32	4,755	100	60	Х	Х
FXE	Fort Lauderdale Executive Airport	GA	13-31	4,000	100	87		
FXE	Fort Lauderdale Executive Airport	GA	8-26	6,001	100	70		Х
HWO	North Perry Airport	RL	9L-27R	3,240	100	100		
HWO	North Perry Airport	RL	9R-27L	3,255	100	88		
HWO	North Perry Airport	RL	18L-36R	3,260	100	100		
HWO	North Perry Airport	RL	18R-36L	3,350	100	98		
LNA	Palm Beach County Park Airport	RL	15-33	3,421	100	100		
LNA	Palm Beach County Park Airport	RL	3-21	3,256	75	77		
LNA	Palm Beach County Park Airport	RL	9-27	3,489	75	87		
PBI	Palm Beach International Airport	PR	10L-28R	10,000	150	100		
PBI	Palm Beach International Airport	PR	10R-28L	3,213	75	77		
PBI	Palm Beach International Airport	PR	14-32	6,931	150	100		
PHK	Palm Beach County Glades Airport	GA	17-35	4,116	75	76		
PMP	Pompano Beach Airpark	GA	10-28	3,502	100	80		
PMP	Pompano Beach Airpark	GA	15-33	4,418	150	100		
PMP	Pompano Beach Airpark	GA	6-24	4,001	150	77		
SUA	Witham Field Airport	GA	12-30	5,827	100	83		
SUA	Witham Field Airport	GA	16-34	4,998	100	65		Х
SUA	Witham Field Airport	GA	7-25	4,652	100	89		
VRB	Vero Beach Municipal Airport	RL	11L-29R	3,504	75	100		
VRB	Vero Beach Municipal Airport	RL	11R-29L	7,314	100	88		
VRB	Vero Beach Municipal Airport	RL	4-22	4,974	100	48	Х	Х
X10	Belle Glade State Municipal Airport	GA	9-27	3,750	50	48	Х	Х
X26	Sebastian Municipal Airport	GA	4-22	4,024	75	89		
X26	Sebastian Municipal Airport	GA	8-26	3,200	75	79		
			W	eighted Av	verage =	82		19%

# Table II: Runway Condition Summary by Airport

# **Figure I-A: Runway Condition**



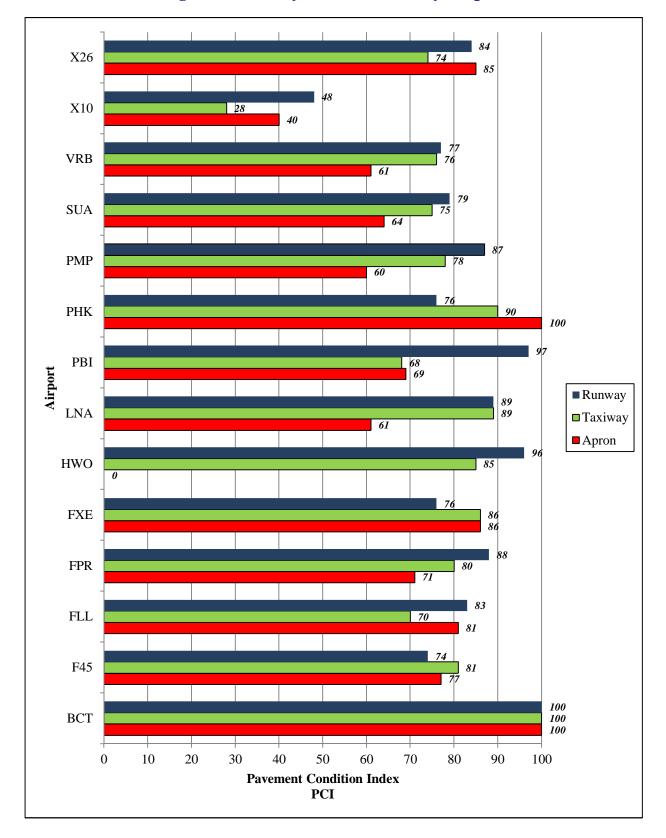
# Figure I-B: Runway Pavement Condition Comparison to FDOT Minimum PCI



Pavement use has an influence on the pavement condition of each facility. For example, the amount and type of distresses observed on a primary runway can vary from a maintenance apron based on frequency and variety of traffic loads experienced. **Table III: Summary of Area by Use by Airport** provides a breakdown of the airport areas by pavement use. **Figure II: PCI by Pavement Use by Airport** graphically shows the PCI for each pavement use at each airport.

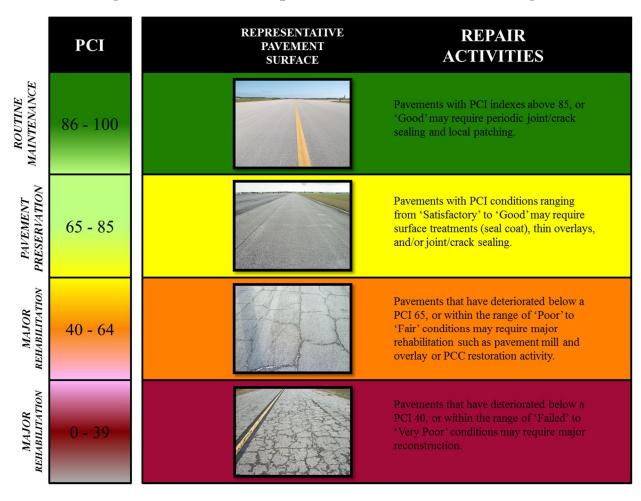
FAA Identifier	Airport Name	Туре	Runway Area (SqFt)	Taxiway Area (SqFt)	Apron Area (SqFt)	Total Area (SqFt)
BCT	Boca Raton Airport	RL	941,250	359,862	55,250	1,356,362
F45	North Palm Beach County General Aviation Airport	RL	751,908	589,068	1,238,269	2,579,244
FLL	Fort Lauderdale-Hollywood International Airport	PR	2,819,350	6,994,957	4,268,447	14,082,754
FPR	St. Lucie County International Airport	GA	1,753,000	1,980,280	1,812,401	5,545,681
FXE	Fort Lauderdale Executive Airport	RL	985,900	2,195,976	162,782	3,344,658
HWO	North Perry Airport	RL	1,279,637	1,342,327	n/a	2,621,964
LNA	Palm Beach County Park Airport	RL	825,858	499,311	913,452	2,238,622
PBI	Palm Beach International Airport	PR	2,748,601	5,444,718	6,176,574	14,369,893
РНК	Palm Beach County Glades Airport	GA	308,794	203,123	200,852	712,769
PMP	Pompano Beach Airpark	GA	1,494,725	1,122,680	724,350	3,341,755
SUA	Witham Field Airport	GA	1,568,200	1,088,796	1,584,610	4,241,606
VRB	Vero Beach Municipal Airport	RL	1,519,270	1,388,950	2,214,614	5,122,834
X10	Belle Glade State Municipal Airport	GA	185,850	25,930	44,600	256,380
X26	Sebastian Municipal Airport	GA	533,887	288,639	310,388	1,132,914
	District 4 Ou	verall =	17,716,231	23,524,617	19,706,588	60,947,436

# Table III: Summary of Area by Use by Airport



# Figure II: PCI by Pavement Use by Airport

**Figure III: Pictorial Representation of PCIs and Ratings** below illustrates characteristic pavement surfaces associated with various ranges of PCIs and Ratings, along with typical repair activities for the PCI ranges.



### **Figure III: Pictorial Representation of PCIs and Ratings**

The immediate major rehabilitation needs, or needs that have been programmed to be completed in the first year of the 10-year M&R plan based on an unlimited budget in District 4 are summarized in **Table IV: Summary of Immediate Major Rehabilitation Needs**.

FAA Identifier	Airport Name	Туре	Current Average PCI	Current Condition Rating	Immediate Major Rehabilitation Need Costs
BCT	Boca Raton Airport	RL	100	Good	\$0.00
F45	North Palm Beach County General Aviation Airport	RL	77	Satisfactory	\$0.00
FLL	Fort Lauderdale-Hollywood International Airport	PR	77	Satisfactory	\$7,876,366.50
FPR	St. Lucie County International Airport	GA	80	Satisfactory	\$9,844,026.82
FXE	Fort Lauderdale Executive Airport	RL	83	Satisfactory	\$2,115,428.73
HWO	North Perry Airport	RL	90	Good	\$1,143,570.04
LNA	Palm Beach County Park Airport	RL	78	Satisfactory	\$3,542,543.82
PBI	Palm Beach International Airport	PR	74	Satisfactory	\$50,364,112.48
PHK	Palm Beach County Glades Airport	GA	87	Good	\$0.00
PMP	Pompano Beach Airpark	GA	78	Satisfactory	\$2,309,538.16
SUA	Witham Field Airport	GA	72	Satisfactory	\$7,350,282.82
VRB	Vero Beach Municipal Airport	RL	70	Fair	\$14,298,584.61
X10	Belle Glade State Municipal Airport	GA	44	Poor	\$1,804,956.86
X26	Sebastian Municipal Airport	GA	82	Satisfactory	\$1,147,941.14
	District 4 Overa		78	Satisfactory	\$101,797,351.98

# **Table IV: Summary of Immediate Major Rehabilitation Needs**

The identified major rehabilitation projects summarized above and further explained in each individual airport report have been determined based on the Critical Pavement Condition Index Criteria. The criteria establishes recommended minimum PCI values that pavement facilities should not deteriorate past based on facility use and airport type.

A forecast of major rehabilitation needs for a 10-year period was developed using an unlimited budget. The analysis identified ongoing maintenance needs and major rehabilitation during that interval. The resulting major rehabilitation needs, excluding maintenance needs, by airport are provided in **Table V: Summary of 10-Year Major Rehabilitation Costs by Airport** below.

FAA Identifier	Airport Name	Туре	Current Average PCI	Current Condition Rating	10-Year Major Rehabilitation Need Cost	
BCT	Boca Raton Airport	RL	100	Good	\$0.00	
F45	North Palm Beach County General Aviation Airport	RL	77	Satisfactory	\$5,547,729.07	
FLL	Fort Lauderdale-Hollywood International Airport	PR	77	Satisfactory	\$19,628,506.75	
FPR	St. Lucie County International Airport	GA	80	Satisfactory	\$13,333,537.83	
FXE	Fort Lauderdale Executive Airport	RL	83	Satisfactory	\$5,525,809.41	
HWO	North Perry Airport	RL	90	Good	\$1,624,221.44	
LNA	Palm Beach County Park Airport	RL	78	Satisfactory	\$4,288,592.46	
PBI	Palm Beach International Airport	PR	74	Satisfactory	\$58,072,215.50	
РНК	Palm Beach County Glades Airport	GA	87	Good	\$792,038.19	
PMP	Pompano Beach Airpark	GA	78	Satisfactory	\$7,336,242.71	
SUA	Witham Field Airport	GA	72	Satisfactory	\$11,420,432.26	
VRB	Vero Beach Municipal Airport	RL	70	Fair	\$18,212,753.75	
X10	Belle Glade State Municipal Airport	GA	44	Poor	\$1,804,956.86	
X26	Sebastian Municipal Airport	GA	82	Satisfactory	\$1,724,507.87	
	District 4 Overall =		78	Satisfactory	\$149,311,544.10	

# Table V: Summary of 10-Year Major Rehabilitation Costs by Airport

The development of the aforementioned costs is based on planning level assumptions with regards to the type of rehabilitation being performed. **Table VI: M&R Activities by Condition** summarizes the M&R activities based on PCI values, as established by the FDOT.

# Table VI: M&R Activities by Condition

	Activity	PCI Trigger	
Maintenance	Crack Sealing and Full-Depth Patching	90	
Wannenance	Intenance Crack Searing and Full-Depth Fatching		
		70	
	Mill and Overlay (AC) or	60	
Rehabilitation	tion Concrete Pavement Restoration (PCC)	50	
Renadilitation		40	
	Description	30	
	Reconstruction	20	

It is important to state that design level efforts are necessary in determining the final rehabilitative construction activity.

### 1. INTRODUCTION

### 1.1 Project Background

The State of Florida has more than 100 public airports that are vital to the Florida economy as well as the economy of the United States. There are millions of square yards of pavement for the runways, taxiways, aprons and other areas of these airports that support aircraft operations. The timely and proper maintenance and rehabilitation of these pavements allows the airports to operate efficiently, economically and without excessive down time.

In order to support the planning, scheduling, and design of the M&R activities based on pavement evaluation and pavement management performance trends, the Florida Department of Transportation (FDOT) Aviation Office implemented the Statewide Airfield Pavement Management Program (SAPMP) in 1992.

In 2010, the FDOT Aviation Office selected a Consultant team consisting of Kimley-Horn and Associates, Inc. and their Subconsultants, AMEC, Penuel Consulting, LLC and All About Pavements, Inc., to provide services in support of FDOT in the continuing evaluation and updating of the existing SAPMP to be completed over fiscal years 2011 and 2012. Pavement condition surveys were performed for airside pavements for the following airports located in District 4:

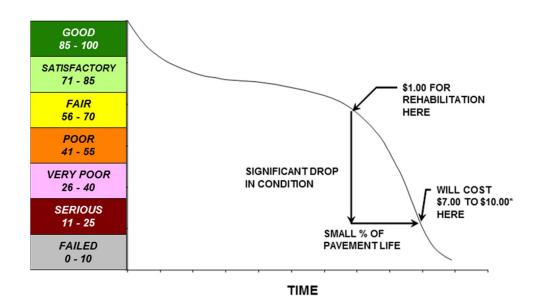
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- FPR St. Lucie County International Airport
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- HWO North Perry Airport
- LNA Palm Beach County Park Airport
- PBI Palm Beach International Airport
- PHK Palm Beach County Glades Airport
- PMP Pompano Beach Airport
- SUA Witham Field Airport
- VRB Vero Beach Municipal Airport
- X10 Belle Glade State Municipal Airport
- X26 Sebastian Municipal Airport

Boca Raton Airport, which is managed by the Boca Raton Airport Authority, had undergone a significant amount of pavement rehabilitation activity just prior to this FDOT SAPMP update and therefore was not inspected as part of this update.

### 1.2 Purpose

The primary goal of the SAPMP update is to provide individual airports with pavement condition ratings as well as recommendations for immediate and long-term major rehabilitation on the basis of pavement condition. This approach is intended to focus pavement M&R in areas where the most urgent need is with the overall goal of minimizing costs by improving pavements before they deteriorate to a point where the cost to rehabilitate is increasing at a higher rate than would have been experienced if repaired earlier.

**Figure 1-1: Pavement Life Cycle** below, taken from FAA/AC 5380-7A "Airport Pavement Management Program", illustrates how a pavement generally deteriorates and the relative cost of rehabilitation at various times throughout its life. Note that during the first portion of a pavement's life, it performs relatively well. After that, however, it begins to deteriorate rapidly. The number of years a pavement stays in "good" condition depends on how well it is maintained. As the illustration demonstrates, the cost of maintaining the pavement above a critical condition before rapid deterioration occurs is much less compared to maintaining pavements after substantial deterioration has occurred.



### **Figure 1-1: Pavement Life Cycle**

Source: FAA/AC 150/5380-7A "Airport Pavement Management Program" \*Modified to reflect current construction costs.

The inspections and analysis that were done were performed in accordance with the methods identified in ASTM D 5340-04 and in the FAA Advisory Circular 150/5380-6B to comply with the FAA Airport Improvement Program (AIP) requirements. The tasks required to achieve this objectives at each airport include:

- Obtain recent construction history from the Airport to update the Pavement Inventory CADD drawings and database from the previous SAPMP update;
- Perform a visual Pavement Condition Index (PCI) survey of the airfield pavements at the Airport;
- Update the MicroPAVER database to analyze the PCI field data and determine the current condition of the airfield pavements;
- Predict the future deterioration of the pavements using performance models based on condition data collected from current and previous inspections;
- Develop a 10-year M&R plan to address the pavement maintenance/rehabilitation needs;
- Estimate the anticipated costs associated with the suggested immediate and future M&R activities based on statewide average construction costs.

This document is intended to serve as a district summary of airport facility pavement condition and both immediate and long-term major rehabilitation based on needs for each airport. Furthermore, this document is intended to:

- Describe, briefly, the Florida Department of Transportation Aviation Office Statewide Airfield Pavement Management Program and the roles and responsibilities of the program's participants;
- Provide information on the pavement management principles, objectives, and methods used to update the existing program;
- Provide average results of the PCI survey at each airport based on pavement facility use, ranking, and type (i.e. Runway, Taxiway, Apron, Primary, Secondary, Tertiary, AC, AAC, APC, PCC, etc.);
- Provide the results of the M&R Analysis that identified both the immediate and 10-Year major rehabilitation project needs on an airport and district wide basis.

# 2. SYSTEM INVENTORY AND AIRPORT NETWORK DEFINITION DEVELOPMENT

### 2.1 System Inventory Update

A significant element to the development and update of the SAPMP has been to identify recent and anticipated construction activity that affects the pavement composition and performance. With cooperation from the airport facility personnel, the project team was able to gather airport specific information that included changes in pavement geometry, new or reconstructed pavements since the last inspection and anticipated pavement rehabilitation that would negate the findings of a visual inspection done in the short term. At the beginning of each phase for this update, FDOT SAPMP participants responded to the Aviation Office with project specific information on the recent and anticipated work. In addition to the construction activity, updates to pavement facility designators (i.e. re-designation, magnetic declination, and/or decommissioning) were reported.

This information was considered during the updating of pavement section areas on the individual airport Network Definition Map. The construction activity information provided by the airport is depicted on the System Inventory Update Map for each facility. This information was also included in the updates to the SAPMP specific MicroPAVER software database.

