

**STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION  
AVIATION OFFICE**

**Statewide Airfield Pavement  
Management Program**

**Arthur Dunn Airpark– X21  
(General Aviation)  
Titusville, Florida  
(District 5)**



**November 2011**

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## **EXECUTIVE SUMMARY**

In 2010, the Florida Department of Transportation (FDOT) Aviation Office selected a Consultant team consisting of Kimley-Horn and Associates and their Subconsultants, AMEC Environment & Infrastructure, Inc. and All About Pavements, Inc., to provide services in support of FDOT in the continuing evaluation and updating of the existing Statewide Airfield Pavement Management Program (SAPMP) to be completed over fiscal years 2011 and 2012.

The tasks required to achieve this objective at Arthur Dunn Airpark included:

- Obtain recent construction history from the Airport to update the Pavement Inventory CADD drawings 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,
- Develop a 10-year M&R plan to address the pavement needs at Arthur Dunn Airpark, and
- Provide the estimated costs associated with the suggested immediate and future M&R activities

During November 2011, the PCI survey was performed at Arthur Dunn Airpark. The results of the survey indicate that, based on a numerical scale of 0 to 100, the overall area-weighted average PCI of the airfield pavements in 2011 is 83, representing a Satisfactory overall network condition.

Table I below summarizes the overall condition summary by network branch.

**Table I: Condition Summary by Branch**

<b>Branch Name</b>	<b>Area Weighted PCI</b>	<b>PCI Range</b>	<b>Average Condition Rating</b>	<b>FDOT Minimum Service Level</b>	<b>MicroPAVER Minimum PCI</b>	<b>Action Required</b>
Apron	72	65 - 100	Satisfactory	60	65	
Apron at T-Hangars	71	69 - 72	Fair	60	65	
Runway 15-33	92	92	Good	75	65	
Taxiway Alpha	87	87 - 90	Good	65	65	
Taxiway Apron	77	74 - 82	Satisfactory	65	65	
Taxiway Bravo	90	84 - 95	Good	65	65	
Taxiway Charlie	86	71 - 99	Satisfactory	65	65	
Taxiway Delta	93	93	Good	65	65	

Tables II and III below illustrate the area-weighted PCI computed individually for each pavement use and rank, respectively.

**Table II: Condition Summary by Pavement Use**

Use	Average Area-Weighted PCI	Condition Rating
Runway	92	Good
Taxiway	86	Good
Apron	71	Satisfactory
<b>All (Weighted)</b>	<b>83</b>	<b>Satisfactory</b>

**Table III: Condition Summary by Pavement Rank**

Rank*	Average Area-Weighted PCI	Condition Rating
Primary	86	Satisfactory
Tertiary	71	Fair
<b>All (Weighted)</b>	<b>83</b>	<b>Satisfactory</b>

\*The pavement rank for the airport pavement network is listed on Table 2-3.

The immediate M&R 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 at Arthur Dunn Airpark, include: None, no immediate M&R needs are anticipated for this airport because of its overall Satisfactory condition. The immediate needs are summarized in Table IV below.

**Table IV: Immediate Major M&R Needs**

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
No immediate M&R identified							
<b>Total</b>				<b>\$0.00</b>			

\* Costs are adjusted for inflation.

A forecast of Major M&R needs for a 10-year period, starting from 2012, was developed using an unlimited budget. The analysis identified ongoing maintenance needs and major M&R during that interval. The results of this analysis are provided in Table V below.

**Table V: 10-Year M&R Costs under Unlimited Funding Scenario**

<b>Year</b>	<b>Preventative</b>	<b>Major M&amp;R</b>	<b>Total Year Cost</b>
2012	\$27,243.25	\$0.00	\$27,243.25
2013	\$42,102.41	\$83,853.69	\$125,956.10
2014	\$43,440.39	\$67,100.39	\$110,540.79
2015	\$37,687.55	\$158,938.67	\$196,626.22
2016	\$41,222.15	\$22,316.13	\$63,538.27
2017	\$38,375.79	\$120,641.39	\$159,017.18
2018	\$43,207.97	\$22,678.05	\$65,886.02
2019	\$52,090.00	\$0.00	\$52,090.00
2020	\$60,234.60	\$0.00	\$60,234.60
2021	\$62,514.22	\$96,040.11	\$158,554.33
<b>Total</b>	<b>\$448,118.33</b>	<b>\$571,568.43</b>	<b>\$1,019,686.76</b>

Note: Costs are adjusted for inflation.

The implementation of the 10-Year Major M&R Plan is expected to provide a slight deterioration in the overall condition of the airfield pavement, where the area-weighted PCI would decrease from 83 in 2011 to 82 in 2021. Appendix F lists the Major M&R for the 10-Year program. Appendix G graphically depicts the program activity.

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 Arthur Dunn Airpark pavements in 2021 may remain near 82. The airport manager should realize that what is most important is that the pavement repair work (preventative and major M&R) that has been identified for Arthur Dunn Airpark is conducted at some point in the 10-year plan.

## **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. 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 (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 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 and their Subconsultants, AMEC Environment & Infrastructure, Inc. 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.

This report discusses the work performed, a summary of the findings, results, and recommendations for M&R planning associated with the update to the SAPMP. It also describes the procedures used to ensure that the appropriate engineering and scientific standards of care, quality, budget, and schedule requirements are implemented during the performance of the SAPMP.

### **1.1 Purpose**

This Florida Airport Pavement Evaluation Report is intended to:

- Describe, briefly, the SAPMP and the roles and responsibilities of the program's participants;
- Provide background information on pavement management principles, objectives, and benefits to this airport;
- Outline the procedures used to collect, evaluate and report pavement inspection results at this airport;
- Present the findings from the pavement inspection;
- Analyze and discuss the needs for Maintenance and Rehabilitation (M&R) activities and associated costs for this airport.

### **1.2 FDOT Statewide Airfield Pavement Management Program**

In 1992, the FDOT implemented the SAPMP 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 1992 SAPMP provided valuable information for establishing and performing pavement M&R.

In 1992/1993, and 1998/1999, 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, AIRPAV, was implemented, and initial condition surveys were performed in 1992 and 1993. The SAPMP was updated with additional surveys in 1998 and 1999.

In 2004, the FDOT Aviation Office undertook a project to update the pavement management system software utilized for the SAPMP. This project involved a review of the AIRPAV software and other available pavement management system software. As a result of this review, MicroPAVER was selected as the software for the update project. Data from the 1998/1999 condition surveys were converted to the MicroPAVER system, and the inventory of the pavement systems and drawings of the pavements were updated to reflect maintenance, rehabilitation, and construction activities since 1998/1999. The pavements were inspected between 2006 and 2008, and an updated M&R program was developed based on the new condition of the airfield pavements. As part of the update, procedures for the inspection and collection of pavement data were developed, and a website ([www.floridaairportpavement.com](http://www.floridaairportpavement.com)) was created for the input of data under secure procedures.

Currently, airports using the AIP Grant Program are required by the Federal Aviation Administration (FAA) to develop a pavement maintenance program (FAA/AC 150/5380-6B “Guidelines and Procedures for Maintenance of Airport Pavements”) using trained personnel to perform a detailed inspection of airfield pavements. The inspections are required to be performed at least once a year or every 3 years if pavement inspection is characterized in the form of a Pavement Condition Index (PCI) survey (such as ASTM D 5340 “Standard Test Method for Airport Pavement Condition Index Surveys”, (2004 edition)). The 2004 edition was utilized in lieu of the 2010 edition to maintain database integrity and benefit of pavement performance curves from the previous inspections.

In 2010, the FDOT Aviation Office selected a team consisting of the Consultant and their Subconsultants 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.

### **1.3 Organization**

#### **1.3.1 Aviation Office Program Manager Role**

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

#### **1.3.2 Consultant Role**

The Consultant (Kimley-Horn and Associates, Inc.) and their Subconsultants (AMEC Environment & Infrastructure, Inc. and All About Pavements, Inc.) provide technical and administrative assistance to the AO-PM during the execution of this program, which involves the continuing evaluation of airport pavements and updating of the SAPMP based upon procedures outlined in FAA Advisory Circular 150/5380-6B “Guidelines and Procedures for Maintenance of Airport Pavements” and ASTM D 5340 “Standard Test Method for Airport Pavement Condition Index Surveys” (2004).



### **1.3.3 Airport Role**

The airports are the ultimate client for each of the field inspections and reports. Individual airports will be provided final deliverables prepared by the Consultant that have been reviewed and approved by the AO-PM. The airport should provide a current Airport Layout Plan (ALP) to the Consultant and, if they participated in the previous SAPMP update, indicate any construction activity that has been performed since the previous inspections.

## **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 an asphalt concrete (AC) surface, and
- Rigid pavement composed of a 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 natural 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, and the base or subbase layer is mainly constructed to provide a smooth and continuous platform for the construction of the concrete surface.

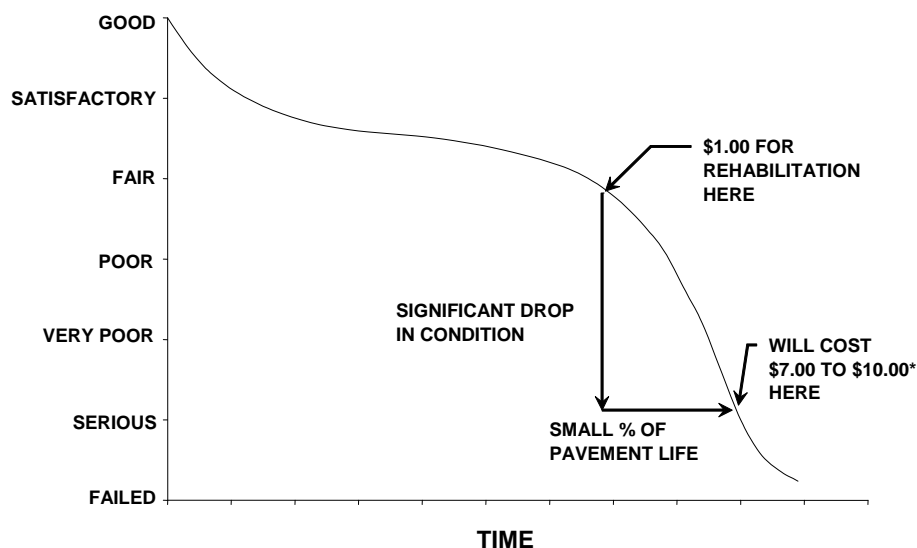
A small percentage of the airport pavements in Florida are composed of asphalt concrete surface over Portland Cement Concrete (APC). This pavement type is known as “composite” pavement.

Due to the different nature of the 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**

The SAPMP utilized a Pavement Management System (PMS) to develop the M&R recommendations discussed in this report. A 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 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 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 “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.

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 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 determined.

### **1.4.3 Pavement Inspection Methodology for the SAPMP**

Pavement condition assessment is one of the primary decision variables in any airport PMS. 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.

For the Statewide Aviation Pavement Management Program update, only visual surveys were performed. Further structural and geotechnical testing should be conducted to determine the appropriate rehabilitation methods during the design process.

In preparation of the PCI surveys, the airfield pavements are divided into sample units as established in FAA AC 150/5380-6B and ASTM D 5340. Further discussion of how the airport pavements are divided and subdivided into units by construction and use can be found in Section 2 “Network Definition and Pavement Inventory” of this report.

Sample unit sizes are approximately  $5000 \pm 2000$  square feet for AC-surfaced pavements and  $20 \pm 8$  slabs for PCC-surfaced pavements. Prior to conducting 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 the FDOT Statewide Airfield 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. As Figure 1-2 below indicates, MicroPAVER provides a rating scale that relates PCI to pavement condition. A PCI between 0 and 10 is considered ‘Failed’ pavement, and a PCI between 86 and 100 is considered ‘Good’ pavement, with five other conditions for PCI values between 11 and 85.

**Figure 1-2: PCI Rating Scale**

	PCI	Condition Rating
	86 – 100	Good
	71 – 85	Satisfactory
	56 – 70	Fair
	41 – 55	Poor
	26 – 40	Very Poor
	11 – 25	Serious
	0 – 10	Failed

## 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 Program Manager (AO-PM) has review and approval authority for each program task of the SAPMP.

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

Branch ID - A short form identification for the pavement Branch. In this report, Branch 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 (certified under Part 139 requirements).

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.

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.

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.

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.

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 program requirements described by the 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.

Network Definition - 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.

Pavement Condition Index (PCI) - 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.

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 System (PMS) - 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.

Pavement Surface Type - 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.

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  $20 \pm 8$  slabs for PCC-surfaced pavements.

Section - 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.

Statewide Airfield Pavement Management Program (SAPMP) – 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.

System Inventory - 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.

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 AND PAVEMENT INVENTORY**

Arthur Dunn Airpark (X21) is located approximately 2 miles northwest of the central business district of the city of Titusville in Brevard County. The airpark is owned and operated by the Titusville-Cocoa Airport Authority and focuses primarily on serving general aviation aircraft. The airpark facility has one paved runway, Runway 15-33 (Length = 2,961 ft), and one turf runway, Runway 4U-22U (Length = 1,805 ft). Runway 15-33 is served by a full-length parallel taxiway.

It is important to note that the aforementioned runway data in addition to the remaining airfield pavement facilities geometric dimensions may vary slightly from the geometry used in the condition and M & R analysis based on field measurements.

Arthur Dunn Airpark was originally constructed in late 1927 by Brevard County to be used as an aircraft landing field in conjunction with the 40-acre emergency landing field already in use. The county operated the airpark primarily as a base for its mosquito control organizations. In December of 1939 the airpark was leased to the U.S. Government for use as an auxiliary outlying field (OLF) for U.S. Navy pilots operating out of Naval Air Station Sanford and OLF Titusville, until it returned to civilian use and control in 1945. In 1966, the airpark was deeded to the Titusville-Cocoa Airport District.

This airport is designated as a General Aviation airport and is located in District 5 of the Florida Department of Transportation.

### **2.1 Network Definition**

The pavements within the 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.

#### **2.1.1 Branch Section Identification**

The airport pavement network is subdivided into separate Branches (runways, taxiways, or aprons) that have distinctly different uses. Branches are then further 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. A pavement rank, consisting of primary, secondary, and tertiary levels, is assigned to each Section based on their level and type of use. The pavement rankings that were designated for each Section in the previous SAPMP update were again used for this update.

As discussed in Section 1.4.3 “Pavement Inspection Methodology for the SAPMP”, the sections are sub-divided into sample units, which are the smallest subdivision in a pavement network, only for the purpose of conducting the pavement condition survey.



### **2.1.2 System Inventory and Network Definition Update**

The System Inventory and Network Definition drawings are used to identify changes in the network since the most recent update from the 2006/2008 inspections and also to plan the field inspection activities for the 2011 survey. Prior to the field inspection process, the System Inventory drawing was updated from the previous inspection with notes indicating recent construction projects on the various Sections of pavement throughout the airfield. This System Inventory drawing is used to update the Network Definition drawing.

The Network Definition drawing 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 previous airport configuration and history was compared with the current airport configuration, and the existing network branch, section and sample unit designations were revised to match the current configuration. This drawing serves not only as a primary guide for the airfield inspectors but also as an important historical record.

Due to recent and anticipate construction history; pavement area sections may have been consolidated or created which will affect the total number of sample units to be inspected based on the ASTM 5340 criteria.

The updated System Inventory and Network Definition drawings for Arthur Dunn Airpark are provided in Appendix A. Table 2-1 below lists the recent construction projects at the airport.

