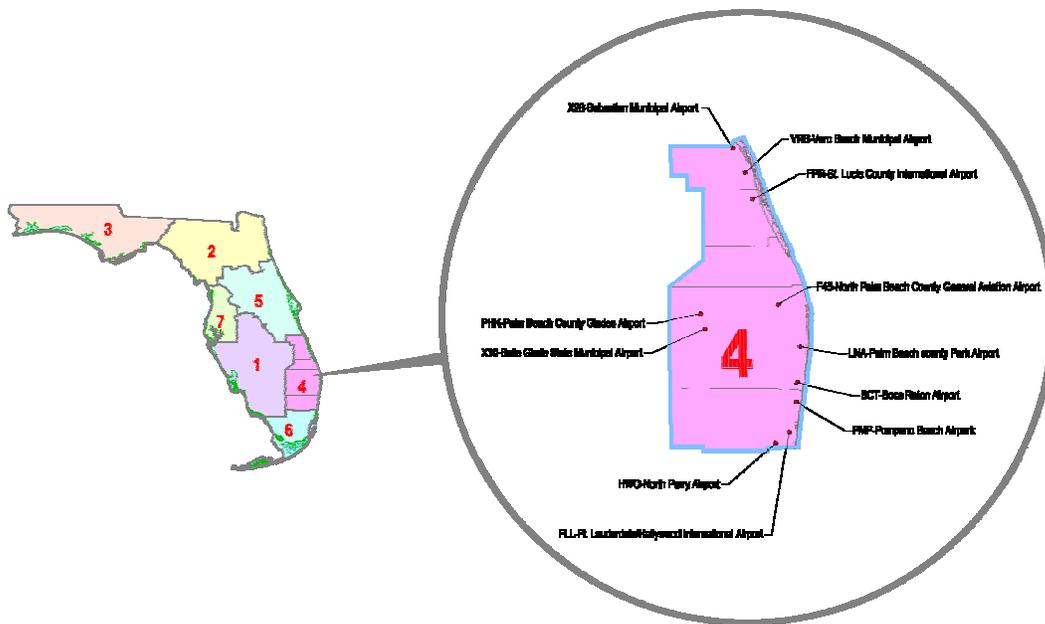




STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
AVIATION OFFICE

Statewide Airfield Pavement Management Program
District 4 Report

May 19, 2008



Prepared for:
Florida Department of Transportation
Aviation Office

by:
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EXECUTIVE SUMMARY

URS Corporation, Inc. with team members MACTEC Engineering and Consulting, Inc. (MACTEC), Planning Technology, Inc. (PTI), and ASC Geosciences, Inc. (ASCG) was awarded a contract to provide services in support of the Florida Department of Transportation (FDOT) Aviation Office for Phase II of the Statewide Aviation Pavement Management Program. As part of this contract, MACTEC conducted pavement condition surveys for airside pavements for airports located in District 4, evaluated the conditions and developed a maintenance and rehabilitation program to improve conditions to prescribed minimum levels. District 4 has 1 Primary (PR), 5 Regional Reliever (RL), and 5 General Aviation (GA) airports participating in the Statewide Pavement Management Program.

Pavement Area and Use

The total pavement area in 2006/2007 for airports located in District 4 is approximately 37,903,934 square feet. The breakdown of pavement area for each pavement use is provided as follows:

Table E-1: Pavement Area by Pavement Use – District 4

Use	Area, SqFt
Runway	12,473,226
Taxiway	13,832,176
Apron	11,598,532
Total	37,903,934

Figure E-1: Pavement Area by Use – District 4

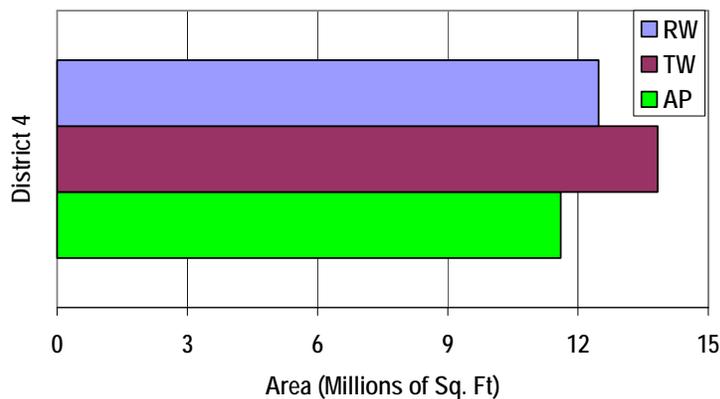
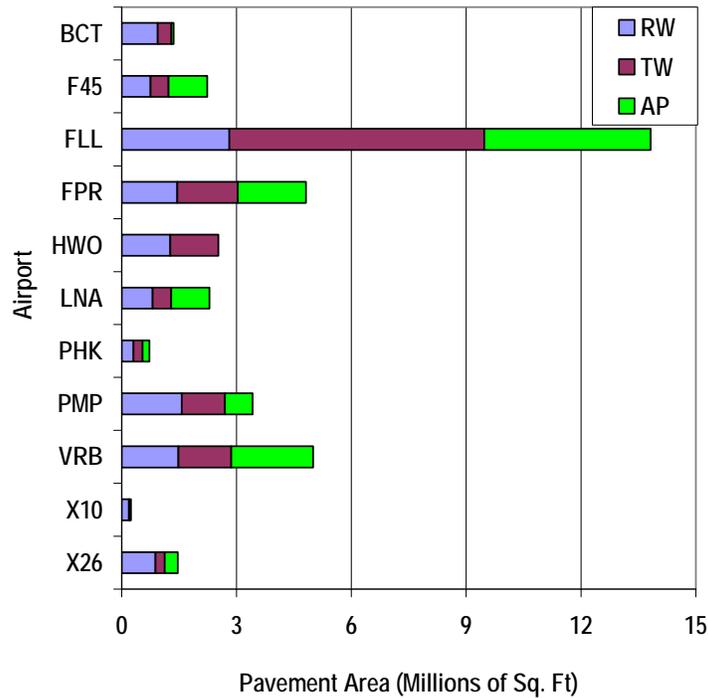


Figure E-2: Pavement Area by Use by Airport – District 4



Pavement Condition Index (PCI)

The overall area-weighted Pavement Condition Index (PCI) of the airports in District 4 in 2006/2007 is 73, representing a Satisfactory overall network condition.

Table E-2 provide list of participating airports within District 4 with weighted-PCI and pavement area.

Table E-3 and Figure E-3 provide the weighted-average PCI by pavement use for airports participating in the program from District 4. Figure E-4 provides the distribution PCI by pavement use by airport most recent condition inspection. Figure E-5 provides the area-weighted PCI by surface type.

The condition summary by pavement use table illustrates the area-weighted PCI computed individually for each use. On average, the runways, taxiways, and aprons are in Satisfactory condition.

Table E-2: Participating Airports Summary – District 4

Airport	Area-Weighted PCI	Pavement Area, SqFt
BCT	68	1,356,362
F45	83	2,238,186
FLL	73	13,819,849
FPR	63	4,816,461
HWO	82	2,527,989
LNA	67	2,290,198
PHK	76	723,275
PMP	66	3,423,595
VRB	80	4,999,691
X10	62	244,993
X26	81	1,463,335
District 4	73	37,903,934

Figure E-3: PCI by Pavement Use – District 4

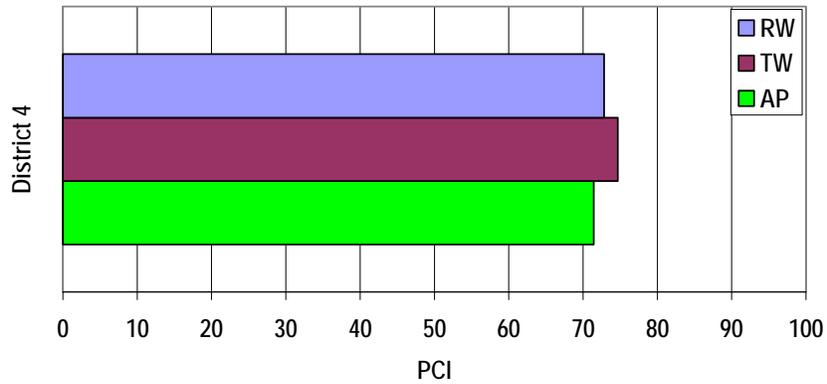


Table E-3: Condition Summary by Pavement Use – District 4

Use	Area-Weighted PCI
Runway	73
Taxiway	75
Apron	71
All	73

Figure E-4: PCI by Use by Airport – District 4

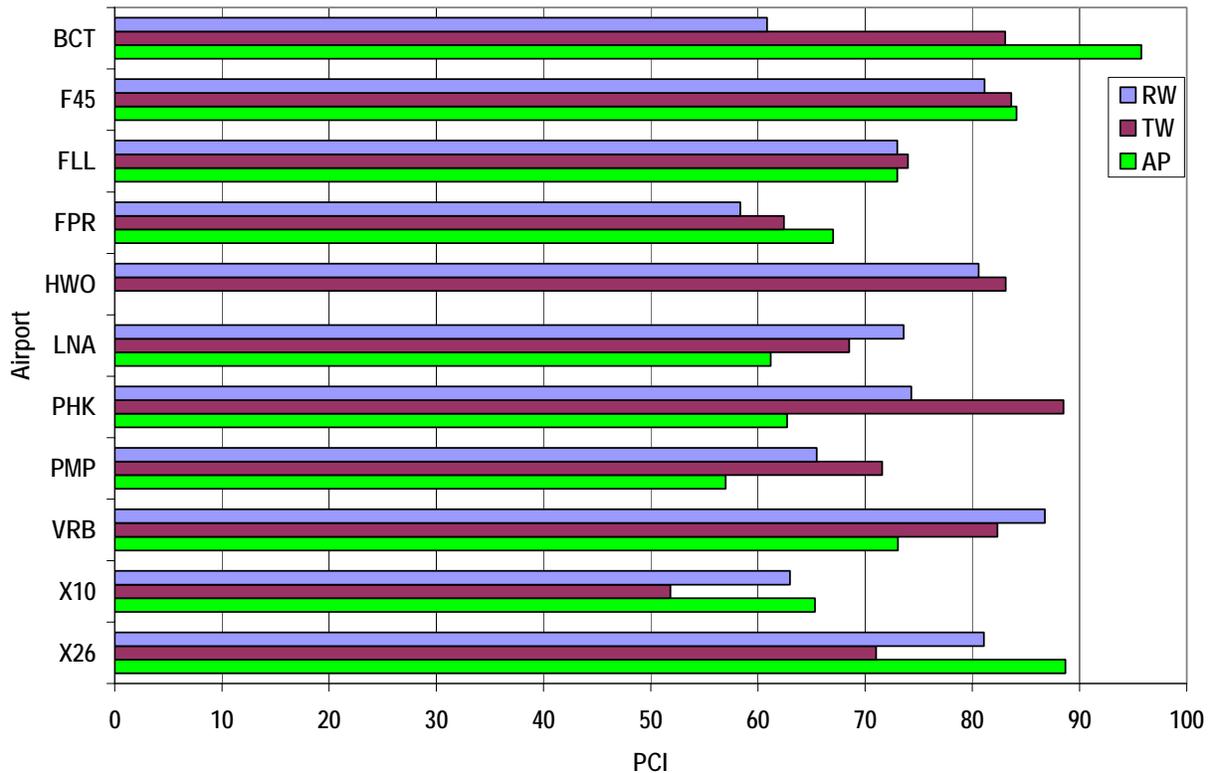
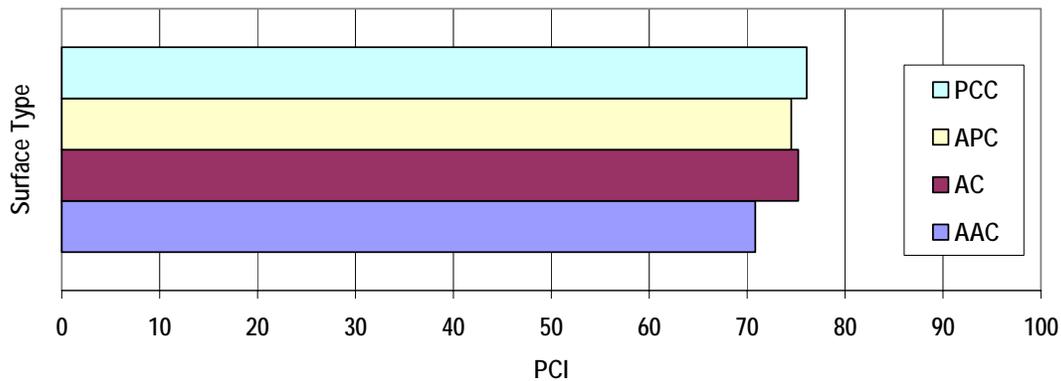


Figure E-5: PCI by Surface Type – District 4



Maintenance and Rehabilitation Costs

Airports in District 4 with immediate M&R needs (2008 needs) include FLL (Fort Lauderdale International), FPR (St. Lucie International), PMP (Pompano Beach Airpark), LNA (Palm Beach County Park), BCT (Boca Raton), VRB (Vero Beach Municipal), X26 (Sebastian Municipal), HWO (North Perry), X10 (Belle Glade Municipal), and PHK (Palm Beach County Park). Some of these needs may not be the highest priority for funding but would need to be programmed over several years. These immediate needs based in FDOT criteria are summarized in the following table.

Table E-4: Immediate Major M&R Cost – District 4

Airport	Avg PCI – Before M&R	Immediate M&R Total **	Avg PCI – 1st Year After M&R
BCT	68	\$3,669,000	92
F45	83	\$0	82
FLL	73	\$33,536,000	90
FPR	63	\$17,154,000	90
HWO	82	\$1,024,000	84
LNA	67	\$5,145,000	85
PHK	76	\$509,000	83
PMP	66	\$7,447,000	87
VRB	80	\$3,357,000	86
X10	62	\$858,000	99
X26	81	\$2,805,000	93
District 4	73	\$75,505,000	88

* This table shows the area-weighted PCI before and after Major M&R and routine maintenance work for the first year of the 10-year plan. It includes all airports participating in the program from District 4.

** Cost figures are rounded to nearest \$1000. Sum may be different. Costs are adjusted for inflation.

A forecast of Major M&R cost for a 10-year period was developed using an unlimited budget. The analysis identified ongoing maintenance needs and major M&R during that interval. This is summarized in Table E-4 and Figures E-5 and E-6.

Table E-5: 10 Year M&R Costs under Unlimited Funding Scenario – District 4

Year	Preventive	Major M&R >= Critical	Major M&R < Critical	Total
2008	\$971,000	\$1,530,000	\$73,975,000	\$76,477,000
2009	\$2,380,000	\$0	\$4,699,000	\$7,079,000
2010	\$2,586,000	\$0	\$2,393,000	\$4,979,000
2011	\$2,709,000	\$0	\$3,601,000	\$6,309,000
2012	\$3,175,000	\$0	\$1,056,000	\$4,232,000
2013	\$3,312,000	\$0	\$5,747,000	\$9,058,000
2014	\$3,898,000	\$0	\$2,172,000	\$6,070,000
2015	\$4,204,000	\$0	\$4,982,000	\$9,187,000
2016	\$4,804,000	\$0	\$2,739,000	\$7,543,000
2017	\$5,256,000	\$0	\$4,139,000	\$9,395,000
Total	\$33,295,000	\$1,530,000	\$105,503,000	\$140,328,000

Note: Cost figures are rounded to nearest \$1000. Sum may be different. Costs are adjusted to inflation

The 10 year analysis suggests an annual budget on the order of \$14 million would be expected to provide an improvement in the overall condition, where the area-weighted PCI would increase from 73 in 2006/2007 to 80 in 2017. However, as stated above, a number of large projects exist that would need to be programmed over multiple years.

It is important to note that although preventative and some major M&R activities would have to be conducted over several years, the area-weighted PCI value for all airport pavements in District 4 in 2017 may remain near 80. What is most important is that the pavement repair work (preventative and major M&R) that has been identified for airports in District 4 is conducted at some point in the 10-year plan.

Figure E-6: Immediate M&R Costs by Airport – District 4

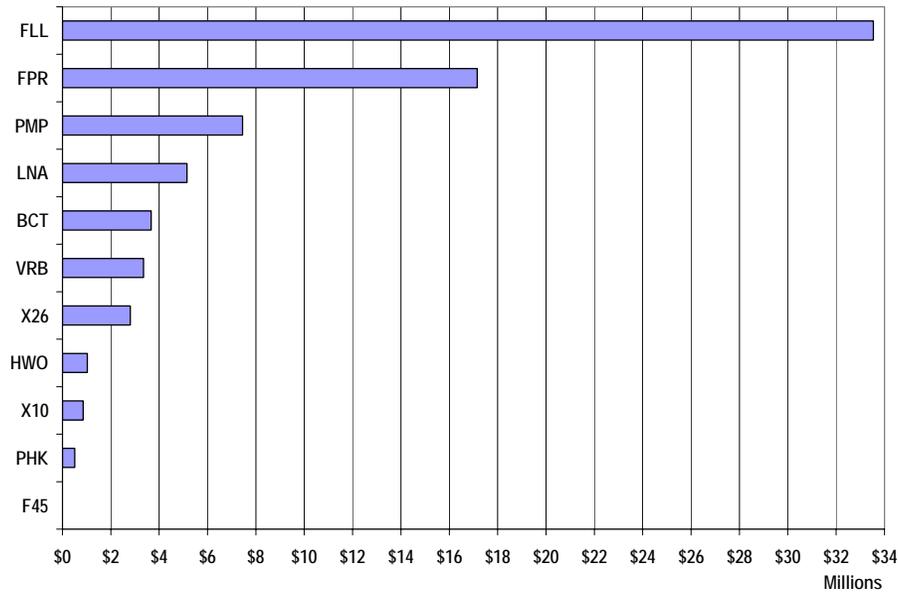
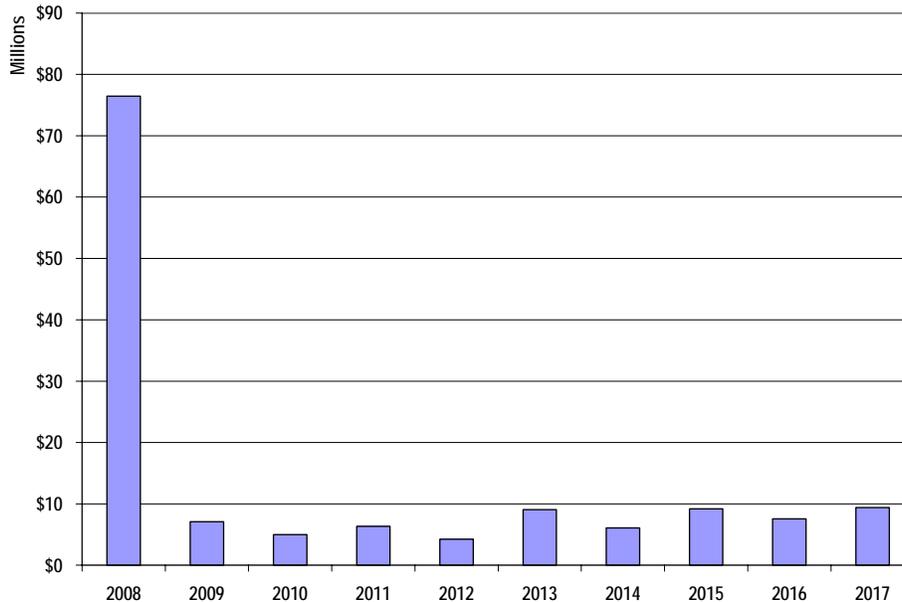


Figure E-7: Estimated Annual Costs (2008-2017) – District 4



1. INTRODUCTION

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. These public airports range from small general aviation airports to large international hub airports. These airports serve business travelers, tourism, and cargo operations crucial to the daily life of the people of Florida.