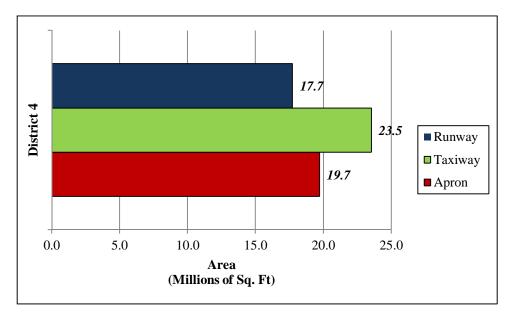
### 2.2 Network Definition Update

Based on the information identified in the System Inventory Map, the geometry of the Network Definition specific to the pavement area sections has been updated to reflect the changes. The purpose of developing pavement area sections is to track future pavement performance as well as to plan for future projects. The Network Definition Map categorically identifies pavement geometry, pavement composition, and sample identification. The updated areas by use for each airport are summarized in **Table 2-1: Summary of Area by Use by Airport**. **Figure 2-1: District Pavement Area by Use** below depicts the district pavement area by use, and **Figure 2-2: Pavement Area by Use by Airport** provides a breakdown of pavement area by usage at each airport.

FAA Identifier	Airport Name	Туре	Runway Area (SqFt)	Taxiway Area (SqFt)	Apron Area (SqFt)	Total Area (SqFt)
BCT	Boca Raton Airport	RL	941,250	359,862	55,250	1,356,362
F45	North Palm Beach County General Aviation Airport	RL	751,908	589,068	1,238,269	2,579,244
FLL	Fort Lauderdale-Hollywood International Airport	PR	2,819,350	6,994,957	4,268,447	14,082,754
FPR	St. Lucie County International Airport	GA	1,753,000	1,980,280	1,812,401	5,545,681
FXE	Fort Lauderdale Executive Airport	RL	985,900	2,195,976	162,782	3,344,658
HWO	North Perry Airport	RL	1,279,637	1,342,327	n/a	2,621,964
LNA	Palm Beach County Park Airport	RL	825,858	499,311	913,452	2,238,622
PBI	Palm Beach International Airport	PR	2,748,601	5,444,718	6,176,574	14,369,893
PHK	Palm Beach County Glades Airport	GA	308,794	203,123	200,852	712,769
PMP	Pompano Beach Airpark	GA	1,494,725	1,122,680	724,350	3,341,755
SUA	Witham Field Airport	GA	1,568,200	1,088,796	1,584,610	4,241,606
VRB	Vero Beach Municipal Airport	RL	1,519,270	1,388,950	2,214,614	5,122,834
X10	Belle Glade State Municipal Airport	GA	185,850	25,930	44,600	256,380
X26	Sebastian Municipal Airport	GA	533,887	288,639	310,388	1,132,914
	District 4 Ov	erall =	17,716,231	23,524,617	19,706,588	60,947,436

# Table 2-1: Summary of Area by Use by Airport

Figure 2-1: District Pavement Area by Use



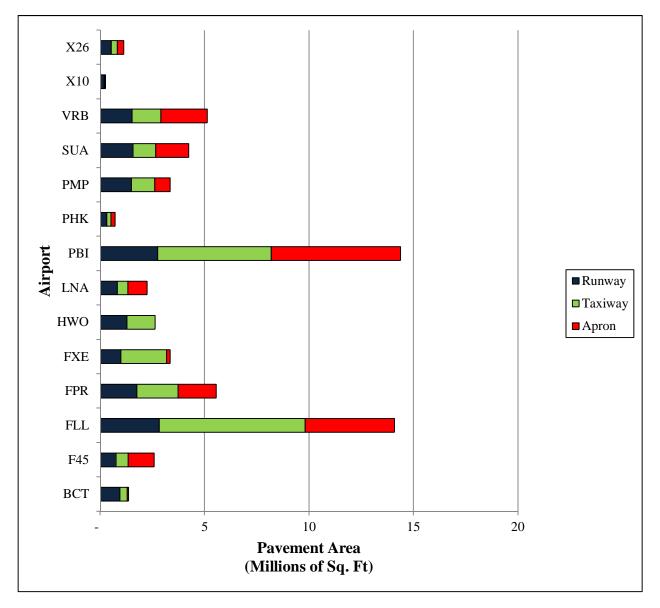


Figure 2-2: Pavement Area by Use by Airport

As part of this process, the individual airport network maps have been referenced in the State Plane Coordinate System. This update included the referencing of aerial imagery supplied by FDOT to the Network Definition Maps resulting in a GIS based navigation map for use on mobile GPS data collection units.

### **3. PAVEMENT EVALUATION**

### 3.1 Pavement Condition Survey

The pavement condition survey was performed using the methods described in ASTM D 5340-04 and FAA Advisory Circular 150/5380-6B. These inspections were performed by a minimum of two inspection personnel that have undergone appropriate FDOT training, demonstrated adequate experience, and have been approved by AO-PM. The visual surveys were performed with significant coordination with airport personnel to ensure minimal impacts on airport operations while maintaining safety. When appropriate, pavement inspectors were escorted by authorized airport personnel.

The inspection of pavement facilities is limited to the identified sample units. The number of sample units inspected in each pavement section was determined to achieve a confidence level of representative distresses throughout the facility. The sampling rate used for the FDOT SAPMP is identified in **Table 3-1: Sampling Rate for FDOT Condition Surveys**.

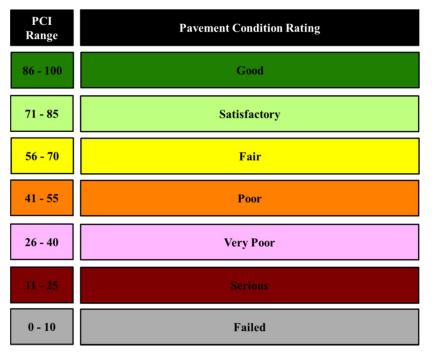
	AC Pavemen	ts	PCC Pavements				
N	n	l	N	n			
1	Runway	Others		Runway	Others		
1-4	1	1	1-3	1	1		
5-10	2	1	4-6	2	1		
11-15	3	2	7-10	3	2		
16-30	5	3	11-15	4	2		
31-40	7	4	16-20	5	3		
41-50	8	5	21-30	7	3		
<u>&gt;</u> 51	20% but <u>&lt;</u> 20	10% but <10	31-40	8	4		
_	_	_	41-50	10	5		
			<u>&gt;</u> 51	20% but <u>&lt;</u> 20	10% but <u>&lt;</u> 10		

# Table 3-1: Sampling Rate for FDOT Condition Surveys

Where N = total number of sample units in Section n = number of sample units to inspect

### 3.2 Pavement Condition Summary

The pavement condition results from each airport have been developed by analyzing the specific pavement distresses using U.S. Army Corp of Engineers CERL MicroPAVER 5.2.4 software. In adherence to the ASTM D 5340-04, the pavement condition index ranges from 100 to 0 with corresponding condition ratings of "Good" to "Failed", respectively. Figure 3-1: PCI Rating Scale depicts the standard index with the corresponding condition ratings and color identification used for this program update.



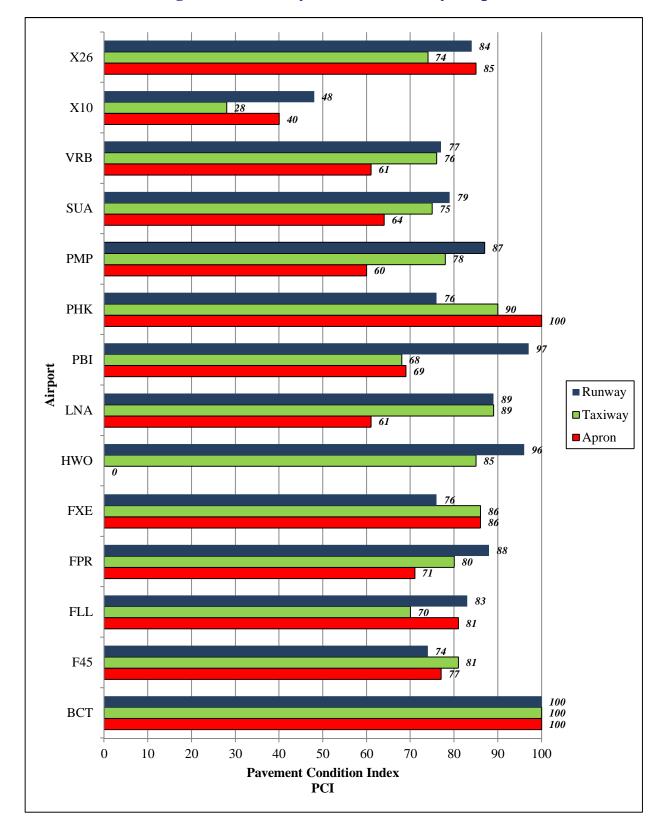
# Figure 3-1: PCI Rating Scale

District 4's overall PCI is at a 78, which corresponds to a 'Satisfactory' condition. **Table 3-2: Condition Summary by Airport** below represents the results of the PCI inspection at each airport within the District. Specific individual airport results are identified in each individual airport report.

FAA Identifier	Airport Name	Type	Runway PCI	Taxiway PCI	Apron PCI	Overall PCI	Overall Condition Rating
BCT	Boca Raton Airport	RL	100	100	100	100	Good
F45	North Palm Beach County General Aviation Airport	RL	74	81	77	77	Satisfactory
FLL	Fort Lauderdale-Hollywood International Airport	PR	83	70	81	77	Satisfactory
FPR	St. Lucie County International Airport	GA	88	80	71	80	Satisfactory
FXE	Fort Lauderdale Executive Airport	RL	76	86	86	83	Satisfactory
HWO	North Perry Airport	RL	96	85	n/a	90	Good
LNA	Palm Beach County Park Airport	RL	89	89	61	78	Satisfactory
PBI	Palm Beach International Airport	PR	97	68	69	74	Satisfactory
PHK	Palm Beach County Glades Airport	GA	76	90	100	87	Good
PMP	Pompano Beach Airpark	GA	87	78	60	78	Satisfactory
SUA	Witham Field Airport	GA	79	75	64	72	Satisfactory
VRB	Vero Beach Municipal Airport	RL	77	76	61	70	Fair
X10	Belle Glade State Municipal Airport		48	28	40	44	Poor
X26	Sebastian Municipal Airport	GA	84	74	85	82	Satisfactory
	District 4 O	verall =	82	77	73	78	Satisfactory

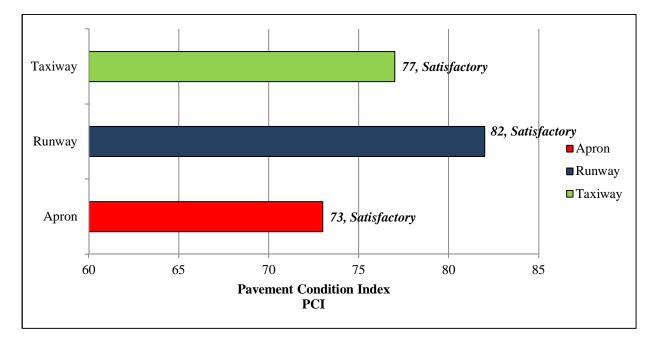
# Table 3-2: Condition Summary by Airport

Pavement use has an influence on the pavement condition of each facility. For example, the amount and type of distresses observed on a primary runway can vary from a maintenance apron based on frequency and variety of traffic loads experienced. **Figure 3-2: PCI by Pavement Use by Airport** graphically shows the PCI for each pavement use at each airport within the District.



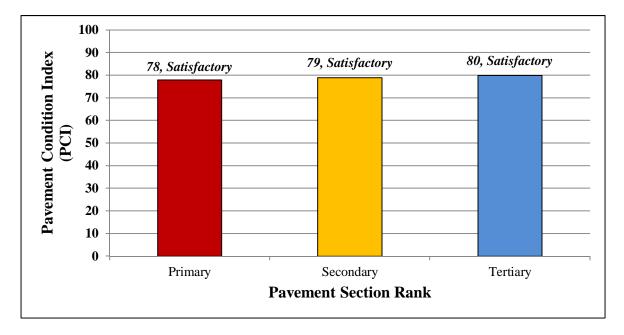
# Figure 3-2: PCI by Pavement Use by Airport

A summary of the area-weighted PCI for each pavement use for all pavements throughout the District are shown below in **Figure 3-3: PCI by Pavement Use**.



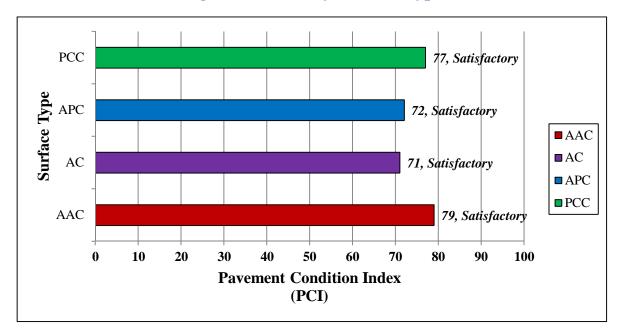


**Figure 3-4: PCI by Pavement Rank** below illustrates the area-weighted PCI within the District for Primary, Secondary and Tertiary pavements. The pavement facility ranking was established during the 1998/1999 survey and has been updated based on airport feedback. Primary pavements are considered to be of highest importance, examples include a primary runway and its parallel taxiway. Secondary pavements examples include a secondary crosswind runway and its parallel taxiway. Tertiary pavements examples can be active aprons such as a maintenance area or a non-active aircraft equipment storage apron.



### Figure 3-4: PCI by Pavement Rank

Pavement facility surface types include four common types of pavement: Portland cement concrete (PCC), asphalt concrete overlaid on Portland cement concrete (APC), asphalt concrete (AC), and asphalt concrete overlay on asphalt concrete (AAC). Figure 3-5: PCI by Surface Type summarizes the PCI based on the various pavement types within the District. Whitetopping, a pavement type that consists of a thin concrete overlay on an asphalt concrete pavement does exist at several airports in the Florida Airport System. However, it does not exist at any airports in District 4.



### Figure 3-5: PCI by Surface Type

### 4. MICROPAVER ANALYSIS

### 4.1 Performance Modeling

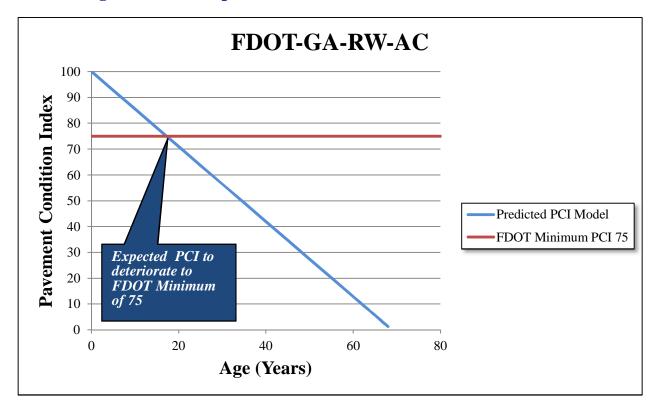
A significant benefit of consolidating Florida's Airport System's pavement infrastructure within the FDOT SAPMP is the large amount of pavement condition data recorded using consistent methods of measurement. The historic pavement condition, or performance trend, has been compiled throughout the entire State system since the inception of the SAPMP and is used in the development of Performance Models. These models have been categorically arranged and developed to predict the future conditions of pavements based on Florida's specific characteristics of climate, construction materials, and operations. Each model has been developed based on the following criteria:

AIRPORT TYPE (Primary, Regional Reliever, or General Aviation)

> FACILITY USE (Runway, Taxiway, or Apron)

>>FACILITY SURFACE TYPE (AC, AAC, APC, or PCC)

The following figure, **Figure 4-1: Example Performance Model**, represents the condition data collected for all participating General Aviation airport runways constructed of AC pavement. The approximate deterioration observed for these pavement types, excluding outliers, is about 1.5 PCI points per year. Appropriate curves have been developed for the identified airport types, facility use, and pavement material.



### Figure 4-1: Example Performance Model: FDOT-GA-RW-AC

The historic trends of pavement performance at Florida airport facilities for all performance models are consolidated within the program database. This information is utilized in the prediction of pavement performance based on the current PCI determined from the inspections that took place between 2011 and 2012. Major rehabilitation is planned based on the predicted PCI. The intent of this for both the individual airport and the District to be aware of anticipated rehabilitation work based on condition.

#### 4.2 Maintenance Policies

FDOT utilizes the distress data collected to estimate maintenance work efforts for pavement area sections that would benefit from this work, specifically sections with a PCI ranging from 65 to 100. Examples of maintenance work include crack sealing, area patching, seal coat applications, and other routine maintenance efforts that typically can be performed in a short time frame by airport maintenance personnel. This maintenance, or repair-type activity, is intended to preserve and extend pavement condition above the critical condition.

**Table 4-1: Routine Maintenance Activities for Airfields** provides the list of the maintenance activities used in MicroPAVER to treat specific distress types based on the FDOT Distress Repair and Maintenance Manual. MicroPAVER applies repairs to these distresses and adjusts the PCI based on specific rules. These repairs are used only in the first year of an analysis.

