

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION AVIATION OFFICE

Statewide Airfield Pavement Management Program

Clearwater Airpark– CLW
(Regional Reliever)
Clearwater, Florida
(District 7)



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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 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 Clearwater 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 Clearwater Airpark, and
- ➤ Provide the estimated costs associated with the suggested immediate and future M&R activities

During December 2011, the PCI survey was performed at Clearwater 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 61, representing a fair overall network condition.

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

Table I: Condition Summary by Branch

Branch Name	Area Weighted PCI	Average Weighted PCI Range	Condition Rating	FDOT Minimum Service Level	MicroPAVER Minimum PCI	Action Required
Center Apron	44	30 - 59	Poor	60	65	X
North Apron	80	80	Satisfactory	60	65	
Run-Up Apron at 33- End	45	45	Poor	60	65	X
Apron at T-Hangars 1	56	45 - 61	Fair	60	65	X
Apron at T-Hangars 2	66	66	Fair	60	65	
Apron at T-Hangars 3	68	68	Fair	60	65	
Runway 16-34	64	53 - 69	Fair	75	65	X
Taxiway Alpha	56	53 - 69	Fair	65	65	X
Taxiway A-1 67 67		Fair	65	65		
Taxiway A-2	36	36	Very Poor	65	65	X
Taxiway A-3	33	33	Very Poor	65	65	X

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	64	Fair		
Taxiway	55	Poor		
Apron	62	Fair		
All (Weighted)	61	Fair		

Table III: Condition Summary by Pavement Rank

Rank*	Average Area- Weighted PCI	Condition Rating		
Primary	56	Fair		
Secondary	N/A	N/A		
Tertiary	N/A	N/A		
All (Weighted)	56	Fair		

^{*}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 Clearwater Airpark, include: Center Apron, Run-Up Apron at RW 34, Runway 16-34, Taxiway A, Taxiway A-2, Taxiway A-3 and Apron at T-Hangar 1. These pavement sections exhibit distresses which justify mill and overlay rehabilitation or full pavement reconstruction. The immediate needs are summarized in Table IV below.

Table IV: Immediate Major M&R Needs

Kranch Name		Surface Type	Section Area (ft ²)			M&R Activity	PCI After M&R
Center Apron	4405	AC	16,498	\$315,559.83	29	Reconstruction	100
Center Apron	4410	AC	17,175	\$79,003.26	58	Mill and Overlay	100
Run-Up Apron at RW 34	5105	AC	1,446	\$11,333.40	44	Mill and Overlay	100
Apron at T-Hangars 1	4305	AC	32,026	\$121,391.79	60	Mill and Overlay	100
Apron at T-Hangars 1	at T-Hangars 1 4310 AC 1		12,550	\$98,368.05	44	Mill and Overlay	100
Runway 16-34	6105	AC	15,000	000 \$105,430.85 52 Mill and Over		Mill and Overlay	100
Runway 16-34	6110	AAC	224,775	\$594,538.82	64	Mill and Overlay	100
Taxiway Alpha	105	AAC	78,329	\$487,137.45	54	Mill and Overlay	100
Taxiway Alpha	110	AC	14,667	\$67,469.17	58	Mill and Overlay	100
Taxiway Alpha	130	AC	27,298	\$125,570.20	58	Mill and Overlay	100
Taxiway Alpha	135	AC	22,265	\$156,493.33	52	Mill and Overlay	100
Taxiway A-2	120	AAC	6,567	\$88,535.23	35	Reconstruction	100
Taxiway A-3	125	AAC	6,967	\$117,531.22	32	Reconstruction	100
			\$2,368,362.60	49		100	

^{*} 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

Year	Preventative	Major M&R	Total Year Cost
2012	\$44,233.43	\$2,368,362.61	\$2,412,596.04
2013	\$22,654.29	\$101,705.11	\$124,359.40
2014	\$21,296.66	\$42,091.84	\$63,388.50
2015	\$18,804.50	\$71,503.87	\$90,308.37
2016	\$25,093.09	\$57,956.15	\$83,049.24
2017	\$37,554.88	\$0.00	\$37,554.88
2018	\$54,298.28	\$0.00	\$54,298.28
2019	\$57,215.87	\$117,760.96	\$174,976.83
2020	\$74,177.96	\$0.00	\$74,177.96
2021	\$90,753.73	\$0.00	\$90,753.73
Total	\$446,082.69	\$2,759,380.54	\$3,205,463.23

Note: Costs are adjusted for inflation.