There are millions of square yards of pavement for the runways, taxiways, aprons and other areas that support aircraft operations. The timely and proper maintenance and rehabilitation (M&R) 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, FDOT has implemented pavement management system technology.

This report describes the procedures used to develop the appropriate engineering and scientific standards of care, quality, budget, and schedule requirements implemented at airports in District 4 as a result of their participation in the Statewide Aviation Pavement Management Program.

1.1 Purpose

This Florida Airport Pavement Evaluation Report is intended to:

- Describe, briefly, the Florida Department of Transportation (FDOT) Aviation Office Statewide Pavement Management Program and the roles and responsibilities of the program's participants
- Provide background information on pavement management principles, objectives, and benefits to the participating airports
- Outline the procedures used to collect, evaluate and report pavement inspection results at the airports
- Present the findings from the inspection and analysis of the needs for maintenance and rehabilitation activities for the airports in District 4 in this report.

1.2 FDOT Aviation PMS Program

In 1992, FDOT implemented a Pavement Management System (PMS) program to improve the knowledge of pavement conditions at public airports in the State system, identify maintenance needs at individual airports, automate information management, and establish standards to address future needs.

The FDOT Aviation Office participated in the development of a proprietary software pavement management system and developed and populated a pavement management database that provided valuable information for establishing M&R policies, estimating M&R costs, and developing recommendations for performing routine pavement maintenance. This system was implemented and condition surveys performed in 1992 and 1993 and again updated in 1998 and 1999. The proprietary system, AIRPAV, is no longer supported.

In 2004, the FDOT Aviation Office undertook a project to update the PMS Program software utilized for the PMS program. The Aviation Office selected a consultant team consisting of URS Corporation, Inc., MACTEC Engineering and Consulting, Inc. (MACTEC), Planning Technology, Inc. (PTI), and ASC Geosciences, Inc. (ASCG) to aid with the implementation of

the program update. This project involved a review of the AIRPAV software and other available PMS software. As a result of this review, MicroPAVER was selected as the software for the update project. Condition data from the 1998/1999 surveys were converted to the MicroPAVER system.

The inventory of the pavement systems and drawings of the pavements were updated to reflect maintenance, rehabilitation, and construction activities since 1998/1999 to the extent that information was available. Detailed, specific procedures for the inspection and collection of pavement data were developed for this project. A web-site (www.floridaairportpavement.com) was developed for the input of data under secure procedures. The site also has a public section for dissemination of information to the general public.

1.3 Organization

The FDOT Aviation Office manages the day-to-day details of the Statewide PMS and the updates. The Aviation Office Airport Engineering Manager serves as the Program Manager (PM) monitoring the work of the Consultant. The Aviation Office has review and approval authority for each program task.

1.3.1 Consultant Role

The Consultant (MACTEC Engineering and Consulting/URS Corporation/Planning Technology/ASC Geosciences) developed the PMS based upon procedures outlined in FAA Advisory Circular 150/5380-6B Guidelines and Procedures for Maintenance of Airport Pavements (FAA/AC) and ASTM D 5340 Standard Test Method for Airport Pavement Condition Index Surveys (2004).

The Consultant provided technical and administrative assistance to the Aviation Office PM, during the execution of this program, which involves the continuing evaluation of airport pavements and updating of the PMS. A website is available to view and update airport information, including construction activities and pavement condition data. In addition, pavement evaluation reports will be available for viewing and download from the site (www.floridaairportpavement.com).

1.3.2 Airport Role

The airports are the ultimate client for each of the field inspections and reports. Individual airports were provided final deliverables prepared by the Consultant that have been reviewed and approved by the FDOT Aviation Office. The airport should review system inventory drawings in their folder in the pavement management website and add maintenance and rehabilitation activities conducted on airside pavements on the website system inventory form.

1.4 Pavement Types and Pavement Management

1.4.1 Pavement Basics

A pavement is a prepared surface designed to provide a continuous smooth ride at a certain speed and to support an estimated amount of traffic for a certain number of years. Pavements are constructed of a combination of subgrade soils, subbases, bases and surfacing. There are mainly two types of pavements;

- Flexible pavement, composed of asphalt concrete (AC) surface, and
- Rigid pavement composed of Portland cement concrete (PCC) surface.

Both pavement types use a combination of layered materials and thicknesses in order to support the traffic loads and protect the underlying subgrade soil. Flexible pavements (AC) dissipate the load from layer to layer until the load magnitude is small enough to be supported by the subgrade soil. In rigid pavements (PCC), the Portland cement concrete supports most of the load, the base or subbase layer is mainly constructed to provide a smooth and continuous platform for the concrete.

Due to the different nature of both pavement types and their materials, flexible and rigid pavements have different distresses and failure mechanisms. Understanding the mechanics and failure modes of both pavement types will assist engineers in making adequate and long lasting repairs or rehabilitation to the pavement structures.

1.4.2 Pavement Management System Concept

A pavement management system (PMS) is a tool to assist engineers, planners and managing agencies in making decisions when planning pavement M&R. The management of pavements involves scheduling pavement maintenance and rehabilitation before pavements deteriorate to a condition where reconstruction (the most expensive alternative) is the only solution. Figure 1-1, taken from FAA/AC 5380-7A Pavement Management System, illustrates how a pavement generally deteriorates and the relative cost of rehabilitation at various times throughout its life. Note that during the first 75 percent of a pavement's life, it performs relatively well. After that, however, it begins to deteriorate rapidly.

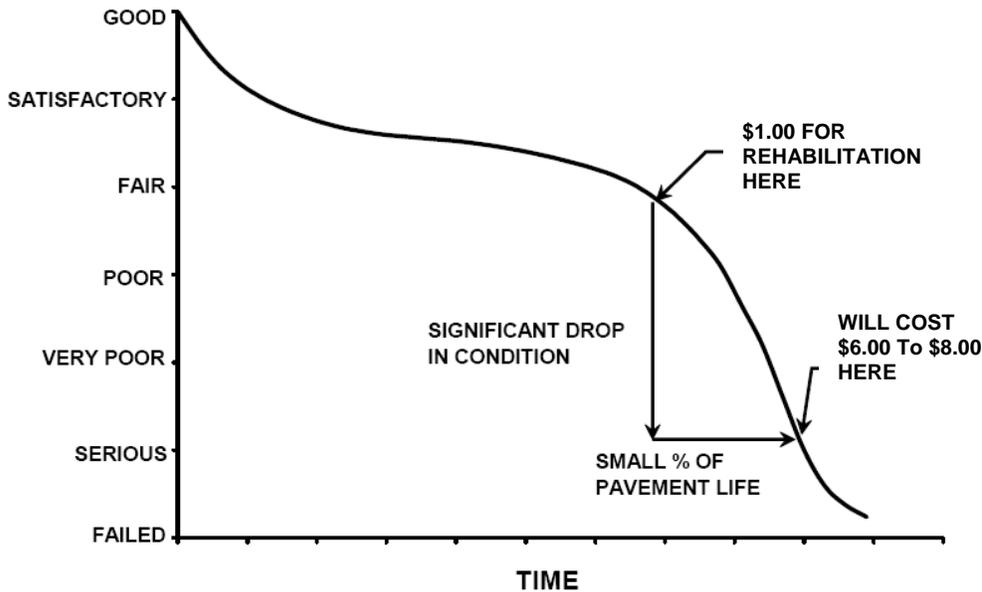
The number of years a pavement stays in "Satisfactory" condition depends on how well it is maintained. The illustration demonstrates the cost of maintaining the pavement above a critical condition before rapid deterioration occurs is much less compared to maintaining pavements after substantial deterioration has occurred.

Pavements deteriorate at an accelerated rate with increasing traffic and limited M&R resources. Planned maintenance and rehabilitation, essentially preventing pavements from reaching deteriorated conditions, helps managers/owners/ agencies stretch and maximize the use of their budgets and prolong the life of the pavements. A PMS provides a tool to schedule and plan maintenance and rehabilitation based on engineering information and existing and predicted conditions of pavements.

There are several components or elements that are essential to a PMS. The first steps in the implementation of a PMS are to know and clearly identify what needs to be managed, the limits of the managing agency's responsibilities and the condition of the existing pavements. Once the

cause and the extent of pavement problems are known, the appropriate maintenance and/or rehabilitation can be planned. By using local unit costs and expected yearly budgets, a multi year M&R plan can be developed.

Figure 1-1: Pavement Life Cycle



Pavements deteriorate even if they do not carry any traffic. Pavement distresses may be attributed to climate, environment, materials, construction or traffic. Knowing the cause, extent and predominance of pavement distresses helps determine the most appropriate maintenance or rehabilitation work needed. Planning and applying preventive maintenance prolongs pavement life and minimizes future pavement repair costs. By projecting the rate of deterioration, a life cycle cost analysis can be performed for various alternatives, and the optimal time of application of appropriate feasible alternatives can be determined. Such a decision is critical in order to avoid higher M&R costs at a later date.

A PMS enables the managing agency to identify and maintain the pavement conditions, keeping them at the upper end of the service life-condition curve. At this point, the total annual costs between maintaining a good pavement above a critical condition is much less than rehabilitating a poor pavement that has rapidly deteriorated beyond a critical condition level.

A PMS is a long-term planning tool that will result in an overall improvement of the pavement network condition and will also result in savings by applying the appropriate maintenance and rehabilitation activity at the appropriate time. Accurate estimates and timely M&R decisions and budgeting are of great importance when managing approximately 300 million square feet of Florida airside pavements.

1.4.3 Pavement Inspection Methodology for PMS

Pavement condition assessment is one of the primary decision variables in any airport pavement management system. Pavement condition assessments generally include visual surveys in accordance with ASTM D 5340, *Standard Test Method for Airport Pavement Condition Index Surveys* and structural evaluation. Pavement condition surveys assess the functional condition of the pavement surface. Typically, most problems within a pavement structure will eventually reflect to the pavement surface. The structural condition and relative support of the pavement layers can be assessed utilizing non-destructive deflection testing (NDT) as well as other in-depth engineering evaluation or sampling and testing methods.

Pavement sections are broken down into sample units as established in FAA AC 150/5380-6B and ASTM D 5340. Sample unit sizes are approximately 5000 ± 2000 square feet (3000 to 7000 square feet) for AC-surfaced pavements and 20 ± 8 slabs (12 to 28 slabs) for PCC-surfaced pavements. Before the field inspections, the sampling plan was developed based on previous sampling and modified based on the available knowledge of branches, sections, use patterns, construction types and history. The sampling rate used for FDOT Statewide Pavement Management Program is provided in Table 1-1 below.

Table 1-1: Sampling Rate for FDOT Condition Surveys

AC Pavements			PCC Pavements		
N	n		N	n	
	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
≥51	20% but ≤20	10% but ≤10	31-40	8	4
			41-50	10	5
			≥51	20% but ≤20	10% but ≤10

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

The sample units to inspect are determined by a systematic random sampling technique. This means that the locations are determined such that they are distributed evenly throughout the section. In the case when nonrepresentative distresses are observed in the field, additional sample units were added.

The distress quantities and severity levels from the sample units are used to compute the PCI value for each section. PCI values range from 0 to 100. MicroPAVER provides a rating scale that relates PCI to pavement condition, with a PCI between 0 and 10 considered 'Failed'

pavement and a PCI between 86 and 100 considered ‘Good’ pavement, with five other conditions for PCI values between 11 and 85. Figure 1-2 shows the PCI scale.

Figure 1-2: PCI Rating Scale



1.5 Definitions

Aviation Office - 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 worked closely with FDOT District Aviation Specialists, during development of this project. District Aviation Specialists will consult with airport owners in implementation of project recommendations.

Base Course - Base Course is a layer of manufactured material, usually crushed rock (aggregate) or stabilized material (asphalt or concrete or Florida Limerock), immediately beneath the surface course of a pavement, which provides support to the surface course.

Branch – (Facility in prior system) - A runway, taxiway or apron is called a Branch. This is an easy reference to a recognizable component of airport pavement. In this report, Branch ID maintains the original AirPAV identification where 100 series through 3000 series facilities are taxiways, 4000 and 5000 series facilities are aprons (the 5000 series represent runup aprons and turnarounds), and 6000 series facilities are runways. It also includes the common designation for the item e.g. RW 18-36.

Category - 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

Critical PCI – 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.

Distress Type - 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.

Florida DOT (FDOT) - 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.

Global M&R- Global M&R is defined as activities applied to entire pavement sections with the primary objective of slowing the rate of deterioration. These activities are primary for asphalt surfaced pavements, e.g. surface treatments.

MicroPAVER – 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 system requirements described by FAA in Advisory Circular 150/5380-7A.

Minimum Condition Level - 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 General Aviation airports.

Major M&R (e.g. Rehabilitation) – 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.

Network Definition – (Airport Sketch in prior system) – A Network Definition is a CAD drawing which shows the airport pavement outline with Branch and Section boundaries. This sketch is intended to assist the user of the report to quickly associate information from the text to a location on the airport. 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 in this report is in Appendix A along with a table of inventory data.

Pavement Condition Index (PCI) – The Pavement Condition Index is a number which represents the condition of a pavement segment at an instant 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 5340-04, “Standard Test Method for Airport Pavement Condition Index Surveys,” published by ASTM International.

Pavement Evaluation – 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.

Pavement Management – Pavement management is a broad function that uses pavement evaluation and pavement performance trends as a basis for planning, programming, financing, and maintaining a pavement system.

Rank – 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

Reconstruction – 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.

Rehabilitation – 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.

Sample Unit – 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 ± 8 slabs for PCC-surfaced pavements.

Section – (Feature in prior system) - 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.

Section ID – A short form identification for the pavement Section that maintains the original AirPAV identification where 100 series through 3000 series sections are taxiways, 4000 and 5000 series sections are aprons (the 5000 series represent run-up aprons and turnarounds), and 6000 series sections are runways.

Use – 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.

2. NETWORK DEFINITION

The airports inspected in District 4 include:

- Boca Raton Airport (BCT)
- North Palm Beach County General Aviation (F45)
- Ft. Lauderdale Hollywood International Airport (FLL)
- St. Lucie County International Airport (FPR)
- North Perry Airport (HWO)
- Palm Beach County Park Airport (LNA)
- Palm Beach County Glades Airport (PHK)
- Pompano Beach Airpark (PMP)
- Vero Beach Municipal Airport (VRB)
- Belle Glade State Municipal Airport (X10)
- Sebastian Municipal Airport (X26)

These airports are designated as 1 Primary (PR), 5 Regional Reliever, and 5 General Aviation (GA) airports.

The pavements within each airport network are defined in MicroPAVER in terms of manageable units that help to organize the data into similar groups. An organizational hierarchy is used to establish these units. The airport pavement network is subdivided into separate branches (runways, taxiways, or aprons) that have distinctly different uses. Branches are then divided into sections with similar pavement construction and performance that may share other common attributes. Sections are manageable units used to organize the data collection and are treated individually during the rehabilitation planning stage.

The network definition was used to identify changes in the network since the most recent update in 1998/1999 and also to plan the field inspection activities for 2006/2007 surveys. Prior to the field inspection process, the network definition drawing was updated. The purpose of this update is to compare the previous airport configuration and history with the current airport configuration and history and update the existing drawing showing network branch, section and sample unit designations to match the current configuration. This drawing serves not only as a primary guide for the airfield inspectors but also as an important history record.

The updated network definition fields and network definition drawings for airports participating from District 4 are included in Appendix A of each individual airport report.

3. PAVEMENT INVENTORY

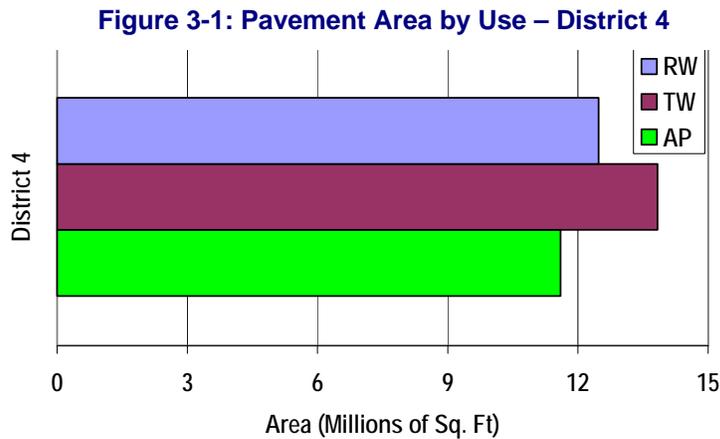
The detailed pavement inventory was updated to reflect the network definition update and field inspection results.

The total pavement area in 2006/2007 for airports participating in the program from District 4 is approximately 37,903,934 square feet. The breakdown of pavement area for each pavement use is provided in Table 3-1.