Surface	Distress	Severity*	Work Type	MicroPAVER Code	Work Unit
	Alligator Crack	M, H	Patching - AC Deep	PA-AD	SqFt
	Bleeding	N/A	No Localized M&R	NONE	N/A
	Block Crack	M, H	Crack Sealing – AC	CS-AC	SqFt
	Corrugation	L, M, H	Patching - AC Deep	PA-AD	SqFt
nt	Depression	M, H	Patching - AC Deep	PA-AD	SqFt
Asphalt Concrete Pavement	Jet Blast	N/A	Patching - AC Deep	PA-AD	SqFt
ave	Joint Ref. Crack	M, H	Crack Sealing – AC	CS-AC	Ft
Ϋ́Ρ	L & T Crack	M, H	Crack Sealing – AC	CS-AC	Ft
rete	Oil Spillage	N/A	Patching - AC Shallow	PA-AS	SqFt
onci	Patching	M, H	Patching - AC Deep	PA-AD	SqFt
č	Polished Agg.	N/A	No Localized M&R	NONE	N/A
nalt	Raveling /	L	Surface Sealing - Rejuvenating	SS-RE	SqFt
sph	Weathering	М	Surface Seal - Coal Tar	SS-CT	SqFt
A	weathering	Н	Microsurfacing	MI-AC	SqFt
	Rutting	M, H	Patching - AC Deep	PA-AD	SqFt
	Shoving	М, Н	Grinding (Localized)	GR-LL	SqFt
	Slippage Crack	N/A	Patching - AC Shallow	PA-AS	SqFt
	Swelling	М, Н	Patching - AC Deep	PA-AD	SqFt
	Blow-Up	L, M, H	Patching - PCC Full Depth	PA-PF	SqFt
<u>с</u> т.	Corner Break	M, H	Patching - PCC Full Depth	PA-PF	SqFt
ient	Linear Crack	М, Н	Crack Sealing – PCC	CS-PC	Ft
em	Durability Creak	Н	Slab Replacement – PCC	SL-PC	SqFt
Pav	Durability Crack	М	Patching - PCC Full Depth	PA-PF	SqFt
[te]	Jt. Seal Damage	М, Н	Joint Seal (Localized)	JS-LC	Ft
cre	Small Patch	М, Н	Patching - PCC Partial Depth	PA-PP	SqFt
Con	Large Patch	М, Н	Patching - PCC Full Depth	PA-PF	SqFt
Jt C	Popouts	N/A	No Localized M&R	NONE	N/A
ner	Pumping	N/A	No Localized M&R	NONE	N/A
Cer	Scaling	Н	Slab Replacement – PCC	SL-PC	SqFt
Portland Cement Concrete Pavement	Faulting	М, Н	Grinding (Localized)	GR-PP	Ft
tlaı	Shattered Slab	М, Н	Slab Replacement – PCC	SL-PC	SqFt
Por	Shrinkage Crack	N/A	No Localized M&R	NONE	N/A
	Joint Spall	М, Н	Patching - PCC Partial Depth	PA-PP	SqFt
	Corner Spall	М, Н	Patching - PCC Partial Depth	PA-PP	SqFt

# Table 4-1: Routine Maintenance Activities for Airfield Pavements

L = Low, M = Medium, H = High

### 4.3 Major Rehabilitation Planning

Major rehabilitation is warranted when the pavement condition decreases below a critical point such that the deterioration is extensive or the rate of deterioration is so great that routine maintenance is no longer cost-efficient. This critical point is called "Critical PCI." The critical PCI levels for different pavement and branch types established in the previous SAPMP update were used in this update for the development of the Major M&R plan for the airports. Sections

above critical PCI levels receive routine maintenances while pavements predicted to deteriorate below their respective critical PCI level during the analysis period will be identified for Major M&R. Appendix B identifies the Cost by Condition and Critical PCI used in the development of major rehabilitation. **Table 4-2: M&R Activities by Condition** summarizes the M&R activities based on PCI values, as established by the FDOT.

	Activity	PCI Trigger
Maintenance	Crack Sealing and Full-Depth Patching	90
Wantenanee	Shuck Searing and I an Deptil I atoming	80
		70
	Mill and Overlay (AC) or	60
Rehabilitation	Concrete Pavement Restoration (PCC)	50
Renabilitation		40
	Deconstruction	30
	Reconstruction	20

# Table 4-2: M&R Activities by Condition

Special consideration is given to pavements that exhibit a significant amount of structural distresses while maintaining a PCI above the critical condition. The presence of structural distresses may be attributed to the greater fatigue load being applied to the pavement than the original design capacity. Therefore in certain situations, pavement area sections may be triggered for work due to structural distresses found rather than solely based on PCI values determined.

### 4.4 Budget Analysis Approach

The scope of this update was to identify the overall work required for major rehabilitation using comparative costs based on the condition survey and predicted pavement performance. As mentioned previously, the criteria for major rehabilitation is based on the MicroPAVER set critical PCI of 65. From the previous SAPMP updates, FDOT has developed desired minimum PCI values based on the airport type and facility use, which are shown in **Table 4-3: FDOT Minimum Service Levels.** The rehabilitation activity identified is based on the critical PCI of 65.

Use	FDOT Minimum PCI						
	GA	RL	PR				
Runway	75	75	75				
Taxiway	65	65	70				
Apron	60	65	65				

**Table 4-3: FDOT Minimum Service Levels** 

The development of major rehabilitation work expressed in the individual airport reports was based on an 'unlimited budget' or unconstrained budget scenario. This scenario was selected in particular as a means to identify project activity based on the condition need. This information is intended to be used as a planning tool to determine project selection based on airport priority, facility use, and traffic demand, among other factors.

The major rehabilitation costs of the projects identified are determined using a cost scale range based on the PCI of the pavement area sections. The cost study performed for pavement work such as mill and overlay and reconstruction identified varying costs based on airport type. The schedule of costs used for the major rehabilitation is referenced in Appendix B.

#### 4.5 Immediate Major Rehabilitation Need

Based on the condition surveys performed in 2011 and 2012, major rehabilitation has been identified for pavement area sections that resulted in a current condition below 65. The following table, **Table 4-4: Summary of Immediate Major Rehabilitation Needs**, identifies the immediate major rehabilitation need for each airport under the unlimited funding scenario. The breakdown of these costs on an individual airport basis can be found in Appendix C.

FAA Identifier	Airport Name	Туре	Current Average PCI	Current Condition Rating	Immediate Major Rehabilitation Need Costs
BCT	Boca Raton Airport	RL	100	Good	\$0.00
F45	North Palm Beach County General Aviation Airport	RL	77	Satisfactory	\$0.00
FLL	Fort Lauderdale-Hollywood International Airport	PR	77	Satisfactory	\$7,876,366.50
FPR	St. Lucie County International Airport	GA	80	Satisfactory	\$9,844,026.82
FXE	Fort Lauderdale Executive Airport	RL	83	Satisfactory	\$2,115,428.73
HWO	North Perry Airport	RL	90	Good	\$1,143,570.04
LNA	Palm Beach County Park Airport	RL	78	Satisfactory	\$3,542,543.82
PBI	Palm Beach International Airport	PR	74	Satisfactory	\$50,364,112.48
РНК	Palm Beach County Glades Airport	GA	87	Good	\$0.00
PMP	Pompano Beach Airpark	GA	78	Satisfactory	\$2,309,538.16
SUA	Witham Field Airport	GA	72	Satisfactory	\$7,350,282.82
VRB	Vero Beach Municipal Airport	RL	70	Fair	\$14,298,584.61
X10	Belle Glade State Municipal Airport	GA	44	Poor	\$1,804,956.86
X26	Sebastian Municipal Airport	GA	82	Satisfactory	\$1,147,941.14
	District 4 0	78	Satisfactory	\$101,797,351.98	

### **Table 4-4: Summary of Immediate Major Rehabilitation Needs**

#### 4.6 10-Year Major Rehabilitation Program

Based on the condition surveys performed in 2011 and 2012 and the predicted pavement condition using the performance models, major rehabilitation has been identified for additional pavement area sections that are expected to reach a condition below 65 in the next 10 years. **Table 4-5: Summary of 10-Year Major Rehabilitation Costs by Airport** below identifies the major rehabilitation need for each airport over a program period of 10 years assuming an unlimited budget. It includes the immediate needs identified in **Table 4-4: Summary of Immediate Major Rehabilitation Needs**.

The breakdown of these costs on an individual airport basis can be found in Appendix C.

FAA Identifier	Airport Name	Туре	Current Average PCI	Current Condition Rating	10-Year Major Rehabilitation Need Cost
BCT	Boca Raton Airport	RL	100	Good	\$0.00
F45	North Palm Beach County General Aviation Airport	RL	77	Satisfactory	\$5,547,729.07
FLL	Fort Lauderdale-Hollywood International Airport	PR	77	Satisfactory	\$19,628,506.75
FPR	St. Lucie County International Airport	GA	80	Satisfactory	\$13,333,537.83
FXE	Fort Lauderdale Executive Airport	RL	83	Satisfactory	\$5,525,809.41
HWO	North Perry Airport	RL	90	Good	\$1,624,221.44
LNA	Palm Beach County Park Airport	RL	78	Satisfactory	\$4,288,592.46
PBI	Palm Beach International Airport	PR	74	Satisfactory	\$58,072,215.50
РНК	Palm Beach County Glades Airport	GA	87	Good	\$792,038.19
PMP	Pompano Beach Airpark	GA	78	Satisfactory	\$7,336,242.71
SUA	Witham Field Airport	GA	72	Satisfactory	\$11,420,432.26
VRB	Vero Beach Municipal Airport	RL	70	Fair	\$18,212,753.75
X10	Belle Glade State Municipal Airport	GA	44	Poor	\$1,804,956.86
X26	Sebastian Municipal Airport	GA	82	Satisfactory	\$1,724,507.87
	District 4 C	78	Satisfactory	\$149,311,544.10	

### Table 4-5: Summary of 10-Year Major Rehabilitation Costs by Airport

Figure 4-2: Summary of 10-Year Major Rehabilitation and Maintenance Costs by Plan Year depicts the 10-year major rehabilitation and maintenance needs under an unlimited funding scenario for all airports in District 4 by plan year.

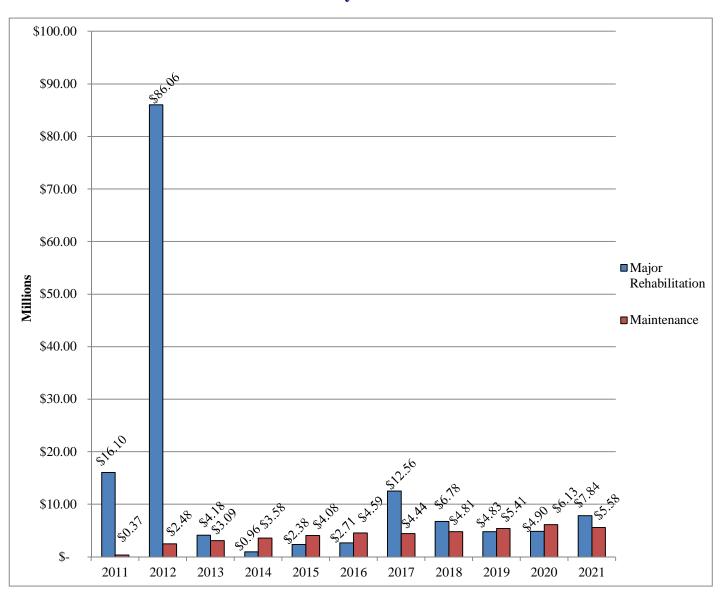


Figure 4-2: Summary of 10-Year Major Rehabilitation and Maintenance Costs by Plan Year

**Tables 4-6** and **4-7** below list the major rehabilitation costs and maintenance needs costs, respectively, by airport for each plan year.

FAA Identifier	Туре	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
BCT	RL	n/a	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
F45	RL	n/a	\$0.00	\$0.00	\$0.00	\$19,275.63	\$0.00	\$2,365,019.26	\$0.00	\$631,132.32	\$34,659.30	\$2,497,642.56	\$5,547,729.07
FLL	PR	n/a	\$7,876,366.50	\$348,528.11	\$396,020.12	\$948,080.44	\$707,780.16	\$433,279.65	\$3,630,729.20	\$1,032,182.62	\$3,146,593.85	\$1,108,946.10	\$19,628,506.75
FPR	GA	n/a	\$9,844,026.84	\$151,004.07	\$18,254.12	\$98,494.06	\$35,714.89	\$0.00	\$1,162,292.08	\$929,542.46	\$161,887.69	\$932,321.62	\$13,333,537.83
FXE	RL	n/a	\$2,115,428.73	\$0.00	\$301,072.45	\$154,589.30	\$1,831,818.39	\$475,131.69	\$0.00	\$438,540.57	\$70,815.98	\$138,412.30	\$5,525,809.41
HWO	RL	n/a	\$1,143,570.04	\$308,415.55	\$144,566.40	\$0.00	\$12,811.66	\$0.00	\$0.00	\$0.00	\$0.00	\$14,857.79	\$1,624,221.44
LNA	RL	n/a	\$3,542,543.81	\$0.00	\$0.00	\$23,932.33	\$0.00	\$0.00	\$0.00	\$722,116.32	\$0.00	\$0.00	\$4,288,592.46
PBI	PR	n/a	\$50,364,112.48	\$860,732.46	\$79,923.72	\$179,417.35	\$0.00	\$5,755,077.52	\$386,068.98	\$350,531.72	\$0.00	\$96,351.27	\$58,072,215.50
РНК	GA	n/a	\$0.00	\$0.00	\$0.00	\$22,503.96	\$0.00	\$737,957.88	\$31,576.35	\$0.00	\$0.00	\$0.00	\$792,038.19
PMP	GA	n/a	\$2,309,538.16	\$0.00	\$24,203.81	\$680,503.60	\$39,302.79	\$2,003,116.95	\$912,853.60	\$0.00	\$874,165.09	\$492,558.71	\$7,336,242.71
SUA	GA	n/a	\$7,350,282.82	\$1,491,045.81	\$0.00	\$224,478.50	\$8,321.71	\$305,550.35	\$8,919.66	\$0.00	\$28,089.63	\$2,003,743.78	\$11,420,432.26
VRB	RL	\$14,298,584.63	\$364,618.74	\$1,017,151.38	\$0.00	\$29,755.70	\$54,777.09	\$489,338.65	\$652,375.96	\$721,562.42	\$584,589.18	n/a	\$18,212,753.75
X10	GA	\$1,804,956.86	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	n/a	\$1,804,956.86
X26	GA	n/a	\$1,147,941.14	\$0.00	\$0.00	\$0.00	\$20,515.22	\$0.00	\$0.00	\$0.00	\$0.00	\$556,051.51	\$1,724,507.87
Annua	l Total =	\$16,103,541.49	\$86,058,429.26	\$4,176,877.38	\$964,040.62	\$2,381,030.87	\$2,711,041.91	\$12,564,471.95	\$6,784,815.83	\$4,825,608.43	\$4,900,800.72	\$7,840,885.64	\$149,311,544.10

# Table 4-6: 10-Year Major Rehabilitation Costs by Airport by Year

FAA Identifier	Туре	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
BCT	RL	n/a	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
F45	RL	n/a	\$391,600.61	\$387,311.88	\$435,789.74	\$489,730.21	\$550,254.66	\$381,995.74	\$422,312.27	\$398,032.68	\$430,114.54	\$220,735.63	\$4,107,877.96
FLL	PR	n/a	\$344,589.30	\$643,247.35	\$735,599.11	\$790,336.14	\$837,830.07	\$941,807.75	\$806,929.56	\$861,189.46	\$770,712.41	\$808,518.47	\$7,540,759.62
FPR	GA	n/a	\$170,462.91	\$213,984.09	\$243,683.23	\$283,488.10	\$338,270.80	\$432,518.52	\$419,925.34	\$451,630.56	\$540,416.26	\$561,938.85	\$3,656,318.66
FXE	RL	n/a	\$170,840.72	\$305,308.81	\$327,939.38	\$357,086.98	\$250,180.95	\$260,401.44	\$323,946.07	\$350,050.11	\$416,224.00	\$488,988.57	\$3,250,967.03
HWO	RL	n/a	\$83,006.33	\$70,978.21	\$88,256.44	\$145,016.71	\$217,720.26	\$285,052.87	\$352,558.48	\$426,225.73	\$496,560.29	\$564,055.70	\$2,729,431.02
LNA	RL	n/a	\$55,614.53	\$77,366.78	\$95,967.53	\$125,307.93	\$162,681.54	\$209,353.21	\$265,882.04	\$258,800.02	\$305,844.84	\$361,644.79	\$1,918,463.21
PBI	PR	n/a	\$195,035.74	\$437,061.09	\$518,147.34	\$637,716.37	\$774,186.75	\$562,689.61	\$742,261.02	\$971,238.81	\$1,294,715.71	\$1,563,930.41	\$7,696,982.85
РНК	GA	n/a	\$21,183.08	\$58,878.73	\$68,133.83	\$75,277.19	\$86,434.11	\$20,275.83	\$23,294.59	\$29,828.22	\$38,912.99	\$48,616.25	\$470,834.82
PMP	GA	n/a	\$319,332.63	\$354,547.95	\$406,027.55	\$390,093.49	\$426,818.04	\$277,873.58	\$239,643.50	\$282,623.44	\$249,847.48	\$254,542.03	\$3,201,349.69
SUA	GA	n/a	\$365,517.89	\$210,422.13	\$264,188.32	\$298,936.49	\$355,282.33	\$393,142.23	\$455,244.44	\$530,088.86	\$635,190.87	\$519,272.58	\$4,027,286.14
VRB	RL	\$365,402.61	\$308,919.27	\$262,034.80	\$314,398.80	\$382,005.15	\$467,223.28	\$534,932.94	\$596,071.86	\$645,944.73	\$717,215.97	n/a	\$4,594,149.41
X10	GA	\$0.00	\$170.08	\$464.46	\$658.83	\$1,182.07	\$1,687.85	\$2,351.35	\$3,491.70	\$9,875.14	\$13,571.50	n/a	\$33,452.98
X26	GA	n/a	\$53,229.31	\$63,464.86	\$81,540.70	\$98,946.05	\$119,062.29	\$140,246.61	\$162,090.37	\$192,367.18	\$219,151.47	\$186,823.67	\$1,316,922.51
Annua	el Total =	\$365,402.61	\$2,479,502.40	\$3,085,071.14	\$3,580,330.80	\$4,075,122.88	\$4,587,632.93	\$4,442,641.68	\$4,813,651.24	\$5,407,894.94	\$6,128,478.33	\$5,579,066.95	\$44,544,795.90

# Table 4-7: 10-Year Maintenance Costs by Airport by Year

### 5. CONCLUSION

The FDOT Aviation Office has updated the Statewide Airfield Pavement Management Program through the pavement condition surveys performed at each participating airport and preparation of M&R planning information in compliance with the FAA Advisory Circular 150/5380-6B. MicroPAVER software was utilized to determine pavement conditions in accordance with ASTM D 5340-04 and develop maintenance and rehabilitation policies consistent with the FDOT Aviation Office policies. These policies were used to identify pavement rehabilitation projects based on the condition of the pavement over a 10-year period that are detailed in the individual airport reports and in Appendix C.

This study was focused on identifying current pavement condition and using a condition based tool to assist in the evaluation of pavement performance and identify and prioritize maintenance and rehabilitation needs and costs to maximize useful pavement life. The methods used to determine pavement condition for this program update, as with previous updates, have been performed in accordance with ASTM D 5340-04. The process is intended to provide airport sponsors with guidance in planning pavement maintenance and rehabilitation projects and funding agencies with planning tools for allocation of funds.