**Table 2-1: Construction Since Last Inspection & Anticipated Construction Activity**

<b>Construction Year</b>	<b>Location</b>	<b>Work Type / Pavement Section</b>
2009	RW 15-33	Mill and overlay

### **2.2 Pavement Inventory**

The detailed pavement inventory was updated to reflect the network definition update and field inspection results. The total number of sample units designated to be inspected at the airport is 29 sample units.

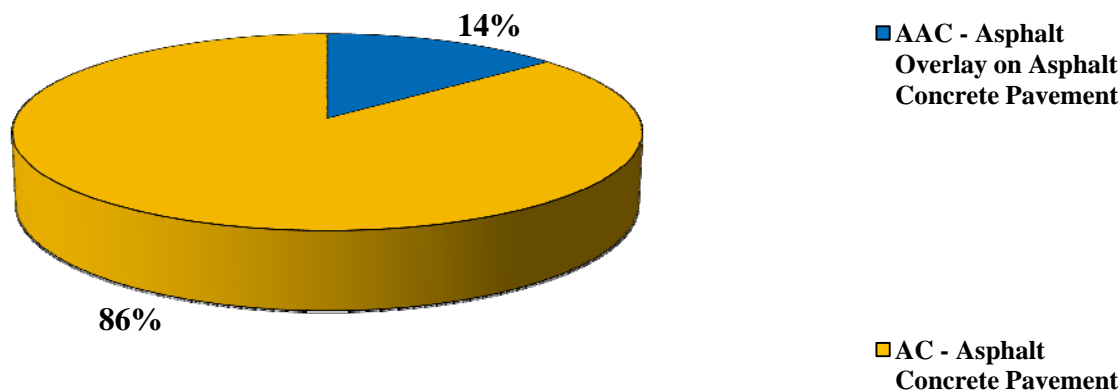
The total airfield pavement area in 2011 at Arthur Dunn Airpark is 535,473 square feet. The breakdown of pavement area for each pavement use is provided in Table 2-2.

**Table 2-2: Pavement Area by Pavement Use**

<b>Use</b>	<b>Area (ft<sup>2</sup>)</b>	<b>% of Total Area</b>
Runway	211,965	39%
Taxiway	127,605	24%
Apron	195,903	37%
<b>All (Weighted)</b>	<b>535,473</b>	<b>100%</b>

Figure 2-1 presents the breakdown of the pavement area at Arthur Dunn Airpark by surface type.

**Figure 2-1: Pavement Area by Surface Type**



Details of pavement Branch and Section information including Branch name (which indicates pavement use), Branch ID, Section ID, section area, rank, surface type, last construction date, number of samples inspected, and number of samples in each Section are given in Table 2-3 below. A more detailed Pavement Inventory Table may be found in Appendix A of this report.

**Table 2-3: Branch and Section Inventory**

<b>Branch Name</b>	<b>Branch ID</b>	<b>Section ID</b>	<b>True Area (ft<sup>2</sup>)</b>	<b>Section Rank</b>	<b>Surface Type</b>	<b>Last Const. Date</b>	<b>Total Samples Inspected</b>	<b>Total Samples</b>
Apron	AP	4104	31,618	P	AAC	1/1/2002	1	6
Apron	AP	4105	24,317	P	AAC	1/1/2002	1	5
Apron	AP	4107	18,403	P	AAC	1/1/2002	1	3
Apron	AP	4108	3,645	P	AC	1/1/2011	0	1
Apron	AP	4110	31,300	P	AC	1/1/2002	1	8
Apron at T-Hangars	AP T-HANG	4205	41,918	T	AC	1/1/1999	3	22
Apron at T-Hangars	AP T-HANG	4210	44,702	T	AC	1/1/1999	3	22
Runway 15-33	RW 15-33	6105	211,965	P	AC	1/2/2009	5	30
Taxiway Alpha	TW A	105	80,060	P	AC	1/2/2009	4	30
Taxiway Alpha	TW A	110	4,022	P	AC	1/2/2009	1	2
Taxiway Apron	TW AP	115	3,797	P	AC	1/1/2002	1	1
Taxiway Apron	TW AP	215	7,302	P	AC	1/1/2002	1	3
Taxiway Bravo	TW B	205	3,981	P	AC	1/2/2009	1	1
Taxiway Bravo	TW B	210	2,879	P	AC	1/2/2009	1	1
Taxiway Charlie	TW C	305	3,059	P	AC	1/2/2009	1	1
Taxiway Charlie	TW C	310	8,517	P	AC	1/1/1999	1	3
Taxiway Charlie	TW C	315	1,267	P	AC	1/2/2009	1	1
Taxiway Charlie	TW C	320	7,500	P	AC	1/2/2009	1	3
Taxiway Delta	TW D	405	5,221	P	AC	1/2/2009	1	1

Note: If a new construction, then survey date = last construction date and PCI is set to 100 by MicroPAVER.

Sections not surveyed due to reasons such as re-sectioning, no escort, not accessible at the time of survey.

### 3. PAVEMENT CONDITION

Pavement conditions were inspected in accordance with the methods outlined in FAA AC 150/5380-6B and ASTM D 5340-04 “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).

#### 3.1 Inspection Methodology

A PCI survey is performed by measuring the amount and severity of pavement distresses, which are caused by traffic load, climate, and other factors, observed within a sample unit. This data is imported into MicroPAVER, which calculates PCI values for the pavement sections. Table 3-1 below lists the pavement distress types and related causes for asphalt concrete (AC).

**Table 3-1: Pavement Distresses for Asphalt Concrete Surfaces**

Code	Distress	Mechanism
41	Alligator Cracking	Load
42	Bleeding	Construction Quality/ Mix Design
43	Block Cracking	Climate / Age
44	Corrugation	Load / Construction Quality
45	Depression	Subgrade Quality
46	Jet Blast	Aircraft
47	Joint Reflection - Cracking	Climate / Prior Pavement
48	Longitudinal/Transverse Cracking	Climate / Age
49	Oil Spillage	Aircraft / Vehicle
50	Patching	Utility / Pavement Repair
51	Polished Aggregate	Load
52	Weathering/Raveling	Climate / Load
53	Rutting	Load
54	Shoving	Pavement Growth
55	Slippage Cracking	Load / Pavement Bond
56	Swelling	Climate / Subgrade Quality
<i>Source: U.S. Army CERL, FDOT Airfield Inspection Reference Manual</i>		

Prior to conducting the inspections, Global Positioning System (GPS) coordinates were recorded using CADD 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 a table on the updated Network Definition Map in Appendix A of this report.

Pavement condition inspections at Arthur Dunn Airpark were performed in November 2011. Data was recorded in the field in accordance with FAA Advisory Circular 150/5380-6B “Guidelines and Procedures for Maintenance of Airport Pavements” and ASTM D 5340 “Standard Test Method for Airport Pavement Condition Index Surveys” (2004).

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

### **3.2 Pavement Condition Index Results**

According to the 2011 survey, the overall area-weighted PCI at Arthur Dunn Airpark is 83, representing a Satisfactory overall network condition.

Overall the airport exhibited pavement distresses associated with climate and age distresses. Runway 15-33 exhibited low severity longitudinal and transverse cracking, low severity weathering, and low severity patching.

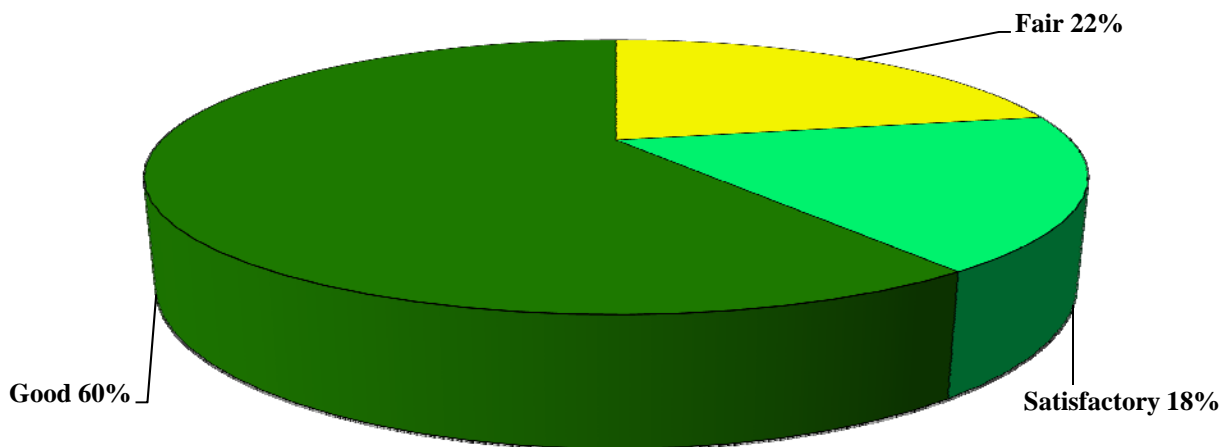
Taxiways Alpha, Apron, Bravo, Charlie, and Delta exhibited similar pavement distresses including low severity longitudinal and transverse cracking, low severity weathering, localized low severity patching, localized low severity rutting, and localized low severity depression.

Apron exhibited low severity longitudinal and transverse cracking, low severity weathering, localized low severity patching, and localized low severity rutting. Apron at T-Hangars exhibited low severity longitudinal and transverse cracking, low severity weathering, localized low severity depression, localized low severity swelling, localized low severity patching, and localized low severity alligator cracking.

Appendix B contains a table and a Condition Map which depicts the PCI results by Section, and Appendix C contains a table of PCI results by Branch. Appendix I includes detailed distress data generated by MicroPAVER for each inspected sample unit.

Figure 3-1 provides the PCI distribution by rating category for Arthur Dunn Airpark.

**Figure 3-1: Network PCI Distribution by Rating Category**



**Figure 3-1a: Condition Rating Summary**

Condition Rating	Total Area (ft <sup>2</sup> )	Percent
Good	320,720	60%
Satisfactory	98,815	18%
Fair	115,938	22%
Poor	0	0%
Very Poor	0	0%
Serious	0	0%
Failed	0	0%

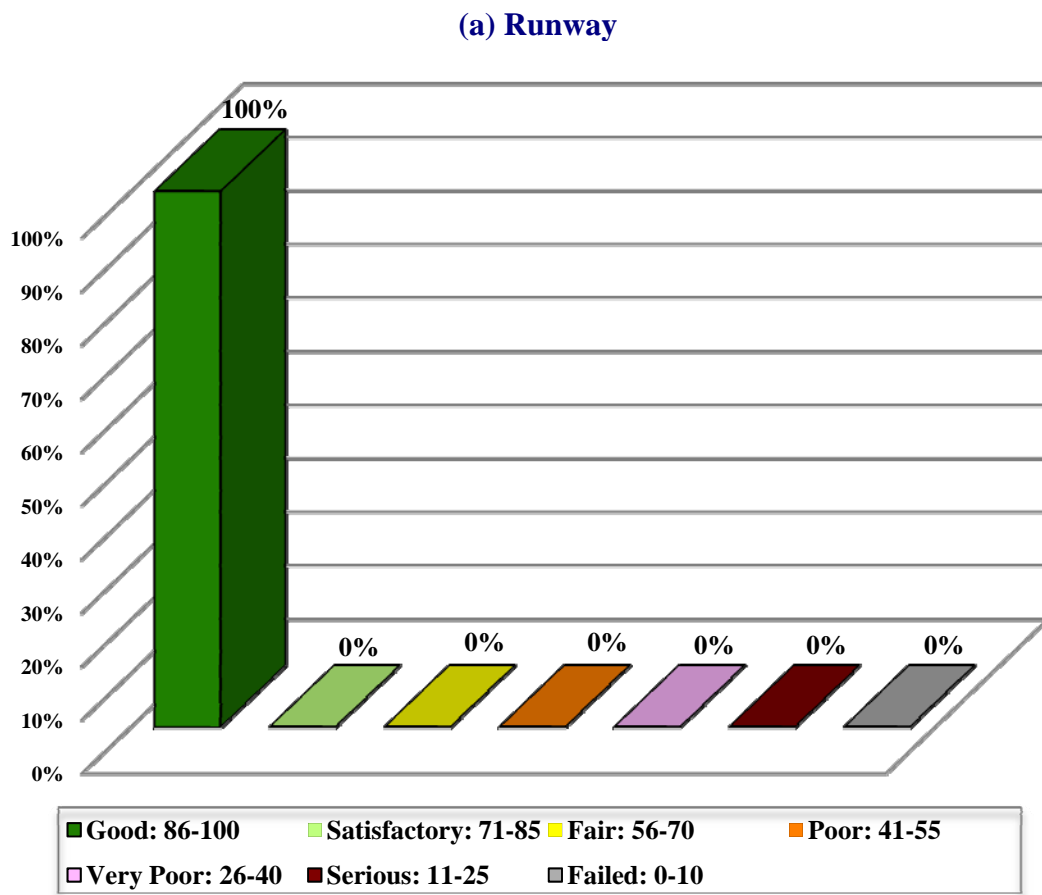
Approximately 78% of the network is in Good and Satisfactory condition while 22% of the network is in Fair condition. Table 3-2 illustrates the area-weighted PCI computed individually for each pavement use.

**Table 3-2: Condition by Pavement Use**

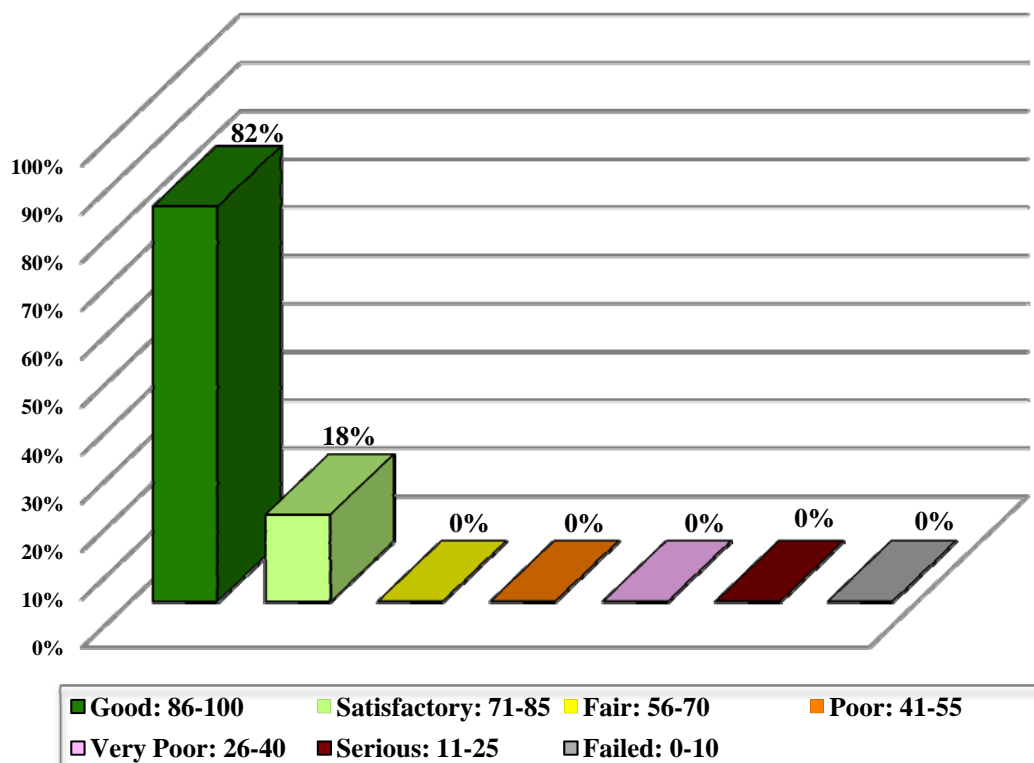
Use	Average Area-Weighted PCI	Condition Rating
Runway	92	Good
Taxiway	86	Good
Apron	71	Satisfactory
<b>All (Weighted)</b>	<b>83</b>	<b>Satisfactory</b>

Figure 3-2 presents the breakdown of PCI by range for each pavement use.