Table 3-1: Pavement Area by Pavement Use – District 4

Use	Area, SqFt
Runway	12,473,226
Taxiway	13,832,176
Apron	11,598,532
Total	37,903,934

Figure 3-1 presents the breakdown of the pavement area for airports in District 4 by pavement use.



Details of pavement section information including section dimensions, rank, surface type, last construction date and last inspection date are given in Appendix A of each individual airport report.

4. PAVEMENT CONDITION

Pavement conditions were inspected in accordance with the methods outlined in FAA AC 150/5380-6B and ASTM D 5340 “Standard Practice for Airport Pavement Condition Index Surveys.” These procedures define distress type, severity and quantity for sampling areas within each section to determine the Pavement Condition Index (PCI).

Pavement condition inspections for airports in District 4 were performed in 2006/2007. Data were recorded in the field using hand-held PDA (personal digital assistant) technology. The identifying information for each sample unit was pre-loaded into the PDA, and the survey results were entered directly, at the time of inspection. This simplified data handling and management.

During the inspections Global Positioning System (GPS) coordinates were recorded at the centroid of each sample unit. The centroid is usually the geometric center of the area but in cases where sample units are irregular in shape this is the center of mass. These data are presented in tables on updated Network Definition drawings available from the website.

After the completion of data collection, the data were imported into MicroPAVER and PCI values were calculated for the pavement sections.

According to the 2006/2007 survey, the overall the average area-weighted PCI for airports in District 4 is 73, representing a Satisfactory overall network condition.

Table 4-1 and Figure 4-1 provide the PCI distribution by rating and age category for District 4.

Table 4-1: Airport Pavement PCI by Use and Rating Category – District 4

Airport	RW	TW	AP	AVG PCI	PCI Category
BCT	61	83	96	68	Fair
F45	81	84	84	83	Satisfactory
FLL	73	74	73	73	Satisfactory
FPR	58	62	67	63	Fair
HWO	81	83	-	82	Satisfactory
LNA	74	69	61	67	Fair
PHK	74	89	63	76	Satisfactory
PMP	65	71	57	66	Fair
VRB	87	82	73	80	Satisfactory
X10	63	52	65	62	Fair
X26	81	71	89	81	Satisfactory
District 4	73	75	71	73	Satisfactory

Figure 4-1: PCI by Surface Type – District 4

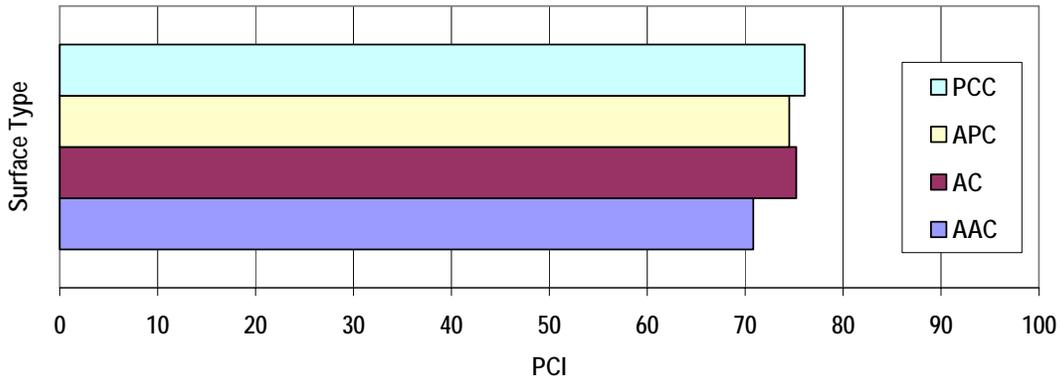


Table 4-2 illustrates the area-weighted PCI computed individually for each pavement use.

Table 4-2: Condition by Pavement Use – District 4

Use	Area-Weighted PCI
Runway	73
Taxiway	75
Apron	71
All	73

On average, the runways, taxiways, and aprons are in Satisfactory condition.

5. PAVEMENT CONDITION PREDICTION

Performance prediction models or deterioration curves for PCI were used to develop a condition forecast. The performance models were developed for combinations of variables such as pavement use (runway, taxiway or apron), surface type (AC or PCC) and airport category (GA, RL, or PR). Figures 5-1 to 5-3 illustrates the predicted performance of pavements at airports participating in the program from District 4 based on current condition, age since last construction and the deterioration model appropriate for the type of pavement. The figure presents the forecast for each pavement use and displays the FDOT minimum condition criteria for District 4 airports.

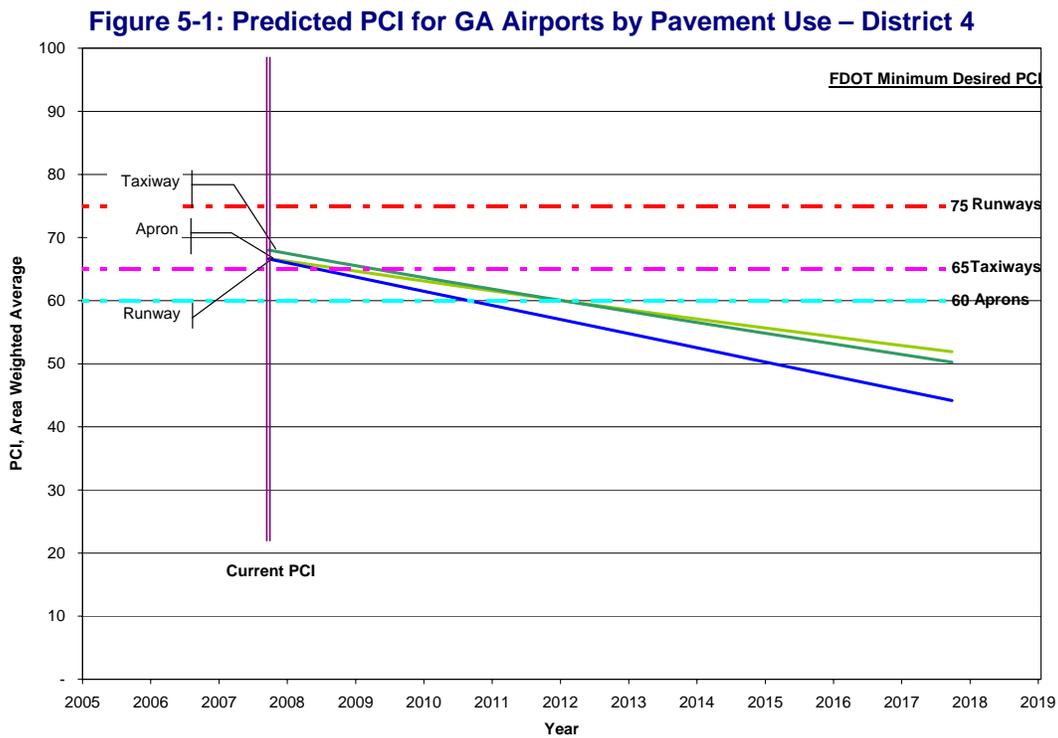


Figure 5-2: Predicted PCI for RL Airports by Pavement Use – District 4

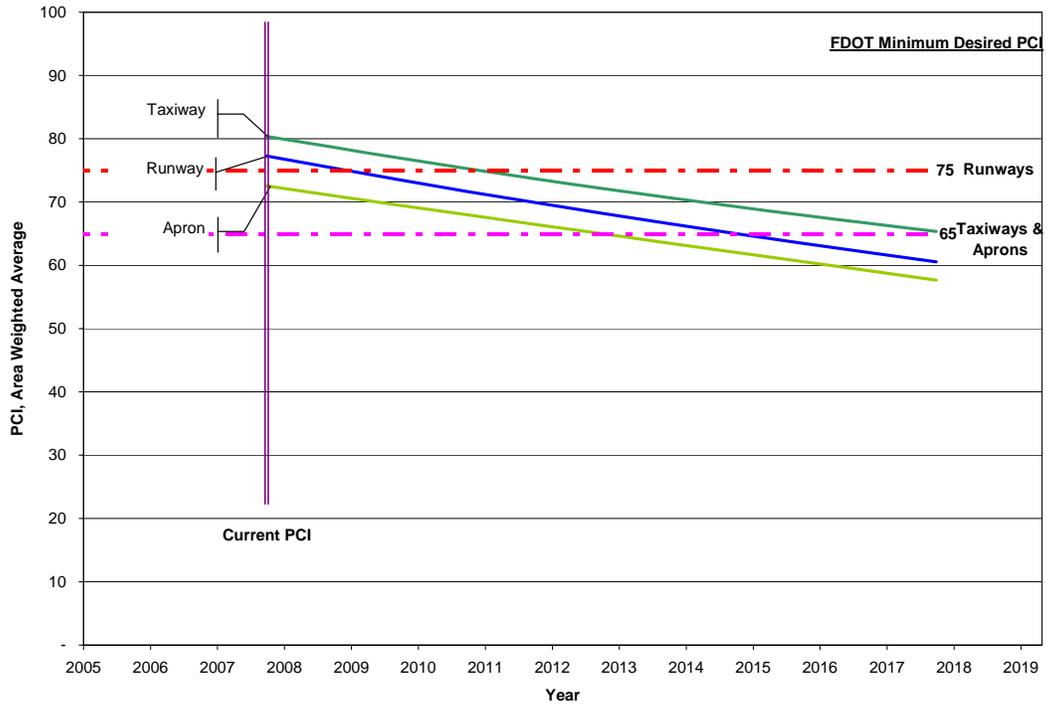
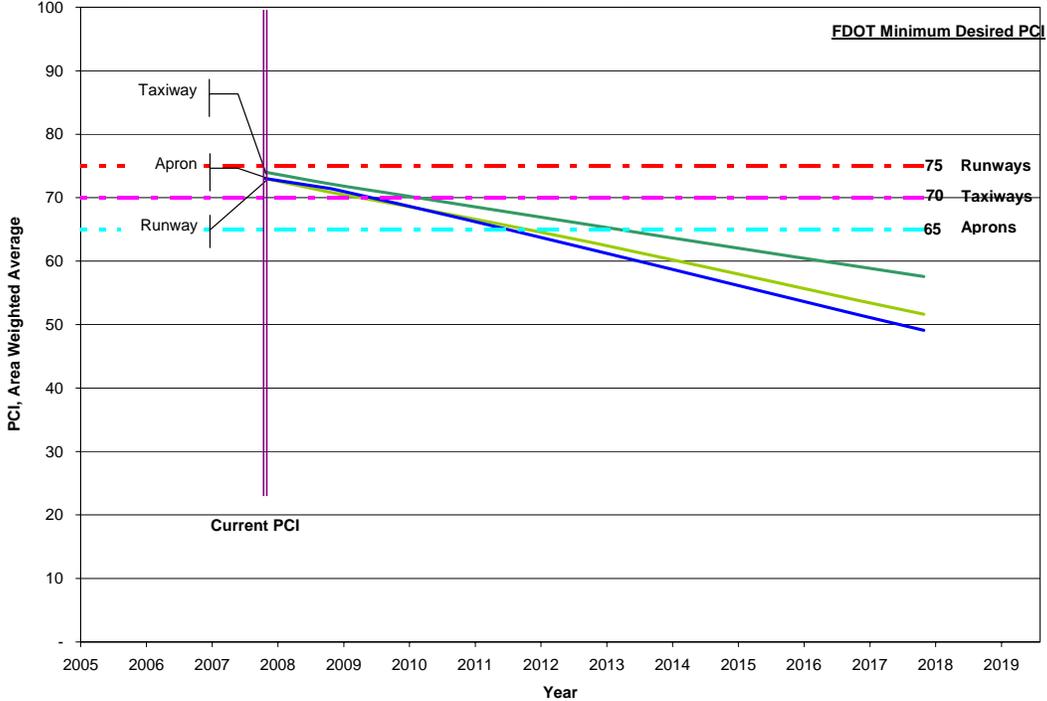


Figure 5-3: Predicted PCI for PR Airports by Pavement Use – District 4



6. MAINTENANCE POLICIES AND COSTS

6.1 Policies

Maintenance and rehabilitation (M&R) policies are sets of rules used to develop repair recommendations for distresses encountered during the visual inspections.

Maintenance refers to repair-type activities that are applied to specific distress types on the pavement. These activities are preventative and/or corrective in nature, and are recommended to help achieve the performance goal.

Table 6-1 provides the list of the maintenance activities used in MicroPAVER to treat specific distress types. These repairs are used in an analysis only if there is an inspection within one year prior to the first year of the analysis period. MicroPAVER applies repairs to these distresses and adjusts the PCI based on specific rules.

Table 6-1: Routine Maintenance Activities for Airfield Pavements

Surface	Distress	Severity*	Work Type	Code	Work Unit	
AC	Alligator Crack	M, H	Patching - AC Deep	PA-AD	SqFt	
	Bleeding	N/A	No Localized M&R	NONE	SqFt	
	Block Crack	M, H	Crack Sealing – AC	CS-AC	SqFt	
	Corrugation	L, M, H	Patching - AC Deep	PA-AD	SqFt	
	Depression	M, H	Patching - AC Deep	PA-AD	SqFt	
	Jet Blast	N/A	Patching - AC Deep	PA-AD	SqFt	
	Joint Ref. Crack	M, H	Crack Sealing – AC	CS-AC	Ft	
	L & T Crack	M, H	Crack Sealing – AC	CS-AC	Ft	
	Oil Spillage	N/A	Patching - AC Shallow	PA-AS	SqFt	
	Patching	M, H	Patching - AC Deep	PA-AD	SqFt	
	Polished Agg.	N/A	No Localized M&R	NONE	SqFt	
	Raveling	L		Surface Sealing - Rejuvenating	SS-RE	SqFt
		M		Surface Seal - Coal Tar	SS-CT	SqFt
		H		Microsurfacing	MI-AC	SqFt
	Rutting	M, H	Patching - AC Deep	PA-AD	SqFt	
	Shoving	M, H	Grinding (Localized)	GR-LL	SqFt	
	Slippage Crack	N/A	Patching - AC Shallow	PA-AS	SqFt	
Swelling	M, H	Patching - AC Deep	PA-AD	SqFt		
PCC	Blow-Up	L, M, H	Patching - PCC Full Depth	PA-PF	SqFt	
	Corner Break	M, H	Patching - PCC Full Depth	PA-PF	SqFt	
	Linear Crack	M, H	Crack Sealing – PCC	CS-PC	Ft	
	Durability Crack	H	Slab Replacement – PCC	SL-PC	SqFt	
		M	Patching - PCC Full Depth	PA-PF	SqFt	
	Jt. Seal Damage	M, H	Joint Seal (Localized)	JS-LC	Ft	
	Small Patch	M, H	Patching - PCC Partial Depth	PA-PP	SqFt	
	Large Patch	M, H	Patching - PCC Full Depth	PA-PF	SqFt	
	Popouts	N/A	No Localized M&R	NONE	SqFt	
	Pumping	N/A	No Localized M&R	NONE	SqFt	
	Scaling	H	Slab Replacement – PCC	SL-PC	SqFt	
	Faulting	M, H	Grinding (Localized)	GR-PP	Ft	
	Shattered Slab	M, H	Slab Replacement – PCC	SL-PC	SqFt	
	Shrinkage Crack	N/A	No Localized M&R	NONE	Ft	
Joint Spall	M, H	Patching - PCC Partial Depth	PA-PP	SqFt		
Corner Spall	M, H	Patching - PCC Partial Depth	PA-PP	SqFt		

*L = Low, M = Medium, H = High

Rehabilitation is warranted when the pavement condition decreases below a critical point such that the deterioration is extensive or 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 Phase I of Statewide Pavement Management Program were reviewed and updated for development of the M&R plan for the airport. 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. Based on the existing condition, the Critical PCI levels for all pavements are set at 65.

It should be noted that critical PCI is not the same as Minimum PCI or Minimum Condition. The Minimum PCI is a value set by the user so pavement sections are rehabilitated before they fall below the set minimum. Table 6-2 gives the targeted, or desired, Minimum PCI values for runways, taxiways, and aprons of the three categories of airports.

Table 6-2: Desired Minimum PCI for Airports By Pavement Use

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

Typical Major M&R activities range from overlays to reconstruction. Based on the critical PCI values in Table 6-2 and our experience with pavement management systems, the PCI trigger range when the likely activity would be a mill and resurface was 31 to 55 and reconstruction at a PCI of 30 or lower. One important concept of pavement management systems is that it is cost effective to maintain pavements that are already in good condition rather than wait for them to get worse and require more expensive rehabilitation. With this objective, microsurfacing has been recommended to maintain pavements that have a PCI from 56 and 79. Microsurfacing is a surface treatment suggested for pavements in Fair to Satisfactory condition to extend the pavement life by five to seven years.

Crack sealing and full-depth patching are the M&R activities recommended to repair pavements with PCI values between 80 and 90. MicroPAVER considers these as preventative M&R with their primary objective being to slow the rate of pavement deterioration. While the trigger PCI for mill and overlay has been set to 55, MicroPAVER also assigns mill and overlay to sections with a PCI greater than 55 if they exhibit some structural distress. Table 6-3 summarizes the M&R activities for the three categories of airports based on PCI value.

Table 6-3: M&R Activities for Airports

	Activity	PCI Range
Maintenance	Crack Sealing and Full-Depth Patching	80 and 90
Rehabilitation	Microsurfacing (AC) or Concrete Pavement Restoration (PCC)	56 to 79
	Mill and Overlay (AC) or Concrete Pavement Restoration (PCC)	31 to 55
	Reconstruction	30 and less

6.2 Unit Costs

FDOT cost databases for airports and highway pavement maintenance and rehabilitation were reviewed in Phase I of Statewide Pavement Management Program in order to determine meaningful costs for the program. Table 6-4 presents the unit costs summary.