A detailed breakdown of pavement condition for each airport is included in Appendix C. As can be seen in this report and by comparing pavement conditions on an airport by airport basis, there is a wide variation in pavement conditions between airports. Recommended major rehabilitation recommendations for each airport are also included in Appendix C. High priority runway projects, based on pavement conditions below the FDOT recommended minimum service level PCI of 75, which the District should consider as immediate needs are listed below. These are not all the needs at each airport in the District and may not be the individual airport's priority, but should be considered in development of funding programs.

F45 – North Palm Beach County General Aviation Airport

#### → Runway 13-31, pavement mill and overlay \$1.09M

FPR - St. Lucie County International Airport

#### → Runway 14-32, pavement mill and overlay \$1.77M

FXE - Fort Lauderdale Executive Airport

#### → Runway 8-26, pavement mill and overlay \$1.73M

SUA - Witham Field Airport

#### → Runway 16-34, pavement mill and overlay \$1.34M

VRB – Vero Beach Municipal Airport

#### → Runway 4-22, pavement mill and overlay \$3.06M

X10 - Belle Glade State Municipal Airport

#### → Runway 9-27, pavement mill and overlay \$1.17M

# **APPENDIX A**

**GLOSSARY OF TERMS** 

#### Glossary

<u>Aviation Office</u> - The Aviation Office is charged with responsibility for promoting the safe development of aviation to serve the people of the State of Florida. The Aviation Office Program Manager (AO-PM) has review and approval authority for each program task of the SAPMP.

<u>Branch</u> - A Branch designates pavements that have common usage and functionality, such as an entire runway, taxiway, or apron.

<u>Category</u> - The Category classifies the airport according to the type and volume of aircraft traffic, as follows:

- GA for general aviation or community airports;
- RL for regional relievers or small hubs;
- PR for primary (certified under Part 139 requirements).

<u>Critical PCI</u> - The PCI value considered to be the threshold for M&R decisions. PCI above the Critical generate economical activities expected to preserve and prolong acceptable condition. M&R for PCI values less than Critical make sense only for reasons of safety or to maintain a pavement in operable condition. A pavement section is expected to deteriorate very quickly once it reaches the Critical PCI and the unit cost of repair increases significantly.

<u>Distress Type</u> - A distress type is a defined visible defect in pavement evidenced by cracking, vertical displacement or deterioration of material. In PCI technology, 16 distinct distress types for asphalt surfaced and 15 for Portland Cement Concrete surfaced pavements have been described and rated according to the impact their presence has on pavement condition.

<u>Florida DOT (FDOT)</u> - Florida Department of Transportation was represented in this project by the Office of Aviation.

Localized M&R (Maintenance and Repair) - Localized M&R is a temporizing activity performed on existing pavement to extend its serviceability and/or to improve rideability. Localized M&R can be applied either as a safety (stop-gap) measure or preventive measure. Common localized maintenance methods include crack sealing, joint sealing, and patching.

<u>Major M&R (e.g. Rehabilitation)</u> - Activities performed over the entire area of a pavement Section that are intended to restore and/or maintain serviceability. This includes asphalt overlays, milling and replacing asphalt pavement, reconstruction with asphalt, reconstruction with Portland Cement Concrete (PCC) pavements, and PCC overlays.

<u>MicroPAVER</u> - A commercially available software subsidized by FAA and agencies in the US Department of Defense developed to support engineered management of pavement assets using a condition based approach. This software has the functionality such that, if properly implemented, maintained, and operated, it meets the pavement management program requirements described by the FAA in Advisory Circular 150/5380-7A.

<u>Minimum Condition Level</u> - A threshold PCI value established by FDOT to represent the targeted minimum pavement condition that is desirable in the Florida Airport System. These values were established with consideration of pavement function and airport type. For instance, runways have higher minimum condition levels than aprons, and Primary airports have higher minimum condition levels than airports.

#### **Glossary (Continued)**

<u>Network Definition</u> - A Network Definition is a Computer-Aided Drafting & Design (CADD) drawing which shows the airport pavement outline with Branch and Section boundaries. This drawing also includes the PCI sample units and is used to identify those sample units to be surveyed, i.e. the sampling plan. The Network Definition for the airport is in Appendix A along with a table of inventory data.

<u>Pavement Condition Index (PCI)</u> - The Pavement Condition Index is a number which represents the condition of a pavement segment at a specific point in time. It is based on visual identification and measurement of specific distress types commonly found in pavement which has been in service for a period of time. The definitions and procedures for determining the PCI are found in ASTM D 5340, published by ASTM International.

<u>Pavement Evaluation</u> - A systematic approach undertaken by trained and experienced personnel intended for determination of the condition, serviceability, and best corrective action for pavement. Techniques to standardize pavement evaluation include the Pavement Condition Index procedures.

<u>Pavement Management System (PMS)</u> - A Pavement Management System is a broad function that uses pavement evaluation and pavement performance trends as a basis for planning, programming, financing, and maintaining a pavement system.

<u>Pavement Surface Type</u> - The surface of pavement is identified as one of four types:

- AC for asphalt surface pavements;
- PCC for Portland Cement Concrete pavements;
- AAC for asphalt surface pavements that have had an asphalt overlay at some point in their construction history;
- APC for composite pavements, which consist of asphalt over Portland Cement Concrete pavement.
- PAC for composite pavements, which consist of Portland Cement Concrete over asphalt pavement.

<u>Rank</u> - Pavement rank in MicroPAVER determines the priority to be assigned to a pavement Section when developing an M&R plan. Pavement Sections are ranked as follows according to their use:

- P for Primary pavements, such as primary runways, primary taxiways, and primary aprons;
- S or Secondary pavements, such as secondary runways, secondary taxiways, and secondary aprons;
- T for Tertiary pavements such as "T" hangars and slightly used aprons.

<u>Reconstruction</u> - Reconstruction includes removal of existing pavement, preparation of subgrade, and construction of new pavement with new or recycled materials. Reconstruction is indicated when distress types evident at the surface indicate failure in the pavement structure or subgrade of a type, and to an extent, not correctable by less extensive construction.

#### **Glossary (Continued)**

<u>Rehabilitation</u> - Rehabilitation represents construction using existing pavement for a foundation. Rehabilitation most commonly consists of an overlay of existing pavement with a new asphalt or concrete surface. Recently, technology has expanded the options to include recycling of existing pavement and incorporating engineering fabrics or thin layers of elasticized materials to retard reflection of distress types through the new surface.

<u>Sample Unit</u> - Uniformly sized portions of a Section as defined in ASTM D 5340. Sample units are a means to reduce the total amount of pavement actually surveyed using statistics to select and survey enough area to provide a representative measure of Section PCI. Sample Unit sizes are  $5,000 \pm 2,000$  square feet for AC-surfaced pavements and  $20 \pm 8$  slabs for PCC-surfaced pavements.

<u>Section</u> - Sections subdivide Branches into portions of similar pavement. Sections are prescribed by pavement structure, age, condition, and use. Sections are identified on the airport Network Definition. They are the smallest unit used for determining M&R requirements based on condition.

<u>Statewide Airfield Pavement Management Program (SAPMP)</u> – The Statewide Airfield Pavement Management Program is a program implemented in 1992 by the Florida Department of Transportation to plan, schedule, and design the maintenance and rehabilitation activities necessary for the airfield pavement on Florida's public airports to allow the airports to operate efficiently, economically, and without excessive down time.

<u>System Inventory</u> - A System Inventory is a Computer-Aided Drafting & Design (CADD) drawing which shows the airport pavement outline and identifies airfield construction activities since the last inspection. The System Inventory for the airport is included in Appendix A.

<u>Use</u> - In MicroPAVER, Use is the term for the function of the pavement area. This is either Runway, Taxiway, or Apron for purposes of the FDOT Statewide Aviation Pavement Management System.

# **APPENDIX B**

## **M&R COST SCHEDULES AND CRITICAL PCIs**

#### **General Aviation Airports**

	Activity	PCI Trigger	Cost/SqFt
Maintenance	Creak Seeling and Full Depth Patching	90	\$0.06
Maintenance	ntenance Crack Sealing and Full-Depth Patching		\$0.24
Rehabilitation		70	\$3.00
	Mill and Overlay (AC) or Concrete Pavement Restoration (PCC)	60	\$3.42
		50	\$6.29
		40	\$6.29
		30	\$13.62
	Reconstruction	20	\$13.62

## **M&R** Activities and Unit Costs by Condition

#### **Critical PCIs**

Use	Critical PCI
Runway	65
Taxiway	65
Apron	65

#### FDOT Minimum Service Level PCIs

Minimum PCI					
Runway Taxiway Apron					
75	65	60			

#### **Regional Reliever Airports**

	Activity	PCI Trigger	Cost/SqFt
Maintenance	Creak Seeling and Full Depth Patching	90	\$0.10
Maintenance	Maintenance Crack Sealing and Full-Depth Patching		\$0.40
Rehabilitation		70	\$0.90
	Mill and Overlay (AC) or Concrete Pavement Restoration (PCC)	60	\$3.68
		50	\$7.61
		40	\$18.57
		30	\$18.57
	Reconstruction	20	\$18.57

## **M&R** Activities and Unit Costs by Condition

#### **Critical PCIs**

Use	Critical PCI
Runway	65
Taxiway	65
Apron	65

#### FDOT Minimum Service Level PCIs

Minimum PCI					
Runway Taxiway Apron					
75	65	65			

#### **Primary Airports**

	Activity	PCI Trigger	Cost/SqFt
Maintenance	Creak Seeling and Full Depth Patching	90	\$0.20
Maintenance	enance Crack Sealing and Full-Depth Patching		\$0.80
		70	\$1.40
	Mill and Overlay (AC) or Concrete Pavement Restoration (PCC)	60	\$4.23
Rehabilitation		50	\$8.55
		40	\$8.55
		30	\$20.88
	Reconstruction	20	\$20.88

## **M&R** Activities and Unit Costs by Condition

#### **Critical PCIs**

Use	Critical PCI
Runway	65
Taxiway	65
Apron	65

#### FDOT Minimum Service Level PCIs

Minimum PCI					
Runway Taxiway Apron					
75	70	65			

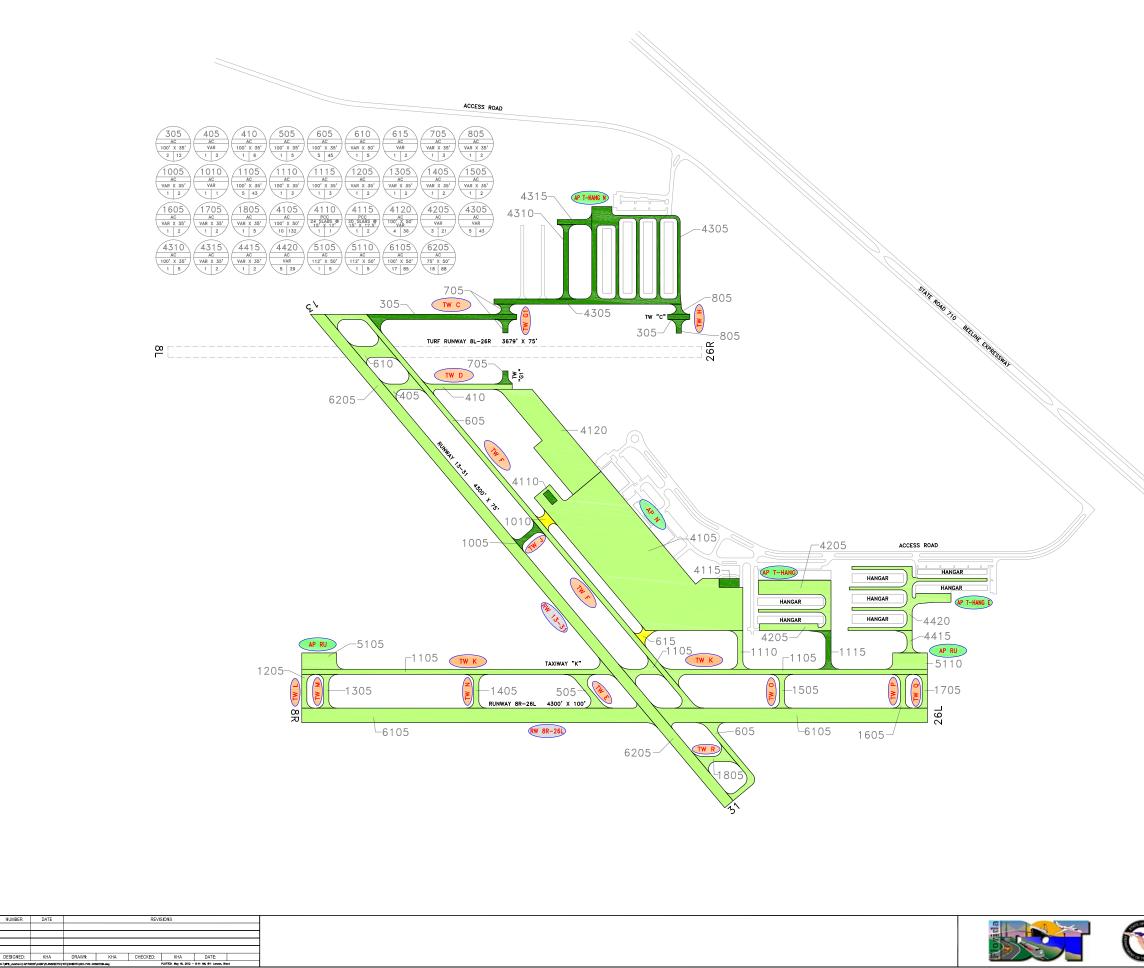
## **Maintenance Unit Costs**

## **Maintenance Unit Costs for FDOT**

Code	Name	Cost	Unit
GR-LL	Grinding (Localized for AC)	\$2.10	SqFt
PA-AL	Patching – AC Leveling	\$2.30	SqFt
PA-AS	Patching – AC Shallow	\$2.90	SqFt
PA-PF	Patching – PCC Full Depth	\$38.11	SqFt
PA-PP	Patching – PCC Partial Depth	\$19.06	SqFt
SL-PC	Slab Replacement – PCC	\$39.11	SqFt
CS-PC	Crack Sealing – PCC	\$4.24	Ft
UN-PC	Undersealing – PCC	\$3.40	Ft
CS-AC	Crack Sealing – AC	\$2.25	Ft
GR-PP	Grinding (Localized for PCC)	\$22.51	Ft
JS-LC	Joint Seal (Localized)	\$2.00	Ft
SH-LE	Shoulder Leveling	\$2.81	Ft
JS-SI	Joint Seal – Silicon	\$2.81	Ft
PA-AD	Patching – AC Deep	\$4.90	SqFt
OL-AT	Overlay – AC Thin	\$2.80	SqFt
SS-CT	Surface Seal – Coal Tar	\$0.40	SqFt
SS-FS	Surface Seal – Fog Seal	\$0.40	SqFt
SS-RE	Surface Seal – Rejuvenating	\$0.40	SqFt
ST-SB	Surface Treatment – Single Bitum.	\$0.30	SqFt
ST-SS	Surface Treatment – Slurry Seal	\$0.55	SqFt
ST-ST	Surface Treatment – Sand Tar	\$0.28	SqFt
MI-AC	Microsurfacing - AC	\$0.65	SqFt

# **APPENDIX C**

## AIRPORT CONDITION MAPS AND MAJOR REHABILITATION PROJECT TABLES







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

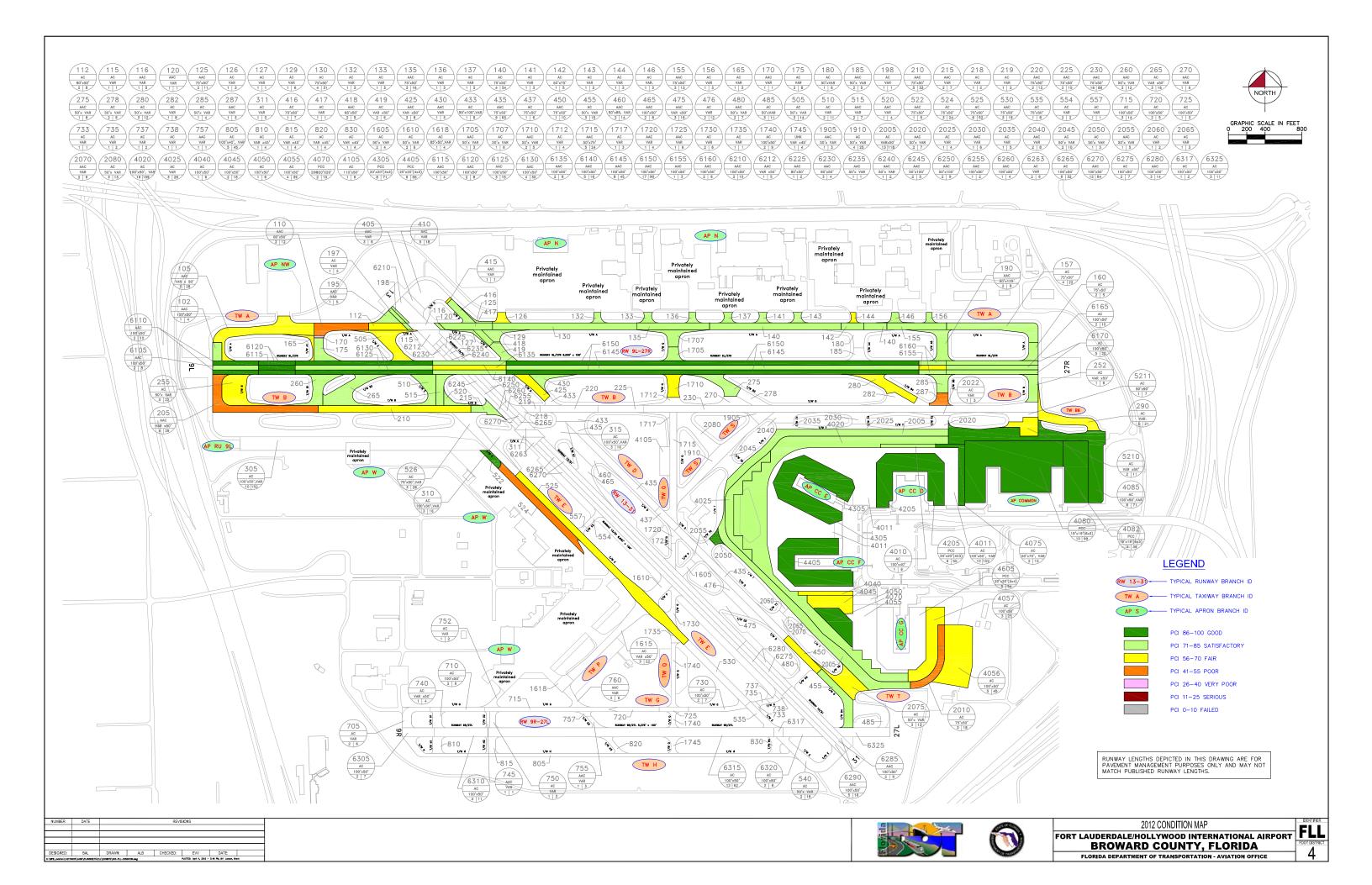


2012 CONDITION MAP	
NORTH PALM BEACH COUNTY G.A. PALM BEACH COUNTY, FLORIDA	FDOT DISTRICT
FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE	4