The implementation of the 10-Year Major M&R Plan is expected to provide an improvement in the overall condition of the airfield pavement, where the area-weighted PCI would increase from 61 in 2012 to 79 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 Clearwater Airpark pavements in 2021 may remain near 79. 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 Clearwater 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, MACTEC Engineering and Consulting 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) 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 provided 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 Engineering and Consulting 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.

GOOD **SATISFACTORY** \$1.00 FOR REHABILIATION FAIR **HERE POOR** SIGNIFICANT DROP IN CONDITION **VERY POOR** WILL COST \$7.00 TO \$10.00* HERE **SERIOUS SMALL % OF PAVEMENT LIFE FAILED** TIME

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 ± 2000 square feet for AC-surfaced pavements and 20 ± 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			AC Pavements PCC Pavements				
NI	n		NI	n			
N	Runway	Others	N	Runway	Others		
1-4	1	1	1-3	1	1		
5-10	2	1	4-6	2	1		
11-15	3	2	7-10	3	2		
16-30	5	3	11-15	4	2		
31-40	7	4	16-20	5	3		
41-50	8	5	21-30	7	3		
<u>≥</u> 51	20% but ≤20	10% but ≤10	31-40	8	4		
	_	_	41-50	10	5		
			<u>></u> 51	20% but <u><</u> 20	10% but <u><</u> 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 nonrepresentive 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

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

<u>Base Course</u> - 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.

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

<u>Branch ID</u> - A short form identification for the pavement Branch. In this report, Branch includes the common designation for the item e.g. RW 18-36.

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

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

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

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

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

<u>Global M&R</u> - 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.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

<u>Section ID</u> - 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.

<u>Statewide Airfield Pavement Management Program (SAPMP)</u> – The Statewide Airfield Pavement Management Program is a program implemented in 1992 by the Florida Department of Transportation to plan, schedule, and design the maintenance and rehabilitation activities

necessary for the airfield pavement on Florida's public airports to allow the airports to operate efficiently, economically, and without excessive down time.

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

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

2. NETWORK DEFINITION AND PAVEMENT INVENTORY

Clearwater Airpark (CLW) consists of one runway with a parallel taxiway, taxiway connectors, aprons and hangars. Runway 16-34 is 75-ft wide by 3,500-ft long. Runway 16-34 is served by parallel Taxiway A and multiple taxiway connectors. The Airport has hangar and apron facilities on the east side of the property. The Airport runways, taxiways and aprons are constructed of asphalt concrete pavement and asphalt overlay on asphalt concrete pavement. This airport is designated as a Regional Reliever and is located in District 7 of the Florida Department of Transportation.

Clearwater Airpark officially opened in 1939 as a city-owned public-use airport. The airpark offers a flight school and the majority of the aircrafts servicing there are single-engine. The airpark sees approximately 50,000 aircraft operations each year.

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.

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 Clearwater 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

Construction Year	Location	Work Type / Pavement Section
2011	North of North Apron	Apron / New Asphalt

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 42 sample units.

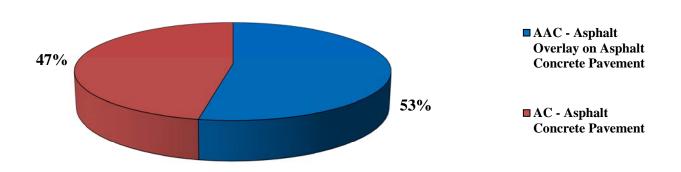
The total airfield pavement area in 2011 at Clearwater Airpark is 608,300 square feet. The breakdown of pavement area for each pavement use is provided in Table 2-2.

Table 2-2: Pavement Area by Pavement Use

Use	Area (ft²)	% of Total Area		
Runway	254,775	42%		
Taxiway	175,560	29%		
Apron	177,965	29%		
All (Weighted)	608,300	100%		

Figure 2-1 presents the breakdown of the pavement area at Clearwater 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