Table 6-4: Maintenance Unit Costs for FDOT

Code	Name	Cost	Unit
PA-AL	Patching – AC Leveling	\$2.00	SqFt
PA-AS	Patching – AC Shallow	\$4.00	SqFt
PA-PF	Patching – PCC Full Depth	\$50.00	SqFt
PA-PP	Patching – Partial Depth	\$35.00	SqFt
SL-PC	Slab Replacement	\$15.00	SqFt
CS-PC	Crack Sealing – PCC	\$2.00	Ft
UN-PC	Undersealing – PCC	\$3.00	Ft
CS-AC	Crack Sealing – AC	\$2.00	Ft
GR-PP	Grinding (Localized for PCC)	\$20.00	Ft
GR-LL	Grinding (Localized for AC)	\$6.00	SqFt
JS-LC	Joint Seal (Localized)	\$1.75	Ft
JS-SI	Joint Seal – Silicon	\$2.50	Ft
PA-AD	Patching – AC Deep	\$7.00	SqFt
OL-AT	Overlay – AC Thin	\$1.50	SqFt
SS-CT	Surface Seal – Coal Tar	\$0.20	SqFt
SS-RE	Surface Seal – Rejuvenating	\$0.15	SqFt
ST-SS	Surface Treatment – Slurry Seal	\$0.25	SqFt
ST-ST	Surface Treatment – Sand Tar	\$0.25	SqFt
MI-AC	Microsurfacing	\$0.90	SqFt

The improvement in condition due to maintenance actions applied to specific distresses is only performed when an inspection is recent and only in the first year of the M&R analysis. In subsequent years MicroPAVER calculates M&R costs based on expected unit costs for pavements in a range of PCI. That is, for low PCI it is expected that the repair would be significant (e.g. reconstruction) and therefore very costly. Using available unit cost data the Major M&R Cost By Condition table was set up as shown in Table 65. The cost assigned to each range of PCI is based on a Transportation Cost Report provided by Office of Planning Policy of FDOT where the unit costs of reconstruction and resurfacing of airfield pavements were included. These costs were then assigned to the appropriate PCI range to arrive at a cost per square foot necessary to restore pavements at that PCI level to new condition, i.e. a PCI of 100.

A 3% inflation rate per year was applied to the unit costs during the M&R analysis.

Table 6-5: M&R Activities and Unit Costs by Condition for Airports

	Activity	PCI Trigger	Cost/SqFt		
			GA	RL	PR
Maintenance	Crack Sealing and Full-Depth Patching	90	\$0.06	\$0.10	\$0.20
		80	\$0.24	\$0.40	\$0.80
Rehabilitation	Microsurfacing (AC) or Concrete Pavement Restoration (PCC)	70	\$0.69	\$0.90	\$1.40
		60	\$3.42	\$3.68	\$4.23
	Mill and Overlay (AC) or Concrete Pavement Restoration (PCC)	50	\$6.29	\$7.61	\$8.55
		40	\$6.29	\$7.61	\$8.55
	Reconstruction	30	\$13.62	\$18.57	\$20.88
		20	\$13.62	\$18.57	\$20.88

7. PAVEMENT REHABILITATION NEEDS ANALYSIS

Maintenance and Rehabilitation (M&R) analyses were performed after the condition data were calculated and MicroPAVER was customized with the maintenance policies and cost settings described in the previous section.

The objective of the M&R analysis is to observe the effect of different fiscal scenarios on the network condition, over a period of ten years. The analysis was conducted using an unlimited budget. An unlimited budget allows all M&R needs to be identified along with the associated cost regardless of priority.

Table 7-1 presents the M&R needs list of immediate needs for Major M&R, i.e. Year 1 of the forecast. The importance of this listing is that it points out the major activities triggered by the current condition of the pavements.

The 10 year forecast results are shown in Figure 7-1, illustrating the effect on pavement condition (PCI) of doing no maintenance versus having unlimited funds and performing all M&R actions based on the policies.

The following network level observations can be made from the figure above:

- The average PCI for airports in District 4 will deteriorate from 73 to 55 in ten years if no M&R activities are performed.
- The PCI will remain at or above 80 through the 10-year analysis period under the unlimited budget scenario. A 2017 PCI of 80 with this scenario is 25 PCI points higher than a “No M&R” scenario. The total cost for Major M&R over this 10-year period is about \$106 million.

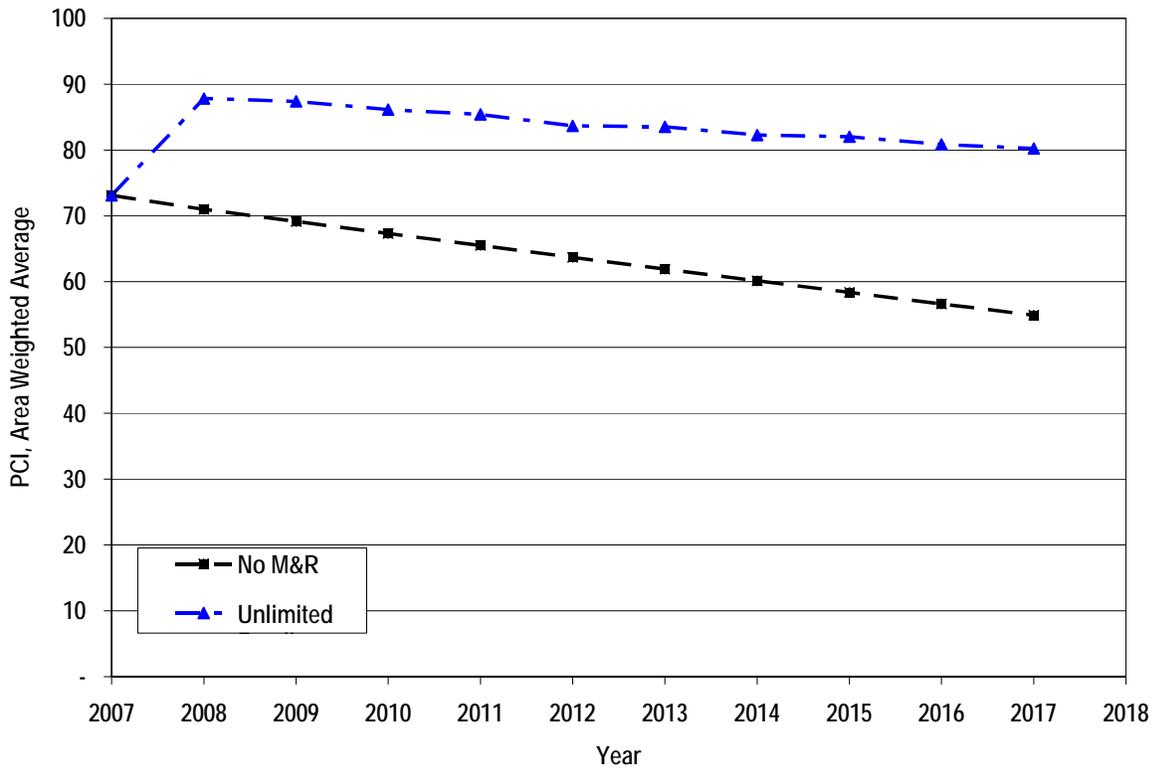
Table 7-1: Summary of Immediate Major M&R Needs – District 4

Airport	Avg PCI - Before M&R	Immediate M&R Total **	Avg PCI -1st Year After M&R
BCT	68	\$3,669,000	92
F45	83	\$0	82
FLL	73	\$33,536,000	90
FPR	63	\$17,154,000	90
HWO	82	\$1,024,000	84
LNA	67	\$5,145,000	85
PHK	76	\$509,000	83
PMP	66	\$7,447,000	87
VRB	80	\$3,357,000	86
X10	62	\$858,000	99
X26	81	\$2,805,000	93
District 4	73	\$75,505,000	88

* This table shows the area-weighted PCI before and after Major M&R and routine maintenance work for the first year of the 10-year plan. It includes all airports participating in the program from District 4.

** Cost figures are rounded to nearest \$1000. Sum may be different. Costs are adjusted for inflation.

Figure 7-1: Budget Scenario Analysis – District 4



8. MAINTENANCE AND REHABILITATION PLAN

The M&R analysis results include activities that likely exceed a typical annual budget level. These activities would need to be evaluated for feasibility and desirability based on the district’s future plans. In an effort to identify appropriate budget levels the 10 year M&R analysis was evaluated to determine levels needed to address several specific areas: preventive maintenance, major activities for pavements in poor condition (Major M&R for PCI less than Critical), and activities that would be desirable to preserve good pavement conditions where they exist (Major M&R for PCI greater than or equal to Critical).

Table 8-1 provides the summary results under the critical PCI scenario.

Approximately 71% of the total Major M&R cost is required in the first year (2008). This is a consequence of several large areas of pavement at FLL (Fort Lauderdale International), FPR (St. Lucie International), PMP (Pompano Beach Airpark), and LNA (Palm Beach County Park) airports being below Critical PCI.

FLL (Fort Lauderdale International), PHK (Palm Beach County Glades), VRB (Vero Beach Municipal), X26 (Sebastian Municipal), HWO (North Perry), and F45 (North Palm Beach County General Aviation) are currently in overall Satisfactory condition with an average PCI value of 73, 76, 80, 81, 82, and 83 respectively, while X10 (Belle Glade Municipal), FPR (St. Lucie International), PMP (Pompano Beach Airpark), LNA (Palm Beach County Park), and BCT (Boca Raton) airports are currently in Fair condition with an average PCI value of 62, 63, 66, 67 and 68, respectively. FLL (Fort Lauderdale International), FPR (St. Lucie International), PMP (Pompano Beach Airpark), and LNA (Palm Beach County Park) will have need for major repair in 2008. The unlimited budget scenario provides the basis for estimating the total repair cost. In reality, it is neither operationally nor fiscally prudent.

Appendix B provides details of M&R plan by year under the unlimited funding scenario. It is important to understand that a PMS is a network level tool and the M&R costs provided in this report are only for planning purposes.

Table 8-1: M&R Costs under Unlimited Funding Scenario – District 4

Year	Preventive	Major M&R >= Critical	Major M&R < Critical	Total
2008	\$971,000	\$1,530,000	\$73,975,000	\$76,477,000
2009	\$2,380,000	\$0	\$4,699,000	\$7,079,000
2010	\$2,586,000	\$0	\$2,393,000	\$4,979,000
2011	\$2,709,000	\$0	\$3,601,000	\$6,309,000
2012	\$3,175,000	\$0	\$1,056,000	\$4,232,000
2013	\$3,312,000	\$0	\$5,747,000	\$9,058,000
2014	\$3,898,000	\$0	\$2,172,000	\$6,070,000
2015	\$4,204,000	\$0	\$4,982,000	\$9,187,000
2016	\$4,804,000	\$0	\$2,739,000	\$7,543,000
2017	\$5,256,000	\$0	\$4,139,000	\$9,395,000
Total	\$33,295,000	\$1,530,000	\$105,503,000	\$140,328,000

Note: Cost figures are rounded to nearest \$1000. Sum may be different. Costs are adjusted to inflation.

9. VISUAL AIDS

9.1 GIS Linked Shape File

The pavement inventory data and pavement condition were linked to the airport's shape file to graphically show the inventory and condition of the airport via color coding shown on the shape file. The coding provides a visual representation that illustrates the PCIs for each pavement section.

During the inspections Global Positioning System (GPS) coordinates were recorded at the centroid of each sample unit. The centroid is usually the geometric center of the area but in cases where sample units are irregular in shape this is the center of mass. These data are presented in tables on updated Network Definition drawings of each individual airport report.

Selected digital photographs taken during the pavement inspection were provided in Appendix G of each individual airport report. These photographs may provide visual support to special pavement conditions or distress observed during the inspection of the facility. As requested by the Aviation Office, these photographs are not linked to the airport's database.

10. RECOMMENDATIONS

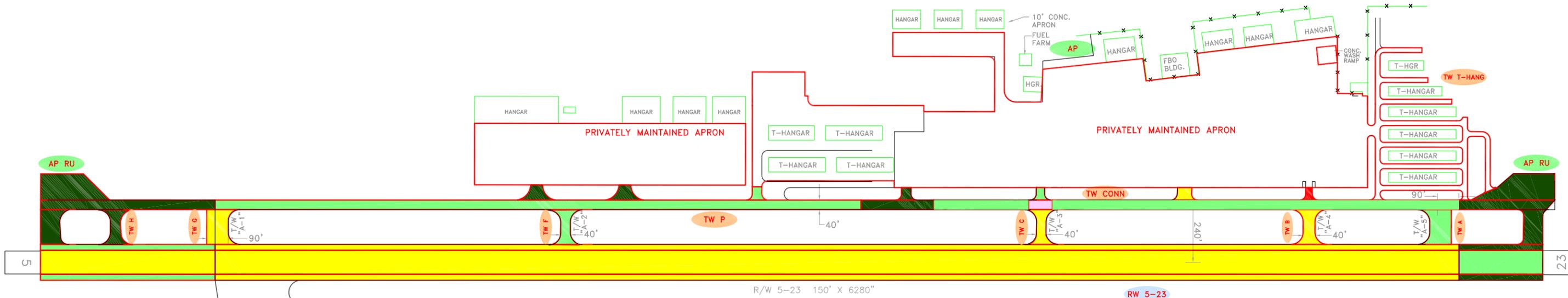
Pavement condition inspections were performed at airports participating in the program from District 4 and a 10-year M&R plan was developed based on the unlimited funding scenario.

Based on 2006/2007 condition inspections and M&R analysis results, some key M&R repair projects identified for each airport for the next 3 years are:

- FLL: Runway 13-31, Runway 9R-27L, and Common Apron
- PHK: Apron
- F45: None
- PMP: Runway 10-28 and Runway 15-33
- BCT: Runway 5-23
- HWO: Runway 18L-36 R
- LNA: Runway 15-33 and GA Apron
- FPR: Runway 9-27 and Center Apron
- VRB: Center Apron
- X10: Runway 9-27
- X26: Runway 4-22

APPENDIX A

2006/2007 CONDITION MAPS



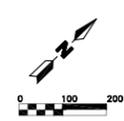
CLOSED

R/W 5-23 150' X 6280"

RW 5-23

LEGEND

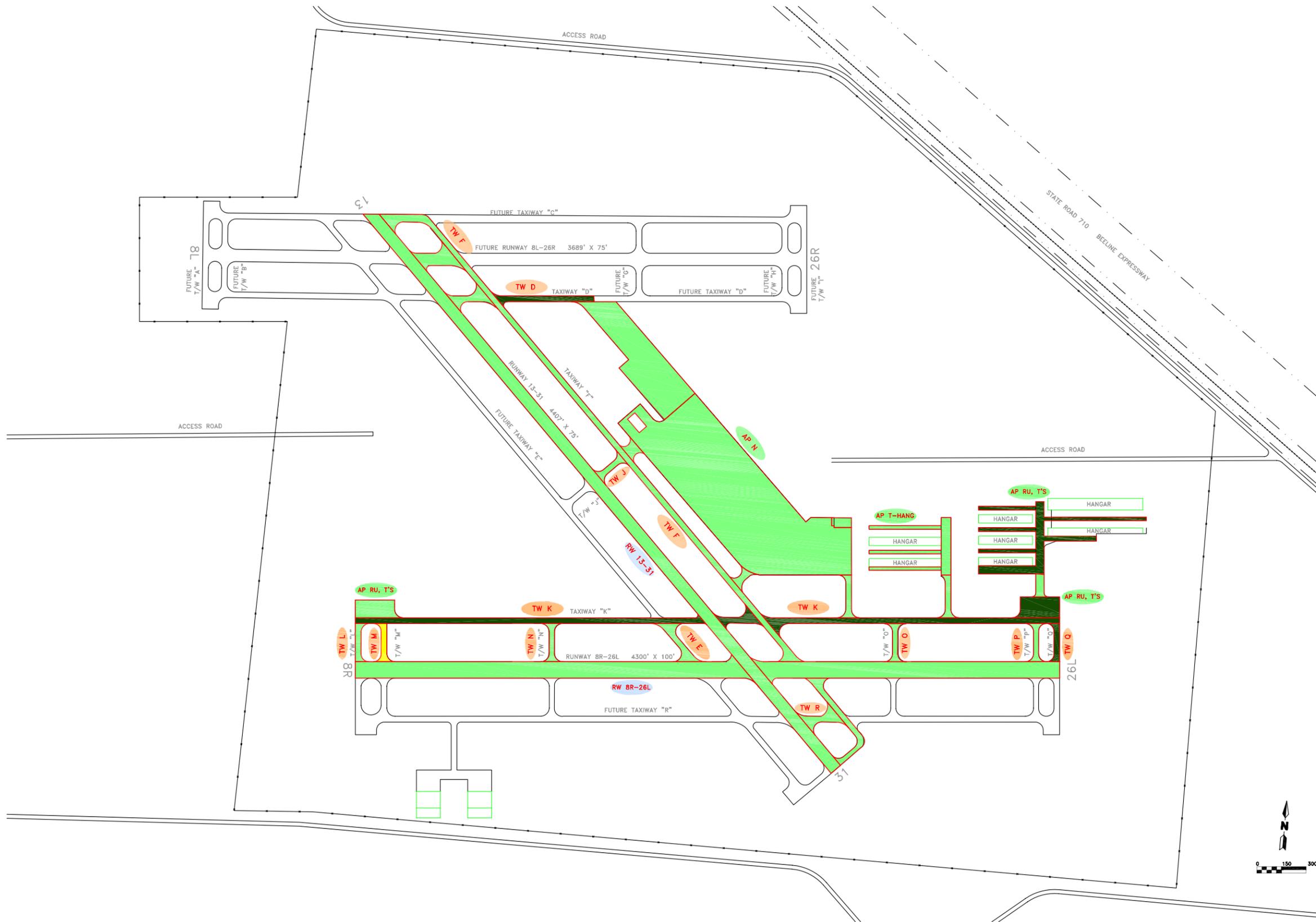
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- TW A — TYPICAL TAXIWAY BRANCH ID
- AP S — TYPICAL APRON BRANCH ID
- Good
- Satisfactory
- Fair
- Poor
- Very Poor
- Serious
- Failed



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

NUMBER	DATE	REVISIONS
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0	Feb-06	Initial Submittal
DESIGNED:	FL	DRAWN: GB CHECKED: DATE: 2-16-2008