#### North Palm Beach County General Aviation Airport (F45)

## Major Rehabilitation Plan by Year under Unlimited Funding Scenario

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2015	Taxiway Foxtrot	615	AC	6,198	\$19,275.63	63	Mill and Overlay	100
2017	Runway 13-31	6205	AC	329,838	\$1,088,231.04	63	Mill and Overlay	100
2017	Runway 8R-26L	6105	AC	422,070	\$1,256,510.13	64	Mill and Overlay	100
2017	Taxiway Juliet	1010	AC	6,812	\$20,278.09	64	Mill and Overlay	100
2019	North Apron	4120	AC	172,695	\$545,426.68	64	Mill and Overlay	100
2019	Apron Run-Up	5110	AC	27,137	\$85,705.64	64	Mill and Overlay	100
2020	Taxiway Oscar	1505	AC	10,654	\$34,659.30	64	Mill and Overlay	100
2021	North Apron	4105	AC	657,596	\$2,203,378.59	64	Mill and Overlay	100
2021	T-Hangar Apron	4205	AC	87,823	\$294,263.97	64	Mill and Overlay	100
	Total \$				\$5,547,729.07	64		100



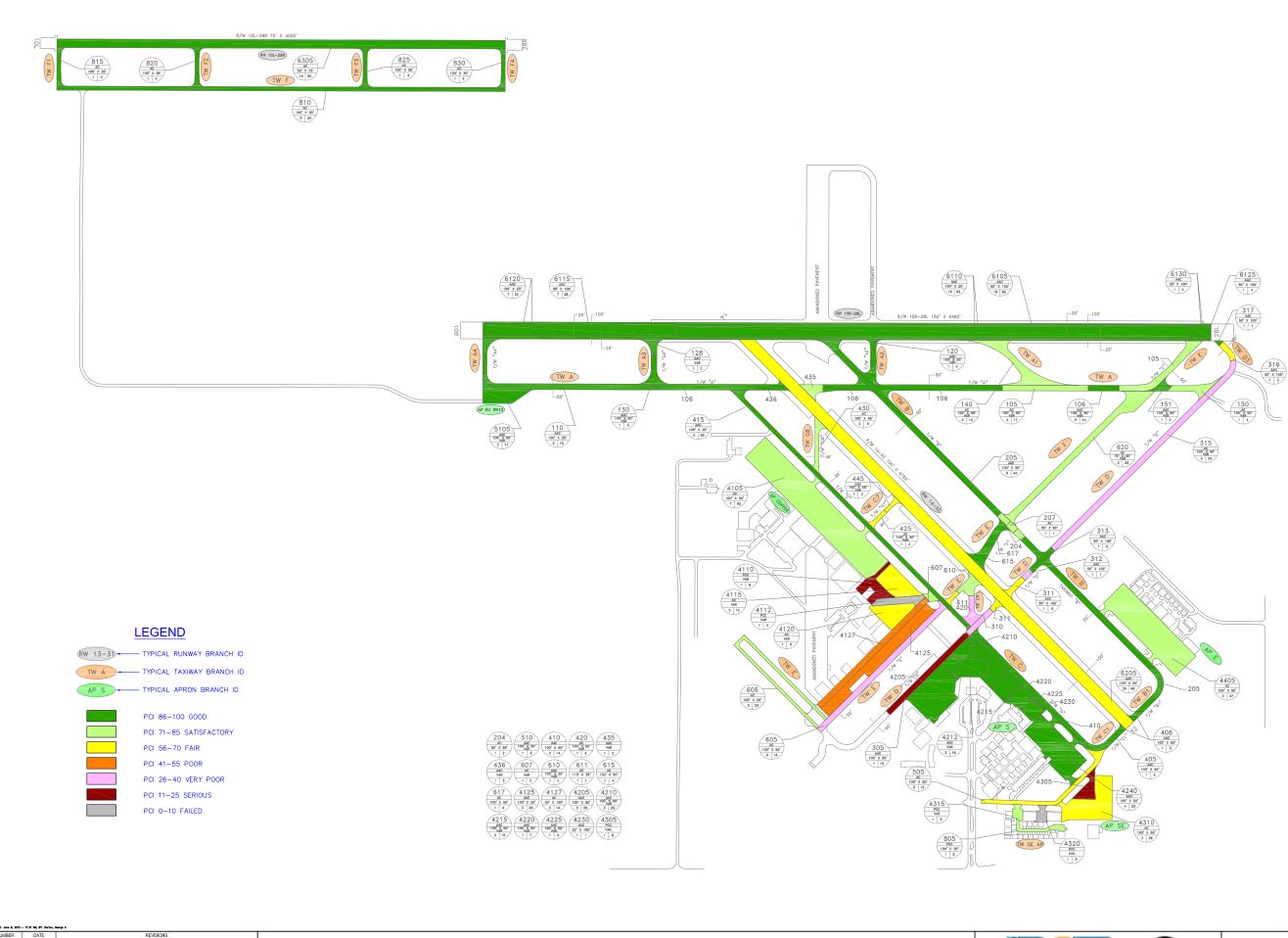
Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2012	Common Apron	4045	AC	75,746	\$385,849.35	58	Mill and Overlay	100
2012	Common Apron	4057	AC	134,323	\$492,160.24	62	Mill and Overlay	100
2012	Common Apron	4040	AC	25,500	\$86,215.45	63	Mill and Overlay	100
2012	Common Apron	4056	AC	210,035	\$650,687.48	64	Mill and Overlay	100
2012	Taxiway Alpha	110	AAC	56,494	\$409,810.43	53	Mill and Overlay	100
2012	Taxiway Alpha	105	AAC	144,501	\$798,511.85	57	Mill and Overlay	100
2012	Taxiway Alpha	112	AAC	31,339	\$97,088.86	64	Mill and Overlay	100
2012	Taxiway A-1	170	AAC	2,699	\$29,734.49	38	Reconstruction	100
2012	Taxiway A-1	165	AC	11,628	\$59,233.76	58	Mill and Overlay	100
2012	Taxiway Bravo	205	AAC	124,292	\$1,062,696.58	46	Mill and Overlay	100
2012	Taxiway Bravo	210	AAC	124,875	\$457,541.66	62	Mill and Overlay	100
2012	Taxiway B-5	287	AAC	21,148	\$144,272.41	54	Mill and Overlay	100
2012	Taxiway Echo	524	AC	93,365	\$798,273.56	49	Mill and Overlay	100
2012	Taxiway Echo	525	AC	227,962	\$899,765.46	61	Mill and Overlay	100
2012	Taxiway Echo	505	AC	67,978	\$229,835.01	63	Mill and Overlay	100
2012	Taxiway Tango	2010	AC	64,117	\$520,500.48	51	Mill and Overlay	100
2012	Taxiway Tango	2005	AC	463,498	\$537,658.06	75	Reconstruction	100
2012	Taxiway T-8	2075	AC	69,894	\$216,531.37	64	Mill and Overlay	100
2013	RU AP at RW 9L	5210	AC	47,968	\$167,043.47	63	Mill and Overlay	100
2013	Runway 9L-27R	6155	AAC	15,000	\$47,864.08	64	Mill and Overlay	100
2013	Runway 9L-27R	6135	AAC	40,000	\$127,637.55	64	Mill and Overlay	100

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2013	Taxiway Delta	415	AAC	1,875	\$5,983.01	64	Mill and Overlay	100
2014	Taxiway Alpha	126	AC	13,824	\$49,583.88	63	Mill and Overlay	100
2014	Taxiway B-6	290	AC	69,246	\$227,587.28	64	Mill and Overlay	100
2014	Taxiway Quebec	1710	AAC	33,134	\$118,848.95	63	Mill and Overlay	100
2015	Taxiway Alpha	144	AC	7,095	\$24,019.55	64	Mill and Overlay	100
2015	Taxiway Bravo	215	AAC	27,262	\$92,287.45	64	Mill and Overlay	100
2015	Taxiway Bravo	255	AC	94,191	\$347,988.37	63	Mill and Overlay	100
2015	Taxiway B-4	280	AC	59,122	\$218,425.78	63	Mill and Overlay	100
2015	Taxiway Delta	450	AAC	36,625	\$135,311.35	63	Mill and Overlay	100
2015	Taxiway Delta	425	AAC	35,200	\$130,047.94	63	Mill and Overlay	100
2016	Common Apron	4010	AC	24,000	\$83,683.80	64	Mill and Overlay	100
2016	Runway 9L-27R	6125	AAC	75,000	\$285,400.74	63	Mill and Overlay	100
2016	Taxiway Alpha	135	AAC	59,250	\$206,594.37	64	Mill and Overlay	100
2016	Taxiway Alpha	197	AC	8,543	\$29,787.49	64	Mill and Overlay	100
2016	Taxiway Alpha	156	AC	8,660	\$30,196.11	64	Mill and Overlay	100
2016	Taxiway Quebec	1705	AAC	20,683	\$72,117.65	64	Mill and Overlay	100
2017	Runway 9L-27R	6165	AC	50,000	\$179,571.48	64	Mill and Overlay	100
2017	Taxiway Alpha	198	AC	6,151	\$24,110.20	63	Mill and Overlay	100
2017	Taxiway Alpha	136	AC	10,290	\$40,330.75	63	Mill and Overlay	100
2017	Taxiway Alpha	143	AC	11,216	\$40,281.98	64	Mill and Overlay	100
2017	Taxiway Alpha	141	AC	10,988	\$39,463.13	64	Mill and Overlay	100

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2017	Taxiway Alpha	115	AC	4,524	\$16,248.38	64	Mill and Overlay	100
2017	Taxiway Delta	430	AAC	25,971	\$93,273.74	64	Mill and Overlay	100
2018	Common Apron	4020	AC	743,659	\$3,002,215.90	63	Mill and Overlay	100
2018	Runway 9L-27R	6105	AAc	25,000	\$92,479.31	64	Mill and Overlay	100
2018	Taxiway Alpha	120	AAC	3,711	\$13,728.63	64	Mill and Overlay	100
2018	Taxiway Alpha	160	AC	22,546	\$91,020.28	63	Mill and Overlay	100
2018	Taxiway Alpha	133	AC	11,769	\$47,513.46	63	Mill and Overlay	100
2018	Taxiway A-1	175	AC	34,416	\$138,941.01	63	Mill and Overlay	100
2018	Taxiway Bravo	252	AC	33,559	\$135,481.99	63	Mill and Overlay	100
2018	Taxiway B-5	285	AC	29,560	\$109,348.61	64	Mill and Overlay	100
2019	Taxiway Alpha	155	AAC	48,750	\$202,712.31	63	Mill and Overlay	100
2019	Taxiway Alpha	125	AAC	41,306	\$171,760.24	63	Mill and Overlay	100
2019	Taxiway Alpha	102	AAC	19,995	\$83,145.06	63	Mill and Overlay	100
2019	Taxiway Alpha	130	AC	118,200	\$450,359.45	64	Mill and Overlay	100
2019	Taxiway Echo	515	AAC	32,599	\$124,205.56	64	Mill and Overlay	100
2020	Common Apron	4025	AC	117,040	\$501,276.41	63	Mill and Overlay	100
2020	Runway 9L-27R	6160	AAC	30,000	\$128,488.42	63	Mill and Overlay	100
2020	Runway 9L-27R	6145	AAC	225,000	\$883,001.72	64	Mill and Overlay	100
2020	Taxiway Alpha	195	AAC	19,444	\$83,277.84	63	Mill and Overlay	100
2020	Taxiway Alpha	157	AC	96,116	\$411,659.33	63	Mill and Overlay	100
2020	Taxiway Alpha	146	AC	12,252	\$52,474.28	63	Mill and Overlay	100

## Major Rehabilitation Plan by Year under Unlimited Funding Scenario (Continued)

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2020	Taxiway Alpha	140	AC	126,300	\$495,658.30	64	Mill and Overlay	100
2020	Taxiway B-1	260	AC	59,605	\$255,285.46	63	Mill and Overlay	100
2020	Taxiway B-3	275	AAC	47,639	\$186,958.74	64	Mill and Overlay	100
2020	Taxiway Delta	418	AAC	14,344	\$61,435.92	63	Mill and Overlay	100
2020	Taxiway Delta	417	AC	5,709	\$22,403.21	64	Mill and Overlay	100
2020	Taxiway Echo	520	AAC	15,100	\$64,674.22	63	Mill and Overlay	100
2021	Runway 9L-27R	6140	AAC	80,000	\$352,914.86	63	Mill and Overlay	100
2021	Taxiway A-5	190	AAC	52,841	\$213,591.84	64	Mill and Overlay	100
2021	Taxiway B-2	265	AC	96,641	\$390,639.61	64	Mill and Overlay	100
2021	Taxiway Quebec	1707	AC	37,554	\$151,799.79	64	Mill and Overlay	100
				Total	\$19,628,506.74	62		100



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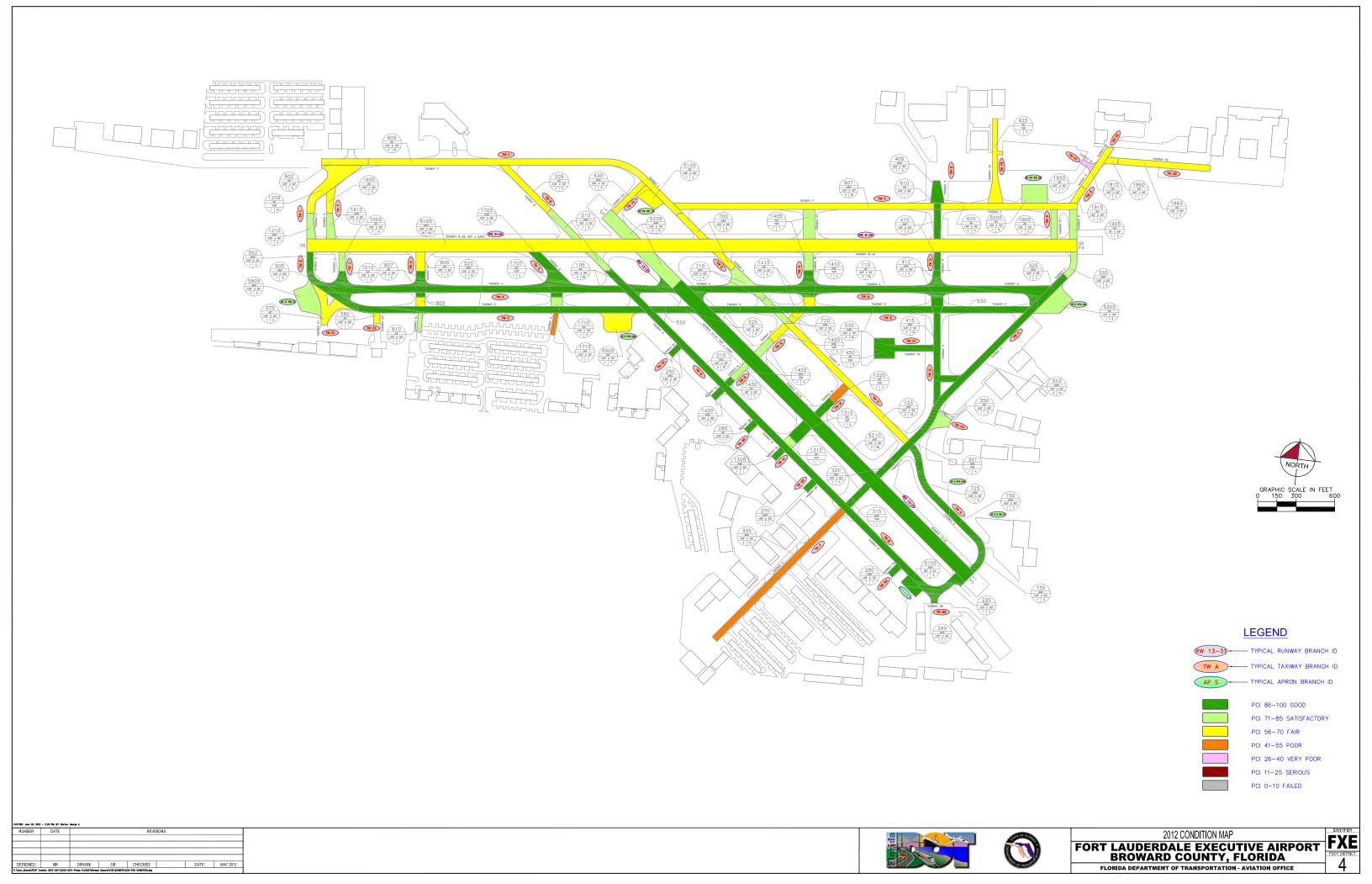
## St. Lucie County International Airport (FPR)