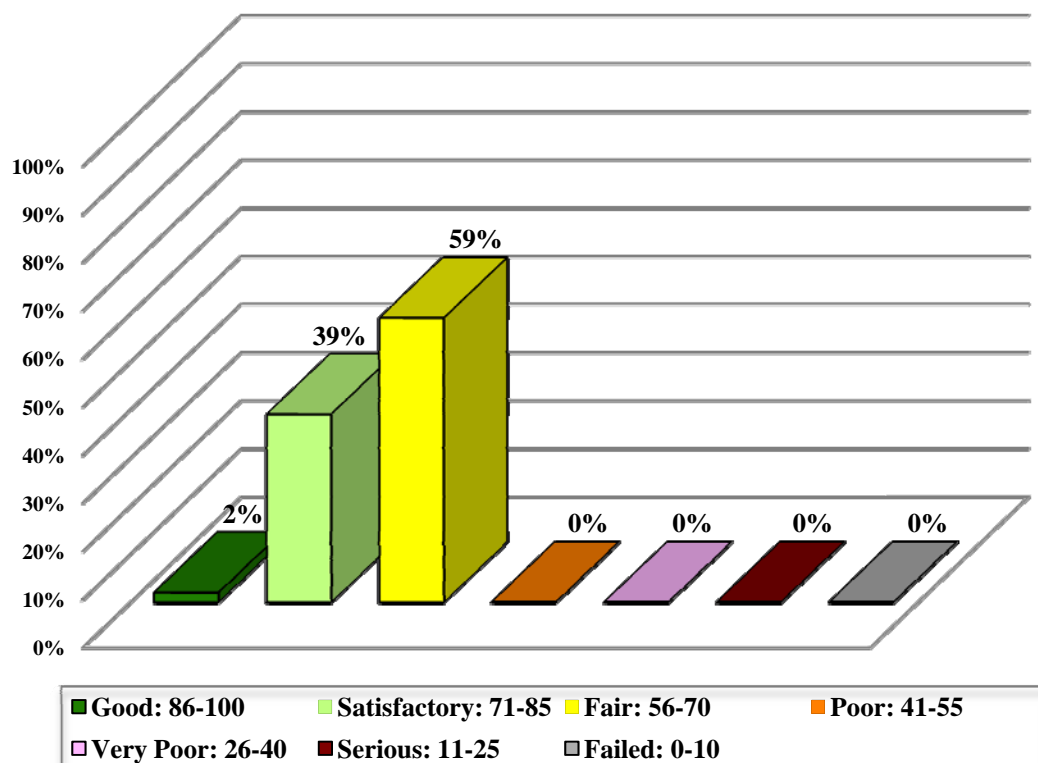
**Figure 3-2: Percentage of Pavement Area within Each PCI Range by Pavement Use**



### (b) Taxiway



### (c) Apron

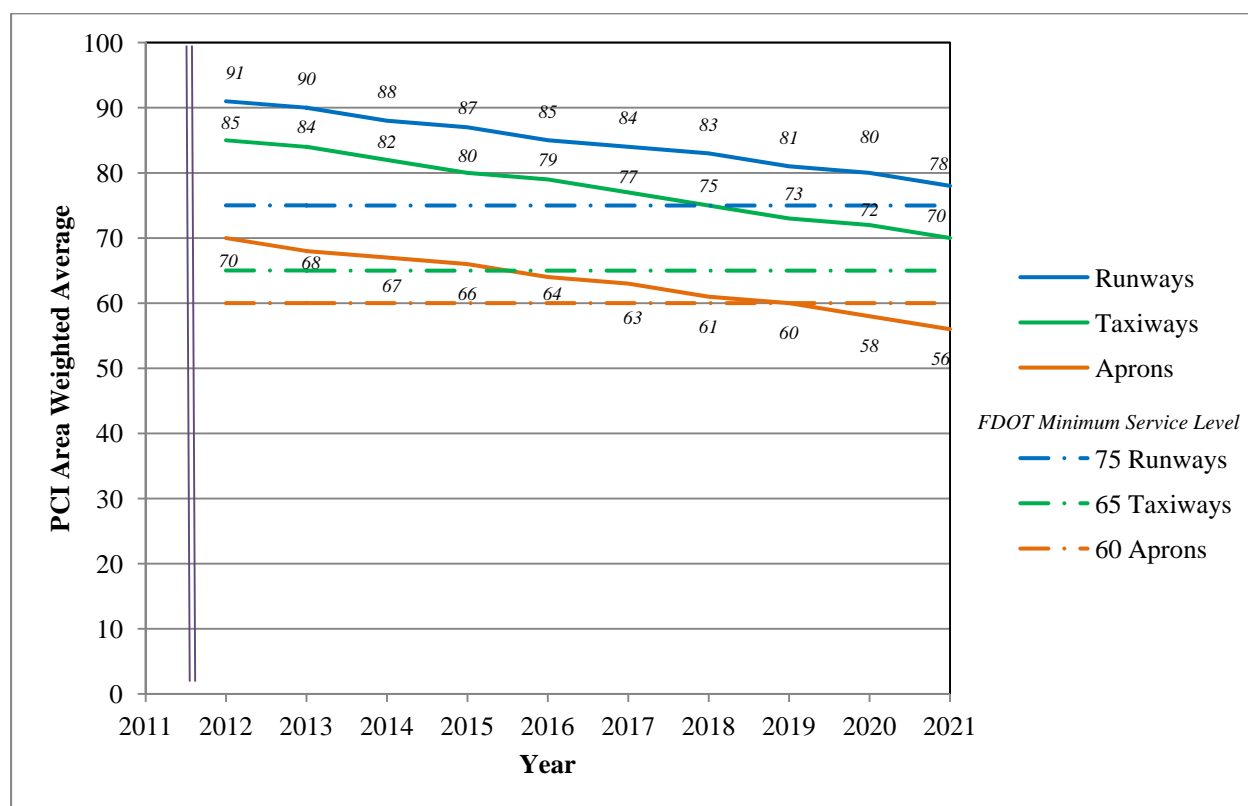




#### 4. PAVEMENT CONDITION PREDICTION

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). Figure 4-1 illustrates the predicted performance of pavements at Arthur Dunn Airpark 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 service level for General Aviation (GA) airports.

**Figure 4-1: Predicted PCI by Pavement Use**



Appendix D presents the tabular summary of the predicted Section PCI for each year from 2012 to 2021.

## **5. MAINTENANCE POLICIES AND COSTS**

### **5.1 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 5-1 provides the list of the maintenance activities used in MicroPAVER to treat specific distress types. 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.

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 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. Table 5-2 gives the critical PCI levels for General Aviation Airports.

The maintenance rehabilitation policy and activity costs have been updated based on the study of readily available construction cost data at the time of this study. The costs depicted in this report are intended for planning purposes.

**Table 5-1: 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	N/A
	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	N/A
	Raveling / Weathering	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	N/A
	Pumping	N/A	No Localized M&R	NONE	N/A
	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	N/A
	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

**Table 5-2: Critical PCI for General Aviation Airports**

Use	Critical PCI
Runway	65
Taxiway	65
Apron	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 5-3 gives the targeted, or desired, Minimum PCI values for runways, taxiways, and aprons of General Aviation Airports.

**Table 5-3: FDOT Minimum Service Level PCI for General Aviation Airports**

Minimum PCI		
Runway	Taxiway	Apron
75	65	60

Typical Major M&R activities range from overlays to reconstruction. Based on the critical PCI values in Table 5-2 the PCI trigger range when the likely activity would be a mill and resurface was 40 to 79 and reconstruction at a PCI of 39 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.

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 5-4 summarizes the M&R activities for General Aviation Airports based on PCI value.

**Table 5-4: M&R Activities for General Aviation Airports**

	Activity	PCI Range
Maintenance	Crack Sealing and Full-Depth Patching	80 and 90
Rehabilitation	Mill and Overlay (AC) or Concrete Pavement Restoration (PCC)	40 to 79
	Reconstruction	39 and less

## **5.2 Unit Costs**

FDOT cost databases for airports and highway pavement maintenance and rehabilitation were updated from the previous SAPMP study based on current construction cost trends in order to determine meaningful costs for the program. Table 5-5 presents the unit costs summary.

## **5.3 M&R Activities**

FDOT recognizes that although Mill and Overlay work is recommended for asphalt pavements within a PCI range from 40 to 79, it is conceivable that airports may not have adequate funding to perform this type of rehabilitation. Microsurfacing treatment is a maintenance/rehabilitation measure that can be used in lieu of asphalt pavement mill and overlay; however it should be understood that this measure is intended for short term pavement life extension. While the cost of microsurfacing is significantly lower than that of pavement mill and overlay, it is not intended to be a full rehabilitative measure for long term benefit.

**Table 5-5: Maintenance Unit Costs for FDOT**

<b>Code</b>	<b>Name</b>	<b>Cost</b>	<b>Unit</b>
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

The improvement in condition due to maintenance actions applied to specific distresses is only performed when an inspection was performed recently 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 PCIs. 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 5-6. 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.

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

	Activity	PCI Trigger	Cost/SqFt
Maintenance	Crack Sealing and Full-Depth Patching	90	\$0.06
		80	\$0.24
Rehabilitation	Mill and Overlay (AC) or Concrete Pavement Restoration (PCC)	70	\$3.00
		60	\$3.42
		50	\$6.29
		40	\$6.29
	Reconstruction	30	\$13.62
		20	\$13.62

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

## **6. 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, starting from 2012. 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 6-1 presents the M&R 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.

**Table 6-1: Summary of Immediate Major M&R Needs Option No. 1**

<b>Branch Name</b>	<b>Section ID</b>	<b>Surface Type</b>	<b>Section Area (ft<sup>2</sup>)</b>	<b>Major M&amp;R Costs*</b>	<b>PCI Before M&amp;R</b>	<b>M&amp;R Activity</b>	<b>PCI After M&amp;R</b>
No immediate M&R identified							
<b>Total</b>				<b>\$0.00</b>			

\* Costs are adjusted for inflation.

In addition to the immediate Major M&R needs, maintenance activities for pavement areas above critical PCI have been recommended by MicroPAVER for Year 1 and are shown in Table 6-3 below. The costs provided in Table 5-5 were used to calculate the costs associated with this work, which is intended to treat specific distress types. A more detailed table is provided in Appendix E.

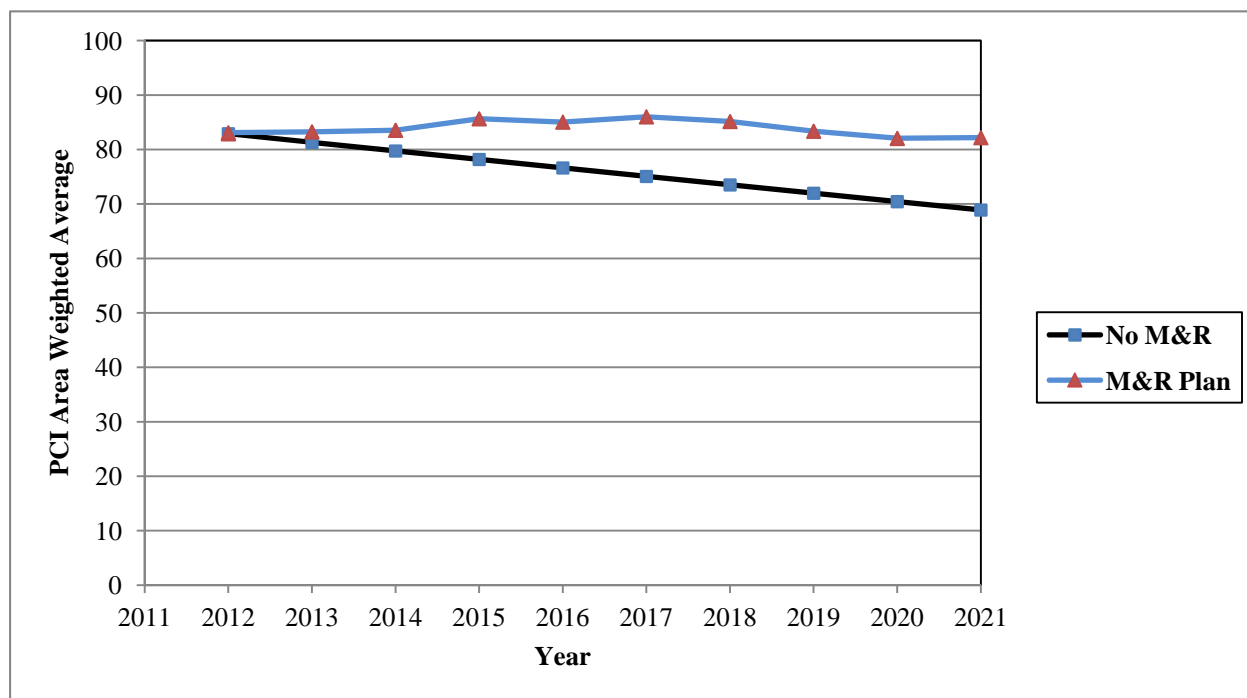


**Table 6-2: Summary of Year 1 Maintenance Activities**

Branch Name	Branch ID	Section ID	Distress Description	Distress Severity	Work Description	Work Quantity	Work Unit	Unit Cost	Work Cost
Apron	AP	4104	WEATH/RAVEL	L	Surface Seal - Rejuvenating	2,687.50	SqFt	\$0.40	\$1,075.02
Apron	AP	4107	WEATH/RAVEL	L	Surface Seal - Rejuvenating	18,403.00	SqFt	\$0.40	\$7,361.26
Apron at T-Hangars	AP T-HANG	4205	WEATH/RAVEL	L	Surface Seal - Rejuvenating	13,832.90	SqFt	\$0.40	\$5,533.22
Apron at T-Hangars	AP T-HANG	4210	WEATH/RAVEL	L	Surface Seal - Rejuvenating	17,124.30	SqFt	\$0.40	\$6,849.78
Runway 15-33	RW 15-33	6105	WEATH/RAVEL	L	Surface Seal - Rejuvenating	2,970.90	SqFt	\$0.40	\$1,188.39
Taxiway Alpha	TW A	105	WEATH/RAVEL	L	Surface Seal - Rejuvenating	82.60	SqFt	\$0.40	\$33.06
Taxiway Alpha	TW A	110	WEATH/RAVEL	L	Surface Seal - Rejuvenating	90.50	SqFt	\$0.40	\$36.20
Taxiway Apron	TW AP	115	WEATH/RAVEL	L	Surface Seal - Rejuvenating	380.00	SqFt	\$0.40	\$152.00
Taxiway Apron	TW AP	215	WEATH/RAVEL	L	Surface Seal - Rejuvenating	3,060.80	SqFt	\$0.40	\$1,224.32
Taxiway Bravo	TW B	205	WEATH/RAVEL	L	Surface Seal - Rejuvenating	117.50	SqFt	\$0.40	\$47.00
Taxiway Bravo	TW B	210	WEATH/RAVEL	L	Surface Seal - Rejuvenating	280.00	SqFt	\$0.40	\$112.00
Taxiway Charlie	TW C	305	WEATH/RAVEL	L	Surface Seal - Rejuvenating	66.00	SqFt	\$0.40	\$26.40
Taxiway Charlie	TW C	310	WEATH/RAVEL	L	Surface Seal - Rejuvenating	8,841.40	SqFt	\$0.40	\$3,536.58
Taxiway Charlie	TW C	315	WEATH/RAVEL	L	Surface Seal - Rejuvenating	30.00	SqFt	\$0.40	\$12.00
Taxiway Charlie	TW C	320	WEATH/RAVEL	L	Surface Seal - Rejuvenating	32.00	SqFt	\$0.40	\$12.81
Taxiway Delta	TW D	405	WEATH/RAVEL	L	Surface Seal - Rejuvenating	108.00	SqFt	\$0.40	\$43.20
<b>Total =</b>									<b>\$27,243.24</b>

The 10 year forecast results are shown in Figure 6-1, 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.