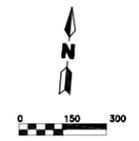




LEGEND

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

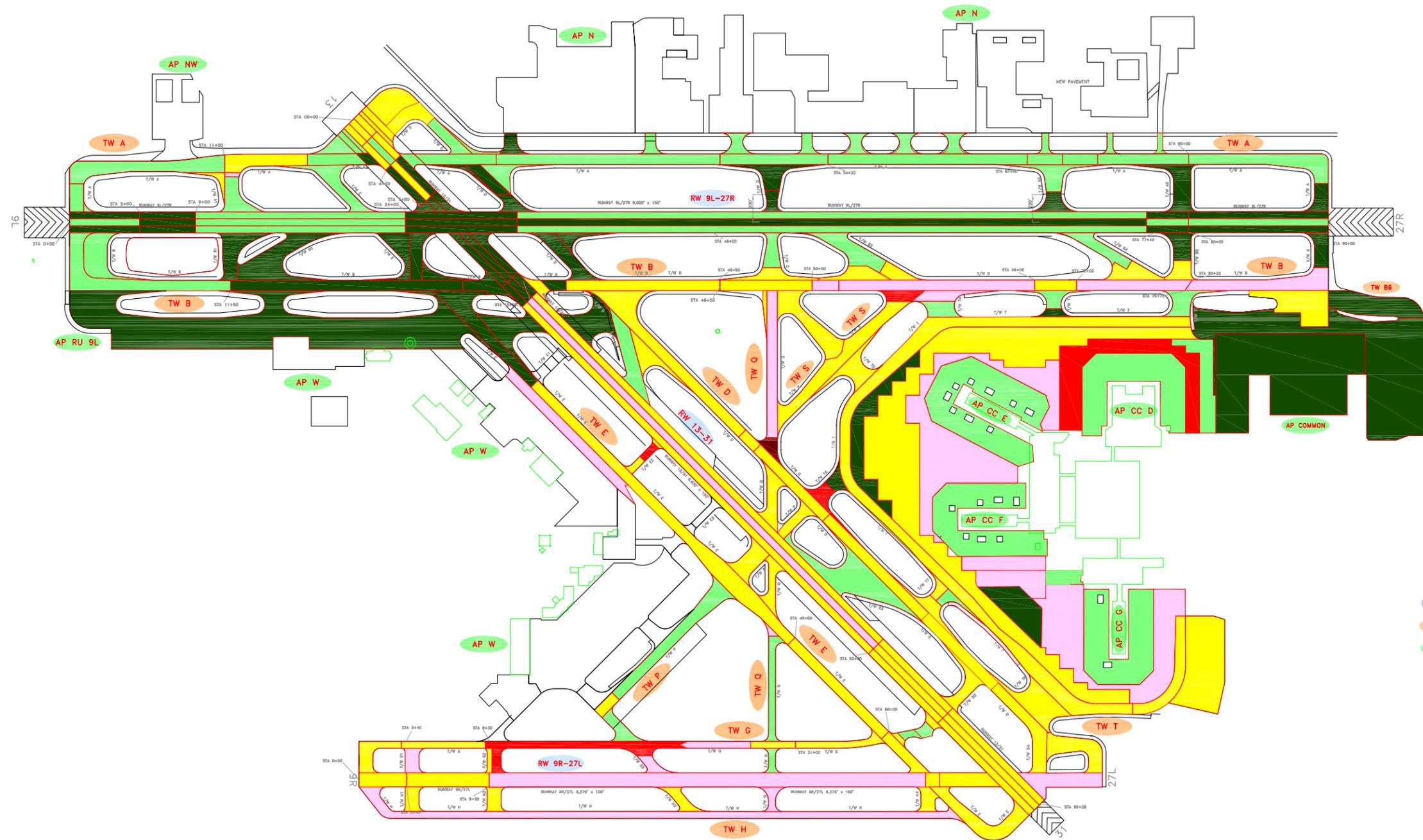
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	Satisfactory
	Fair
	Poor
	Very Poor
	Serious
	Failed



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NUMBER	DATE	REVISIONS
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0	Feb-06	Initial Submittal
DESIGNED:	JCB	DRAWN: RWF
CHECKED:		DATE: 2-21-2008





LEGEND

- RW 13-31 TYPICAL RUNWAY BRANCH ID
- TW A TYPICAL TAXIWAY BRANCH ID
- AP S TYPICAL APRON BRANCH ID
- Good
- Satisfactory
- Fair
- Poor
- Very Poor
- Serious
- Failed

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



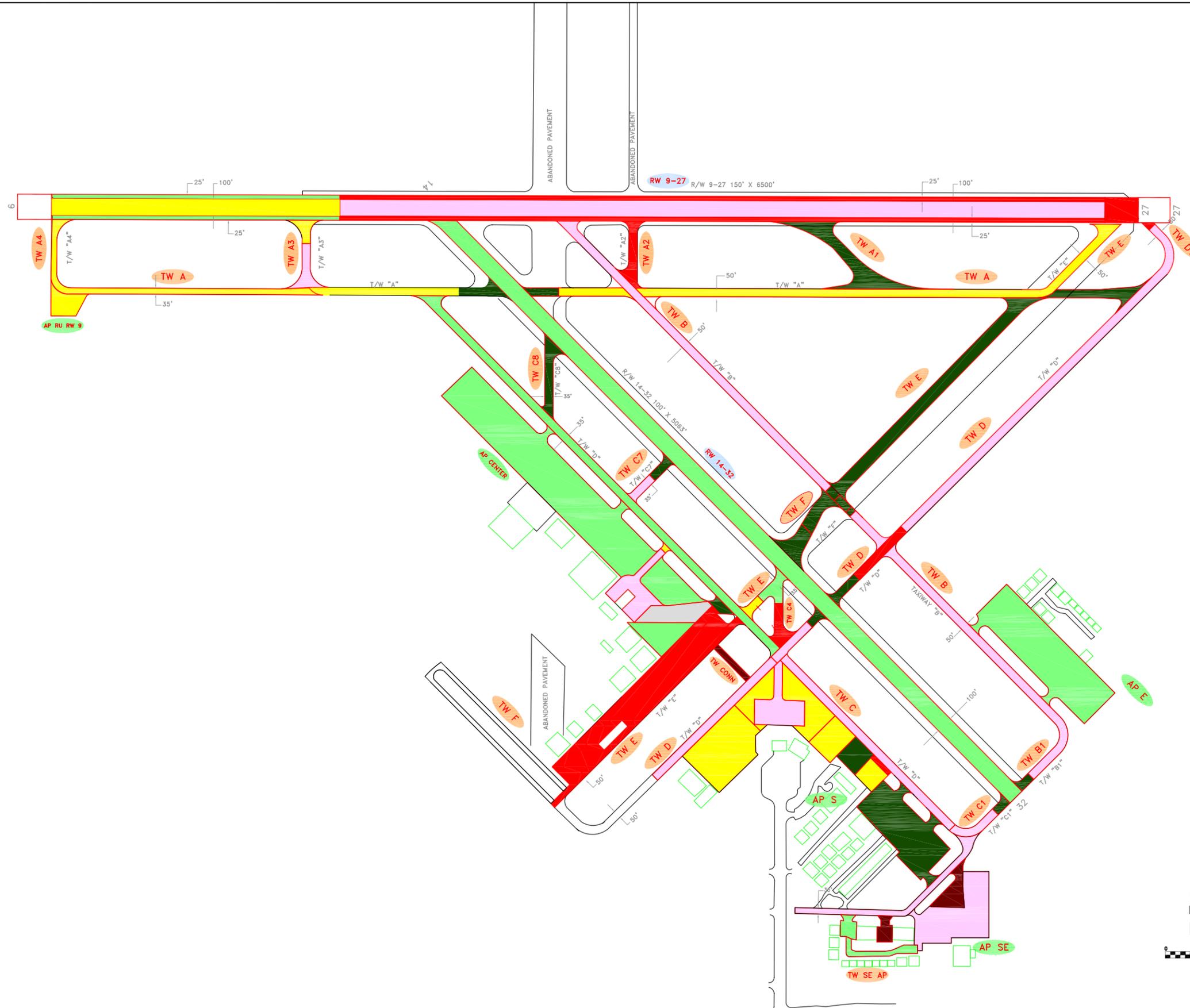
NUMBER	DATE	REVISIONS
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0	Feb-06	Initial Submittal
DESIGNED:	FL	DRAWN: GB CHECKED: DATE: 2-20-2008



MACTEC
Engineering and Consulting, Inc.
Tallahassee, Florida
850-656-1293

2007 Condition Map
FORT LAUDERDALE/HOLLYWOOD INTERNATIONAL AIRPORT
BROWARD COUNTY, FLORIDA
FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

IDENTIFIER
FLL
FOOT DISTRICT
4



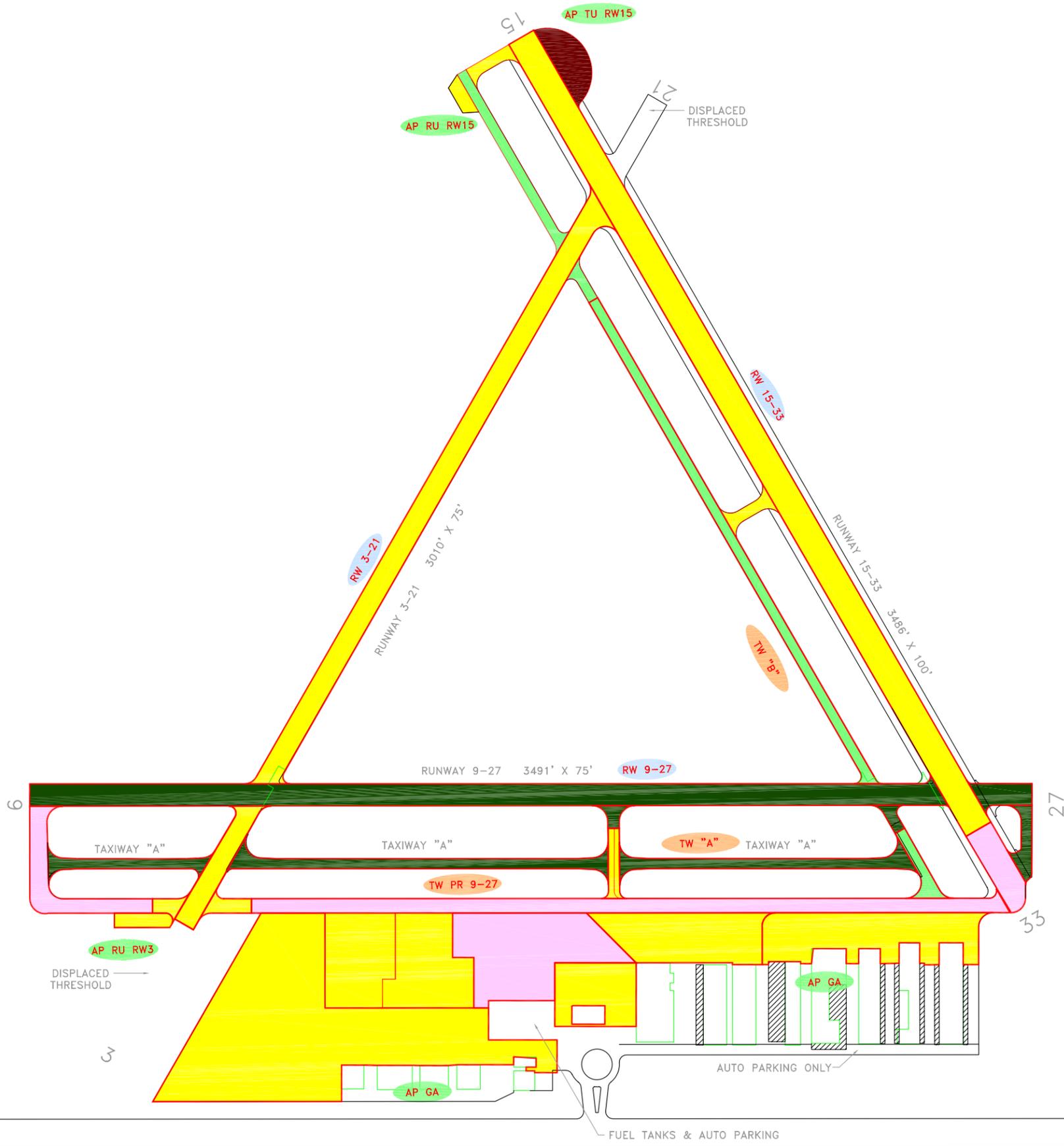
LEGEND

- RW 13-31 — TYPICAL RUNWAY BRANCH ID
- TW A — TYPICAL TAXIWAY BRANCH ID
- AP S — TYPICAL APRON BRANCH ID
- Good
- Satisfactory
- Fair
- Poor
- Very Poor
- Serious
- Failed

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

NUMBER	DATE	REVISIONS
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0	Feb-06	Initial Submittal
DESIGNED:	JCB	DRAWN: JCB
CHECKED:		DATE: 2-22-2006





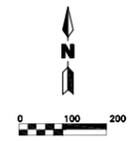
LEGEND

RW 13-31 — TYPICAL RUNWAY BRANCH ID

TW A — TYPICAL TAXIWAY BRANCH ID

AP S — TYPICAL APRON BRANCH ID

Green	Good
Light Green	Satisfactory
Yellow	Fair
Orange	Poor
Red	Very Poor
Dark Red	Serious
Black	Failed



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

NUMBER	DATE	REVISIONS
1	Feb-14	Draft Report
0	Feb-06	Initial Submittal
DESIGNED:	JCB	DRAWN: RWF
CHECKED:		DATE: 2-22-2008



2007 Condition Map

PALM BEACH COUNTY PARK AIRPORT
WEST PALM BEACH, PALM BEACH, FLORIDA

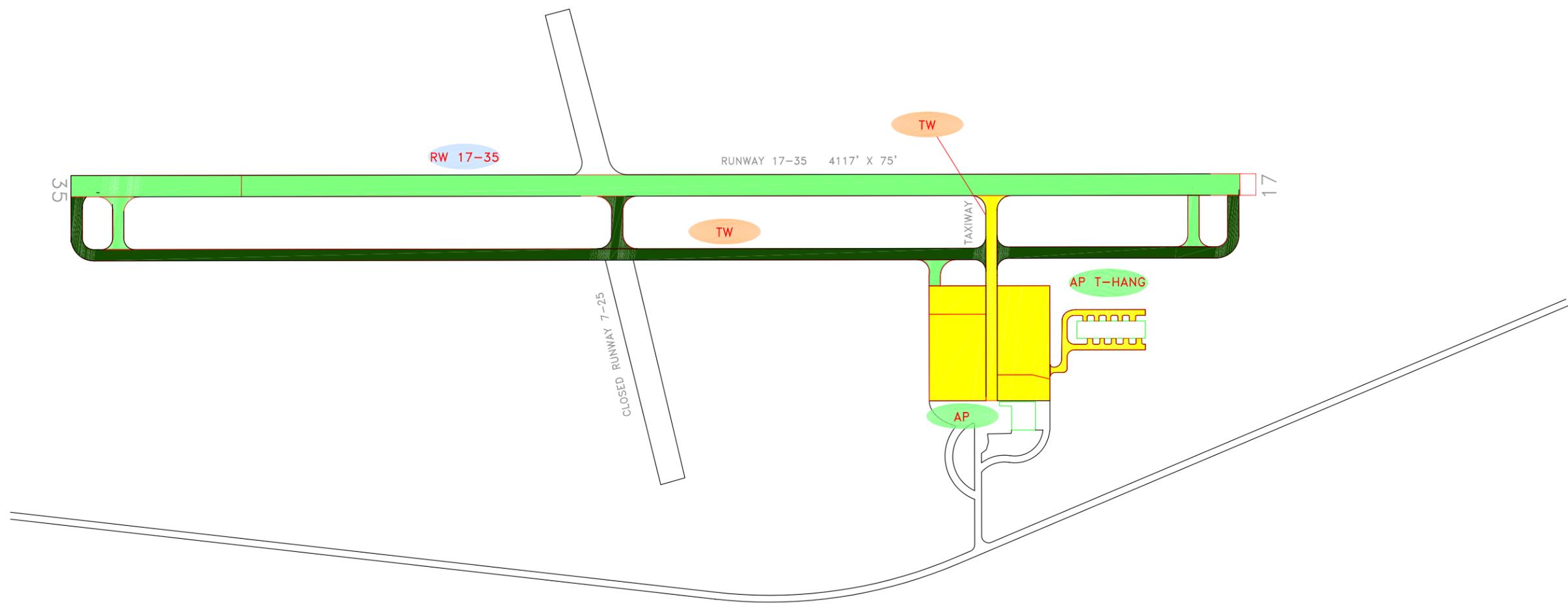
FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

IDENTIFIER

LNA

FOOT DISTRICT

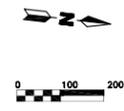
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LEGEND

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

- Good
- Satisfactory
- Fair
- Poor
- Very Poor
- Serious
- Failed



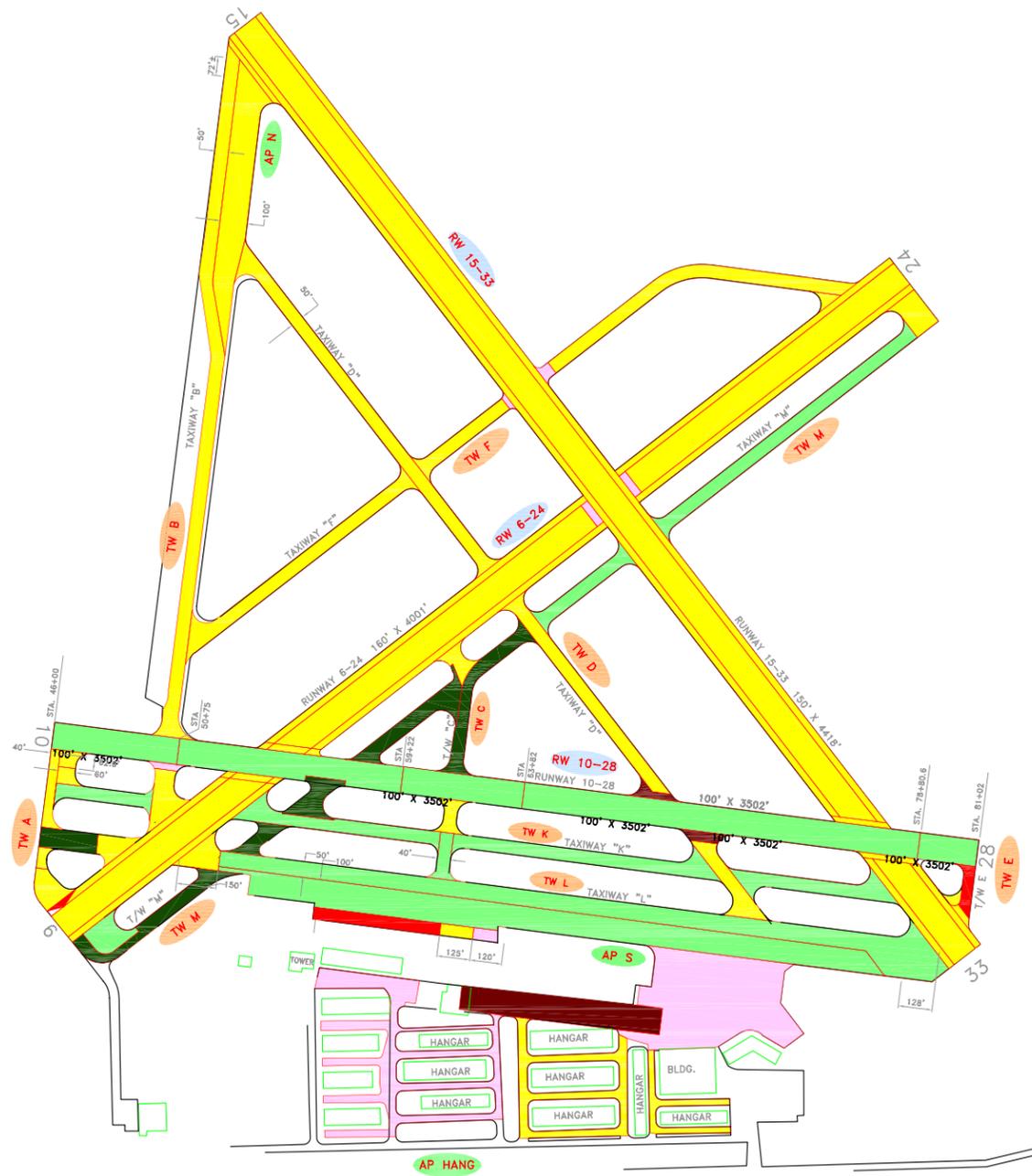
RUNWAY LENGTHS DEPICTED IN THIS DRAWING ARE FOR PAVEMENT MANAGEMENT PURPOSES ONLY AND MAY NOT MATCH PUBLISHED RUNWAY LENGTHS.