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2012	Center Apron	4110	PCC	99,875	\$1,360,297.94	23	Reconstruction	100
2012	Center Apron	4112	PCC	46,618	\$634,944.12	0	Reconstruction	100
2012	Center Apron	4120	AC	42,050	\$97,892.46	64	Mill and Overlay	100
2012	Center Apron	4125	AAC	120,000	\$754,800.06	43	Mill and Overlay	100
2012	Center Apron	4127	AC	70,000	\$440,300.03	42	Mill and Overlay	100
2012	Southeast Apron	4305	PCC	25,120	\$342,134.51	17	Reconstruction	100
2012	Southeast Apron	4310	AC	121,350	\$381,888.72	61	Mill and Overlay	100
2012	Southeast Apron	4320	PCC	12,300	\$167,526.05	6	Reconstruction	100
2012	Runway 14-32	6205	AAC	478,000	\$1,771,947.08	59	Mill and Overlay	100
2012	Taxiway C-1	505	AC	46,382	\$107,977.36	64	Mill and Overlay	100
2012	Taxiway C-4	420	AAC	18,540	\$225,335.24	32	Reconstruction	100
2012	Taxiway C-7	425	AC	6,275	\$19,748.57	61	Mill and Overlay	100
2012	Taxiway Delta	305	AAC	50,000	\$681,000.22	17	Reconstruction	100
2012	Taxiway Delta	310	AAC	13,750	\$96,566.27	39	Reconstruction	100
2012	Taxiway Delta	312	AAC	26,641	\$362,846.16	28	Reconstruction	100
2012	Taxiway Delta	315	AC	126,787	\$1,726,839.50	27	Reconstruction	100
2012	Taxiway Delta	316	AAC	9,410	\$34,882.89	59	Mill and Overlay	100
2012	Taxiway Echo	605	AC	75,050	\$637,099.64	37	Reconstruction	100
2013	Center Apron	4115	AC	58,250	\$139,674.27	64	Mill and Overlay	100
2013	Taxiway C-7	445	AAC	4,725	\$11,329.80	64	Mill and Overlay	100
2014	Taxiway Echo	611	AC	7,391	\$18,254.12	64	Mill and Overlay	100

#### **St. Lucie County International Airport (FPR)**

## Major Rehabilitation Plan by Year under Unlimited Funding Scenario (Continued)

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2015	Taxiway Delta	311	AAC	16,620	\$42,279.12	64	Mill and Overlay	100
2015	Taxiway SE Apron	805	PCC	17,900	\$56,214.94	62	PCC Restoration	100
2016	Southeast Apron	4315	PCC	12,200	\$35,714.89	63	PCC Restoration	100
2018	Center Apron	4105	AC	398,125	\$1,106,690.16	64	Mill and Overlay	100
2018	Taxiway Alpha	435	AAC	20,002	\$55,601.93	64	Mill and Overlay	100
2019	East Apron	4405	AC	246,000	\$786,930.36	63	Mill and Overlay	100
2019	Taxiway C-5	607	AC	8,150	\$26,071.07	63	Mill and Overlay	100
2019	Taxiway C-8	430	AC	21,300	\$68,136.65	63	Mill and Overlay	100
2019	Taxiway Echo	610	AAC	16,906	\$48,404.38	64	Mill and Overlay	100
2020	Taxiway Echo	606	AC	54,895	\$161,887.69	64	Mill and Overlay	100
2021	Taxiway Alpha	105	AC	220,850	\$670,835.71	64	Mill and Overlay	100
2021	Taxiway A-1	140	AC	77,050	\$261,485.91	63	Mill and Overlay	100
				Total	\$13,333,537.82	49		100



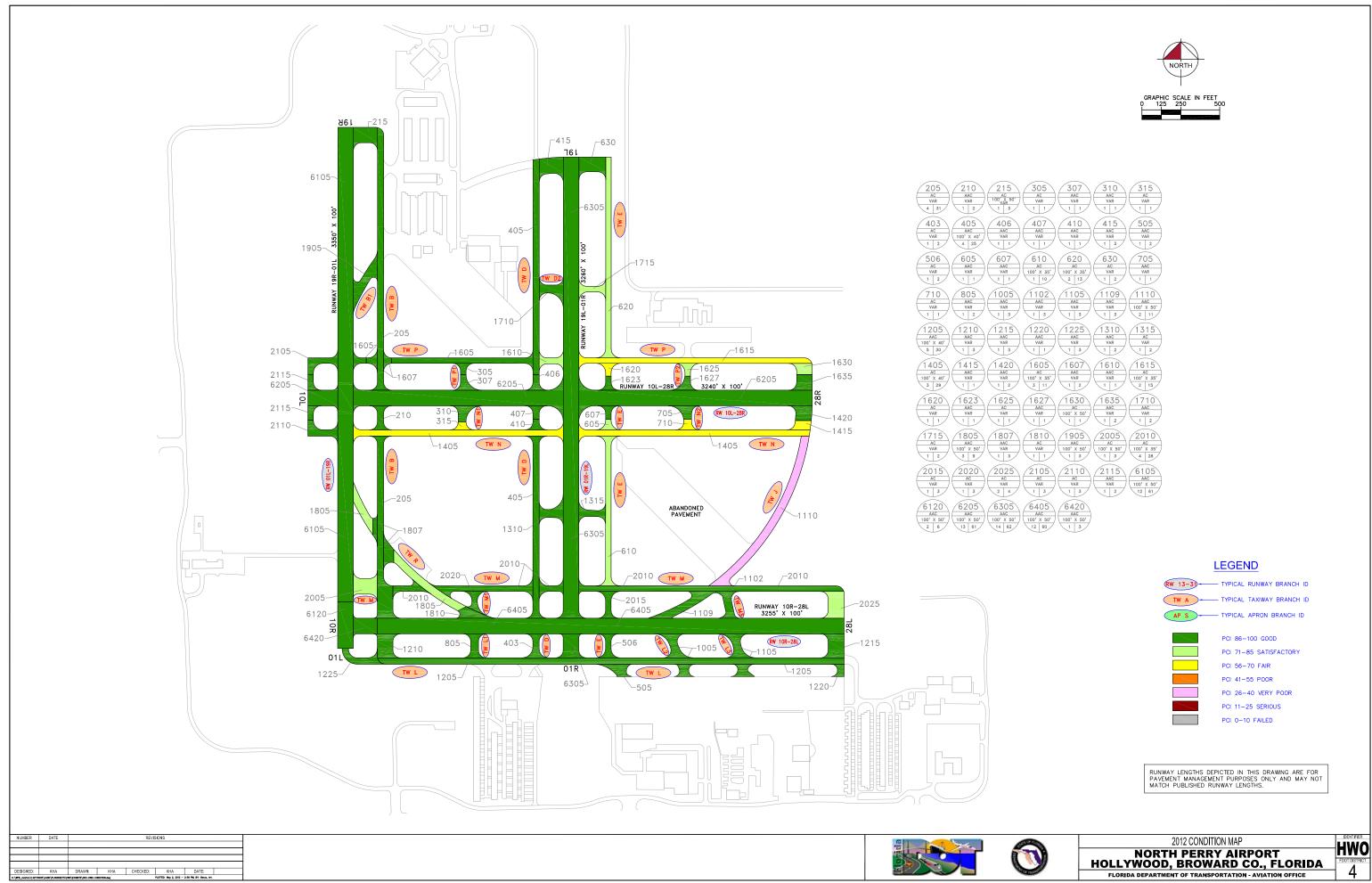
## Fort Lauderdale Executive Airport (FXE)

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2012	Run-Up Apron at RW 13	5105	AC	18,300	\$62,256.61	61	Mill and Overlay	100
2012	Taxiway Bravo	205	AAC	25,242	\$78,856.01	62	Mill and Overlay	100
2012	Taxiway Charlie	305	AAC	71,000	\$540,310.27	50	Mill and Overlay	100
2012	Taxiway Echo	580	AC	4,255	\$15,658.40	60	Mill and Overlay	100
2012	Taxiway Foxtrot	605	AAC	128,538	\$675,081.86	56	Mill and Overlay	100
2012	Taxiway Foxtrot	630	AC	14,625	\$41,622.75	63	Mill and Overlay	100
2012	Taxiway Golf	723	AC	65,000	\$290,290.10	58	Mill and Overlay	100
2012	Taxiway Mike	1320	AC	9,666	\$73,558.30	45	Mill and Overlay	100
2012	Taxiway November	1420	AAC	9,715	\$27,648.89	63	Mill and Overlay	100
2012	Taxiway Quebec	1715	AC	6,040	\$45,964.42	49	Mill and Overlay	100
2012	Taxiway Sierra	1915	AC	18,995	\$59,340.38	62	Mill and Overlay	100
2012	Taxiway S-1	1950	AC	4,590	\$60,083.10	35	Reconstruction	100
2012	Taxiway S-3	1960	AC	4,781	\$12,277.61	64	Mill and Overlay	100
2012	Taxiway S-3	1965	AC	36,000	\$132,480.03	60	Mill and Overlay	100
2014	Taxiway F-9	625	AC	41,865	\$114,056.63	64	Mill and Overlay	100
2014	Taxiway Lima	1206	AC	49,690	\$135,374.99	64	Mill and Overlay	100
2014	Taxiway November	1415	AC	11,710	\$31,902.62	64	Mill and Overlay	100
2014	Taxiway Sierra	1910	AC	7,245	\$19,738.21	64	Mill and Overlay	100
2015	Holding Apron at TWs A and E	5505	AC	33,090	\$92,854.60	64	Mill and Overlay	100
2015	Taxiway Golf	705	AC	22,000	\$61,734.70	64	Mill and Overlay	100
2016	Runway 8-26	6105	AAC	600,000	\$1,734,183.84	64	Mill and Overlay	100

#### **Fort Lauderdale Executive Airport (FXE)**

## Major Rehabilitation Plan by Year under Unlimited Funding Scenario (Continued)

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2016	Taxiway Foxtrot	602	AC	18,170	\$52,516.87	64	Mill and Overlay	100
2016	Taxiway Hotel	805	AC	15,610	\$45,117.68	64	Mill and Overlay	100
2017	Runway 13-31	6205	AAC	63,400	\$188,742.79	64	Mill and Overlay	100
2017	Taxiway Echo	575	AC	32,440	\$96,574.39	64	Mill and Overlay	100
2017	Taxiway Foxtrot	620	AC	53,100	\$158,079.53	64	Mill and Overlay	100
2017	Taxiway Papa	1605	AC	10,660	\$31,734.99	64	Mill and Overlay	100
2019	Run-Up Apron at RW 26	5205	AC	30,000	\$105,006.63	63	Mill and Overlay	100
2019	Taxiway Foxtrot	607	AAC	100,495	\$317,394.95	64	Mill and Overlay	100
2019	Taxiway Hotel	810	AC	5,110	\$16,138.99	64	Mill and Overlay	100
2020	Taxiway Golf	720	AC	9,875	\$32,124.02	64	Mill and Overlay	100
2020	Taxiway Mike	1310	AC	5,473	\$17,804.03	64	Mill and Overlay	100
2020	Taxiway Quebec	1710	AC	6,421	\$20,887.93	64	Mill and Overlay	100
2021	Holding Apron at TWs A and C	5305	AC	33,709	\$112,947.31	64	Mill and Overlay	100
2021	Taxiway Juliet	1005	AC	7,600	\$25,465.00	64	Mill and Overlay	100
				Total	\$5,525,809.43	61		100





305 AC VAR 1 1	307 AAC VAR 1 1	310 AAC VAR	315 AC VAR 1 1
407 AAC VAR	410 AAC VAR 1 1	415 AAC VAR 1 3	505 AAC VAR 1 2
610	620	630	705
AC	AC	AC	AAC
00' X 35'	100' X 35'	VAR	VAR
1 10	2 13	1 2	1 1
1102	1105	1109	1110
AAC	AAC	AAC	AAC
VAR	VAR	VAR	100' X 50'
1 3	1 3	1 3	2 11
1220	1225	1310	1315
AAC	AAC	AAC	AC
VAR	VAR	VAR	VAR
1 1	1 3	1 2	1 2
1605	1607	1610	1615
AC	AAC	AAC	AC
00' x 35'	VAR	VAR	100' X 35'
3 11	1 2	1 1	2 15
1627	1630	1635	1710
AAC	AC	AAC	AAC
VAR	100' X 50'	VAR	VAR
1 1	1 1	1 2	1 2
1810	1905	2005	2010
AC	AAC	AC	AC
VAR	100' X 50'	100' X 50'	100' X 35'
1 1	1 3	1 3	4 28
2105	2110	2115	6105
AC	AC	AAC	AAC
VAR	VAR	VAR	100' X 50'
1 3	1 3	1 2	12 61
6405 AAC 00' X 50'	6420 AAC 100' X 50'		

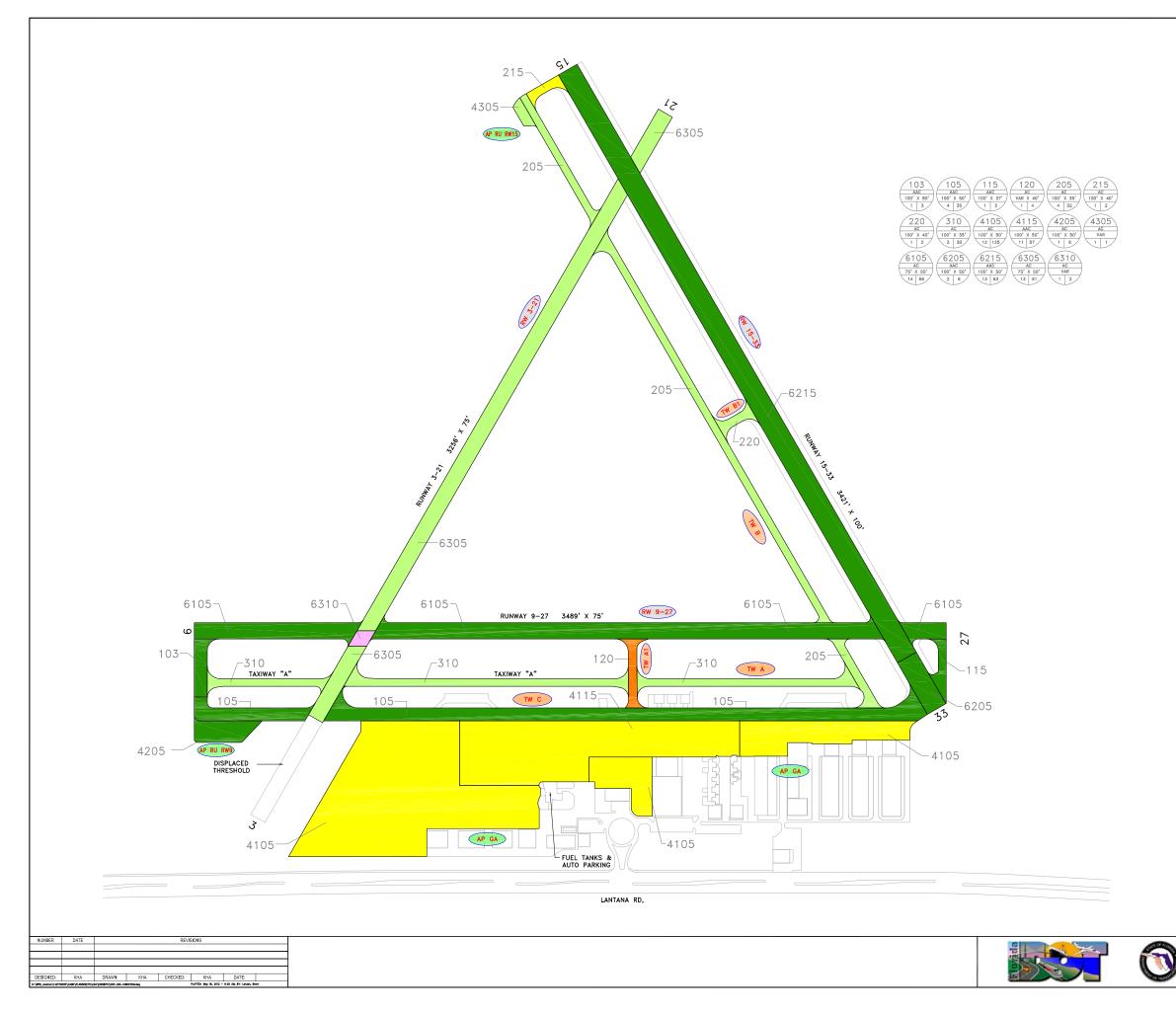
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_	TYPICAL	RUNV



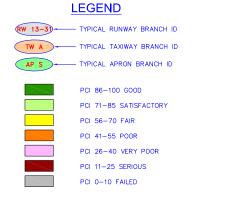
## North Perry Airport (HWO)

## Major Rehabilitation Plan by Year under Unlimited Funding Scenario

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2012	Taxiway Juliet	1110	AAC	58,977	\$1,095,208.57	27	Reconstruction	100
2012	Taxiway November	1415	AAC	6,564	\$16,855.32	64	Mill and Overlay	100
2012	Taxiway N-1	315	AC	3,573	\$18,765.46	56	Mill and Overlay	100
2012	Taxiway N-2	710	AC	4,477	\$12,740.69	63	Mill and Overlay	100
2013	Taxiway November	1405	AC	116,601	\$308,415.55	64	Mill and Overlay	100
2014	Taxiway Papa	1615	AC	53,064	\$144,566.40	64	Mill and Overlay	100
2016	Taxiway Echo	1620	AC	4,433	\$12,811.66	64	Mill and Overlay	100
2021	Taxiway P-2	1625	AC	4,434	\$14,857.79	64	Mill and Overlay	100
				Total	\$1,624,221.44	58		100