Branch Name	Branch ID	Section ID	True Area (ft²)	Section Rank	Surface Type	Last Const. Date	Total Samples Inspected	Total Samples
Center Apron	AP CENTER	4405	16,498	P	AC	1/1/2003	1	1
Center Apron	AP CENTER	4410	17,175	P	AC	1/1/2003	1	1
North Apron	AP N	4505	36,200	P	AC	1/1/2003	1	1
Run-Up Apron at RW 34	AP RU RW34	5105	1,446	P	AC	1/1/2003	1	9
Apron at T-Hangars 1	AP T-HAN 1	4305	32,026	P	AC	1/1/2003	3	3
Apron at T-Hangars 1	AP T-HAN 1	4310	12,550	P	AC	1/1/2003	1	1
Apron at T-Hangars 2	AP T-HAN 2	4105	37,331	P	AC	1/1/2003	3	8
Apron at T-Hangars 3	AP T-HAN 3	4205	24,739	P	AC	1/1/2003	3	6
Runway 16-34	RW 16-34	6105	15,000	P	AC	1/1/2003	1	1
Runway 16-34	RW 16-34	6110	224,775	P	AAC	1/1/2003	12	56
Runway 16-34	RW 16-34	6120	15,000	P	AC	1/1/2003	1	3
Taxiway A	TW A	105	78,329	P	AAC	1/1/2003	5	24
Taxiway A	TW A	110	14,667	P	AC	1/1/2003	1	4
Taxiway A	TW A	130	27,298	P	AC	1/1/2003	2	5
Taxiway A	TW A	135	22,265	P	AC	1/1/2003	2	5
Taxiway A	TW A	140	12,540	P	AC	1/1/2003	1	1
Taxiway A-1	TW A-1	115	6,928	P	AAC	1/1/2003	1	1
Taxiway A-2	TW A-2	120	6,567	P	AAC	1/1/2003	1	2
Taxiway A-3	TW A-3	125	6,967	P	AAC	1/1/2003	1	2

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 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		
Source: U.S	. Army CERL, FDOT Airfield Inspecti	on Reference Manual		

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 Clearwater Airpark were performed in December 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 Clearwater Airpark is 61, representing a fair overall network condition.

Overall the airport exhibited pavement distresses associated with subgrade quality, climate and age distresses. Asphalt Concrete pavement distresses include; oil spillage, patching, weathering/raveling, depression, block cracking, longitudinal and transverse cracking and swelling.

The asphalt pavement on Runway 16-34 exhibited low and medium severity longitudinal/transverse cracking, low and medium severity weathering/raveling, low severity patching, low severity block cracking and low severity swelling. These are climate, age related distresses. Runway 16-34 has a PCI range of 53-69, which is considered below critical.

Taxiway A pavements exhibited medium severity patching, low severity swelling, low severity block cracking, low and high severity longitudinal/transverse cracking, low and medium severity weathering and raveling. These are climate and age related distresses. Taxiway Alpha has a PCI range of 53-69, which is considered below critical.

Taxiway A-3, A-2 and Center Apron pavements exhibited low and medium severity longitudinal/transverse cracking, low severity block cracking and low and medium severity weathering/raveling. These are climate and age related distresses. These areas are in Very Poor condition. The Apron at T-Hangars 1 and the Run-up Apron at Runway 34 exhibited similar distresses and are in Poor condition.

The remaining aprons and taxiways appeared to be in fair to satisfactory overall condition, with the exception to a few isolated instances of low severity block cracking. Most of the other distresses consisted of low severity weathering and raveling and low severity longitudinal cracking mainly along the paving joints. This is a common distress due to the pavement being weakest at this location.

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 Clearwater Airpark.

Figure 3-1: Network PCI Distribution by Rating Category

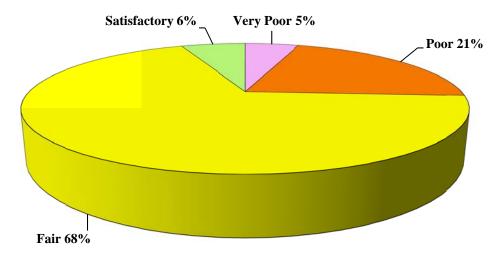


Figure 3-1a: Condition Rating Summary

Condition Rating	Total Area (ft²)	Percent
Good	0	0%
Satisfactory	36,200	6%
Fair	412,479	68%
Poor	129,589	21%
Very Poor	30,031	5%
Serious	0	0%
Failed	0	0%

Approximately 6% of the network is in Satisfactory condition while 26% of the network is in Poor and Very Poor condition. Table 3-3 illustrates the area-weighted PCI computed individually for each pavement use.

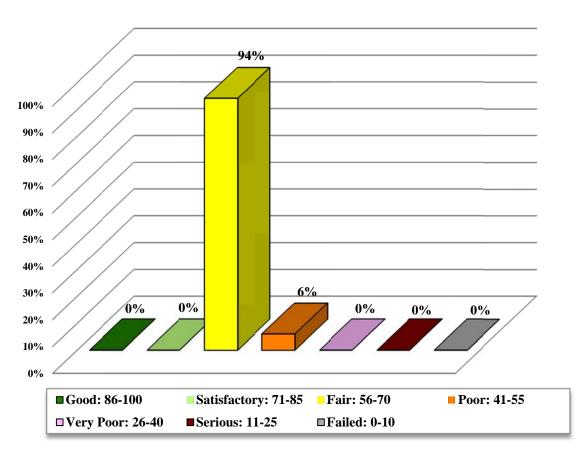
Table 3-3: Condition by Pavement Use

Use	Average Area- Weighted PCI	Condition Rating		
Runway	64	Fair		
Taxiway	55	Poor		
Apron	62	Fair		
All (Weighted)	61	Fair		