**Figure 6-1: Budget Scenario Analysis**



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

- The PCI will deteriorate from an average of 83 in 2012 to an average of 69 in ten years if no M&R activities are performed. Specific pavement sections may be closer to critical condition as identified by the immediate needs in Table IV. Estimated PCI ratings are presented in Appendix D.
- The PCI will remain at or above an average of 82 through the 10-year analysis period under the unlimited budget scenario. A 2021 PCI average of 82 with this scenario is 13 PCI points higher than a “No M&R” scenario. The total cost for Major M&R over this 10-year period is about \$0.6 million

## 7. 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 airport'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 PCIs 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 7-1 provides the summary results under the critical PCI unlimited funding scenario.

**Table 7-1: M&R Costs under Unlimited Funding Scenario**

Year	Preventative	Major M&R	Total Year Cost
2012	\$27,243.25	\$0.00	\$27,243.25
2013	\$42,102.41	\$83,853.69	\$125,956.10
2014	\$43,440.39	\$67,100.39	\$110,540.79
2015	\$37,687.55	\$158,938.67	\$196,626.22
2016	\$41,222.15	\$22,316.13	\$63,538.27
2017	\$38,375.79	\$120,641.39	\$159,017.18
2018	\$43,207.97	\$22,678.05	\$65,886.02
2019	\$52,090.00	\$0.00	\$52,090.00
2020	\$60,234.60	\$0.00	\$60,234.60
2021	\$62,514.22	\$96,040.11	\$158,554.33
<b>Total</b>	<b>\$448,118.33</b>	<b>\$571,568.43</b>	<b>\$1,019,686.76</b>

Note: Costs are adjusted for inflation.

None of the total Major M&R cost is required in the first year (2012). According to the 2011 inspections, the following pavement sections were in immediate need of Major M&R Activity:

- **None** – No immediate Major M&R Activity identified.

The unlimited budget scenario provides the basis for estimating the total repair cost.

Appendix F provides details of M&R plan by year under the unlimited funding scenario, and the map of the 10-year M&R plan is provided in Appendix G. It is important to understand that the SAPMP is a network level tool and the M&R costs provided in this report are only for planning purposes.

## **8. VISUAL AIDS**

### **8.1 System Inventory and Network Definition Drawings**

The System Inventory and Network Definition CADD drawings, which show the airport pavement outline with Branch and Section boundaries and identify changes in the network pavement since the last inspection and the sampling plan, respectively, are included in Appendix A of this report.

### **8.2 Condition Map**

A Condition Map that has been prepared based on data linked to the airport's shape file is included in Appendix B. The Condition Map 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.

### **8.3 10-Year M&R Map**

A 10-Year M&R Map that shows the summary of the M&R plan is attached in Appendix G.

### **8.4 Photographs**

Selected digital photographs taken during the pavement inspection are provided in Appendix H to provide visual support to special pavement conditions or distress observed during the inspection of the airport.

## **9. RECOMMENDATIONS**

Pavement condition inspections were performed at Arthur Dunn Airpark, and a 10-year M&R plan was developed based on the unlimited funding scenario.

The following recommendations were made based on the 2011 condition inspection and M&R analysis results:

- **None** – No immediate Major M&R Activity identified.

Further evaluation of this feature is necessary in order to develop repair plans and timing for future budgets since this need cannot be addressed with typical annual expenditures.

# **APPENDIX A**

**NETWORK DEFINITION MAP**

**SYSTEM INVENTORY MAP**

**PAVEMENT INVENTORY TABLE**

**WORK HISTORY REPORT**

RECENT/ANTICIPATED PAVEMENT CONSTRUCTION ACTIVITY		
Construction Year	Location	Work Type / Pavement Section
Comments		
No recent/anticipated pavement construction activity information available.		

**RW 13-3** — TYPICAL RUNWAY BRANCH ID

**TW A** — TYPICAL TAXIWAY BRANCH ID

**AP S** — TYPICAL APRON BRANCH ID

**4105** — SECTION NUMBER

**AC** — PAVEMENT TYPE

**100' x 50'** — TYPICAL SAMPLE UNIT INFORMATION

**5** — FLEXIBLE (AC) PAVEMENT LENGTH & WIDTH

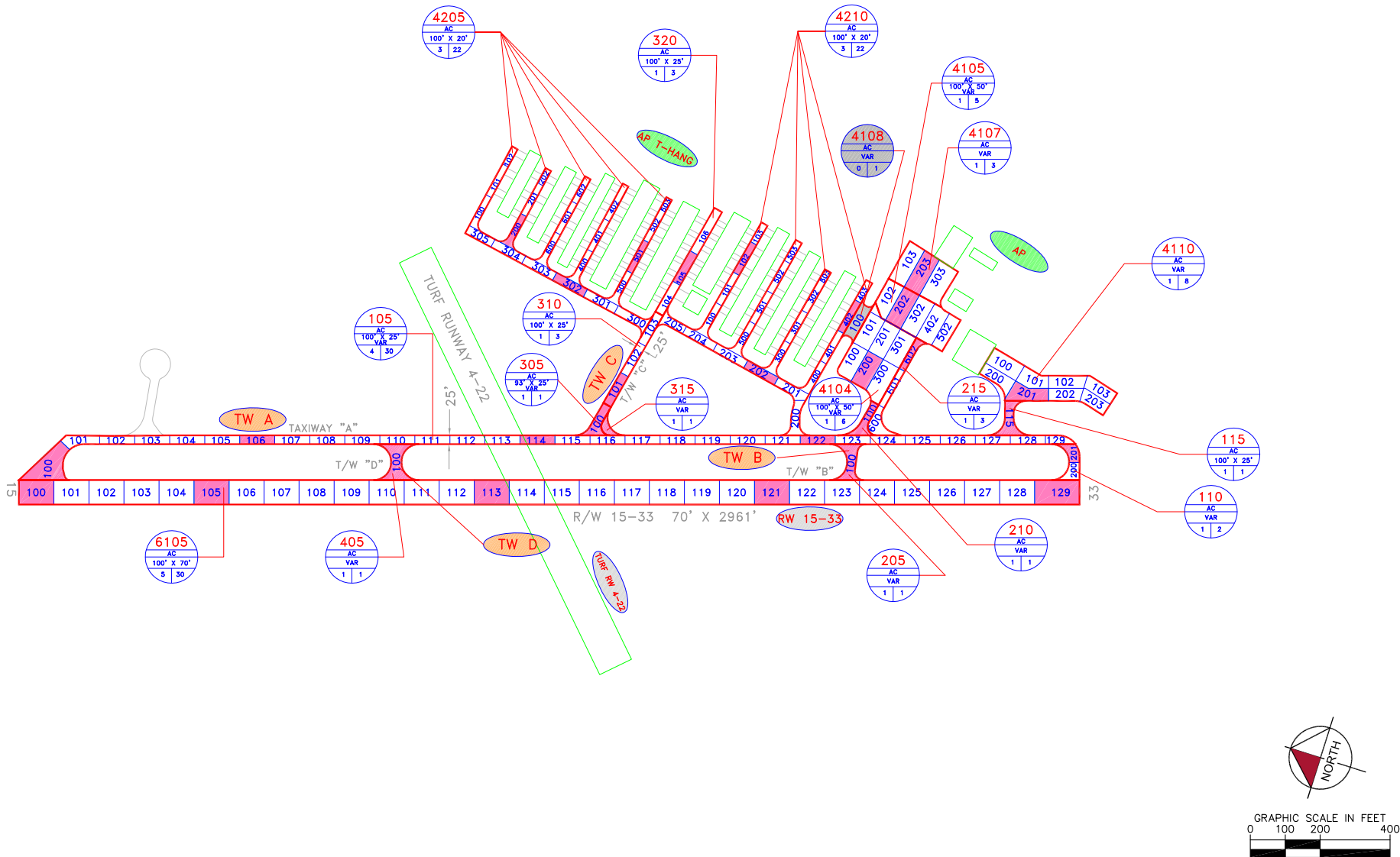
**14** — RIGID (PCC) PAVEMENT NO. OF SLABS AND SLAB SIZE

**1** — NUMBER OF SAMPLE UNITS IN SECTION

**605** — SECTION NOT INSPECTED DUE TO RECENT CONSTRUCTION. SEE SYSTEM INVENTORY MAP FOR CONSTRUCTION DATES.

**100** — INSPECTED SAMPLE UNITS. GPS COORDINATES ARE AT THE CENTROID OF THE SAMPLE UNIT.

RUNWAY LENGTHS DEPICTED IN THIS DRAWING ARE FOR  
PAVEMENT MANAGEMENT PURPOSES ONLY AND MAY NO  
MATCH PUBLISHED RUNWAY LENGTHS.



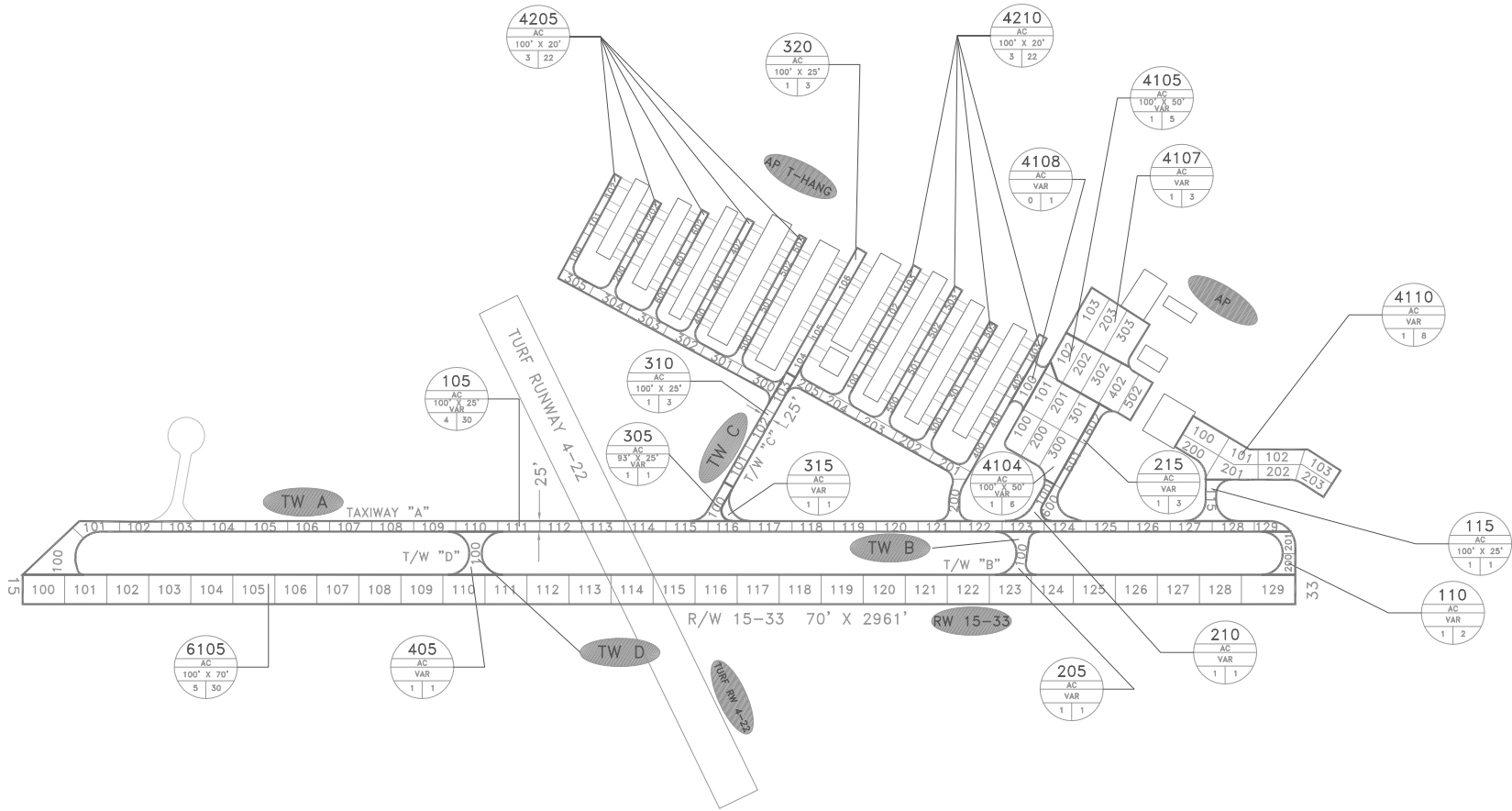
IDENTIFIER  
**X21**  
FDOT DISTRICT  
**5**

RECENT/ANTICIPATED PAVEMENT CONSTRUCTION ACTIVITY

Construction Year	Location	Work Type / Pavement Section

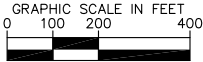
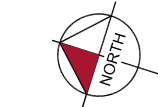
Comments

No recent/anticipated pavement construction activity information available.



LEGEND

- PROJECTS YEAR 2008
- PROJECTS YEAR 2009
- PROJECTS YEAR 2010
- PROJECTS YEAR 2011
- PROJECTS YEAR 2012
- PROJECTS YEAR 2013
- PROJECTS YEAR 2014
- PROJECTS YEAR 2015
- PROJECTS YEAR 2016
- PROJECTS YEAR 2017



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

NUMBER	DATE	REVISIONS
DESIGNED:	NR	DRAWN: GB
CHECKED:		DATE: May 2012



SYSTEM INVENTORY DRAWING
<b>ARTHUR DUNN AIRPORT</b>
<b>TITUSVILLE, BREVARD COUNTY, FLORIDA</b>
FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

IDENTIFIER
<b>X21</b>
FOOT DISTRICT
<b>5</b>



**Table A-1: Pavement Inventory**

Branch Name	Branch ID	Branch Use	Section ID	Length (ft)	Width (ft)	True Area (ft <sup>2</sup> )	Section Rank	Surface Type	Last Const. Date	Last Insp. Date	Sample Units in Section
Apron	AP	APRON	4104	200	150	31,618	P	AAC	1/1/2002	11/17/2011	6
Apron	AP	APRON	4105	238	111	24,317	P	AAC	1/1/2002	11/17/2011	5
Apron	AP	APRON	4107	160	120	18,403	P	AAC	1/1/2002	11/17/2011	3
Apron	AP	APRON	4108	35	100	3,645	P	AC	1/1/2011	1/1/2011	1
Apron	AP	APRON	4110	385	100	31,300	P	AC	1/1/2002	11/17/2011	8
Apron at T-Hangars	AP T-HANG	APRON	4205	1955	20	41,918	T	AC	1/1/1999	11/17/2011	22
Apron at T-Hangars	AP T-HANG	APRON	4210	1520	20	44,702	T	AC	1/1/1999	11/17/2011	22
Runway 15-33	RW 15-33	RUNWAY	6105	3028	70	211,965	P	AC	1/2/2009	11/17/2011	30
Taxiway Alpha	TW A	TAXIWAY	105	3000	25	80,060	P	AC	1/2/2009	11/17/2011	30
Taxiway Alpha	TW A	TAXIWAY	110	100	35	4,022	P	AC	1/2/2009	11/17/2011	2
Taxiway Apron	TW AP	TAXIWAY	115	100	25	3,797	P	AC	1/1/2002	11/17/2011	1
Taxiway Apron	TW AP	TAXIWAY	215	310	18	7,302	P	AC	1/1/2002	11/17/2011	3
Taxiway Bravo	TW B	TAXIWAY	205	105	25	3,981	P	AC	1/2/2009	11/17/2011	1
Taxiway Bravo	TW B	TAXIWAY	210	120	25	2,879	P	AC	1/2/2009	11/17/2011	1
Taxiway Charlie	TW C	TAXIWAY	305	93	25	3,059	P	AC	1/2/2009	11/17/2011	1
Taxiway Charlie	TW C	TAXIWAY	310	340	25	8,517	P	AC	1/1/1999	11/17/2011	3
Taxiway Charlie	TW C	TAXIWAY	315	50	50	1,267	P	AC	1/2/2009	11/17/2011	1
Taxiway Charlie	TW C	TAXIWAY	320	300	25	7,500	P	AC	1/2/2009	11/17/2011	3
Taxiway Delta	TW D	TAXIWAY	405	100	30	5,221	P	AC	1/2/2009	11/17/2011	1

Note: If a new construction, then survey date = last construction date and PCI is set to 100 by MicroPAVER.