NUMBER	DATE	REVISIONS
1	Feb-11-08	Draft Report
0	Feb-06	Initial Submittal
DESIGNED:	JP	DRAWN: JCB
CHECKED:		DATE: 2-21-2008



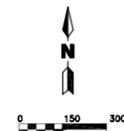
2007 Condition Map
PALM BEACH COUNTY GLADES AIRPORT PAHOKEE, PALM BEACH, FLORIDA
 FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

IDENTIFIER
PHK
 FOOT DISTRICT
4



LEGEND

- RW 13-31 — TYPICAL RUNWAY BRANCH ID
- TW A — TYPICAL TAXIWAY BRANCH ID
- AP S — TYPICAL APRON BRANCH ID
- Good
- Satisfactory
- Fair
- Poor
- Very Poor
- Serious
- Failed



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

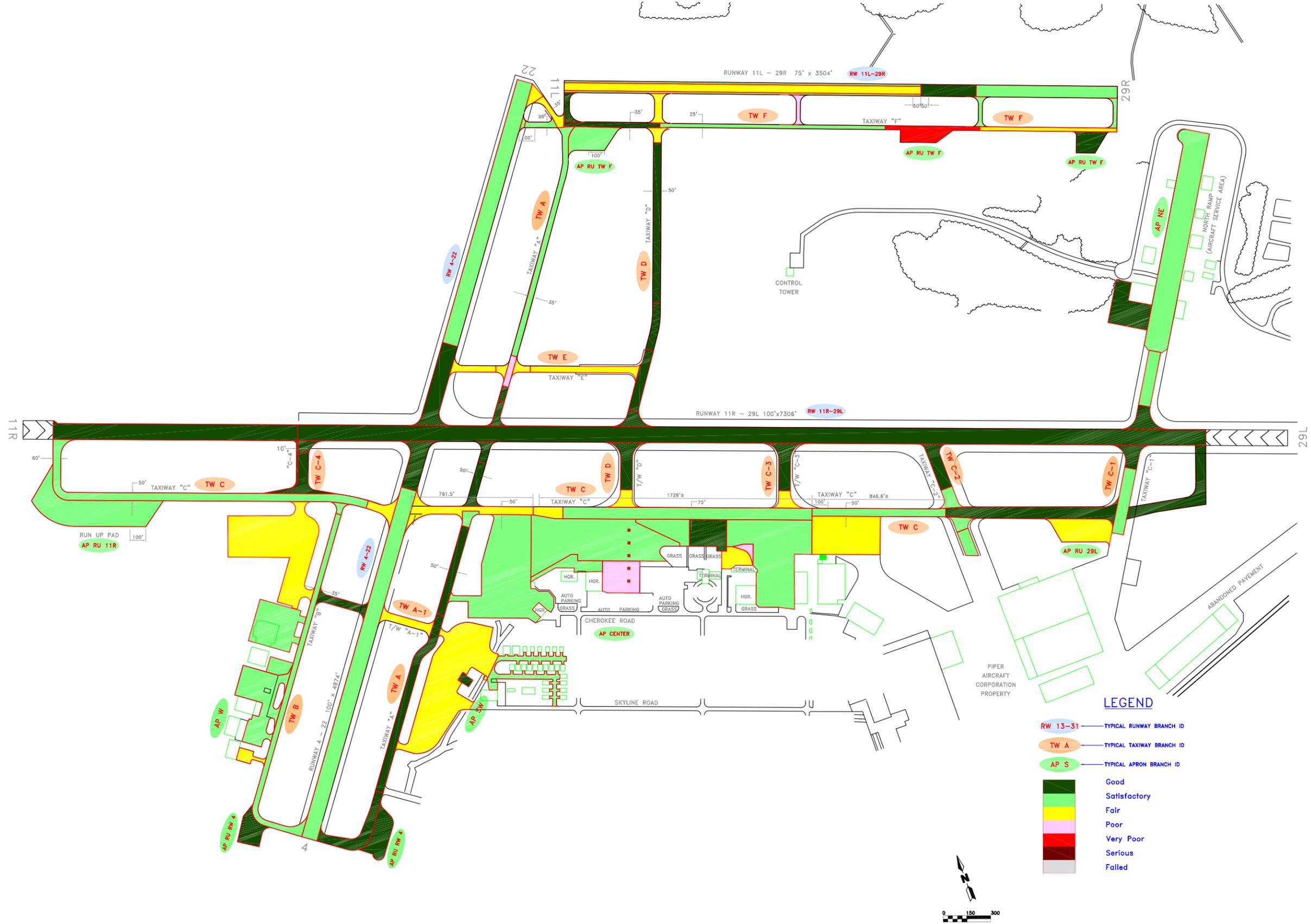
NUMBER	DATE	REVISIONS
1	Feb-14	Draft Report
0	Feb-06	Initial Submittal
DESIGNED:	JCB	DRAWN: RWF
CHECKED:		DATE: 2-22-2006



MACTEC
Engineering and Consulting, Inc.
Tallahassee, Florida
850-656-1293

2007 Condition Map
POMPAÑO BEACH AIR PARK
POMPAÑO BEACH, BROWARD, FLORIDA
FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

IDENTIFIER
PMP
FOOT DISTRICT
4



LEGEND

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

	Good
	Satisfactory
	Fair
	Poor
	Very Poor
	Serious
	Failed

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

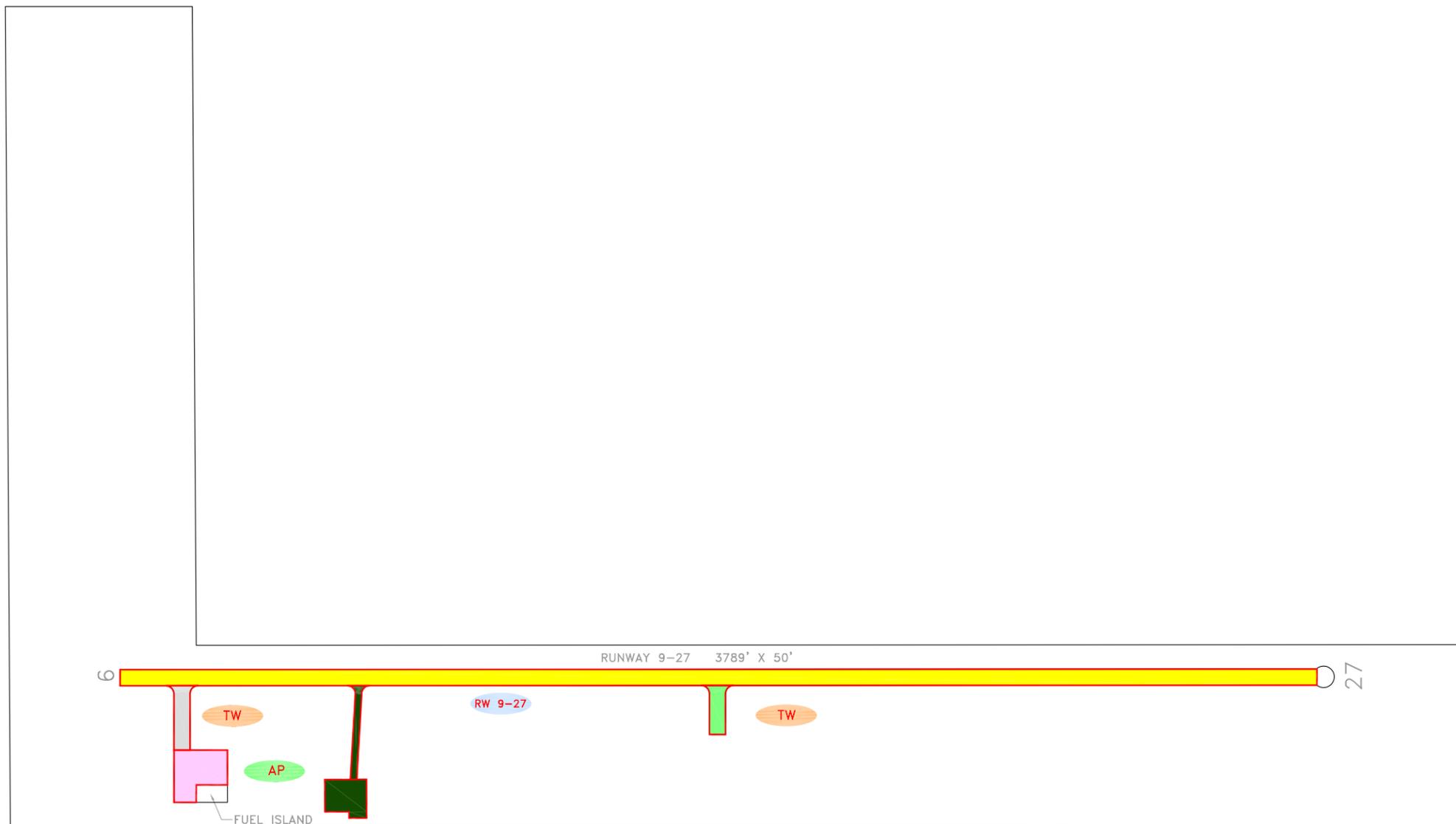
NUMBER	DATE	REVISIONS
2	Apr-10	Draft Report
1	May-06	Revised per FDOT comments
0	Feb-06	Initial Submittal
DESIGNED:	FL	DRAWN: GB CHECKED: DATE: 9-06-2007



2006 Condition Map
VERO BEACH MUNICIPAL AIRPORT
INDIAN RIVER COUNTY, FLORIDA
 FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

IDENTIFIER: **VRB**
 FDOT DISTRICT: **4**

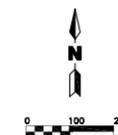
U.S. 441



LEGEND

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

- Good
- Satisfactory
- Fair
- Poor
- Very Poor
- Serious
- Failed



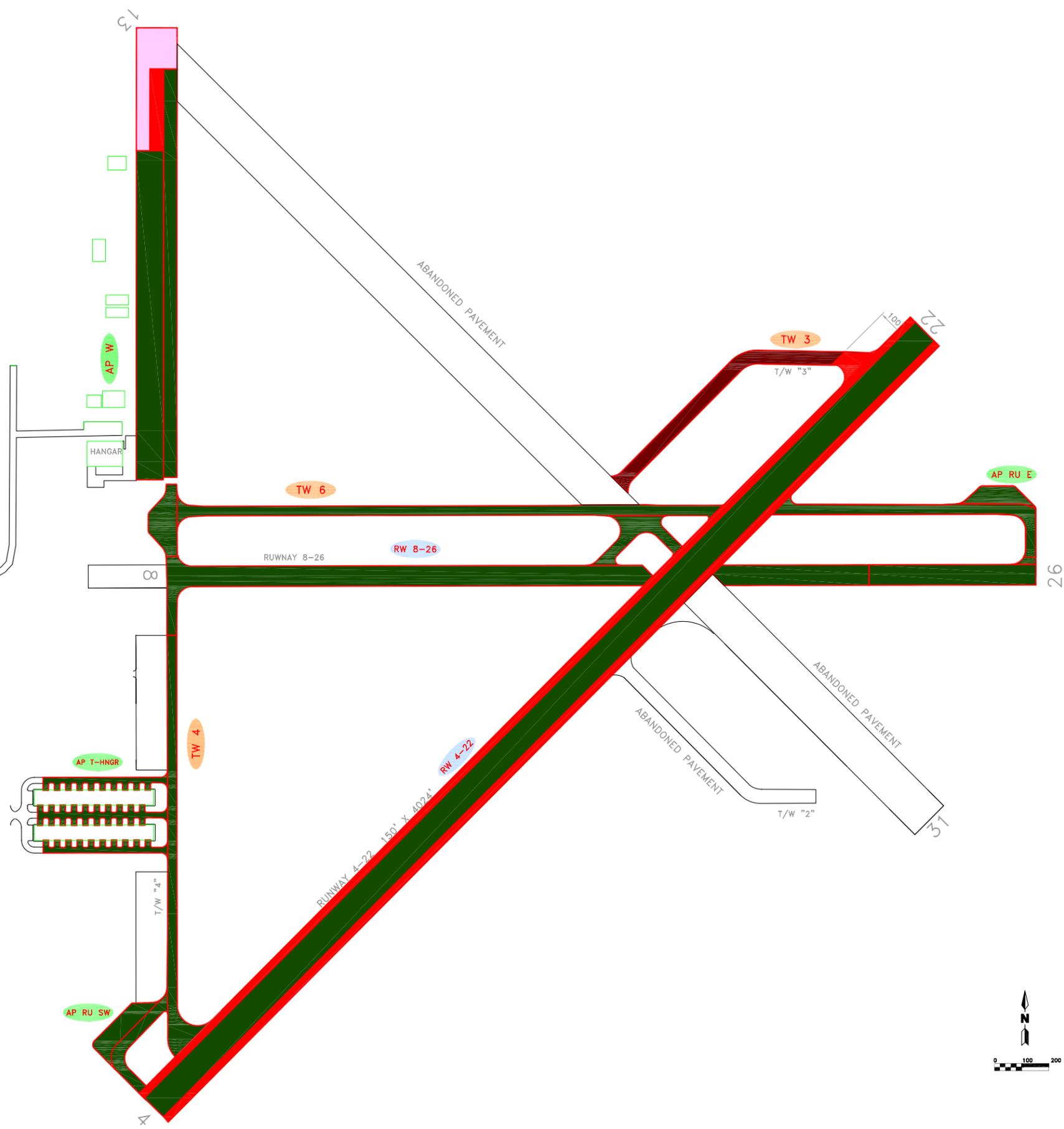
RUNWAY LENGTHS DEPICTED IN THIS DRAWING ARE FOR PAVEMENT MANAGEMENT PURPOSES ONLY AND MAY NOT MATCH PUBLISHED RUNWAY LENGTHS.

NUMBER	DATE	REVISIONS
1	Mar-20	Draft Report
0	Feb-06	Initial Submittal
DESIGNED:	FL	DRAWN: GB CHECKED: DATE: 9-06-2007



2007 Condition Map
BELLE GLADE STATE MUNICIPAL AIRPORT
PALM BEACH COUNTY, FLORIDA
 FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

IDENTIFIER
X10
 FDOT DISTRICT
4



LEGEND

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

	Good
	Satisfactory
	Fair
	Poor
	Very Poor
	Failed

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

NUMBER	DATE	REVISIONS
2	Jan-30-08	Draft Report
1	May-06	Revised per FDOT comments
0	Feb-06	Initial Submittal
DESIGNED:	JCB	DRAWN: JCB
CHECKED:		DATE: 2-22-2008



APPENDIX B
MAJOR M&R PLAN

Table B-1: BCT Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
BCT	RUNWAY	RW 5-23	6105	AAC	520,000	2008	56	Microsurfacing	100	\$2,731,041
BCT	RUNWAY	RW 5-23	6110	AAC	260,000	2008	61	Microsurfacing	100	\$884,520
BCT	TAXIWAY	TW CONN	225	AAC	3,210	2008	36	Mill & Overlay	100	\$38,501
BCT	TAXIWAY	TW P	113	AC	2,000	2008	50	Mill & Overlay	100	\$15,220
BCT	RUNWAY	RW 5-23	6106	AC	72,500	2009	64	Microsurfacing	100	\$191,765
BCT	TAXIWAY	TW C	120	AAC	7,500	2010	64	Microsurfacing	100	\$20,433
BCT	RUNWAY	RW 5-23	6107	AC	35,000	2012	63	Microsurfacing	100	\$112,112
BCT	RUNWAY	RW 5-23	6111	AC	36,250	2012	63	Microsurfacing	100	\$116,116
BCT	TAXIWAY	TW B	125	AAC	7,500	2014	64	Microsurfacing	100	\$22,997
BCT	TAXIWAY	TW CONN	220	AC	3,288	2014	64	Microsurfacing	100	\$10,082
BCT	TAXIWAY	TW CONN	230	AAC	4,056	2014	64	Microsurfacing	100	\$12,437
BCT	TAXIWAY	TW G	110	AAC	13,100	2015	64	Microsurfacing	100	\$41,374

Table B-2: F45 Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
F45	TAXIWAY	TW M	1305	AC	9,225	2012	64	Microsurfacing	100	\$26,663
F45	RUNWAY	RW 13-31	6205	AC	322,500	2015	64	Microsurfacing	100	\$1,018,557
F45	RUNWAY	RW 8R-26L	6105	AC	428,000	2016	64	Microsurfacing	100	\$1,392,312
F45	TAXIWAY	TW R	1805	AC	10,000	2017	64	Microsurfacing	100	\$33,507