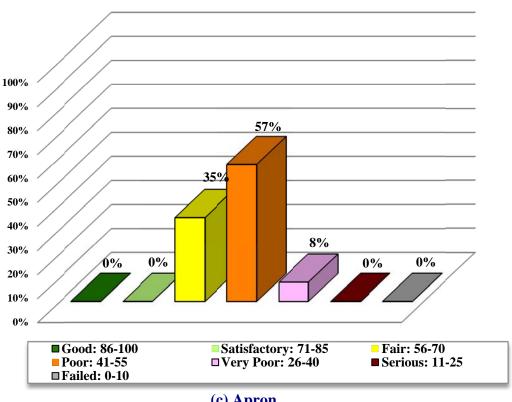
Figure 3-2 presents the breakdown of PCI by range for each pavement use.

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

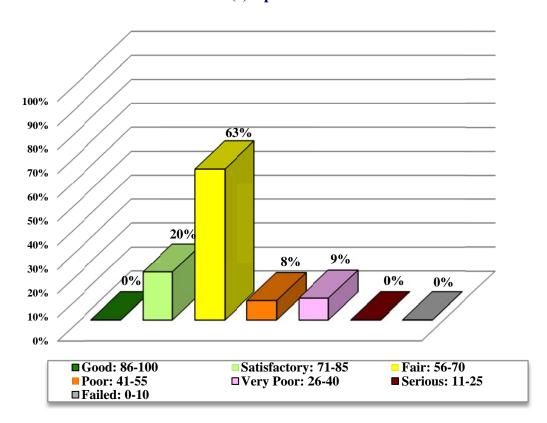




(b) Taxiway



(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 Clearwater 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 Regional Reliever (RL) airports.

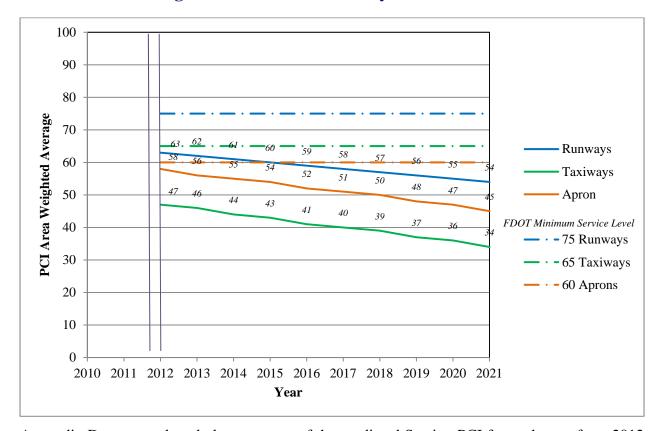


Figure 4-1: Predicted PCI by Pavement Use

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 Regional Reliever 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				Code	Work Unit
	Alligator Crack	M, H	Patching - AC Deep	PA-AD	SqFt
AC	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
	Davidina /	L	Surface Sealing - Rejuvenating	SS-RE	SqFt
	Raveling / Weathering	M	Surface Seal - Coal Tar	SS-CT	SqFt
	Weathering	Н	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	elling M, H Patching - AC Deep		PA-AD	SqFt
	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	Н	Slab Replacement – PCC	SL-PC	SqFt
	Durability Clack	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
PCC	Large Patch	M, H	Patching - PCC Full Depth	PA-PF	SqFt
rcc	Popouts	N/A	No Localized M&R	NONE	N/A
	Pumping	N/A	No Localized M&R	NONE	N/A
	Scaling	Н	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 Regional Reliever 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 Regional Reliever Airports.

Table 5-3: FDOT Minimum Service Level PCI for Regional Reliever 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 Regional Reliever Airports based on PCI value.