Sections not surveyed due to reasons such as re-sectioning, no escort, not accessible at the time of survey.

Date:12/22/2011

# Work History Report

1 of 4

*Pavement Database:*

**Network:** X21 **Branch:** AP (APRON) **Section:** 4104 **Surface:** AAC  
**L.C.D.:** 01/01/2002 **Use:** APRON **Rank:** P **Length:** 200.00 Ft **Width:** 150.00 Ft **True Area:** 31,618.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2002 01/01/1970	OL-AS IMPORTED	Overlay - AC Structural BUILT	\$0	2.00	True True	2" AC Ovly with GripFlex ESTIMATE 1970 CONSTRUCTION - ASSUME: BITUMINOUS SURFACE TREATMENT ON S

**Network:** X21 **Branch:** AP (APRON) **Section:** 4105 **Surface:** AAC  
**L.C.D.:** 01/01/2002 **Use:** APRON **Rank:** P **Length:** 238.00 Ft **Width:** 111.00 Ft **True Area:** 24,317.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2002 01/01/1968 01/01/1968	OL-AS IMPORTED IMPORTED	Overlay - AC Structural OVERLAY BUILT	\$0	2.00  0.50	True True True	2" AC Ovly with GripFlex SOIL: SP APPROX. .5" BIT. SURFACE TREATMENT ON 6" SAND/SHELL BASE ESTIMATE 196

**Network:** X21 **Branch:** AP (APRON) **Section:** 4107 **Surface:** AAC  
**L.C.D.:** 01/01/2002 **Use:** APRON **Rank:** P **Length:** 160.00 Ft **Width:** 120.00 Ft **True Area:** 18,403.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2002 01/01/1970	OL-AS IMPORTED	Overlay - AC Structural BUILT	\$0	2.00	True True	2" AC Ovly with GripFlex ESTIMATE 1970 CONSTRUCTION - ASSUME: BIT. SURFACE TREATMENT ON SAND/SH

**Network:** X21 **Branch:** AP (APRON) **Section:** 4108 **Surface:** AC  
**L.C.D.:** 01/01/2011 **Use:** APRON **Rank:** P **Length:** 35.00 Ft **Width:** 100.00 Ft **True Area:** 3,645.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2011	INITIAL	Initial Construction	\$0	0.00	True	

**Network:** X21 **Branch:** AP (APRON) **Section:** 4110 **Surface:** AC  
**L.C.D.:** 01/01/2002 **Use:** APRON **Rank:** P **Length:** 385.00 Ft **Width:** 100.00 Ft **True Area:** 31,300.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2002	INITIAL	Initial Construction	\$0	2.00	True	2"AC/8" Limerock/6" Stab Base

**Network:** X21 **Branch:** AP T-HANG (T-HANGAR APRON) **Section:** 4205 **Surface:** AC  
**L.C.D.:** 01/01/1999 **Use:** APRON **Rank:** T **Length:** 1,955.00 Ft **Width:** 20.00 Ft **True Area:** 41,918.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1999	INITIAL	Initial Construction	\$0	2.00	True	2"AC/6" Limerock/6"Stab Subgr

**Network:** X21 **Branch:** AP T-HANG (T-HANGAR APRON) **Section:** 4210 **Surface:** AC  
**L.C.D.:** 01/01/1999 **Use:** APRON **Rank:** T **Length:** 1,520.00 Ft **Width:** 20.00 Ft **True Area:** 44,702.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1999	INITIAL	Initial Construction	\$0	0.00	True	

**Network:** X21 **Branch:** RW 15-33 (RUNWAY 15-33) **Section:** 6105 **Surface:** AC  
**L.C.D.:** 01/02/2009 **Use:** RUNWAY **Rank:** P **Length:** 3,028.00 Ft **Width:** 70.00 Ft **True Area:** 211,965.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/02/2009 01/01/2009	OL-AC MI-CO	Overlay-AC Cold Milling	\$0 \$0	1.50 -1.50	True False	

Date:12/22/2011

## Work History Report

2 of 4

Pavement Database:

01/01/1968	IMPORTED	BUILT		0.50	True	APPROX. .5" BIT SURFACE TREATMENT ON 6" STABILIZED SAND/SHELL BASE (ES SOIL: SP
01/01/1968	IMPORTED	OVERLAY			True	

Network: X21 Branch: TW A (TAXIWAY A) Section: 105 Surface: AC  
 L.C.D.: 01/02/2009 Use: TAXIWAY Rank: P Length: 3.000.00 Ft Width: 25.00 Ft True Area: 80.060.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/02/2009	OL-AC	Overlay-AC	\$0	1.50	True	APPROX. .5" BIT. SURFACE TREATMENT ON 6" STABILIZED SAND/SHELL BASE (E SOIL: SP
01/01/2009	MI-CO	Cold Milling	\$0	-1.50	False	
01/01/1968	IMPORTED	BUILT		0.50	True	
01/01/1968	IMPORTED	OVERLAY			True	

Network: X21 Branch: TW A (TAXIWAY A) Section: 110 Surface: AC  
 L.C.D.: 01/02/2009 Use: TAXIWAY Rank: P Length: 100.00 Ft Width: 35.00 Ft True Area: 4.022.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/02/2009	OL-AC	Overlay-AC	\$0	1.50	True	APPROX. .5" BIT. SURFACE TREATMENT ON 6" STABILIZED SHELL BASE (ESTIM
01/01/2009	MI-CO	Cold Milling	\$0	-1.50	False	
01/01/1968	IMPORTED	BUILT		0.50	True	

Network: X21 Branch: TW AP (TAXIWAY AP) Section: 115 Surface: AC  
 L.C.D.: 01/01/2002 Use: TAXIWAY Rank: P Length: 100.00 Ft Width: 25.00 Ft True Area: 3.797.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2002	NC-AC	New Construction - AC	\$0	0.00	True	
01/01/2000	INITIAL	Initial Construction	\$0	0.00	True	

Network: X21 Branch: TW AP (TAXIWAY AP) Section: 215 Surface: AC  
 L.C.D.: 01/01/2002 Use: TAXIWAY Rank: P Length: 310.00 Ft Width: 18.00 Ft True Area: 7.302.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2002	NC-AC	New Construction - AC	\$0	0.00	True	
01/01/2000	INITIAL	Initial Construction	\$0	0.00	True	

Network: X21 Branch: TW B (TAXIWAY B) Section: 205 Surface: AC  
 L.C.D.: 01/02/2009 Use: TAXIWAY Rank: P Length: 105.00 Ft Width: 25.00 Ft True Area: 3.981.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/02/2009	OL-AC	Overlay-AC	\$0	1.50	True	APPROX. .5" BIT. SURFACE TREATMENT ON 6" STABILIZED SHELL BASE (ESTIMA SOIL: SP
01/01/2009	MI-CO	Cold Milling	\$0	-1.50	False	
01/01/1968	IMPORTED	BUILT		0.50	True	
01/01/1968	IMPORTED	OVERLAY			True	

Network: X21 Branch: TW B (TAXIWAY B) Section: 210 Surface: AC  
 L.C.D.: 01/02/2009 Use: TAXIWAY Rank: P Length: 120.00 Ft Width: 25.00 Ft True Area: 2.879.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/02/2009	OL-AC	Overlay-AC	\$0	1.50	True	2" AC /8" Limerock/6" Stab Subbase SOIL: SP
01/01/2009	MI-CO	Cold Milling	\$0	-1.50	False	
01/01/2002	CR-AC	Complete Reconstruction - AC	\$0	2.00	True	
01/01/1968	IMPORTED	OVERLAY			True	

Date:12/22/2011

## Work History Report

3 of 4

Pavement Database:

01/01/1968	IMPORTED	BUILT		0.50	True	APPROX. .5" BIT. SURFACE TREATMENT ON 6" STABILIZED SHELL BASE (ESTIM
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Network: X21 Branch: TW C (TAXIWAY C) Section: 305 Surface: AC  
 L.C.D.: 01/02/2009 Use: TAXIWAY Rank: P Length: 93.00 Ft Width: 25.00 Ft True Area: 3.059.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/02/2009	OL-AC	Overlay-AC	\$0	1.50	True	SOIL: SP APPROX. .5" BIT SURFACE TREATMENT ON 6" STABILIZED SAND/SHELL BASE (ES
01/01/2009	MI-CO	Cold Milling	\$0	-1.50	False	
01/01/1968	IMPORTED	OVERLAY			True	
01/01/1968	IMPORTED	BUILT		0.50	True	

Network: X21 Branch: TW C (TAXIWAY C) Section: 310 Surface: AC  
 L.C.D.: 01/01/1999 Use: TAXIWAY Rank: P Length: 340.00 Ft Width: 25.00 Ft True Area: 8.517.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1999	NC-AC	New Construction - AC	\$0	2.00	True	2" AC/6" Limerock/6" Stab Subgrade APPROX. .5" AC ON 6" SHELL BASE COURSE SOIL: SP
01/01/1968	IMPORTED	BUILT		0.50	True	
01/01/1968	IMPORTED	OVERLAY			True	

Network: X21 Branch: TW C (TAXIWAY C) Section: 315 Surface: AC  
 L.C.D.: 01/02/2009 Use: TAXIWAY Rank: P Length: 50.00 Ft Width: 50.00 Ft True Area: 1,267.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/02/2009	OL-AC	Overlay-AC	\$0	1.50	True	
01/01/2009	MI-CO	Cold Milling	\$0	-1.50	False	
01/01/1999	NC-AC	New Construction - AC	\$0	0.00	True	
01/01/1968	INITIAL	Initial Construction	\$0	0.00	True	

Network: X21 Branch: TW C (TAXIWAY C) Section: 320 Surface: AC  
 L.C.D.: 01/02/2009 Use: TAXIWAY Rank: P Length: 300.00 Ft Width: 25.00 Ft True Area: 7,500.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/02/2009	OL-AC	Overlay-AC	\$0	1.50	True	2" AC/6" Limerock/6" Stab Subgrade SOIL: SP APPROX. .5" AC ON 6" SHELL BASE COURSE
01/01/2009	MI-CO	Cold Milling	\$0	-1.50	False	
01/01/1999	NC-AC	New Construction - AC	\$0	2.00	True	
01/01/1968	IMPORTED	OVERLAY	\$0	0.00	True	
01/01/1968	IMPORTED	BUILT	\$0	0.50	True	

Network: X21 Branch: TW D (TAXIWAY D) Section: 405 Surface: AC  
 L.C.D.: 01/02/2009 Use: TAXIWAY Rank: P Length: 100.00 Ft Width: 30.00 Ft True Area: 5,221.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/02/2009	OL-AC	Overlay-AC	\$0	1.50	True	SOIL: SP APPROX. .5" BIT SURFACE TREATMENT ON 6" STABILIZED SAND/SHELL BASE (ES
01/01/2009	MI-CO	Cold Milling	\$0	-1.50	False	
01/01/1968	IMPORTED	OVERLAY			True	
01/01/1968	IMPORTED	BUILT		0.50	True	

**Summary:**

Work Description	Section Count	Area Total (SqFt)	Thickness Avg (in)	Thickness STD (in)
BUILT	12	401,542.00	.50	.00
Cold Milling	9	319,954.00	-1.50	.00
Complete Reconstruction - AC	1	2,879.00	2.00	
Initial Construction	7	133,931.00	.57	.98
New Construction - AC	5	28,383.00	.80	1.10
OVERLAY	9	347,499.00	.00	
Overlay - AC Structural	3	74,338.00	2.00	.00
Overlay-AC	9	319,954.00	1.50	.00

STD = Standard Deviation

# **APPENDIX B**

## **2012 CONDITION MAP PAVEMENT CONDITION INDEX TABLE**



**Table B-1: Pavement Condition Index**

<b>Branch Name</b>	<b>Branch ID</b>	<b>Branch Use</b>	<b>Section ID</b>	<b>True Area (ft<sup>2</sup>)</b>	<b>Section Rank</b>	<b>Surface Type</b>	<b>Total Samples Inspected</b>	<b>Total Samples</b>	<b>PCI</b>	<b>PCI Category</b>
Apron	AP	APRON	4104	31,618	P	AAC	1	6	81	Satisfactory
Apron	AP	APRON	4105	24,317	P	AAC	1	5	67	Fair
Apron	AP	APRON	4107	18,403	P	AAC	1	3	69	Fair
Apron	AP	APRON	4108	3,645	P	AC	0	1	100	Good
Apron	AP	APRON	4110	31,300	P	AC	1	8	65	Fair
Apron at T-Hangars	AP T-HANG	APRON	4205	41,918	T	AC	3	22	69	Fair
Apron at T-Hangars	AP T-HANG	APRON	4210	44,702	T	AC	3	22	72	Satisfactory
Runway 15-33	RW 15-33	RUNWAY	6105	211,965	P	AC	5	30	92	Good
Taxiway Alpha	TW A	TAXIWAY	105	80,060	P	AC	4	30	87	Good
Taxiway Alpha	TW A	TAXIWAY	110	4,022	P	AC	1	2	90	Good
Taxiway Apron	TW AP	TAXIWAY	115	3,797	P	AC	1	1	82	Satisfactory
Taxiway Apron	TW AP	TAXIWAY	215	7,302	P	AC	1	3	74	Satisfactory
Taxiway Bravo	TW B	TAXIWAY	205	3,981	P	AC	1	1	95	Good
Taxiway Bravo	TW B	TAXIWAY	210	2,879	P	AC	1	1	84	Satisfactory
Taxiway Charlie	TW C	TAXIWAY	305	3,059	P	AC	1	1	92	Good
Taxiway Charlie	TW C	TAXIWAY	310	8,517	P	AC	1	3	71	Satisfactory
Taxiway Charlie	TW C	TAXIWAY	315	1,267	P	AC	1	1	91	Good
Taxiway Charlie	TW C	TAXIWAY	320	7,500	P	AC	1	3	99	Good
Taxiway Delta	TW D	TAXIWAY	405	5,221	P	AC	1	1	93	Good