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

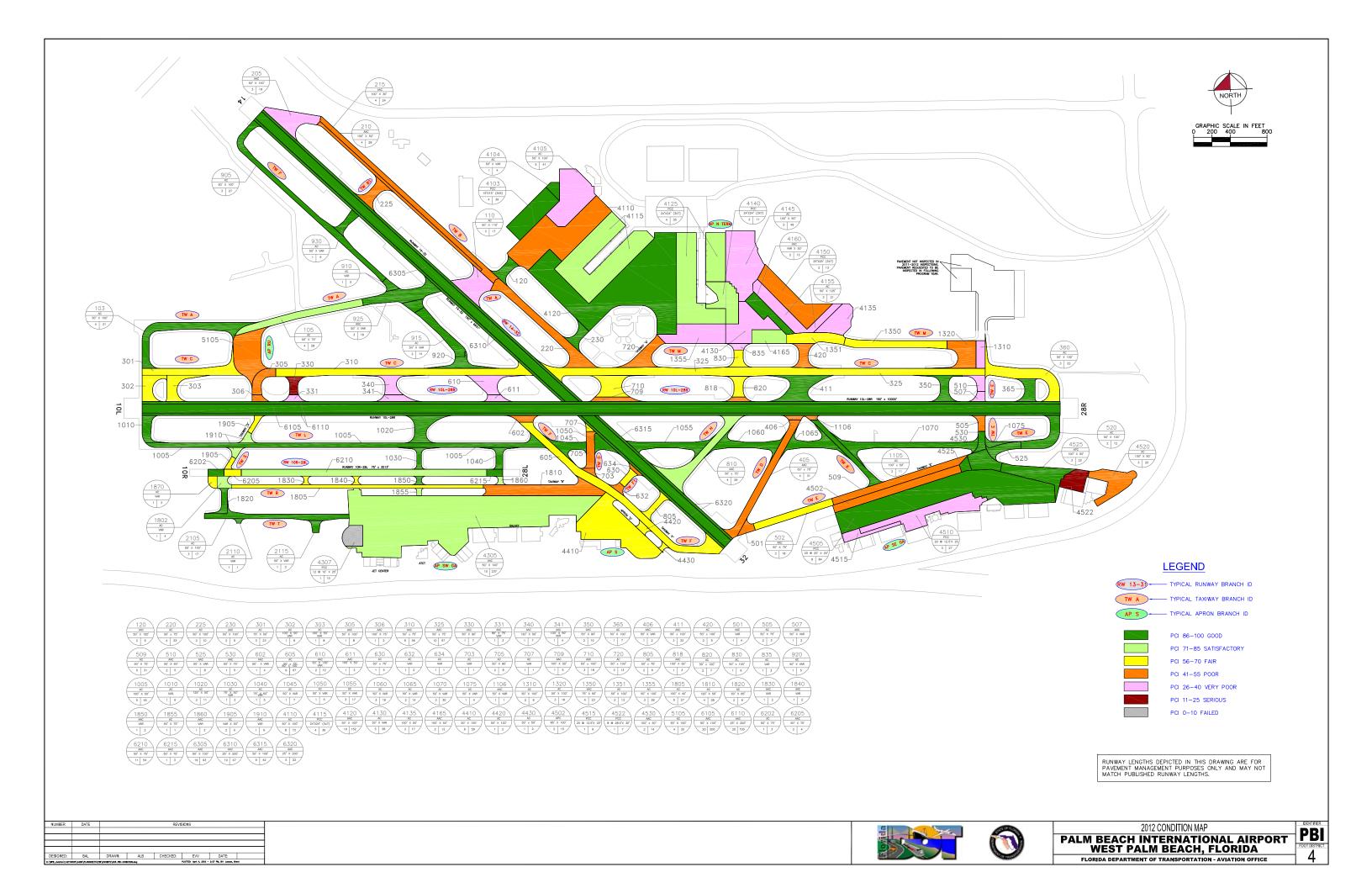




## Palm Beach County Park Airport (LNA)

## Major Rehabilitation Plan by Year under Unlimited Funding Scenario

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2012	General Aviation Apron	4105	AC	587,002	\$1,833,794.03	62	Mill and Overlay	100
2012	General Aviation Apron	4115	AAC	293,243	\$1,540,111.16	56	Mill and Overlay	100
2012	Runway 3-21	6310	AC	6,150	\$60,282.32	38	Reconstruction	100
2012	Taxiway A-1	120	AC	15,014	\$108,356.31	51	Mill and Overlay	100
2015	Taxiway Bravo	215	AC	8,529	\$23,932.33	64	Mill and Overlay	100
2019	Runway 3-21	6305	AC	228,640	\$722,116.32	64	Mill and Overlay	100
				\$4,288,592.47	56		100	



Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2012	North Terminal Apron	4155	AC	125,928	\$2,629,380.20	27	Reconstruction	100
2012	North Terminal Apron	4145	AC	236,242	\$4,641,436.10	31	Reconstruction	100
2012	North Terminal Apron	4135	AC	82,283	\$1,515,165.65	32	Reconstruction	100
2012	North Terminal Apron	4105	AC	191,226	\$2,578,106.39	36	Reconstruction	100
2012	North Terminal Apron	4130	AC	134,443	\$1,481,024.23	38	Reconstruction	100
2012	North Terminal Apron	4110	AC	351,727	\$3,007,264.39	44	Mill and Overlay	100
2012	North Terminal Apron	4150	PCC	163,437	\$1,114,967.22	54	PCC Restoration	100
2012	Run-Up Apron b/w A&C	5105	AC	145,788	\$1,246,488.51	43	Mill and Overlay	100
2012	South Apron	4410	AC	289,502	\$1,060,734.13	62	Mill and Overlay	100
2012	Southeast GA Apron	4520	AC	96,705	\$659,723.55	54	Mill and Overlay	100
2012	Southeast GA Apron	4502	APC	123,034	\$945,642.27	52	Mill and Overlay	100
2012	Southeast GA Apron	4522	PCC	53,467	\$1,116,399.26	11	Reconstruction	100
2012	Southeast GA Apron	4510	PCC	170,834	\$3,145,743.78	32	Reconstruction	100
2012	Southeast GA Apron	4515	PCC	36,875	\$406,214.86	38	Reconstruction	100
2012	Southwest GA Apron	4307	PCC	46,576	\$972,503.31	1	Reconstruction	100
2012	Runway 10R-28L	6205	AAC	14,075	\$47,586.06	63	Mill and Overlay	100
2012	Taxiway Alpha	110	AAC	85,741	\$944,518.34	38	Reconstruction	100
2012	Taxiway Bravo	205	AAC	88,749	\$1,853,079.31	29	Reconstruction	100
2012	Taxiway Bravo	215	AAC	72,383	\$618,872.98	43	Mill and Overlay	100
2012	Taxiway Bravo	210	AAC	135,817	\$1,161,236.75	46	Mill and Overlay	100
2012	Taxiway Bravo	225	AC	40,559	\$346,779.93	42	Mill and Overlay	100

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2012	Taxiway Bravo	220	AC	136,127	\$1,163,881.18	43	Mill and Overlay	100
2012	Taxiway Charlie	330	AAC	21,482	\$448,546.98	23	Reconstruction	100
2012	Taxiway Charlie	341	AAC	23,779	\$496,508.95	29	Reconstruction	100
2012	Taxiway Charlie	331	AAC	12,267	\$210,759.10	33	Reconstruction	100
2012	Taxiway Charlie	340	AAC	37,698	\$647,696.03	33	Reconstruction	100
2012	Taxiway Charlie	306	AAC	10,393	\$88,864.22	41	Mill and Overlay	100
2012	Taxiway Charlie	305	AAC	37,592	\$321,407.81	42	Mill and Overlay	100
2012	Taxiway Charlie	325	AAC	398,372	\$1,572,372.34	61	Mill and Overlay	100
2012	Taxiway Charlie	301	AC	92,379	\$390,762.17	60	Mill and Overlay	100
2012	Taxiway Charlie	360	AC	121,369	\$410,347.49	63	Mill and Overlay	100
2012	Taxiway Charlie	303	AC	47,634	\$147,570.84	64	Mill and Overlay	100
2012	Taxiway Delta	406	AAC	8,853	\$75,695.01	41	Mill and Overlay	100
2012	Taxiway Delta	405	AAC	115,228	\$985,200.60	50	Mill and Overlay	100
2012	Taxiway Delta	420	AC	36,938	\$315,819.71	49	Mill and Overlay	100
2012	Taxiway Echo	510	AAC	20,365	\$425,223.81	28	Reconstruction	100
2012	Taxiway Echo	507	AAC	12,712	\$249,749.66	31	Reconstruction	100
2012	Taxiway Echo	501	AAC	15,998	\$129,874.72	51	Mill and Overlay	100
2012	Taxiway Echo	502	AAC	67,339	\$227,672.43	63	Mill and Overlay	100
2012	Taxiway Echo	505	AC	15,319	\$130,979.97	43	Mill and Overlay	100
2012	Taxiway Echo	509	AC	112,709	\$963,664.87	43	Mill and Overlay	100
2012	Taxiway Foxtrot	610	AAC	51,739	\$633,746.13	37	Reconstruction	100

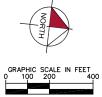
Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2012	Taxiway Foxtrot	611	AAC	15,196	\$148,664.37	39	Reconstruction	100
2012	Taxiway Foxtrot	602	AAC	16,820	\$122,010.13	53	Mill and Overlay	100
2012	Taxiway Foxtrot	634	AC	5,932	\$43,033.98	53	Mill and Overlay	100
2012	Taxiway Foxtrot	632	AC	9,584	\$65,378.95	54	Mill and Overlay	100
2012	Taxiway Foxtrot	630	AC	15,592	\$99,634.17	55	Mill and Overlay	100
2012	Taxiway Foxtrot	605	AC	223,265	\$881,225.55	61	Mill and Overlay	100
2012	Taxiway Golf	709	AAC	23,553	\$201,376.71	43	Mill and Overlay	100
2012	Taxiway Golf	710	AAC	65,910	\$278,798.18	60	Mill and Overlay	100
2012	Taxiway Golf	705	AC	36,388	\$311,117.29	42	Mill and Overlay	100
2012	Taxiway Golf	720	AC	61,336	\$524,425.01	49	Mill and Overlay	100
2012	Taxiway Golf	703	AC	7,565	\$54,876.49	53	Mill and Overlay	100
2012	Taxiway Hotel	818	AAC	10,511	\$89,869.10	40	Mill and Overlay	100
2012	Taxiway Hotel	835	AC	11,285	\$124,316.95	38	Reconstruction	100
2012	Taxiway Hotel	820	AC	28,116	\$155,369.36	57	Mill and Overlay	100
2012	Taxiway Hotel	830	AC	23,068	\$127,475.40	57	Mill and Overlay	100
2012	Taxiway Kilo	1106	AAC	5,755	\$49,206.77	50	Mill and Overlay	100
2012	Taxiway Mike	1355	AC	131,178	\$2,092,033.66	34	Reconstruction	100
2012	Taxiway Mike	1310	AC	30,200	\$369,919.67	37	Reconstruction	100
2012	Taxiway Mike	1320	AC	76,878	\$657,308.81	47	Mill and Overlay	100
2012	Taxiway Mike	1351	AC	68,492	\$270,337.42	61	Mill and Overlay	100
2012	Taxiway Mike	1350	AC	88,231	\$298,307.73	63	Mill and Overlay	100

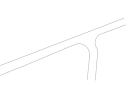
Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2012	Taxiway Romeo	1840	AAC	5,642	\$19,076.00	63	Mill and Overlay	100
2012	Taxiway Romeo	1830	AAC	5,642	\$17,479.28	64	Mill and Overlay	100
2012	Taxiway Romeo	1810	AC	160,215	\$1,369,836.41	45	Mill and Overlay	100
2012	Taxiway Romeo	1805	AC	109,651	\$463,823.85	60	Mill and Overlay	100
2013	Taxiway Charlie	310	AAC	217,969	\$695,526.06	64	Mill and Overlay	100
2013	Taxiway Charlie	302	AC	44,804	\$142,967.61	64	Mill and Overlay	100
2013	Taxiway Golf	707	AC	6,386	\$22,238.79	63	Mill and Overlay	100
2014	Taxiway Hotel	805	AC	24,318	\$79,923.72	64	Mill and Overlay	100
2015	South Apron	4420	AC	11,258	\$41,592.62	63	Mill and Overlay	100
2015	South Apron	4430	AC	5,362	\$19,810.58	63	Mill and Overlay	100
2015	Taxiway Romeo	1870	AC	11,700	\$43,223.90	63	Mill and Overlay	100
2015	Taxiway Sierra	1905	AC	20,244	\$74,790.25	63	Mill and Overlay	100
2017	Southwest GA Apron	4305	AAC	1,163,304	\$4,559,572.69	63	Mill and Overlay	100
2017	Runway 10R-28L	6210	AAC	200,660	\$720,657.88	64	Mill and Overlay	100
2017	Taxiway Hotel	810	AAC	121,150	\$474,846.95	63	Mill and Overlay	100
2018	Taxiway Alpha	105	AC	104,366	\$386,068.98	64	Mill and Overlay	100
2019	North Terminal Apron	4165	AAC	55,566	\$250,392.46	62	Mill and Overlay	100
2019	Taxiway Romeo	1855	AC	4,386	\$16,712.37	64	Mill and Overlay	100
2019	Taxiway Sierra	1910	AAC	21,896	\$83,426.88	64	Mill and Overlay	100
2021	Taxiway Romeo	1860	AAC	6,030	\$24,376.24	64	Mill and Overlay	100
2021	Taxiway Romeo	1802	AC	17,806	\$71,975.04	64	Mill and Overlay	100

## Major Rehabilitation Plan by Year under Unlimited Funding Scenario (Continued)

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
				Total	\$58,072,215.50	49		100

6105 A4C 75' × 50' 3 12	6110 <u>ACC</u> <u>78' X 50'</u> <u>14</u> 70 <u>W 17-33</u>	RUNWAY 17–3	35 4116' X 75'	
	$\frac{115}{\frac{AC}{VR.}}$			HANG 4205 1 2 4205 1 2
NUMBER         DATE         REVISIONS           DESIGNED:         KHA         DRAWN:         KHA         CHECKED:         KHA         DATE           DESIGNED:         KHA         DRAWN:         KHA         CHECKED:         KHA         DATE				





#### 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

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

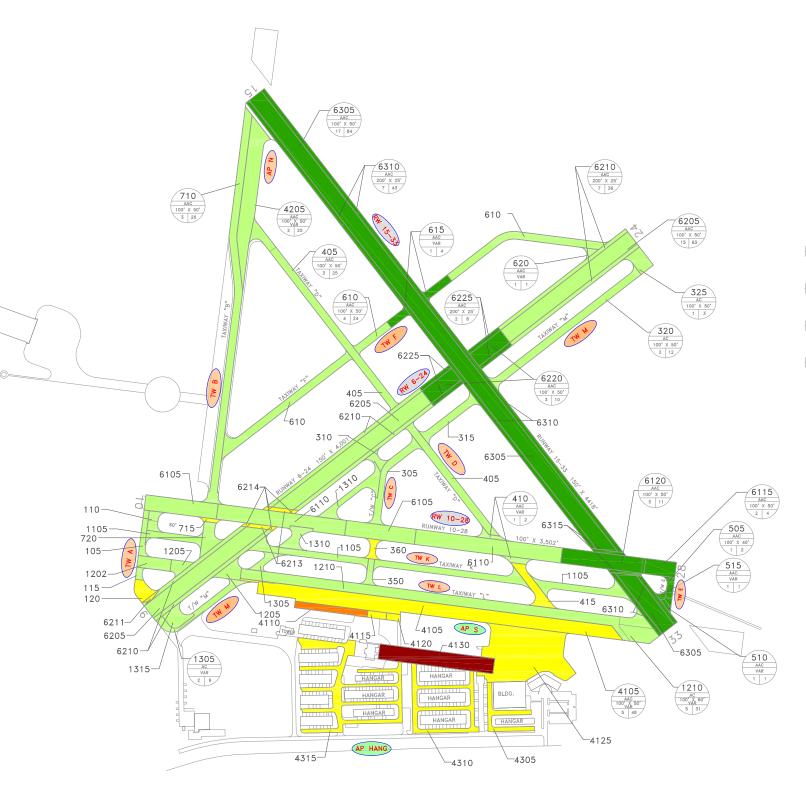




## Palm Beach County Glades Airport (PHK)

## Major Rehabilitation Plan by Year under Unlimited Funding Scenario

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2015	Taxiway Echo	125	AC	8,846	\$22,503.96	64	Mill and Overlay	100
2017	Runway 17-35	6110	AAC	263,794	\$711,924.39	64	Mill and Overlay	100
2017	Taxiway Alpha	130	AC	9,646	\$26,033.49	64	Mill and Overlay	100
2018	Taxiway Delta	110	AC	11,359	\$31,576.35	64	Mill and Overlay	100
				\$792,038.19	64		100	



PLOTTED: June 7, 2012	PLOTED: June 7, 2012 — 8:38 AN, BY: Burton, George A										
NUMBER	DATE		REVISIONS								
				-							
DESIGNED:	NR	DRAWN:	GB	CHECKED:		DATE:	MAY 2012				



SCALE IN FEET 300 600



#### 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

2012 CONDITION MAP
POMPANO BEACH AIRPARK
BROWARD COUNTY, FLORIDA
FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

## Pompano Beach Airpark (PMP)

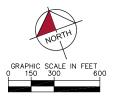
Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2012	Hangar Apron	4305	AC	16,875	\$77,085.03	56	Mill and Overlay	100
2012	Hangar Apron	4310	AC	46,250	\$171,448.85	59	Mill and Overlay	100
2012	Hangar Apron	4315	AC	82,500	\$376,860.16	56	Mill and Overlay	100
2012	South Apron	4110	AC	20,250	\$109,937.27	53	Mill and Overlay	100
2012	South Apron	4115	AC	5,625	\$19,237.51	60	Mill and Overlay	100
2012	South Apron	4120	AC	4,300	\$18,408.31	57	Mill and Overlay	100
2012	South Apron	4125	AC	150,000	\$431,100.29	62	Mill and Overlay	100
2012	South Apron	4130	PCC	78,750	\$1,072,575.35	24	Reconstruction	100
2012	Runway 6-24	6211	AAC	2,425	\$9,685.46	58	Mill and Overlay	100
2012	Taxiway Bravo	715	AAC	2,930	\$10,861.52	59	Mill and Overlay	100
2012	Taxiway Charlie	360	AC	5,300	\$12,338.41	64	Mill and Overlay	100
2014	Runway 6-24	6213	AAC	9,800	\$24,203.81	64	Mill and Overlay	100
2015	South Apron	4105	AAC	224,800	\$571,861.99	64	Mill and Overlay	100
2015	Runway 6-24	6214	AAC	4,000	\$10,175.48	64	Mill and Overlay	100
2015	Taxiway Alpha	120	AC	12,000	\$34,106.22	63	Mill and Overlay	100
2015	Taxiway Delta	415	AAC	25,300	\$64,359.91	64	Mill and Overlay	100
2016	Taxiway Bravo	720	AAC	15,000	\$39,302.79	64	Mill and Overlay	100
2017	North Apron - Old RW	4205	AAC	95,000	\$256,385.22	64	Mill and Overlay	100
2017	Runway 10-28	6110	AAC	179,500	\$484,433.12	64	Mill and Overlay	100
2017	Runway 6-24	6205	AAC	287,500	\$775,902.63	64	Mill and Overlay	100
2017	Taxiway Bravo	710	AAC	130,000	\$391,985.58	63	Mill and Overlay	100