Table 5-4: M&R Activities for Regional Reliever Airports

	Activity	PCI Range			
Maintenance	Maintenance Crack Sealing and Full-Depth Patching				
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

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

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 Regional Reliever Airports

	Activity	PCI Trigger	Cost/SqFt
Maintenance	Crack Sealing and Full-Depth Patching	90	\$0.10
Wantenance	Crack Searing and Fun-Depth I atching	80	\$0.40
Rehabilitation		70	\$0.90
	Mill and Overlay (AC) or Concrete Pavement Restoration (PCC)	60	\$3.68
		50	\$7.61
		40	\$18.57
	Reconstruction	30	\$18.57
	Reconstruction	20	\$18.57

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

Branch Name	Section ID	Surface Type	Section Area (ft ²)	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
Center Apron	4405	AC	16,498	\$315,559.83	29	Reconstruction	100
Center Apron	4410	AC	17,175	\$79,003.26	58	Mill and Overlay	100
Run-Up Apron at RW 34	5105	AC	1,446	\$11,333.40	44	Mill and Overlay	100
Apron at T-Hangars 1	4305	AC	32,026	\$121,391.79	60	Mill and Overlay	100
Apron at T-Hangars 1	4310	AC	12,550	\$98,368.05	44	Mill and Overlay	100
Runway 16-34	6105	AC	15,000	\$105,430.85	52	Mill and Overlay	100
Runway 16-34	6110	AAC	224,775	\$594,538.82	64	Mill and Overlay	100
Taxiway Alpha	105	AAC	78,329	\$487,137.45	54	Mill and Overlay	100
Taxiway Alpha	110	AC	14,667	\$67,469.17	58	Mill and Overlay	100
Taxiway Alpha	130	AC	27,298	\$125,570.20	58	Mill and Overlay	100
Taxiway Alpha	135	AC	22,265	\$156,493.33	52	Mill and Overlay	100
Taxiway A-2	120	AAC	6,567	\$88,535.23	35	Reconstruction	100
Taxiway A-3	125	AAC	6,967	\$117,531.22	32	Reconstruction	100
					49		100

^{*} Costs are adjusted for inflation.

FDOT recognizes that the costs attributed to the aforementioned 'Major Activity' of performing a pavement 'Mill and Overlay' may conflict with budgetary constraints. Table 6-2 presents an alternative minor rehabilitative activity to the mid-range performing pavements. The alternative activity is performing a 'Microsurfacing/Slurry Seal' to the pavement to retard the degradation of the facility until funding is available for a 'Mill and Overlay' activity.

Table 6-2: Summary of Immediate Major M&R Needs Option No. 2

Branch Name	Section ID	Surface Type	Section Area (ft ²)	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
Center Apron	4405	AC	16,498	\$315,559.83	29 Reconstruction		100
Center Apron	4410	AC	17,175	\$11,163.55	58	Microsurfacing	100
Run-Up Apron at RW 34	5105	AC	1,446	\$939.84	44	Microsurfacing	100
Apron at T-Hangars 1	4305	AC	32,026	\$20,816.97	60	Microsurfacing	100
Apron at T-Hangars 1	4310	AC	12,550	\$8,157.28	44	Microsurfacing	100
Runway 16-34	6105	AC	15,000	\$9,750.00	52	Microsurfacing	100
Runway 16-34	6110	AAC	224,775	\$146,103.75	64	Microsurfacing	100
Taxiway Alpha	105	AAC	78,329	\$50,913.66	54	Microsurfacing	100
Taxiway Alpha	110	AC	14,667	\$9,533.73	58	Microsurfacing	100
Taxiway Alpha	130	AC	27,298	\$17,743.69	58	Microsurfacing	100
Taxiway Alpha	135	AC	22,265	\$14,472.14	52	Microsurfacing	100
Taxiway A-2	120	AAC	6,567	\$88,535.23	35	Reconstruction	100
Taxiway A-3	125	AAC	6,967	\$117,531.22	32	Reconstruction	100
		-		\$811,220.88	49		100

^{*} 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 6-3: 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
North Apron	AP N	4505	WEATH/RAVEL	L	Surface Seal - Rejuvenating	18,100.00	SqFt	\$0.40	\$7,240.06
Apron at T-Hangars 2	AP T-HAN 2	4105	WEATH/RAVEL	L	Surface Seal - Rejuvenating	36,680.50	SqFt	\$0.40	\$14,672.31
Apron at T-Hangars 3	AP T-HAN 3	4205	L & T CR	M	Crack Sealing - AC	155.80	Ft	\$2.25	\$350.45
Apron at T-Hangars 3	AP T-HAN 3	4205	WEATH/RAVEL	L	Surface Seal - Rejuvenating	24,737.80	SqFt	\$0.40	\$9,895.19
Runway 16-34	RW 16-34	6120	WEATH/RAVEL	L	Surface Seal - Rejuvenating	7,499.90	SqFt	\$0.40	\$3,000.00
Taxiway Alpha	TW A	140	WEATH/RAVEL	L	Surface Seal - Rejuvenating	12,540.00	SqFt	\$0.40	\$5,016.03
Taxiway A-1	TW A-1	115	WEATH/RAVEL	L	Surface Seal - Rejuvenating	6,927.50	SqFt	\$0.40	\$2,771.03
	Total =					\$42,945.07			

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.