# **APPENDIX C**

**BRANCH CONDITION REPORT  
SECTION CONDITION REPORT**

Date: 12 /22/2011

**Branch Condition Report**

1 of 2

Pavement Database: NetworkID: X21

Branch ID	Number of Sections	Sum Section Length (Ft)	Avg Section Width (Ft)	True Area (SqFt)	Use	Average PCI	PCI Standard Deviation	Weighted Average PCI
AP (APRON)	5	1,018.00	116.20	109,283.00	APRON	76.40	13.05	71.92
AP T-HANG (T-HANGAR APRON)	2	3,475.00	20.00	86,620.00	APRON	70.50	1.50	70.55
RW 15-33 (RUNWAY 15-33)	1	3,028.00	70.00	211,965.00	RUNWAY	92.00	0.00	92.00
TW A (TAXIWAY A)	2	3,100.00	30.00	84,082.00	TAXIWAY	88.50	1.50	87.14
TW AP (TAXIWAY AP)	2	410.00	21.50	11,099.00	TAXIWAY	78.00	4.00	76.74
TW B (TAXIWAY B)	2	225.00	25.00	6,860.00	TAXIWAY	89.50	5.50	90.38
TW C (TAXIWAY C)	4	783.00	31.25	20,343.00	TAXIWAY	88.25	10.43	85.73
TW D (TAXIWAY D)	1	100.00	30.00	5,221.00	TAXIWAY	93.00	0.00	93.00

Date: 12 /22/2011

## Branch Condition Report

2 of 2

*Pavement Database:*

Use Category	Number of Sections	Total Area (SqFt)	Arithmetic Average PCI	Average PCI STD.	Weighted Average PCI
APRON	7	195,903.00	74.71	11.37	71.31
RUNWAY	1	211,965.00	92.00	0.00	92.00
TAXIWAY	11	127,605.00	87.09	8.27	86.43
<b>All</b>	<b>19</b>	<b>535,473.00</b>	<b>82.79</b>	<b>11.25</b>	<b>83.10</b>

STD = Standard Deviation

Date: 12 /22/2011

## Section Condition Report

1 of 2

Pavement Database: FDOT NetworkID: X21

Branch ID	Section ID	Last Const. Date	Surface	Use	Rank	Lanes	True Area (SqFt)	Last Inspection Date	Age At Inspection	PCI
AP (APRON)	4104	01/01/2002	AAC	APRON	P	0	31,618.00	11/17/2011	9	81.00
AP (APRON)	4105	01/01/2002	AAC	APRON	P	0	24,317.00	11/17/2011	9	67.00
AP (APRON)	4107	01/01/2002	AAC	APRON	P	0	18,403.00	11/17/2011	9	69.00
AP (APRON)	4108	01/01/2011	AC	APRON	P	0	3,645.00	01/01/2011	0	100.00
AP (APRON)	4110	01/01/2002	AC	APRON	P	0	31,300.00	11/17/2011	9	65.00
AP T-HANG (T-HANGAR APRON)	4205	01/01/1999	AC	APRON	T	0	41,918.00	11/17/2011	12	69.00
AP T-HANG (T-HANGAR APRON)	4210	01/01/1999	AC	APRON	T	0	44,702.00	11/17/2011	12	72.00
RW 15-33 (RUNWAY 15-33)	6105	01/02/2009	AC	RUNWAY	P	0	211,965.00	11/17/2011	2	92.00
TW A (TAXIWAY A)	105	01/02/2009	AC	TAXIWAY	P	0	80,060.00	11/17/2011	2	87.00
TW A (TAXIWAY A)	110	01/02/2009	AC	TAXIWAY	P	0	4,022.00	11/17/2011	2	90.00
TW AP (TAXIWAY AP)	115	01/01/2002	AC	TAXIWAY	P	0	3,797.00	11/17/2011	9	82.00
TW AP (TAXIWAY AP)	215	01/01/2002	AC	TAXIWAY	P	0	7,302.00	11/17/2011	9	74.00
TW B (TAXIWAY B)	205	01/02/2009	AC	TAXIWAY	P	0	3,981.00	11/17/2011	2	95.00
TW B (TAXIWAY B)	210	01/02/2009	AC	TAXIWAY	P	0	2,879.00	11/17/2011	2	84.00
TW C (TAXIWAY C)	305	01/02/2009	AC	TAXIWAY	P	0	3,059.00	11/17/2011	2	92.00
TW C (TAXIWAY C)	310	01/01/1999	AC	TAXIWAY	P	0	8,517.00	11/17/2011	12	71.00
TW C (TAXIWAY C)	315	01/02/2009	AC	TAXIWAY	P	0	1,267.00	11/17/2011	2	91.00
TW C (TAXIWAY C)	320	01/02/2009	AC	TAXIWAY	P	0	7,500.00	11/17/2011	2	99.00
TW D (TAXIWAY D)	405	01/02/2009	AC	TAXIWAY	P	0	5,221.00	11/17/2011	2	93.00

Date: 12 /22/2011

## Section Condition Report

2 of 2

*Pavement Database: FDOT*

Age Category	Average Age At Inspection	Total Area (SqFt)	Number of Sections	Arithmetic Average PCI	PCI Standard Deviation	Weighted Average PCI
0-02	1.80	323,599.00	10	92.30	4.65	90.97
06-10	9.00	116,737.00	6	73.00	6.61	71.50
11-15	12.00	95,137.00	3	70.67	1.25	70.59
All	5.68	535,473.00	19	82.79	11.25	83.10

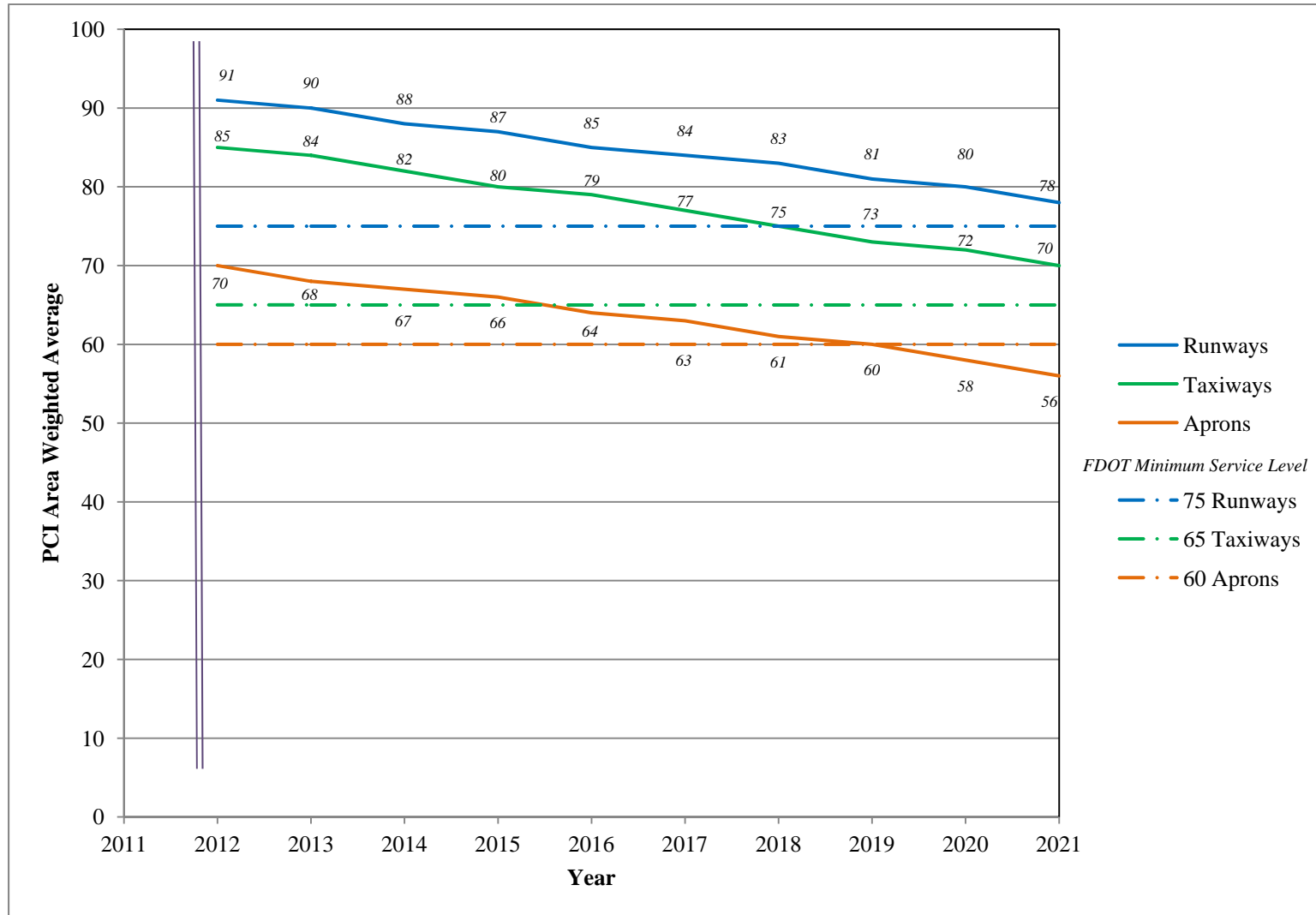
# **APPENDIX D**

## **PAVEMENT CONDITION PREDICTION TABLE PREDICTED PCI BY PAVEMENT USE GRAPH**

**Table D-1: Pavement Condition Prediction**

Branch Name	Branch ID	Section ID	Current PCI	PCI Forecast									
				2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Apron	AP	4104	81	81	79	77	75	73	71	69	68	66	64
Apron	AP	4105	67	67	65	63	62	60	58	57	55	54	52
Apron	AP	4107	69	69	67	65	64	62	60	59	57	56	54
Apron	AP	4108	100	99	97	96	94	93	91	90	88	87	85
Apron	AP	4110	65	65	63	62	60	59	58	56	55	53	52
Apron at T-Hangars	AP T-HANG	4205	69	69	67	66	64	63	62	60	59	57	56
Apron at T-Hangars	AP T-HANG	4210	72	72	70	69	67	66	65	63	62	60	59
Runway 15-33	RW 15-33	6105	92	92	90	89	87	86	85	83	82	80	79
Taxiway Alpha	TW A	105	87	87	85	83	82	80	78	76	75	73	71
Taxiway Alpha	TW A	110	90	90	88	86	85	83	81	79	78	76	74
Taxiway Apron	TW AP	115	82	82	80	78	77	75	73	71	70	68	66
Taxiway Apron	TW AP	215	74	74	72	70	69	67	65	63	62	60	58
Taxiway Bravo	TW B	205	95	95	93	91	90	88	86	84	83	81	79
Taxiway Bravo	TW B	210	84	84	82	80	79	77	75	73	72	70	68
Taxiway Charlie	TW C	305	92	92	90	88	87	85	83	81	80	78	76
Taxiway Charlie	TW C	310	71	71	69	67	66	64	62	60	59	57	55
Taxiway Charlie	TW C	315	91	91	89	87	86	84	82	80	79	77	75
Taxiway Charlie	TW C	320	99	99	97	95	94	92	90	88	87	85	83
Taxiway Delta	TW D	405	93	93	91	89	88	86	84	82	81	79	77

**Figure D-1: Predicted PCI by Pavement Use**





# **APPENDIX E**

## **YEAR 1 MAINTENANCE ACTIVITIES TABLE**

**Table E-1: Year 1 Maintenance Activities**

Branch Name	Branch ID	Section ID	Distress Description	Distress Severity	Work Description	Work Quantity	Work Unit	Unit Cost	Work Cost
Apron	AP	4104	WEATH/RAVEL	L	Surface Seal - Rejuvenating	2,687.50	SqFt	\$0.40	\$1,075.02
Apron	AP	4107	WEATH/RAVEL	L	Surface Seal - Rejuvenating	18,403.00	SqFt	\$0.40	\$7,361.26
Apron at T-Hangars	AP T-HANG	4205	WEATH/RAVEL	L	Surface Seal - Rejuvenating	13,832.90	SqFt	\$0.40	\$5,533.22
Apron at T-Hangars	AP T-HANG	4210	WEATH/RAVEL	L	Surface Seal - Rejuvenating	17,124.30	SqFt	\$0.40	\$6,849.78
Runway 15-33	RW 15-33	6105	WEATH/RAVEL	L	Surface Seal - Rejuvenating	2,970.90	SqFt	\$0.40	\$1,188.39
Taxiway Alpha	TW A	105	WEATH/RAVEL	L	Surface Seal - Rejuvenating	82.60	SqFt	\$0.40	\$33.06
Taxiway Alpha	TW A	110	WEATH/RAVEL	L	Surface Seal - Rejuvenating	90.50	SqFt	\$0.40	\$36.20
Taxiway Apron	TW AP	115	WEATH/RAVEL	L	Surface Seal - Rejuvenating	380.00	SqFt	\$0.40	\$152.00
Taxiway Apron	TW AP	215	WEATH/RAVEL	L	Surface Seal - Rejuvenating	3,060.80	SqFt	\$0.40	\$1,224.32
Taxiway Bravo	TW B	205	WEATH/RAVEL	L	Surface Seal - Rejuvenating	117.50	SqFt	\$0.40	\$47.00
Taxiway Bravo	TW B	210	WEATH/RAVEL	L	Surface Seal - Rejuvenating	280.00	SqFt	\$0.40	\$112.00
Taxiway Charlie	TW C	305	WEATH/RAVEL	L	Surface Seal - Rejuvenating	66.00	SqFt	\$0.40	\$26.40
Taxiway Charlie	TW C	310	WEATH/RAVEL	L	Surface Seal - Rejuvenating	8,841.40	SqFt	\$0.40	\$3,536.58
Taxiway Charlie	TW C	315	WEATH/RAVEL	L	Surface Seal - Rejuvenating	30.00	SqFt	\$0.40	\$12.00
Taxiway Charlie	TW C	320	WEATH/RAVEL	L	Surface Seal - Rejuvenating	32.00	SqFt	\$0.40	\$12.81
Taxiway Delta	TW D	405	WEATH/RAVEL	L	Surface Seal - Rejuvenating	108.00	SqFt	\$0.40	\$43.20
<b>Total =</b>									<b>\$27,243.24</b>