Table B-3: FLL Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
FLL	APRON	AP COMMON	4010	AC	262,350	2008	38	Mill & Overlay	100	\$2,890,047
FLL	APRON	AP COMMON	4015	AC	226,100	2008	70	Microsurfacing	100	\$316,541
FLL	APRON	AP COMMON	4020	AC	399,350	2008	45	Mill & Overlay	100	\$3,414,441
FLL	APRON	AP COMMON	4040	AC	112,600	2008	43	Mill & Overlay	100	\$962,730
FLL	APRON	AP COMMON	4045	AC	61,200	2008	48	Mill & Overlay	100	\$523,260
FLL	APRON	AP COMMON	4055	AC	330,100	2008	48	Mill & Overlay	100	\$2,822,354
FLL	APRON	AP RU 9L	5210	AC	90,194	2008	58	Microsurfacing	100	\$459,448
FLL	RUNWAY	RW 13-31	6210	AAC	20,000	2008	62	Microsurfacing	100	\$73,280
FLL	RUNWAY	RW 13-31	6220	AAC	12,000	2008	69	Microsurfacing	100	\$20,196
FLL	RUNWAY	RW 13-31	6265	AC	165,000	2008	53	Mill & Overlay	100	\$1,196,910
FLL	RUNWAY	RW 13-31	6270	AAC	330,000	2008	58	Microsurfacing	100	\$1,681,019
FLL	RUNWAY	RW 13-31	6275	AAC	35,000	2008	63	Microsurfacing	100	\$118,335
FLL	RUNWAY	RW 13-31	6280	AAC	70,000	2008	64	Microsurfacing	100	\$216,860
FLL	RUNWAY	RW 9R-27L	6310	AC	59,000	2008	63	Microsurfacing	100	\$199,479
FLL	RUNWAY	RW 9R-27L	6315	AC	311,000	2008	46	Mill & Overlay	100	\$2,659,049
FLL	RUNWAY	RW 9R-27L	6325	AC	54,750	2008	52	Mill & Overlay	100	\$420,808
FLL	TAXIWAY	TW A	110	AAC	58,900	2008	66	Microsurfacing	100	\$149,135
FLL	TAXIWAY	TW A1	165	AC	5,000	2008	62	Microsurfacing	100	\$18,320
FLL	TAXIWAY	TW A1	170	AAC	4,500	2008	52	Mill & Overlay	100	\$34,587
FLL	TAXIWAY	TW B	225	AAC	8,250	2008	62	Microsurfacing	100	\$30,228
FLL	TAXIWAY	TW B	230	AAC	48,750	2008	57	Microsurfacing	100	\$269,392
FLL	TAXIWAY	TW B	233	AAC	16,875	2008	53	Mill & Overlay	100	\$122,411
FLL	TAXIWAY	TW B	235	AAC	103,125	2008	49	Mill & Overlay	100	\$881,718
FLL	TAXIWAY	TW B	240	AAC	22,500	2008	58	Microsurfacing	100	\$114,615
FLL	TAXIWAY	TW B	245	AAC	60,000	2008	53	Mill & Overlay	100	\$435,240
FLL	TAXIWAY	TW B	250	AC	91,900	2008	48	Mill & Overlay	100	\$785,745
FLL	TAXIWAY	TW B3	270	AAC	29,500	2008	61	Microsurfacing	100	\$116,436
FLL	TAXIWAY	TW B4	282	AC	34,200	2008	58	Microsurfacing	100	\$174,215
FLL	TAXIWAY	TW B5	287	AAC	20,794	2008	57	Microsurfacing	100	\$114,908
FLL	TAXIWAY	TW D	403	AAC	7,725	2008	57	Microsurfacing	100	\$42,688

Table B-3: FLL Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
FLL	TAXIWAY	TW D	405	AC	15,775	2008	62	Microsurfacing	100	\$57,800
FLL	TAXIWAY	TW D	410	AAC	50,700	2008	57	Microsurfacing	100	\$280,168
FLL	TAXIWAY	TW D	415	AAC	42,100	2008	59	Microsurfacing	100	\$196,270
FLL	TAXIWAY	TW D	435	AAC	136,600	2008	61	Microsurfacing	100	\$539,160
FLL	TAXIWAY	TW D	440	AAC	54,225	2008	56	Microsurfacing	100	\$323,072
FLL	TAXIWAY	TW D	445	AAC	75,000	2008	63	Microsurfacing	100	\$253,575
FLL	TAXIWAY	TW D	450	AAC	52,500	2008	60	Microsurfacing	100	\$222,075
FLL	TAXIWAY	TW D	485	AC	59,000	2008	62	Microsurfacing	100	\$216,176
FLL	TAXIWAY	TW D3	480	AAC	33,900	2008	63	Microsurfacing	100	\$114,616
FLL	TAXIWAY	TW D4	455	AC	67,050	2008	56	Microsurfacing	100	\$399,484
FLL	TAXIWAY	TW E	524	AC	87,256	2008	40	Mill & Overlay	100	\$746,038
FLL	TAXIWAY	TW E2	554	AAC	2,300	2008	58	Microsurfacing	100	\$11,716
FLL	TAXIWAY	TW E2	555	AC	4,290	2008	38	Mill & Overlay	100	\$47,259
FLL	TAXIWAY	TW E2	556	AC	3,500	2008	37	Mill & Overlay	100	\$42,871
FLL	TAXIWAY	TW E2	557	AAC	7,500	2008	63	Microsurfacing	100	\$25,357
FLL	TAXIWAY	TW G	710	AC	29,500	2008	64	Microsurfacing	100	\$91,391
FLL	TAXIWAY	TW G	715	AC	69,500	2008	30	Reconstruction	100	\$1,451,160
FLL	TAXIWAY	TW G	720	AC	21,600	2008	45	Mill & Overlay	100	\$184,680
FLL	TAXIWAY	TW G	730	AC	33,100	2008	61	Microsurfacing	100	\$130,646
FLL	TAXIWAY	TW G	733	AAC	1,880	2008	62	Microsurfacing	100	\$6,888
FLL	TAXIWAY	TW G1	740	AC	18,700	2008	44	Mill & Overlay	100	\$159,885
FLL	TAXIWAY	TW G2	745	AAC	7,080	2008	59	Microsurfacing	100	\$33,007
FLL	TAXIWAY	TW G2	750	AC	12,600	2008	36	Mill & Overlay	100	\$169,873
FLL	TAXIWAY	TW G3	755	AAC	15,000	2008	49	Mill & Overlay	100	\$128,250
FLL	TAXIWAY	TW G3	757	AC	6,156	2008	32	Mill & Overlay	100	\$113,357
FLL	TAXIWAY	TW H	805	AC	230,000	2008	47	Mill & Overlay	100	\$1,966,499
FLL	TAXIWAY	TW H2	815	AC	17,500	2008	64	Microsurfacing	100	\$54,215
FLL	TAXIWAY	TW H3	820	AC	20,050	2008	57	Microsurfacing	100	\$110,796
FLL	TAXIWAY	TW H4	830	AC	17,000	2008	62	Microsurfacing	100	\$62,288
FLL	TAXIWAY	TW P	1605	AC	24,400	2008	66	Microsurfacing	100	\$61,781

Table B-3: FLL Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
FLL	TAXIWAY	TW P	1610	AC	38,500	2008	64	Microsurfacing	100	\$119,273
FLL	TAXIWAY	TW P	1618	AC	13,125	2008	64	Microsurfacing	100	\$40,661
FLL	TAXIWAY	TW Q	1712	AAC	28,200	2008	63	Microsurfacing	100	\$95,344
FLL	TAXIWAY	TW Q	1715	AAC	86,975	2008	50	Mill & Overlay	100	\$743,636
FLL	TAXIWAY	TW Q	1717	AAC	6,875	2008	62	Microsurfacing	100	\$25,190
FLL	TAXIWAY	TW Q	1720	AAC	13,800	2008	23	Reconstruction	100	\$288,144
FLL	TAXIWAY	TW Q	1725	AAC	37,400	2008	55	Mill & Overlay	100	\$238,986
FLL	TAXIWAY	TW Q	1730	AC	27,900	2008	64	Microsurfacing	100	\$86,434
FLL	TAXIWAY	TW Q	1735	AC	2,150	2008	54	Mill & Overlay	100	\$14,667
FLL	TAXIWAY	TW Q	1745	AC	13,600	2008	45	Mill & Overlay	100	\$116,280
FLL	TAXIWAY	TW S	1905	AAC	18,200	2008	39	Mill & Overlay	100	\$178,051
FLL	TAXIWAY	TW T	2005	AC	316,875	2008	68	Microsurfacing	100	\$622,977
FLL	TAXIWAY	TW T	2010	AC	65,625	2008	62	Microsurfacing	100	\$240,450
FLL	TAXIWAY	TW T4	2040	AAC	25,900	2008	50	Mill & Overlay	100	\$221,445
FLL	TAXIWAY	TW T5	2080	AC	75,400	2008	56	Microsurfacing	100	\$449,233
FLL	TAXIWAY	TW T6	2055	AAC	21,600	2008	34	Mill & Overlay	100	\$344,477
FLL	TAXIWAY	TW T7	2060	AC	10,500	2008	64	Microsurfacing	100	\$32,529
FLL	TAXIWAY	TW T8	2075	AC	41,900	2008	58	Microsurfacing	100	\$213,438
FLL	RUNWAY	RW 13-31	6290	AAC	92,800	2009	63	Microsurfacing	100	\$323,169
FLL	RUNWAY	RW 9R-27L	6305	AC	34,000	2009	64	Microsurfacing	100	\$108,492
FLL	TAXIWAY	TW E	530	AAC	71,250	2009	64	Microsurfacing	100	\$227,354
FLL	TAXIWAY	TW E	535	AC	29,300	2009	64	Microsurfacing	100	\$93,495
FLL	TAXIWAY	TW T5	2045	AC	28,050	2009	64	Microsurfacing	100	\$89,506
FLL	TAXIWAY	TW T7	2070	AAC	24,200	2009	64	Microsurfacing	100	\$77,221
FLL	RUNWAY	RW 13-31	6205	AAC	10,000	2010	64	Microsurfacing	100	\$32,867
FLL	RUNWAY	RW 13-31	6285	AAC	46,400	2010	63	Microsurfacing	100	\$166,432
FLL	RUNWAY	RW 9R-27L	6320	AC	39,050	2010	64	Microsurfacing	100	\$128,344
FLL	TAXIWAY	TW B	218	AAC	12,050	2010	64	Microsurfacing	100	\$39,604
FLL	TAXIWAY	TW B3	278	AAC	19,105	2010	64	Microsurfacing	100	\$62,792
FLL	RUNWAY	RW 13-31	6225	AC	18,000	2011	64	Microsurfacing	100	\$60,935

Table B-3: FLL Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
FLL	TAXIWAY	TW E	525	AC	224,457	2011	64	Microsurfacing	100	\$759,847
FLL	TAXIWAY	TW G	705	AC	35,500	2011	64	Microsurfacing	100	\$120,177
FLL	TAXIWAY	TW G	725	AAC	18,500	2011	64	Microsurfacing	100	\$62,627
FLL	TAXIWAY	TW D	437	AAC	9,375	2012	64	Microsurfacing	100	\$32,689
FLL	TAXIWAY	TW D1	460	AAC	34,600	2012	64	Microsurfacing	100	\$120,644
FLL	TAXIWAY	TW G	738	AC	5,100	2012	64	Microsurfacing	100	\$17,783
FLL	TAXIWAY	TW S	1910	AC	113,800	2012	64	Microsurfacing	100	\$396,801
FLL	APRON	AP CC D	4205	PCC	269,300	2013	64	PCC Restoration	100	\$967,172
FLL	APRON	AP CC E	4305	PCC	344,400	2013	64	PCC Restoration	100	\$1,236,888
FLL	APRON	AP COMMON	4056	AC	228,800	2013	64	Microsurfacing	100	\$821,719
FLL	RUNWAY	RW 9R-27L	6317	AC	10,000	2013	64	Microsurfacing	100	\$35,914
FLL	TAXIWAY	TW H1	810	AC	17,500	2013	64	Microsurfacing	100	\$62,850
FLL	RUNWAY	RW 9L-27R	6155	AAC	12,500	2014	63	Microsurfacing	100	\$50,464
FLL	TAXIWAY	TW E	540	AC	77,200	2014	64	Microsurfacing	100	\$285,576
FLL	TAXIWAY	TW G3	760	AAC	8,800	2014	63	Microsurfacing	100	\$35,526
FLL	TAXIWAY	TW D2	475	AAC	129,300	2015	64	Microsurfacing	100	\$492,652
FLL	TAXIWAY	TW G	735	AC	14,973	2015	64	Microsurfacing	100	\$57,049
FLL	TAXIWAY	TW D1	465	AAC	43,000	2016	63	Microsurfacing	100	\$184,167
FLL	TAXIWAY	TW G	737	AC	3,300	2016	64	Microsurfacing	100	\$12,951
FLL	TAXIWAY	TW T7	2065	AC	14,200	2016	64	Microsurfacing	100	\$55,727
FLL	RUNWAY	RW 9L-27R	6105	AAC	25,000	2017	64	Microsurfacing	100	\$101,055
FLL	TAXIWAY	TW A	105	AAC	116,300	2017	64	Microsurfacing	100	\$470,106
FLL	TAXIWAY	TW A	135	AAC	62,700	2017	64	Microsurfacing	100	\$253,445
FLL	TAXIWAY	TW P	1615	AC	102,425	2017	64	Microsurfacing	100	\$414,021

Table B-4: FPR Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
FPR	APRON	AP CENTER	4110	PCC	99,875	2008	45	PCC Restoration	100	\$628,214
FPR	APRON	AP CENTER	4112	PCC	46,360	2008	0	Reconstruction	100	\$631,423
FPR	APRON	AP CENTER	4125	AAC	120,000	2008	36	Mill & Overlay	100	\$1,106,640
FPR	APRON	AP CENTER	4127	AC	70,000	2008	27	Reconstruction	100	\$953,400
FPR	APRON	AP S	4205	AC	125,200	2008	64	Microsurfacing	100	\$291,466
FPR	APRON	AP S	4212	AC	56,250	2008	53	Mill & Overlay	100	\$305,381
FPR	APRON	AP S	4230	AC	2,700	2008	38	Mill & Overlay	100	\$20,941
FPR	APRON	AP SE	4305	PCC	25,120	2008	16	Reconstruction	100	\$342,135
FPR	APRON	AP SE	4310	AC	121,350	2008	54	Mill & Overlay	100	\$623,982
FPR	APRON	AP SE	4320	PCC	12,300	2008	12	Reconstruction	100	\$167,526
FPR	RUNWAY	RW 9-27	6105	AAC	458,500	2008	42	Mill & Overlay	100	\$2,883,965
FPR	RUNWAY	RW 9-27	6110	AC	229,250	2008	36	Mill & Overlay	100	\$2,114,144
FPR	RUNWAY	RW 9-27	6125	AAC	20,000	2008	32	Mill & Overlay	100	\$243,080
FPR	RUNWAY	RW 9-27	6130	AAC	10,000	2008	31	Mill & Overlay	100	\$128,870
FPR	TAXIWAY	TW A	105	AC	245,950	2008	58	Microsurfacing	100	\$982,325
FPR	TAXIWAY	TW A	110	AC	67,550	2008	56	Microsurfacing	100	\$308,569
FPR	TAXIWAY	TW A2	120	AC	20,500	2008	36	Mill & Overlay	100	\$189,051
FPR	TAXIWAY	TW A3	128	AC	9,475	2008	55	Mill & Overlay	100	\$46,001
FPR	TAXIWAY	TW A3	130	AC	13,500	2008	43	Mill & Overlay	100	\$84,915
FPR	TAXIWAY	TW B	205	AAC	227,912	2008	48	Mill & Overlay	100	\$1,433,567
FPR	TAXIWAY	TW C1	405	AAC	12,500	2008	49	Mill & Overlay	100	\$78,625
FPR	TAXIWAY	TW C1	505	AC	46,382	2008	53	Mill & Overlay	100	\$251,808
FPR	TAXIWAY	TW C4	420	AAC	18,540	2008	37	Mill & Overlay	100	\$157,386
FPR	TAXIWAY	TW C6	440	AAC	1,457	2008	63	Microsurfacing	100	\$3,790
FPR	TAXIWAY	TW C7	425	AC	6,125	2008	52	Mill & Overlay	100	\$35,011
FPR	TAXIWAY	TW CONN	705	AC	9,625	2008	23	Reconstruction	100	\$131,093
FPR	TAXIWAY	TW D	305	AAC	50,000	2008	44	Mill & Overlay	100	\$314,500
FPR	TAXIWAY	TW D	310	AAC	13,750	2008	41	Mill & Overlay	100	\$86,488
FPR	TAXIWAY	TW D	312	AAC	28,100	2008	35	Mill & Overlay	100	\$279,736
FPR	TAXIWAY	TW D	315	AC	127,250	2008	44	Mill & Overlay	100	\$800,403

Table B-4: FPR Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
FPR	TAXIWAY	TW D	317	AAC	5,000	2008	32	Mill & Overlay	100	\$60,770
FPR	TAXIWAY	TW C	410	AAC	71,000	2008	47	Mill & Overlay	100	\$446,590
FPR	TAXIWAY	TW E	605	AC	75,050	2008	28	Reconstruction	100	\$1,022,181
FPR	APRON	AP RU RW 9	5105	AC	25,612	2009	64	Microsurfacing	100	\$61,414
FPR	TAXIWAY	TW E	611	AC	7,391	2009	64	Microsurfacing	100	\$17,722
FPR	APRON	AP S	4210	AC	86,550	2010	64	Microsurfacing	100	\$213,759
FPR	RUNWAY	RW 9-27	6115	AC	171,500	2010	63	Microsurfacing	100	\$473,238
FPR	APRON	AP S	4215	AC	40,500	2011	64	Microsurfacing	100	\$103,027
FPR	APRON	AP S	4225	AC	23,100	2011	64	Microsurfacing	100	\$58,763
FPR	RUNWAY	RW 14-32	6205	AAC	478,000	2013	64	Microsurfacing	100	\$1,290,022
FPR	APRON	AP CENTER	4115	AC	58,250	2014	64	Microsurfacing	100	\$161,921
FPR	RUNWAY	RW 9-27	6120	AC	85,750	2014	64	Microsurfacing	100	\$238,364
FPR	APRON	AP CENTER	4120	AC	42,050	2015	64	Microsurfacing	100	\$120,395
FPR	TAXIWAY	TW C	415	AC	107,120	2015	64	Microsurfacing	100	\$306,700
FPR	APRON	AP E	4405	AC	246,000	2017	64	Microsurfacing	100	\$747,228
FPR	TAXIWAY	TW E	610	AAC	16,906	2017	64	Microsurfacing	100	\$51,352