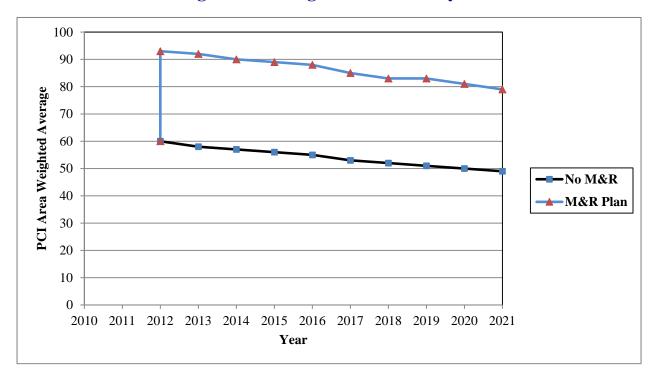


Figure 6-1: Budget Scenario Analysis

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

- The PCI will deteriorate from an average of 60 in 2012 to an average of 49 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 79 through the 10-year analysis period under the unlimited budget scenario. A 2021 PCI average of 79 with this scenario is 30 PCI points higher than a "No M&R" scenario. The total cost for Major M&R over this 10-year period is about \$2.8 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	\$44,233.43	\$2,368,362.61	\$2,412,596.04
2013	\$22,654.29	\$101,705.11	\$124,359.40
2014	\$21,296.66	\$42,091.84	\$63,388.50
2015	\$18,804.50	\$71,503.87	\$90,308.37
2016	\$25,093.09	\$57,956.15	\$83,049.24
2017	\$37,554.88	\$0.00	\$37,554.88
2018	\$54,298.28	\$0.00	\$54,298.28
2019	\$57,215.87	\$117,760.96	\$174,976.83
2020	\$74,177.96	\$0.00	\$74,177.96
2021	\$90,753.73	\$0.00	\$90,753.73
Total	\$446,082.69	\$2,759,380.54	\$3,205,463.23

Note: Costs are adjusted for inflation.

Approximately 86% 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:

- Center Apron Asphalt pavement mill and overlay along with reconstruction
- Run-up Apron at Runway 34 Asphalt pavement mill and overlay activity
- **Apron at T-Hangars 1** Asphalt pavement mill and overlay activity
- Runway 16-34 Asphalt pavement mill and overlay activity
- **Taxiway A** Asphalt pavement mill and overlay activity
- Taxiway A-2 Asphalt pavement reconstruction
- Taxiway A-3 Asphalt pavement reconstruction

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 Clearwater Airpark, and a 10-year M&R plan was developed based on the unlimited funding scenario.