# Pompano Beach Airpark (PMP)

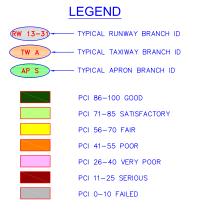
### Major Rehabilitation Plan by Year under Unlimited Funding Scenario (Continued)

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2017	Taxiway Charlie	325	AC	15,200	\$45,832.16	63	Mill and Overlay	100
2017	Taxiway Lima	1205	AAC	18,000	\$48,578.25	64	Mill and Overlay	100
2018	Runway 6-24	6210	AAC	152,500	\$473,624.12	63	Mill and Overlay	100
2018	Taxiway Charlie	350	AC	8,500	\$23,627.92	64	Mill and Overlay	100
2018	Taxiway Delta	405	AAC	120,750	\$375,017.13	63	Mill and Overlay	100
2018	Taxiway Delta	410	AAC	10,400	\$28,909.46	64	Mill and Overlay	100
2018	Taxiway Foxtrot	620	AAC	4,200	\$11,674.97	64	Mill and Overlay	100
2020	Taxiway Charlie	305	AC	33,000	\$97,318.41	64	Mill and Overlay	100
2020	Taxiway Charlie	310	AC	6,070	\$17,900.69	64	Mill and Overlay	100
2020	Taxiway Charlie	320	AC	61,000	\$200,987.13	63	Mill and Overlay	100
2020	Taxiway Kilo	1105	AC	145,000	\$427,611.18	64	Mill and Overlay	100
2020	Taxiway Mike	1305	AC	44,200	\$130,347.68	64	Mill and Overlay	100
2021	Taxiway Charlie	315	AC	22,500	\$68,344.06	64	Mill and Overlay	100
2021	Taxiway Foxtrot	610	AAC	125,000	\$424,214.64	63	Mill and Overlay	100
				Total	\$7,336,242.71	61		100









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





## Witham Field Airport (SUA)

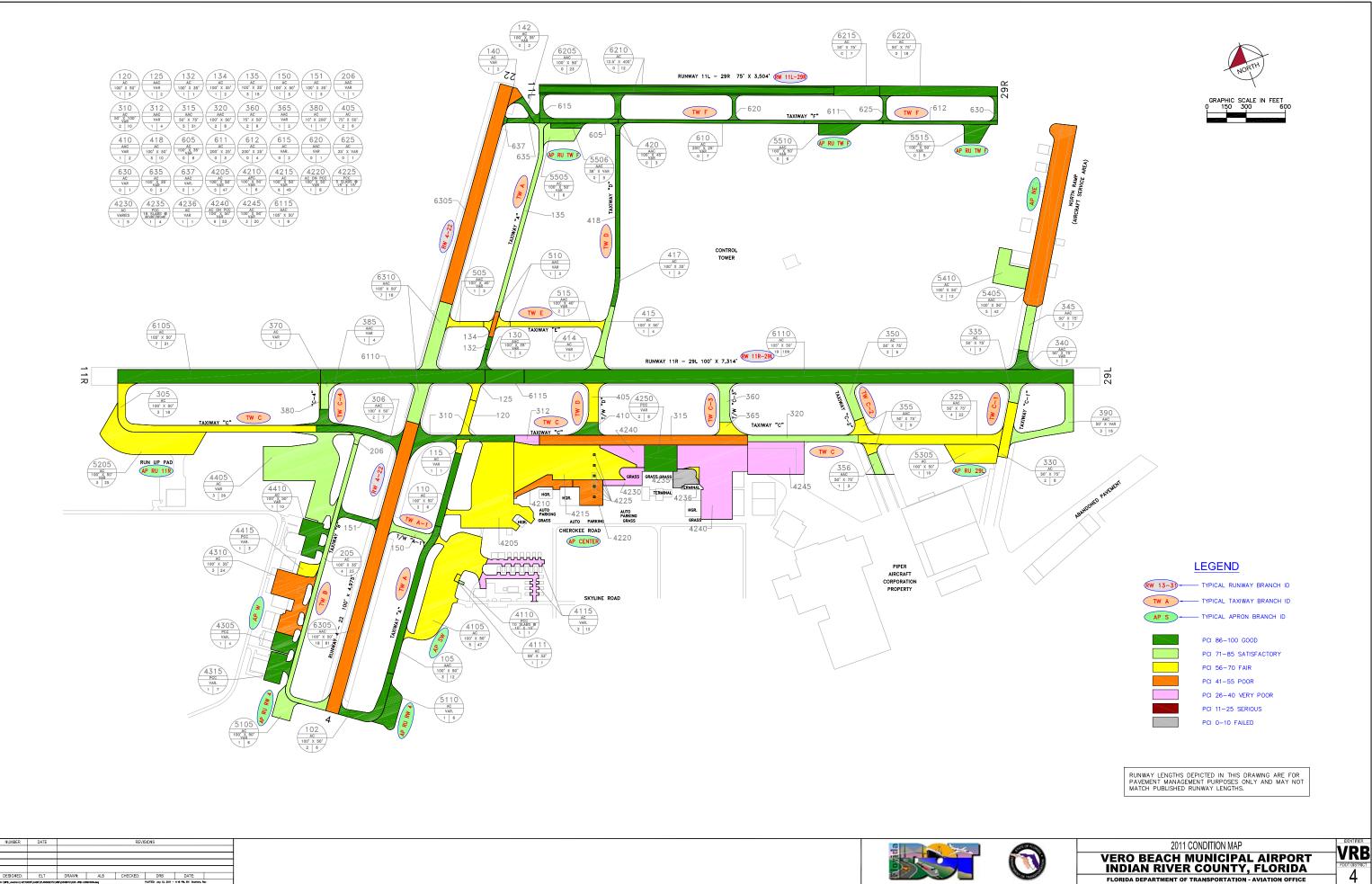
# Major Rehabilitation Plan by Year under Unlimited Funding Scenario

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2012	East Apron	4235	AC	45,219	\$284,427.53	43	Mill and Overlay	100
2012	North Apron	4405	AC	214,846	\$2,926,203.47	27	Reconstruction	100
2012	West Apron	4105	AC	141,337	\$848,446.10	51	Mill and Overlay	100
2012	West Apron	4110	PCC	60,800	\$158,140.90	63	PCC Restoration	100
2012	West Apron	4120	AC	142,800	\$816,244.90	52	Mill and Overlay	100
2012	West Apron	4125	PCC	12,419	\$78,115.52	47	PCC Restoration	100
2012	Taxiway Alpha	125	AC	12,000	\$75,480.01	42	Mill and Overlay	100
2012	Taxiway Bravo	205	AC	60,000	\$377,400.03	45	Mill and Overlay	100
2012	Taxiway Bravo	206	AC	9,100	\$57,239.00	46	Mill and Overlay	100
2012	Taxiway Charlie	330	AC	134,134	\$1,728,585.36	31	Reconstruction	100
2013	Helicopter Pad	4505	AC	27,291	\$73,113.45	63	Mill and Overlay	100
2013	West Apron	4115	AC	26,000	\$69,654.82	63	Mill and Overlay	100
2013	Runway 16-34	6305	AAC	500,000	\$1,339,515.83	63	Mill and Overlay	100
2013	Taxiway Bravo	209	AC	3,654	\$8,761.71	64	Mill and Overlay	100
2015	East Apron	4210	AC	24,000	\$61,052.88	64	Mill and Overlay	100
2015	East Apron	4215	AC	54,000	\$153,477.97	63	Mill and Overlay	100
2015	Taxiway Charlie	315	AAC	3,500	\$9,947.65	63	Mill and Overlay	100
2016	Taxiway Alpha	126	AC	3,176	\$8,321.71	64	Mill and Overlay	100
2017	Taxiway Alpha	115	AAC	9,000	\$24,289.13	64	Mill and Overlay	100
2017	Taxiway Charlie	310	AC	95,000	\$256,385.22	64	Mill and Overlay	100
2017	Taxiway Charlie	325	AC	8,250	\$24,876.01	63	Mill and Overlay	100

## Witham Field Airport (SUA)

### Major Rehabilitation Plan by Year under Unlimited Funding Scenario

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2018	Taxiway Alpha	136	AC	2,872	\$8,919.66	63	Mill and Overlay	100
2020	Taxiway Bravo	208	AC	9,525	\$28,089.63	64	Mill and Overlay	100
2021	Runway 12-30	6105	APC	486,600	\$1,478,054.25	64	Mill and Overlay	100
2021	Taxiway Alpha	110	AAC	137,000	\$464,939.25	63	Mill and Overlay	100
2021	Taxiway Alpha	130	AC	20,000	\$60,750.28	64	Mill and Overlay	100
				\$11,420,432.27	56		100	





# Vero Beach Municipal Airport (VRB)

### Major Rehabilitation Plan by Year under Unlimited Funding Scenario

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2011	Runway 4-22	6305	AAC	402,500	\$3,063,026.51	43	Mill and Overlay	100
2011	Northeast Apron	5405	AAC	214,560	\$1,632,802.41	49	Mill and Overlay	100
2011	West Apron	4310	AAC	88,260	\$671,658.93	48	Mill and Overlay	100
2011	Center Apron	4245	AC	107,500	\$1,760,634.96	32	Reconstruction	100
2011	Center Apron	4240	APC	193,400	\$1,683,741.04	39	Reconstruction	100
2011	Center Apron	4235	PCC	22,860	\$424,510.17	5	Reconstruction	100
2011	Center Apron	4230	AC	28,600	\$280,337.28	38	Reconstruction	100
2011	Center Apron	4220	APC	36,940	\$281,113.54	50	Mill and Overlay	100
2011	Center Apron	4210	APC	26,920	\$194,281.74	51	Mill and Overlay	100
2011	Center Apron	4205	AC	230,110	\$654,893.05	63	Mill and Overlay	100
2011	Southwest Apron	4115	PCC	45,980	\$853,848.54	28	Reconstruction	100
2011	Southwest Apron	4105	AC	213,450	\$1,037,153.95	57	Mill and Overlay	100
2011	Taxiway Echo	510	AAC	9,270	\$45,042.95	57	Mill and Overlay	100
2011	Taxiway Echo	505	AAC	12,730	\$51,849.30	59	Mill and Overlay	100
2011	Taxiway Delta	405	AC	25,540	\$72,686.84	63	Mill and Overlay	100
2011	Taxiway Charlie 2	355	AC	21,020	\$77,353.62	60	Mill and Overlay	100
2011	Taxiway Charlie 1	330	AC	31,875	\$108,438.76	61	Mill and Overlay	100
2011	Taxiway Charlie	315	AAC	119,535	\$768,729.94	53	Mill and Overlay	100
2011	Taxiway Charlie	312	AAC	12,520	\$108,999.16	39	Reconstruction	100
2011	Taxiway Charlie	305	AC	98,595	\$362,829.67	60	Mill and Overlay	100
2011	Taxiway Alpha	140	AC	7,770	\$59,129.73	43	Mill and Overlay	100

### Vero Beach Municipal Airport (VRB)

## Major Rehabilitation Plan by Year under Unlimited Funding Scenario (Continued)

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2011	Taxiway Alpha	134	AC	7,000	\$39,515.02	55	Mill and Overlay	100
2011	Taxiway Alpha	120	AC	14,780	\$66,007.50	58	Mill and Overlay	100
2012	Run-Up Apron at RW 11R	5205	AC	137,850	\$364,618.74	64	Mill and Overlay	100
2013	Run-Up Apron at RW 29L	5305	AC	52,790	\$143,820.60	64	Mill and Overlay	100
2013	Center Apron	4215	AC	223,600	\$609,173.83	64	Mill and Overlay	100
2013	Taxiway Charlie 3	365	AAC	14,320	\$39,013.28	64	Mill and Overlay	100
2013	Taxiway Charlie	325	AAC	82,640	\$225,143.67	64	Mill and Overlay	100
2015	Taxiway Charlie 4	380	AC	2,045	\$5,910.68	64	Mill and Overlay	100
2015	Taxiway Alpha	125	AAC	8,250	\$23,845.03	64	Mill and Overlay	100
2016	West Apron	4415	PCC	14,800	\$44,059.83	64	Mill and Overlay	100
2016	Center Apron	4236	AC	3,600	\$10,717.26	64	Mill and Overlay	100
2017	Run-Up Apron at TW F	5505	AC	28,145	\$86,301.75	64	Mill and Overlay	100
2017	Northeast Apron	5410	AC	51,735	\$158,636.38	64	Mill and Overlay	100
2017	Southwest Apron	4111	AC	1,790	\$8,705.44	59	Mill and Overlay	100
2017	Taxiway Charlie 4	370	AC	14,710	\$45,105.66	64	Mill and Overlay	100
2017	Taxiway Charlie 1	335	AC	14,750	\$45,228.31	64	Mill and Overlay	100
2017	Taxiway Charlie	320	AAC	42,775	\$ 145,361.12	63	Mill and Overlay	100
2018	Runway 4-22	6310	AAC	86,630	\$303,224.14	63	Mill and Overlay	100
2018	Run-Up Apron at RW 4	5105	AC	26,770	\$84,548.12	64	Mill and Overlay	100
2018	Taxiway Bravo	205	AC	83,780	\$264,603.70	64	Mill and Overlay	100
2019	West Apron	4405	AC	221,810	\$721,562.42	64	Mill and Overlay	100

#### Vero Beach Municipal Airport (VRB)

### Major Rehabilitation Plan by Year under Unlimited Funding Scenario (Continued)

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2020	West Apron	4410	AC	41,220	\$138,114.09	64	Mill and Overlay	100
2020	Taxiway Echo	515	AAC	29,930	\$100,285.17	64	Mill and Overlay	100
2020	Taxiway Charlie 2	350	AC	25,100	\$84,101.50	64	Mill and Overlay	100
2020	Taxiway Alpha 1	150	AC	18,320	\$61,384.04	64	Mill and Overlay	100
2020	Taxiway Alpha	135	AC	53,600	\$179,595.23	64	Mill and Overlay	100
2020	Taxiway Alpha	115	AAC	6,300	\$21,109.14	64	Mill and Overlay	100
			\$18,212,753.74	56		100		

C	RUNWAY 9-27 3,750' X 50'	Graphic sci 10 20 20 20 20 20 20 20 20 20 20 20 20 20
NUMBER         DATE         REVISIONS           DESIGNED:         ELIT         DRAWNE         ALB         CHECKED:         DRB         DATE:           NUMBER/DUMONDERSYNCHMORE TRANSPORTED TO CONSTRAINT         FLITE with 1, 2011 - 40 FM,		



Ĺ	EGEND
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

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



2011 CONDITION MAP BELLE GLADE STATE MUNICIPAL AIRPORT PALM BEACH COUNTY, FLORIDA FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

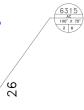
#### **Belle Glade State Municipal Airport (X10)**

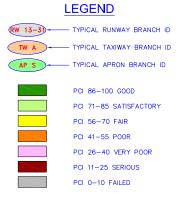
### Major Rehabilitation Plan by Year under Unlimited Funding Scenario

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2011	Apron	4105	AC	21,440	\$166,288.68	38	Reconstruction	100
2011	Apron	4110	AC	14,200	\$172,586.86	32	Reconstruction	100
2011	Apron	4115	AC	8,960	\$38,357.78	57	Mill and Overlay	100
2011	Runway 9-27	6105	AC	185,850	\$1,168,996.59	48	Mill and Overlay	100
2011	Taxiway	105	AC	11,360	\$154,723.25	9	Reconstruction	100
2011	Taxiway	110	AC	8,430	\$65,383.10	38	Reconstruction	100
2011	Taxiway	115	AC	6,140	\$38,620.60	47	Mill and Overlay	100
				Total	\$1,804,956.86	38		100

NUMBER DATE REVISIONS  DESIGNED: BAM DRAWN: ALB CHECKED: EVV DATE:  Lever.vering/control/code/code/code/code/code/code/code/code	







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2012 CONDITION MAP	IDENTIFIER
	VDC
SEBASTIAN MUNICIPAL AIRPORT	AZU
INDIAN RIVER COUNTY, FLORIDA	FDOT DISTRICT
INDIAN RIVER COONTT, FLORIDA	Λ
FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE	4

#### Sebastian Municipal Airport (X26)

### Major Rehabilitation Plan by Year under Unlimited Funding Scenario

Year	Branch Name	Section ID	Surface Type	Section Area (ft <sup>2</sup> )	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2012	West Apron	5115	AC	14,563	\$198,343.08	28	Reconstruction	100
2012	West Apron	410	AC	14,645	\$124,324.67	37	Reconstruction	100
2012	Taxiway Charlie	306	AC	9,418	\$128,278.65	24	Reconstruction	100
2012	Taxiway Charlie	305	AC	51,174	\$696,994.74	18	Reconstruction	100
2016	Taxiway Alpha	425	AAC	7,008	\$20,515.22	63	Mill and Overlay	100
2021	Runway 8-26	6310	AC	43,436	\$147,409.06	63	Mill and Overlay	100
2021	Runway 8-26	6305	AC	134,532	\$408,642.45	64	Mill and Overlay	100
				Total	\$1,724,507.87	42		100