# **APPENDIX F**

## **MAJOR M&R PLAN BY YEAR UNDER UNLIMITED FUNDING SCENARIO TABLE**

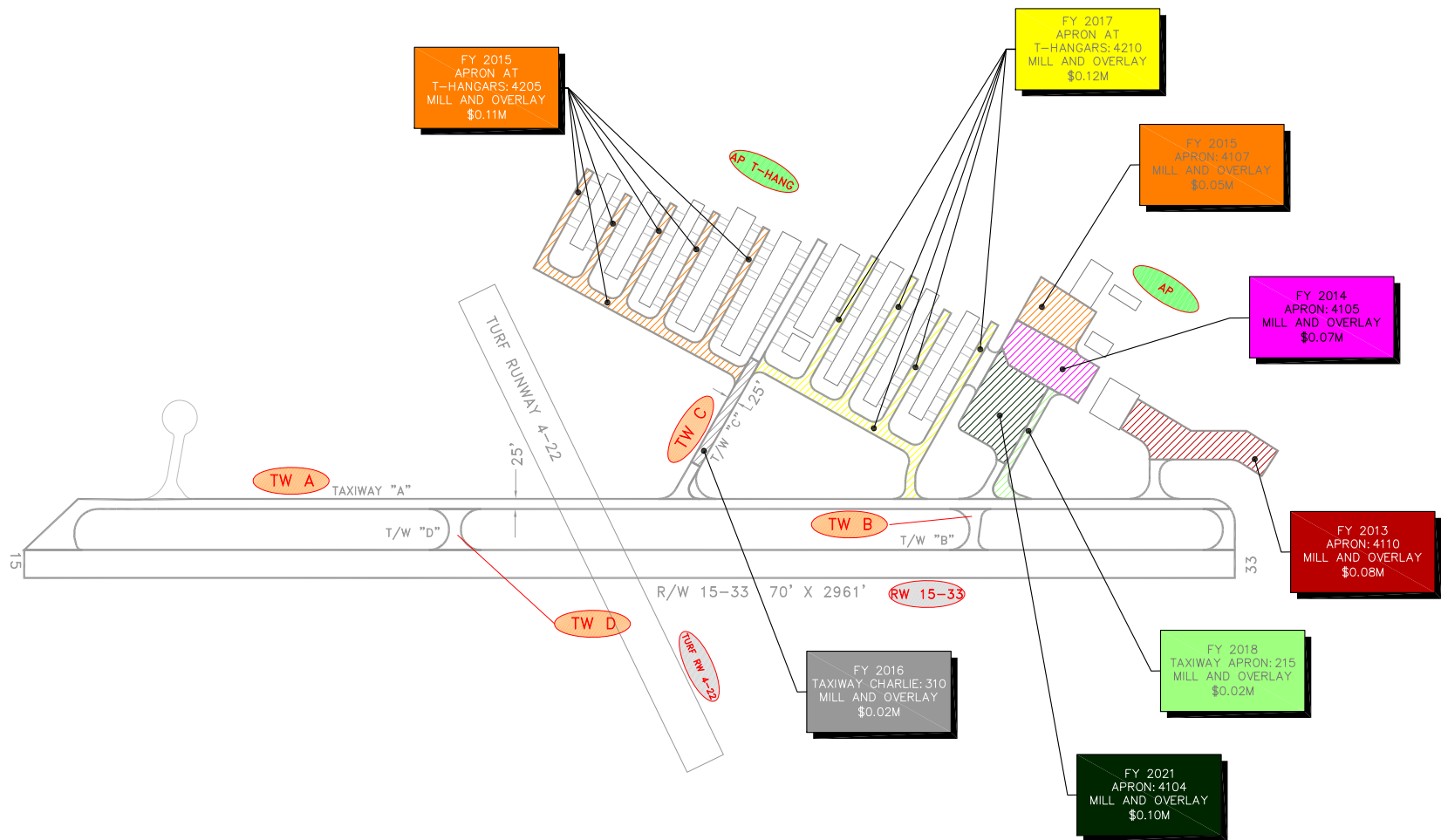
**Table F-1: Major M&R Plan by Year under Unlimited Funding Scenario**

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
2013	Apron	4110	AC	31,300. SqFt	\$83,853.69	63	Mill and Overlay	100
2014	Apron	4105	AAC	24,317. SqFt	\$67,100.39	63	Mill and Overlay	100
2015	Apron	4107	AAC	18,403. SqFt	\$52,304.72	63	Mill and Overlay	100
2015	Apron at T-Hangars	4205	AC	41,918. SqFt	\$106,633.95	64	Mill and Overlay	100
2016	Taxiway Charlie	310	AC	8,517. SqFt	\$22,316.13	64	Mill and Overlay	100
2017	Apron at T-Hangars	4210	AC	44,702. SqFt	\$120,641.39	64	Mill and Overlay	100
2018	Taxiway Apron	215	AC	7,302. SqFt	\$22,678.05	63	Mill and Overlay	100
2021	Apron	4104	AAC	31,618. SqFt	\$96,040.11	64	Mill and Overlay	100
<b>Total</b>					<b>\$571,568.43</b>	<b>64</b>		<b>100</b>

\* Costs are adjusted for inflation.

# **APPENDIX G**

## **10-YEAR M&R MAP**



LEGEND

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

YEAR

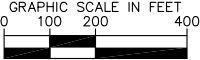
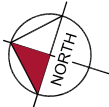
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020
- 2021

ACTIVITY

- MICROSURFACING
- MILL AND OVERLAY
- RECONSTRUCTION
- CONCRETE PAVEMENT RESTORATION

"PLAN YEAR"  
"BRANCH": "SECTION"  
"M AND R ACTIVITY"  
"EST. COST"

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



NUMBER	DATE	REVISIONS
DESIGNED:	NR	DRAWN: GB
CHECKED:		DATE: February 2012



10-YEAR M & R DRAWING	IDENTIFIER
ARTHUR DUNN AIRPORT AIRPORT	X21
TITUSVILLE, BREVARD COUNTY, FLORIDA	FOOT DISTRICT
FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE	5

# **APPENDIX H**

## **PHOTOGRAPHS**



Apron, Section 4107, Sample Unit 203 – Low severity (48) Longitudinal and Transverse Cracking, low severity (52) Weathering and Raveling.

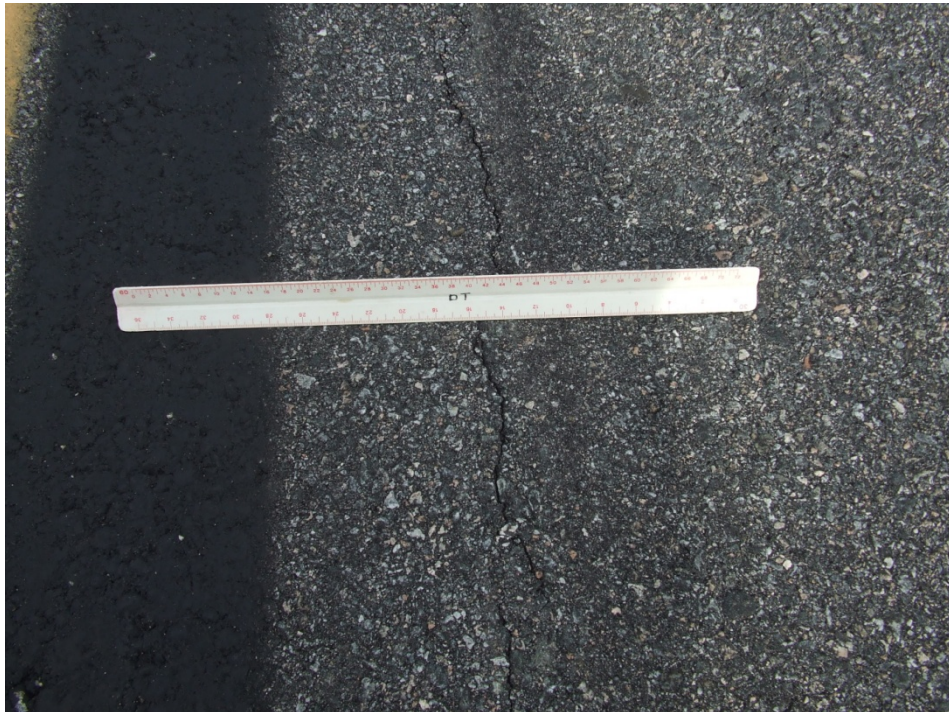


Apron, Section 4105, Sample Unit 202 – Low severity (48) Longitudinal and Transverse Cracking, low severity (50) Patching





Runway 15-33, Section 6105, Sample Unit 121 – Overview of sample unit



Runway 15-33, Section 6105, Sample Unit 121 – Low severity (48) Longitudinal and Transverse Cracking, low severity (52) Weathering and Raveling.





Apron at T-Hangars, Section 4210, Sample Unit 402 – Low severity (50) Patching, low severity (52) Weathering and Raveling.



Apron at T-Hangars, Section 4210, Sample Unit 202 – Low severity (48) Longitudinal and Transverse Cracking, low severity (52) Weathering and Raveling.





Taxiway Charlie, Section 320, Sample Unit 105 – Low severity (45) Depression, low severity (52) Weathering and Raveling.



Apron at T-Hangars, Section 4205, Sample Unit 302 – Low severity (45) Depression, low severity (52) Weathering and Raveling, low severity (56) Swelling.

# **APPENDIX I**

## **PCI RE-INSPECTION REPORT**

# Re-inspection Report

FDOT  
Report Generated Date: 12/22/201  
Site Name:

Network:	X21	Name: ARTHUR DUNN AIRPARK							
Branch:	AP	Name: APRON			Use: APRON		Area:	109,283.00SqFt	
Section:	4104	of	5	From: -		To: -	Last Const.: 1/1/2002		
Surface:	AAC	Family: FDOT-GA-AP-AAC		Zone:	Category:	Rank: P			
Area:	31,618.00SqFt	Length: 200.00Ft		Width:	150.00Ft				
Shoulder:	Street Type:		Grade: 0.00	Lanes: 0					
Section Comments:									

Last Insp. Date11/17/2011    Total Samples: 6    Surveyed: 1  
Conditions: PCI:81.00 |  
Inspection Comments:

Sample Number:	200	Type:	R	Area:	5,000.00SqFt	PCI =	81
Sample Comments:							
48	LONGITUDINAL/TRANSVERSE CRACKING	L	227.00	Ft	Comments:		
52	WEATHERING/RAVELING	L	425.00	SqFt	Comments:		

Re-inspection Report

FDOT  
Report Generated Date: 12/22/201  
Site Name:

Network:	X21	Name: ARTHUR DUNN AIRPARK							
Branch:	AP	Name: APRON			Use: APRON		Area:	109,283.00SqFt	
Section:	4105	of	5	From: -	To: -	Last Const.: 1/1/2002			
Surface:	AAC	Family: FDOT-GA-AP-AAC		Zone:	Category:	Rank: P			
Area:	24,317.00SqFt	Length: 238.00Ft		Width:	111.00Ft				
Shoulder:	Street Type:		Grade: 0.00	Lanes: 0					
Section Comments:									

Last Insp. Date11/17/2011    Total Samples: 5    Surveyed: 1  
Conditions: PCI:67.00 |  
Inspection Comments:

Sample Number:	202	Type:	R	Area:	5,000.00SqFt	PCI =	67
Sample Comments:							
48	LONGITUDINAL/TRANSVERSE CRACKING	L	313.00	Ft		Comments:	
50	PATCHING	L	1.50	SqFt		Comments:	
53	RUTTING	L	381.00	SqFt		Comments:	

# Re-inspection Report

FDOT  
Report Generated Date: 12/22/201  
Site Name:

Network:	X21	Name: ARTHUR DUNN AIRPARK							
Branch:	AP	Name: APRON			Use: APRON		Area:	109,283.00SqFt	
Section:	4107	of	5	From: -		To: -	Last Const.: 1/1/2002		
Surface:	AAC	Family: FDOT-GA-AP-AAC		Zone:	Category:	Rank: P			
Area:	18,403.00SqFt	Length: 160.00Ft		Width:	120.00Ft				
Shoulder:	Street Type:		Grade: 0.00	Lanes: 0					
Section Comments:									

Last Insp. Date11/17/2011    Total Samples: 3    Surveyed: 1  
Conditions: PCI:69.00 |  
Inspection Comments:

Sample Number:	203	Type:	R	Area:	5,350.00SqFt	PCI =	69
Sample Comments:							
48	LONGITUDINAL/TRANSVERSE CRACKING	L	409.00	Ft		Comments:	
52	WEATHERING/RAVELING	L	5,350.00	SqFt		Comments:	

Re-inspection Report

FDOT  
Report Generated Date: 12/22/201  
Site Name:

Network:	X21	Name: ARTHUR DUNN AIRPARK							
Branch:	AP	Name: APRON			Use: APRON		Area:	109,283.00SqFt	
Section:	4108	of	5	From: -	To: -	Last Const.: 1/1/2011			
Surface:	AC	Family: DEFAULT		Zone:	Category:	Rank: P			
Area:	3,645.00SqFt	Length: 35.00Ft		Width:	100.00Ft				
Shoulder:	Street Type:		Grade: 0.00	Lanes: 0					
Section Comments:									

Last Insp. Date1/1/2011      Total Samples: 0      Surveyed: 0  
Conditions: PCI:100.00 |  
Inspection Comments: Construction/Major M&R inspection record.

Sample Number:                      Type:                      Area:                      0.00  
<NO SAMPLE RECORDS>



# Re-inspection Report

FDOT  
Report Generated Date: 12/22/201  
Site Name:

Network:	X21	Name: ARTHUR DUNN AIRPARK					
Branch:	AP	Name: APRON			Use: APRON	Area:	109,283.00SqFt
Section:	4110	of	5	From:	To:	Last Const.: 1/1/2002	
Surface:	AC	Family: FDOT-GA-AP-AC		Zone:	Category:	Rank: P	
Area:	31,300.00SqFt	Length: 385.00Ft		Width:	100.00Ft		
Shoulder:	Street Type:		Grade: 0.00	Lanes: 0			
Section Comments:							

Last Insp. Date11/17/2011    Total Samples: 8    Surveyed: 1  
Conditions: PCI:65.00 |  
Inspection Comments:

Sample Number:	201	Type:	R	Area:	4,750.00SqFt	PCI = 65
Sample Comments:						
48	LONGITUDINAL/TRANSVERSE CRACKING	L	101.00	Ft	Comments:	
53	RUTTING	L	465.00	SqFt	Comments:	
50	PATCHING	L	0.75	SqFt	Comments:	

# Re-inspection Report

FDOT

Report Generated Date: 12/22/201

Site Name:

Network: X21 Name: ARTHUR DUNN AIRPARK

Branch: AP T-HANG Name: T-HANGAR APRON Use: APRON Area: 86,620.00SqFt

Section: 4205 of 2 From: To: Last Const.: 1/1/1999  
Surface: AC Family: FDOT-GA-AP-AC Zone: Category: Rank: T  
Area: 41,918.00SqFt Length: 1,955.00Ft Width: 20.00Ft  
Shoulder: Street Type: Grade: 0.00 Lanes: 0  
Section Comments:

Last Insp. Date11/17/2011 Total Samples: 22 Surveyed: 3

Conditions: PCI:69.00 I

Inspection Comments:

Sample Number: 200 Type: R Area: 2,000.00SqFt PCI = 74

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING L 116.00 Ft Comments:  
45 DEPRESSION L 40.00 SqFt Comments:  
52 WEATHERING/RAVELING L 320.00 SqFt Comments:

Sample Number: 302 Type: R Area: 2,500.00SqFt PCI = 68

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING L 156.00 Ft Comments:  
45 DEPRESSION L 57.00 SqFt Comments:  
56 SWELLING L 45.00 SqFt Comments:  
52 WEATHERING/RAVELING L 380.00 SqFt Comments:

Sample Number: 501 Type: R Area: 2,000.00SqFt PCI = 67

Sample Comments:

45 DEPRESSION L 25.00 SqFt Comments:  
48 LONGITUDINAL/TRANSVERSE CRACKING L 158.00 Ft Comments:  
52 WEATHERING/RAVELING L 1,445.00 SqFt Comments:

# Re-inspection Report

FDOT

Report Generated Date: 12/22/201

Site Name:

Network: X21 Name: ARTHUR DUNN AIRPARK

Branch: AP T-HANG Name: T-HANGAR APRON Use: APRON Area: 86,620.00SqFt

Section: 4210 of 2 From: To: Last Const.: 1/1/1999  
Surface: AC Family: FDOT-GA-AP-AC Zone: Category: Rank: T  
Area: 44,702.00SqFt Length: 1,520.00Ft Width: 20.00Ft  
Shoulder: Street Type: Grade: 0.00 Lanes: 0  
Section Comments:

Last Insp. Date11/17/2011 Total Samples: 22 Surveyed: 3

Conditions: PCI:72.00 I

Inspection Comments:

Sample Number: 102 Type: R Area: 2,000.00SqFt PCI = 74

Sample Comments:

50 PATCHING	L	0.50 SqFt	Comments:
52 WEATHERING/RAVELING	L	840.00 SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	L	68.00 Ft	Comments:

Sample Number: 202 Type: R Area: 2,500.00SqFt PCI = 69

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	81.00 Ft	Comments:
41 ALLIGATOR CRACKING	L	27.00 SqFt	Comments:
52 WEATHERING/RAVELING	L	700.00 SqFt	Comments:

Sample Number: 402 Type: R Area: 2,000.00SqFt PCI = 73

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	62.00 Ft	Comments:
50 PATCHING	L	0.50 SqFt	Comments:
52 WEATHERING/RAVELING	L	950.00 SqFt	Comments:

# Re-inspection Report

FDOT

Report Generated Date: 12/22/201

Site Name:

Network: X21 Name: ARTHUR DUNN AIRPARK

Branch: RW 15-33 Name: RUNWAY 15-33 Use: RUNWAY Area: 211,965.00SqFt

Section: 6105 of 1 From: - To: - Last Const.: 1/2/2009  
Surface: AC Family: FDOT-GA-RW-AC Zone: Category: Rank: P  
Area: 211,965.00SqFt Length: 3,028.00Ft Width: 70.00Ft  
Shoulder: Street Type: Grade: 0.00 Lanes: 0  
Section Comments:

Last Insp. Date: 11/17/2011 Total Samples: 30 Surveyed: 5

Conditions: PCI: 92.00

Inspection Comments:

Sample Number: 100 Type: R Area: 7,000.00SqFt PCI = 93

Sample Comments:

52 WEATHERING/RAVELING L 55.00 SqFt Comments:  
48 LONGITUDINAL/TRANSVERSE CRACKING L 3.00 Ft Comments:  
50 PATCHING L 26.00 SqFt Comments:

Sample Number: 105 Type: R Area: 7,000.00SqFt PCI = 96

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING L 51.00 Ft Comments:

Sample Number: 113 Type: R Area: 7,000.00SqFt PCI = 91

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING L 81.00 Ft Comments:  
52 WEATHERING/RAVELING L 25.00 SqFt Comments:  
50 PATCHING L 0.25 SqFt Comments:

Sample Number: 121 Type: R Area: 7,000.00SqFt PCI = 92

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING L 67.00 Ft Comments:  
52 WEATHERING/RAVELING L 50.00 SqFt Comments:  
52 WEATHERING/RAVELING L 65.00 SqFt Comments:

Sample Number: 129 Type: R Area: 9,100.00SqFt PCI = 89

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING L 132.00 Ft Comments:  
52 WEATHERING/RAVELING L 100.00 SqFt Comments:  
52 WEATHERING/RAVELING L 225.00 SqFt Comments:

# Re-inspection Report

FDOT

Report Generated Date: 12/22/201

Site Name:

Network: X21 Name: ARTHUR DUNN AIRPARK

Branch: TW A Name: TAXIWAY A Use: TAXIWAY Area: 84,082.00SqFt

Section: 105 of 2 From: - To: - Last Const.: 1/2/2009  
Surface: AC Family: FDOT-GA-TW-AC Zone: Category: Rank: P  
Area: 80,060.00SqFt Length: 3,000.00Ft Width: 25.00Ft  
Shoulder: Street Type: Grade: 0.00 Lanes: 0  
Section Comments:

Last Insp. Date: 11/17/2011 Total Samples: 30 Surveyed: 4

Conditions: PCI: 87.00

Inspection Comments:

Sample Number: 100 Type: R Area: 8,000.00SqFt PCI = 80

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING L 57.00 Ft Comments:  
53 RUTTING L 85.00 SqFt Comments:

Sample Number: 106 Type: R Area: 2,500.00SqFt PCI = 92

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING L 58.00 Ft Comments:

Sample Number: 114 Type: R Area: 2,500.00SqFt PCI = 96

Sample Comments:

52 WEATHERING/RAVELING L 16.00 SqFt Comments:  
50 PATCHING L 0.25 SqFt Comments:

Sample Number: 122 Type: R Area: 2,500.00SqFt PCI = 96

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING L 11.00 Ft Comments:

Re-inspection Report

FDOT  
Report Generated Date: 12/22/201  
Site Name:

Network:	X21	Name:	ARTHUR DUNN AIRPARK			
Branch:	TW A	Name:	TAXIWAY A	Use:	TAXIWAY	Area: 84,082.00SqFt
Section:	110	of	2	From:	-	To: - Last Const.: 1/2/2009
Surface:	AC	Family:	FDOT-GA-TW-AC	Zone:	Category:	Rank: P
Area:	4,022.00SqFt	Length:	100.00Ft	Width:	35.00Ft	
Shoulder:	Street Type:	Grade:	0.00	Lanes:	0	
Section Comments:						

Last Insp. Date11/17/2011 Total Samples: 2 Surveyed: 1  
Conditions: PCI:90.00 I  
Inspection Comments:

Sample Number:	201	Type:	R	Area:	2,000.00SqFt	PCI = 90
Sample Comments:						
48	LONGITUDINAL/TRANSVERSE CRACKING	L	29.00	Ft	Comments:	
52	WEATHERING/RAVELING	L	45.00	SqFt	Comments:	

Re-inspection Report

FDOT  
Report Generated Date: 12/22/201  
Site Name:

Network:	X21	Name:	ARTHUR DUNN AIRPARK			
Branch:	TW AP	Name:	TAXIWAY AP	Use:	TAXIWAY	Area: 11,099.00SqFt
Section:	115	of	2	From:	-	To: - Last Const.: 1/1/2002
Surface:	AC	Family:	FDOT-GA-TW-AC	Zone:	Category:	Rank: P
Area:	3,797.00SqFt	Length:	100.00Ft	Width:	25.00Ft	
Shoulder:	Street Type:	Grade:	0.00	Lanes:	0	
Section Comments:						

Last Insp. Date11/17/2011 Total Samples: 1 Surveyed: 1  
Conditions: PCI:82.00 I  
Inspection Comments:

Sample Number:	115	Type:	R	Area:	3,797.00SqFt	PCI = 82
Sample Comments:						
52	WEATHERING/RAVELING	L	380.00	SqFt	Comments:	
48	LONGITUDINAL/TRANSVERSE CRACKING	L	126.00	Ft	Comments:	
50	PATCHING	L	0.50	SqFt	Comments:	

# Re-inspection Report

FDOT  
Report Generated Date: 12/22/201  
Site Name:

Network:	X21	Name: ARTHUR DUNN AIRPARK							
Branch:	TW AP	Name: TAXIWAY AP			Use: TAXIWAY		Area:	11,099.00SqFt	
Section:	215	of	2	From: -	To: -	Last Const.: 1/1/2002			
Surface:	AC	Family: FDOT-GA-TW-AC		Zone:	Category:	Rank: P			
Area:	7,302.00SqFt	Length: 310.00Ft		Width:	18.00Ft				
Shoulder:	Street Type:		Grade: 0.00	Lanes: 0					
Section Comments:									

Last Insp. Date11/17/2011    Total Samples: 3    Surveyed: 1  
Conditions: PCI:74.00 |  
Inspection Comments:

Sample Number:	602	Type:	R	Area:	1,930.00SqFt	PCI =	74
Sample Comments:							
48	LONGITUDINAL/TRANSVERSE	CRACKING	L	83.00	Ft	Comments:	
50	PATCHING		L	0.25	SqFt	Comments:	
52	WEATHERING/RAVELING		L	444.00	SqFt	Comments:	
52	WEATHERING/RAVELING		L	72.00	SqFt	Comments:	
52	WEATHERING/RAVELING		L	168.00	SqFt	Comments:	
52	WEATHERING/RAVELING		L	125.00	SqFt	Comments:	



Re-inspection Report

FDOT  
Report Generated Date: 12/22/201  
Site Name:

Network:	X21	Name:	ARTHUR DUNN AIRPARK			
Branch:	TW B	Name:	TAXIWAY B	Use:	TAXIWAY	Area: 6,860.00SqFt
Section:	205	of	2	From:	-	To: - Last Const.: 1/2/2009
Surface:	AC	Family:	FDOT-GA-TW-AC	Zone:	Category:	Rank: P
Area:	3,981.00SqFt	Length:	105.00Ft	Width:	25.00Ft	
Shoulder:	Street Type:	Grade:	0.00	Lanes:	0	
Section Comments:						

Last Insp. Date11/17/2011 Total Samples: 1 Surveyed: 1  
Conditions: PCI:95.00 I  
Inspection Comments:

Sample Number:	100	Type:	R	Area:	3,981.00SqFt	PCI = 95
Sample Comments:						
52	WEATHERING/RAVELING	L	45.00	SqFt	Comments:	
52	WEATHERING/RAVELING	L	35.00	SqFt	Comments:	
52	WEATHERING/RAVELING	L	37.50	SqFt	Comments:	

Re-inspection Report

FDOT  
Report Generated Date: 12/22/201  
Site Name:

Network:	X21	Name: ARTHUR DUNN AIRPARK							
Branch:	TW B	Name: TAXIWAY B			Use: TAXIWAY		Area:	6,860.00SqFt	
Section:	210	of	2	From: -		To: -	Last Const.: 1/2/2009		
Surface:	AC	Family: FDOT-GA-TW-AC		Zone:	Category:	Rank: P			
Area:	2,879.00SqFt	Length: 120.00Ft		Width:	25.00Ft				
Shoulder:	Street Type:		Grade: 0.00	Lanes: 0					
Section Comments:									

Last Insp. Date11/17/2011    Total Samples: 1    Surveyed: 1  
Conditions: PCI:84.00 |  
Inspection Comments:

Sample Number:	100	Type:	R	Area:	2,879.00SqFt	PCI =	84
Sample Comments:							
48	LONGITUDINAL/TRANSVERSE	CRACKING	L	15.00	Ft	Comments:	
52	WEATHERING/RAVELING		L	280.00	SqFt	Comments:	
50	PATCHING		L	0.25	SqFt	Comments:	

Re-inspection Report

FDOT  
Report Generated Date: 12/22/201  
Site Name:

Network:	X21	Name:	ARTHUR DUNN AIRPARK			
Branch:	TW C	Name:	TAXIWAY C	Use:	TAXIWAY	Area: 20,343.00SqFt
Section:	305	of	4	From:	-	To: - Last Const.: 1/2/2009
Surface:	AC	Family:	FDOT-GA-TW-AC	Zone:	Category:	Rank: P
Area:	3,059.00SqFt	Length:	93.00Ft	Width:	25.00Ft	
Shoulder:	Street Type:	Grade:	0.00	Lanes:	0	
Section Comments:						

Last Insp. Date11/17/2011 Total Samples: 1 Surveyed: 1  
Conditions: PCI:92.00 I  
Inspection Comments:

Sample Number:	100	Type:	R	Area:	3,059.00SqFt	PCI = 92
Sample Comments:						
48	LONGITUDINAL/TRANSVERSE CRACKING	L	17.00	Ft	Comments:	
52	WEATHERING/RAVELING	L	24.00	SqFt	Comments:	
52	WEATHERING/RAVELING	L	30.00	SqFt	Comments:	
52	WEATHERING/RAVELING	L	12.00	SqFt	Comments:	

Re-inspection Report

FDOT  
Report Generated Date: 12/22/201  
Site Name:

Network:	X21	Name:	ARTHUR DUNN AIRPARK			
Branch:	TW C	Name:	TAXIWAY C	Use:	TAXIWAY	Area: 20,343.00SqFt
Section:	310	of	4	From:	-	To: - Last Const.: 1/1/1999
Surface:	AC	Family:	FDOT-GA-TW-AC	Zone:	Category:	Rank: P
Area:	8,517.00SqFt	Length:	340.00Ft	Width:	25.00Ft	
Shoulder:	Street Type:	Grade:	0.00	Lanes:	0	
Section Comments:						

Last Insp. Date11/17/2011 Total Samples: 6 Surveyed: 1  
Conditions: PCI:71.00 I  
Inspection Comments:

Sample Number:	105	Type:	R	Area:	2,500.00SqFt	PCI = 71
Sample Comments:						
45	DEPRESSION	L	6.00	SqFt	Comments:	
48	LONGITUDINAL/TRANSVERSE CRACKING	L	36.00	Ft	Comments:	
50	PATCHING	L	0.25	SqFt	Comments:	
52	WEATHERING/RAVELING	L	1,380.00	SqFt	Comments:	

Re-inspection Report

FDOT  
Report Generated Date: 12/22/201  
Site Name:

Network:	X21	Name:	ARTHUR DUNN AIRPARK			
Branch:	TW C	Name:	TAXIWAY C	Use:	TAXIWAY	Area: 20,343.00SqFt
Section:	315	of	4	From:	-	To: - Last Const.: 1/2/2009
Surface:	AC	Family:	FDOT-GA-TW-AC	Zone:	Category:	Rank: P
Area:	1,267.00SqFt	Length:	50.00Ft	Width:	50.00Ft	
Shoulder:	Street Type:	Grade:	0.00	Lanes:	0	
Section Comments:						

Last Insp. Date11/17/2011 Total Samples: 1 Surveyed: 1  
Conditions: PCI:91.00 I  
Inspection Comments:

Sample Number:	315	Type:	R	Area:	1,267.00SqFt	PCI = 91
Sample Comments:						
48	LONGITUDINAL/TRANSVERSE CRACKING	L	8.00	Ft	Comments:	
52	WEATHERING/RAVELING	L	20.00	SqFt	Comments:	
52	WEATHERING/RAVELING	L	10.00	SqFt	Comments:	

Re-inspection Report

FDOT  
Report Generated Date: 12/22/201  
Site Name:

Network:	X21	Name:	ARTHUR DUNN AIRPARK			
Branch:	TW C	Name:	TAXIWAY C	Use:	TAXIWAY	Area: 20,343.00SqFt
Section:	320	of	4	From:	-	To: - Last Const.: 1/2/2009
Surface:	AC	Family:	FDOT-GA-TW-AC	Zone:	Category:	Rank: P
Area:	7,500.00SqFt	Length:	300.00Ft	Width:	25.00Ft	
Shoulder:	Street Type:	Grade:	0.00	Lanes:	0	
Section Comments:						

Last Insp. Date11/17/2011 Total Samples: 6 Surveyed: 1  
Conditions: PCI:99.00 I  
Inspection Comments:

Sample Number:	101	Type:	R	Area:	2,500.00SqFt	PCI = 99
Sample Comments:						
52 WEATHERING/RAVELING				L	5.00 SqFt	Comments:

Re-inspection Report

FDOT  
Report Generated Date: 12/22/201  
Site Name:

Network:	X21	Name:	ARTHUR DUNN AIRPARK			
Branch:	TW D	Name:	TAXIWAY D	Use:	TAXIWAY	Area: 5,221.00SqFt
Section:	405	of	1	From:	-	To: - Last Const.: 1/2/2009
Surface:	AC	Family:	FDOT-GA-TW-AC	Zone:	Category:	Rank: P
Area:	5,221.00SqFt	Length:	100.00Ft	Width:	30.00Ft	
Shoulder:	Street Type:	Grade:	0.00	Lanes:	0	
Section Comments:						

Last Insp. Date11/17/2011 Total Samples: 1 Surveyed: 1  
Conditions: PCI:93.00 I  
Inspection Comments:

Sample Number:	100	Type:	R	Area:	5,221.00SqFt	PCI = 93
Sample Comments:						
52	WEATHERING/RAVELING	L	28.00	SqFt	Comments:	
52	WEATHERING/RAVELING	L	35.00	SqFt	Comments:	
52	WEATHERING/RAVELING	L	45.00	SqFt	Comments:	
48	LONGITUDINAL/TRANSVERSE CRACKING	L	9.00	Ft	Comments:	