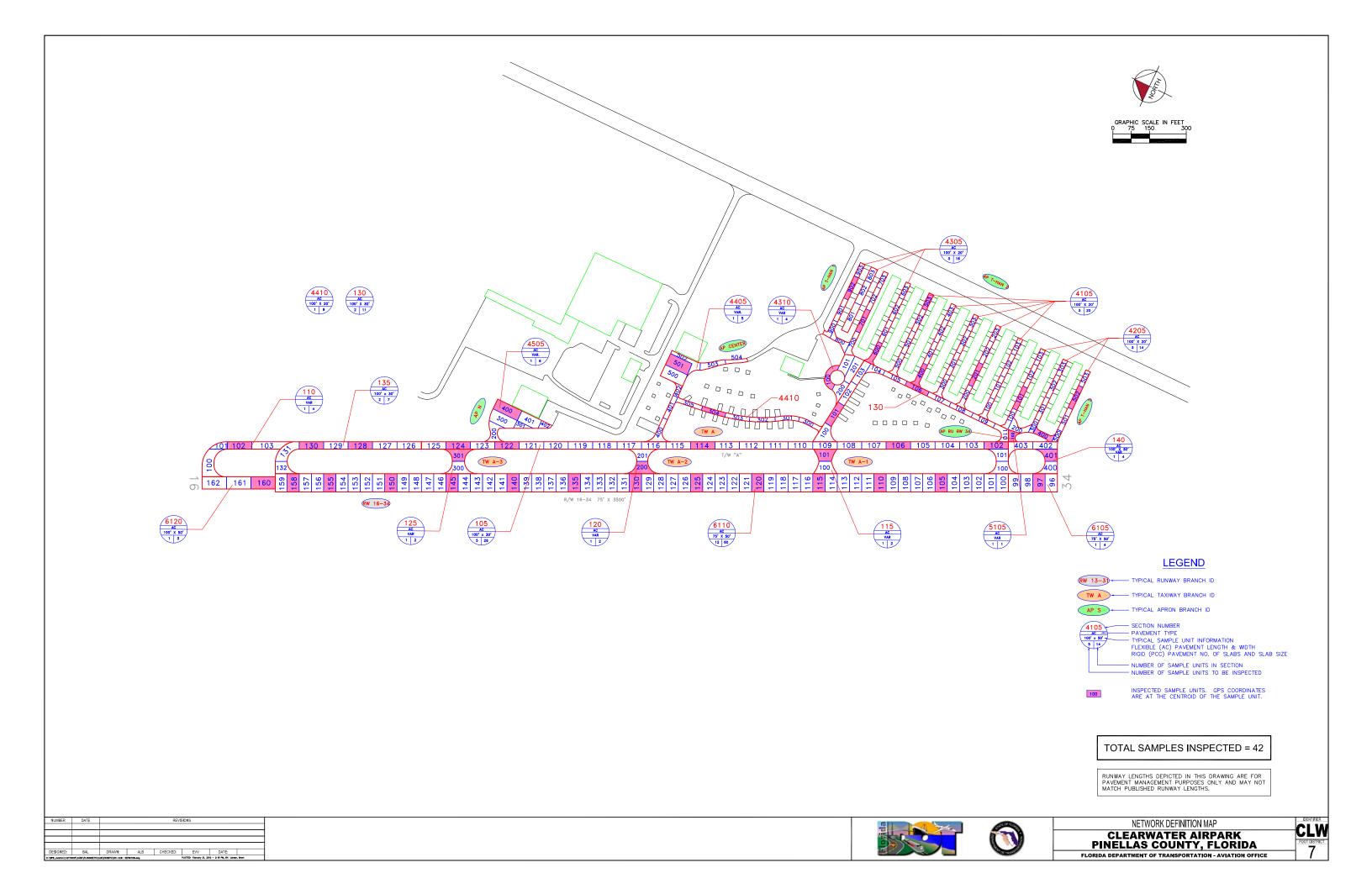
The following recommendations were made based on the 2011 condition inspection and M&R analysis results:

- Center Apron Asphalt pavement mill and overlay along with reconstruction
- **Run-up Apron at Runway 34** Asphalt pavement mill and overlay activity
- **Apron at T-Hangars 1** Asphalt pavement mill and overlay activity
- **Runway 16-34** Asphalt pavement mill and overlay activity
- **Taxiway A** Asphalt pavement mill and overlay activity
- Taxiway A-2 Asphalt pavement reconstruction
- Taxiway A-3 Asphalt pavement reconstruction

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

APPENDIX A

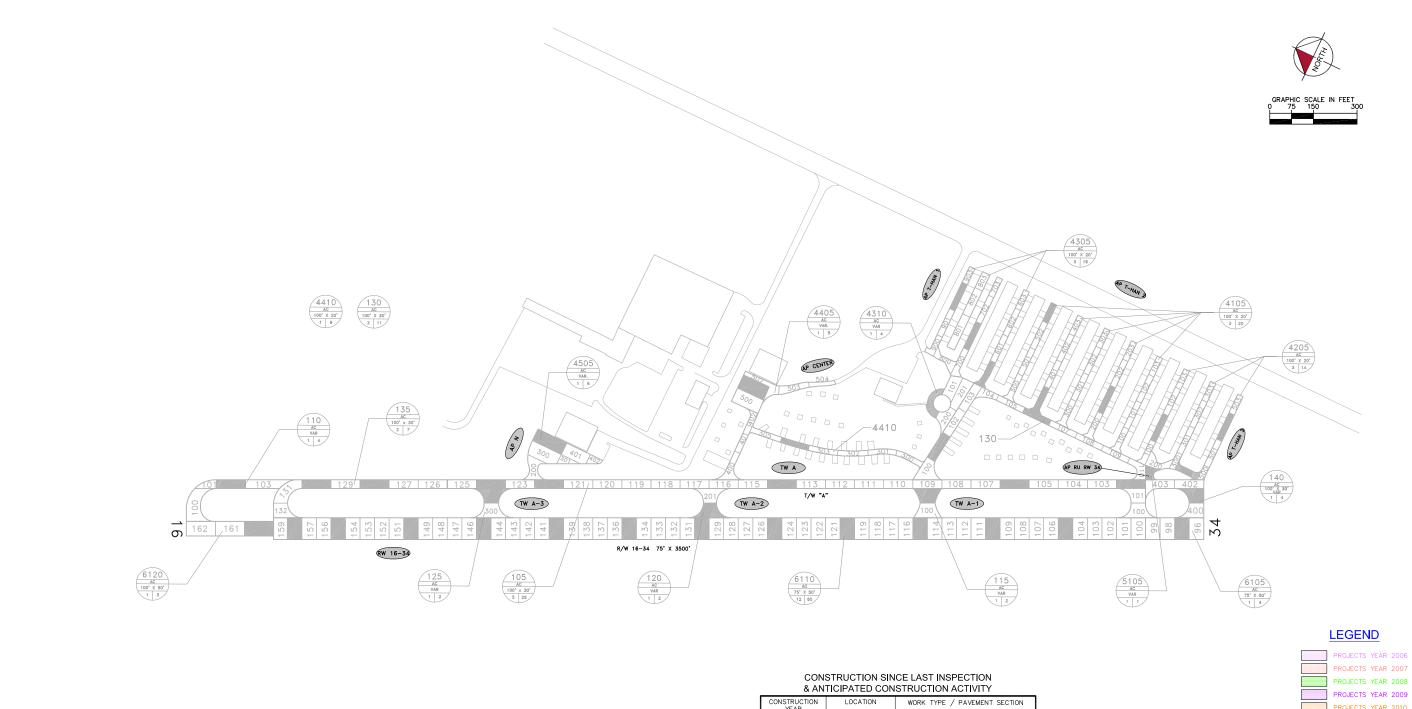
NETWORK DEFINITION MAP SYSTEM INVENTORY MAP PAVEMENT INVENTORY TABLE WORK HISTORY REPORT