Table B-5: HWO Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
HWO	RUNWAY	RW 18L-36R	6310	AC	8,410	2008	37	Mill & Overlay	100	\$91,652
HWO	RUNWAY	RW 9L-27R	6210	AC	3,552	2008	51	Mill & Overlay	100	\$25,635
HWO	RUNWAY	RW 9R-27L	6415	AC	7,500	2008	60	Microsurfacing	100	\$27,600
HWO	TAXIWAY	TW B	210	AAC	12,200	2008	64	Microsurfacing	100	\$31,330
HWO	TAXIWAY	TW B	215	AC	15,700	2008	60	Microsurfacing	100	\$57,776
HWO	TAXIWAY	TW B1	1905	AAC	10,350	2008	62	Microsurfacing	100	\$32,333
HWO	TAXIWAY	TW D	415	AAC	15,000	2008	33	Mill & Overlay	100	\$229,230
HWO	TAXIWAY	TW D2	1705	AAC	8,400	2008	63	Microsurfacing	100	\$23,906
HWO	TAXIWAY	TW D2	1710	AC	3,418	2008	59	Microsurfacing	100	\$13,922
HWO	TAXIWAY	TW E	505	AAC	9,800	2008	48	Mill & Overlay	100	\$74,578
HWO	TAXIWAY	TW M	2005	AC	16,050	2008	59	Microsurfacing	100	\$65,372
HWO	TAXIWAY	TW M3	1102	AAC	8,000	2008	17	Reconstruction	100	\$148,560
HWO	TAXIWAY	TW N	1410	AAC	33,600	2008	60	Microsurfacing	100	\$123,648
HWO	TAXIWAY	TW N	1415	AAC	15,225	2008	61	Microsurfacing	100	\$51,795
HWO	TAXIWAY	TW N1	315	AC	3,500	2008	60	Microsurfacing	100	\$12,880
HWO	TAXIWAY	TW N2	710	AC	3,500	2008	59	Microsurfacing	100	\$14,256
HWO	RUNWAY	RW 9L-27R	6215	AC	8,520	2009	63	Microsurfacing	100	\$24,975
HWO	RUNWAY	RW 18L-36R	6315	AC	6,345	2010	63	Microsurfacing	100	\$19,158
HWO	RUNWAY	RW 18L-36R	6320	AC	17,400	2010	64	Microsurfacing	100	\$47,404
HWO	TAXIWAY	TW N	1405	AC	84,000	2010	64	Microsurfacing	100	\$228,849
HWO	TAXIWAY	TW N2	705	AAC	7,300	2010	64	Microsurfacing	100	\$19,888
HWO	RUNWAY	RW 18L-36R	6305	AAC	280,790	2011	64	Microsurfacing	100	\$787,931
HWO	TAXIWAY	TW B	205	AC	116,200	2013	64	Microsurfacing	100	\$345,929
HWO	RUNWAY	RW 9L-27R	6220	AC	17,100	2014	64	Microsurfacing	100	\$52,434
HWO	RUNWAY	RW 9R-27L	6410	AC	7,500	2014	64	Microsurfacing	100	\$22,997
HWO	TAXIWAY	TW P	1610	AAC	7,039	2014	64	Microsurfacing	100	\$21,584
HWO	RUNWAY	RW 9L-27R	6205	AAC	275,873	2015	64	Microsurfacing	100	\$871,294
HWO	RUNWAY	RW 9R-27L	6405	AAC	288,075	2016	63	Microsurfacing	100	\$1,038,576
HWO	TAXIWAY	TW E	1620	AC	6,945	2016	64	Microsurfacing	100	\$22,593

Table B-6: LNA Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
LNA	APRON	AP GA	4115	AAC	83,125	2008	62	Microsurfacing	100	\$259,683
LNA	APRON	AP GA	4120	AAC	129,300	2008	44	Mill & Overlay	100	\$983,973
LNA	APRON	AP GA	4125	AAC	86,870	2008	58	Microsurfacing	100	\$387,962
LNA	APRON	AP RU RW15	4305	AC	6,600	2008	60	Microsurfacing	100	\$24,288
LNA	APRON	AP TU RW15	4405	AC	26,250	2008	11	Reconstruction	100	\$487,462
LNA	RUNWAY	RW 15-33	6205	AAC	30,500	2008	54	Mill & Overlay	100	\$184,159
LNA	RUNWAY	RW 15-33	6215	AAC	317,100	2008	59	Microsurfacing	100	\$1,291,549
LNA	TAXIWAY	TW B	220	AC	9,200	2008	64	Microsurfacing	100	\$23,626
LNA	TAXIWAY	TW PR 9-27	105	AAC	187,424	2008	46	Mill & Overlay	100	\$1,426,297
LNA	TAXIWAY	TW PR 9-27	110	AAC	15,180	2008	64	Microsurfacing	100	\$38,982
LNA	TAXIWAY	TW PR 9-27	120	AAC	6,396	2008	58	Microsurfacing	100	\$28,565
LNA	TAXIWAY	TW PR 9-27	125	AC	3,430	2008	64	Microsurfacing	100	\$8,808
LNA	APRON	AP GA	4105	AC	520,650	2009	64	Microsurfacing	100	\$1,377,140
LNA	APRON	AP GA	4130	AAC	55,200	2009	64	Microsurfacing	100	\$146,006
LNA	RUNWAY	RW 3-21	6305	AC	213,562	2009	63	Microsurfacing	100	\$626,031
LNA	APRON	AP GA	4110	AAC	75,350	2010	63	Microsurfacing	100	\$227,506
LNA	TAXIWAY	TW B	215	AC	8,100	2010	64	Microsurfacing	100	\$22,068
LNA	APRON	AP RU RW 3	4205	AC	10,000	2012	64	Microsurfacing	100	\$28,903
LNA	TAXIWAY	TW B	205	AC	116,350	2015	64	Microsurfacing	100	\$367,470
LNA	TAXIWAY	TW B	210	AC	5,800	2016	64	Microsurfacing	100	\$18,868

Table B-7: PHK Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
PHK	APRON	AP	4105	AC	60,000	2008	57	Microsurfacing	100	\$256,860
PHK	APRON	AP	4115	AC	16,400	2008	64	Microsurfacing	100	\$38,179
PHK	APRON	AP	4120	AC	20,000	2008	63	Microsurfacing	100	\$52,020
PHK	APRON	AP T-HANG	4205	AC	20,000	2008	63	Microsurfacing	100	\$52,020
PHK	TAXIWAY	TW	110	AC	29,600	2008	59	Microsurfacing	100	\$109,727
PHK	APRON	AP	4110	AC	60,000	2009	63	Microsurfacing	100	\$160,742
PHK	RUNWAY	RW 17-35	6110	AAC	263,475	2011	64	Microsurfacing	100	\$670,246
PHK	RUNWAY	RW 17-35	6105	AAC	45,000	2015	63	Microsurfacing	100	\$143,951
PHK	TAXIWAY	TW	130	AC	4,800	2016	64	Microsurfacing	100	\$14,155

Table B-8: PMP Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
PMP	APRON	AP HANG	4305	AC	16,875	2008	58	Microsurfacing	100	\$67,399
PMP	APRON	AP HANG	4310	AC	46,250	2008	60	Microsurfacing	100	\$158,175
PMP	APRON	AP HANG	4315	AC	82,500	2008	53	Mill & Overlay	100	\$447,893
PMP	APRON	AP S	4110	AC	20,250	2008	36	Mill & Overlay	100	\$186,746
PMP	APRON	AP S	4115	AC	5,625	2008	61	Microsurfacing	100	\$17,702
PMP	APRON	AP S	4120	AC	4,300	2008	53	Mill & Overlay	100	\$23,345
PMP	APRON	AP S	4125	AC	150,000	2008	49	Mill & Overlay	100	\$943,500
PMP	APRON	AP S	4130	PCC	78,750	2008	24	Reconstruction	100	\$1,072,575
PMP	RUNWAY	RW 15-33	6305	AAC	422,000	2008	59	Microsurfacing	100	\$1,564,355
PMP	RUNWAY	RW 6-24	6205	AAC	364,500	2008	61	Microsurfacing	100	\$1,147,082
PMP	RUNWAY	RW 6-24	6210	AAC	191,750	2008	64	Microsurfacing	100	\$446,394
PMP	RUNWAY	RW 6-24	6211	AAC	2,425	2008	37	Mill & Overlay	100	\$20,586
PMP	RUNWAY	RW 6-24	6213	AAC	9,800	2008	54	Mill & Overlay	100	\$50,392
PMP	RUNWAY	RW 6-24	6214	AAC	4,000	2008	62	Microsurfacing	100	\$11,496
PMP	RUNWAY	RW 6-24	6220	AAC	6,000	2008	53	Mill & Overlay	100	\$32,574
PMP	TAXIWAY	TW A	110	AC	7,500	2008	63	Microsurfacing	100	\$19,508
PMP	TAXIWAY	TW A	115	AAC	3,000	2008	57	Microsurfacing	100	\$12,843
PMP	TAXIWAY	TW A	120	AC	12,000	2008	61	Microsurfacing	100	\$37,764
PMP	TAXIWAY	TW B	705	AAC	9,590	2008	62	Microsurfacing	100	\$27,562
PMP	TAXIWAY	TW B	715	AAC	2,930	2008	54	Mill & Overlay	100	\$15,066
PMP	TAXIWAY	TW B	720	AAC	15,000	2008	60	Microsurfacing	100	\$51,300
PMP	TAXIWAY	TW C	310	AC	6,070	2008	63	Microsurfacing	100	\$15,788
PMP	TAXIWAY	TW C	325	AC	15,200	2008	63	Microsurfacing	100	\$39,535
PMP	TAXIWAY	TW C	360	AC	5,300	2008	61	Microsurfacing	100	\$16,679
PMP	TAXIWAY	TW D	405	AAC	120,750	2008	63	Microsurfacing	100	\$314,071
PMP	TAXIWAY	TW D	410	AAC	10,400	2008	16	Reconstruction	100	\$141,648
PMP	TAXIWAY	TW D	415	AAC	25,300	2008	58	Microsurfacing	100	\$101,048
PMP	TAXIWAY	TW E	505	AC	8,000	2008	35	Mill & Overlay	100	\$79,640
PMP	TAXIWAY	TW F	610	AAC	135,000	2008	63	Microsurfacing	100	\$351,135
PMP	TAXIWAY	TW F	615	AAC	3,200	2008	54	Mill & Overlay	100	\$16,454

Table B-8: PMP Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
PMP	TAXIWAY	TW F	620	AAC	4,200	2008	58	Microsurfacing	100	\$16,775
PMP	APRON	AP N	4205	AAC	95,000	2009	63	Microsurfacing	100	\$254,508
PMP	RUNWAY	RW 15-33	6310	AAC	210,000	2009	64	Microsurfacing	100	\$503,547
PMP	RUNWAY	RW 15-33	6315	AAC	6,000	2009	63	Microsurfacing	100	\$16,074
PMP	TAXIWAY	TW B	710	AAC	130,000	2009	63	Microsurfacing	100	\$348,274
PMP	TAXIWAY	TW E	515	AC	1,505	2009	64	Microsurfacing	100	\$3,609
PMP	TAXIWAY	TW L	1205	AAC	18,000	2009	63	Microsurfacing	100	\$48,223
PMP	RUNWAY	RW 10-28	6110	AAC	234,500	2010	64	Microsurfacing	100	\$579,163
PMP	APRON	AP S	4105	AAC	224,800	2011	64	Microsurfacing	100	\$571,862
PMP	TAXIWAY	TW A	105	AC	13,200	2012	63	Microsurfacing	100	\$38,642
PMP	TAXIWAY	TW E	510	AC	2,000	2012	63	Microsurfacing	100	\$5,855
PMP	RUNWAY	RW 10-28	6105	AC	93,500	2014	64	Microsurfacing	100	\$259,907
PMP	TAXIWAY	TW C	320	AC	61,000	2014	64	Microsurfacing	100	\$169,565
PMP	RUNWAY	RW 10-28	6115	AC	22,500	2017	64	Microsurfacing	100	\$68,344
PMP	TAXIWAY	TW C	315	AC	22,500	2017	63	Microsurfacing	100	\$76,359
PMP	TAXIWAY	TW C	350	AC	8,500	2017	63	Microsurfacing	100	\$28,847
PMP	TAXIWAY	TW L	1210	AC	195,000	2017	63	Microsurfacing	100	\$661,775

Table B-9: VRB Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
VRB	APRON	AP CENTER	4215	AC	200,000	2008	73	Microsurfacing	100	\$150,000
VRB	APRON	AP CENTER	4220	APC	48,000	2008	41	Mill & Overlay	100	\$365,280
VRB	APRON	AP CENTER	4235	PCC	18,700	2008	58	PCC Restoration	100	\$83,514
VRB	APRON	AP CENTER	4236	AC	3,900	2008	45	Mill & Overlay	100	\$29,679
VRB	APRON	AP CENTER	4245	AC	103,200	2008	64	Microsurfacing	100	\$265,018
VRB	APRON	AP RU 11R	5205	AC	120,750	2008	70	Microsurfacing	100	\$108,675
VRB	APRON	AP RU 29L	5305	AC	52,500	2008	62	Microsurfacing	100	\$164,010
VRB	APRON	AP RU TW F	5510	AAC	28,000	2008	23	Reconstruction	100	\$519,960
VRB	APRON	AP SW	4105	AC	225,000	2008	64	Microsurfacing	100	\$577,800
VRB	APRON	AP SW	4110	PCC	2,800	2008	84	PCC Restoration	100	\$784
VRB	APRON	AP W	4305	PCC	9,600	2008	57	PCC Restoration	100	\$46,646
VRB	APRON	AP W	4405	AC	199,811	2008	63	Microsurfacing	100	\$568,662
VRB	TAXIWAY	TW A	134	AC	8,000	2008	49	Mill & Overlay	100	\$60,880
VRB	TAXIWAY	TW A	140	AC	6,500	2008	60	Microsurfacing	100	\$23,920
VRB	TAXIWAY	TW C	306	AC	10,880	2008	62	Microsurfacing	100	\$33,989
VRB	TAXIWAY	TW C	312	AAC	14,000	2008	55	Mill & Overlay	100	\$79,030
VRB	TAXIWAY	TW C	315	AAC	118,125	2008	71	Microsurfacing	100	\$100,406
VRB	TAXIWAY	TW E	510	AAC	6,900	2008	63	Microsurfacing	100	\$19,637
VRB	TAXIWAY	TW F	611	AC	6,850	2008	31	Mill & Overlay	100	\$119,697
VRB	TAXIWAY	TW F	620	AAC	6,180	2008	53	Mill & Overlay	100	\$39,744
VRB	TAXIWAY	TW C	310	AC	40,750	2010	64	Microsurfacing	100	\$111,019
VRB	RUNWAY	RW 11L-29R	6205	AAC	112,500	2011	63	Microsurfacing	100	\$349,864
VRB	TAXIWAY	TW A	142	AC	7,700	2011	64	Microsurfacing	100	\$21,607
VRB	TAXIWAY	TW C3	365	AAC	12,000	2011	64	Microsurfacing	100	\$33,673
VRB	TAXIWAY	TW A1	150	AC	17,510	2012	64	Microsurfacing	100	\$50,609
VRB	TAXIWAY	TW E	505	AAC	11,600	2012	64	Microsurfacing	100	\$33,528
VRB	TAXIWAY	TW F	612	AC	26,250	2012	64	Microsurfacing	100	\$75,871
VRB	APRON	AP CENTER	4205	AC	215,000	2013	63	Microsurfacing	100	\$709,348
VRB	RUNWAY	RW 11L-29R	6220	AC	67,050	2013	64	Microsurfacing	100	\$199,609
VRB	TAXIWAY	TW D	410	AAC	8,000	2013	64	Microsurfacing	100	\$23,816

Table B-9: VRB Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
VRB	TAXIWAY	TW D	420	AAC	18,000	2013	64	Microsurfacing	100	\$53,586
VRB	APRON	AP CENTER	4210	APC	30,000	2014	64	Microsurfacing	100	\$91,990
VRB	APRON	AP NE	5405	AAC	210,000	2014	64	Microsurfacing	100	\$643,928
VRB	TAXIWAY	TW C1	330	AC	30,000	2014	64	Microsurfacing	100	\$91,990
VRB	RUNWAY	RW 11L-29R	6210	AC	56,250	2015	63	Microsurfacing	100	\$196,887
VRB	RUNWAY	RW 4-22	6305	AAC	402,000	2015	64	Microsurfacing	100	\$1,269,643
VRB	TAXIWAY	TW E	515	AAC	30,500	2015	64	Microsurfacing	100	\$96,329
VRB	APRON	AP CENTER	4240	APC	225,471	2017	64	Microsurfacing	100	\$755,476
VRB	TAXIWAY	TW C	305	AC	117,500	2017	64	Microsurfacing	100	\$393,702
VRB	TAXIWAY	TW C2	355	AAC	19,500	2017	64	Microsurfacing	100	\$65,338
VRB	TAXIWAY	TW F	630	AC	5,440	2017	64	Microsurfacing	100	\$18,228

Table B-10: X10 Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
X10	APRON	AP	4105	AC	21,600	2008	43	Mill & Overlay	100	\$135,864
X10	RUNWAY	RW 9-27	6105	AC	186,000	2008	61	Microsurfacing	100	\$585,342
X10	TAXIWAY	TW	105	AC	10,045	2008	2	Reconstruction	100	\$136,813

Table B-11: X26 Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
X26	APRON	AP W	5115	AC	37,650	2008	43	Mill & Overlay	100	\$236,819
X26	RUNWAY	RW 4-22	6210	AAC	201,200	2008	38	Mill & Overlay	100	\$1,560,508
X26	TAXIWAY	TW 3	305	AC	49,000	2008	20	Reconstruction	100	\$667,380
X26	TAXIWAY	TW 3	306	AC	10,000	2008	30	Reconstruction	100	\$136,200
X26	TAXIWAY	TW 4	410	AC	15,000	2008	29	Reconstruction	100	\$204,300

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