Sample Unit Centroid Coordinates

Branch	Section	Sample	Latitude	Longitude
RW 16-34	6120	160	27.98017025	-82.7606681
RW 16-34	6110	105	27.97330347	-82.75693654
RW 16-34	6110	110	27.97392278	-82.75727306
RW 16-34	6110	115	27.97454208	-82.75760959
RW 16-34	6110	120	27.97516138	-82.75794611
RW 16-34	6110	125	27.97578068	-82.75828265
RW 16-34	6110	130	27.97639998	-82.75861918
RW 16-34	6110	135	27.97701928	-82.75895572
RW 16-34	6110	140	27.97763857	-82.75929227
RW 16-34	6110	145	27.97825787	-82.75962882
RW 16-34	6110	150	27.97887717	-82.75996537
RW 16-34	6110	155	27.97949646	-82.76030192
RW 16-34	6110	158	27.97986804	-82.76050386
RW 16-34	6105	97	27.97231259	-82.75639811
AP RU RW 34	5105	102	27.97281063	-82.75601083
AP N	4505	400	27.97805255	-82.75849061
TW AP CENTER	4410	304	27.97595558	-82.75737713
AP T-HANG	4310	100	27.97486949	-82.75630707
AP T-HANG	4305	600	27.97461187	-82.75583003
AP T-HANG	4305	701	27.97488889	-82.75551901
AP T-HANG	4305	902	27.97516817	-82.75520642
AP T-HANG	4205	502	27.97235989	-82.7552222
AP T-HANG	4205	400	27.97249385	-82.75582724
AP T-HANG	4205	101	27.97291949	-82.75553539
AP T-HANG	4105	201	27.97348345	-82.7555105
AP T-HANG	4105	400	27.97404302	-82.75582836
AP T-HANG	4105	503	27.97432504	-82.75494246
TW A	140	401	27.97234252	-82.7560173
TW A	135	128	27.97936967	-82.75970672
TW A	135	130	27.9798651	-82.75997596
TW T-HANG	130	106	27.97400853	-82.75599399
TW T-HANG	130	101	27.97471884	-82.75674019
TW A3	125	301	27.97832985	-82.75926544
TW A2	120	200	27.97640145	-82.75841967
TW A1	115	101	27.97461604	-82.75725153
TW A	110	102	27.98059227	-82.76037114
TW A	105	102	27.97292894	-82.75620677

Branch	Section	Sample	Latitude	Longitude
TW A	105	106	27.97391983	-82.75674519
TW A	105	114	27.9759016	-82.75782208
TW A	105	122	27.97788335	-82.758899
TW A	105	124	27.97837879	-82.75916824



CONSTRUCTION YEAR	LOCATION	WORK TYPE / PAVEMENT SECTION
2011	NORTH OF NORTH APRON	APRON / NEW ASPHALT

PROJECTS YEAR 2007 PROJECTS YEAR 2008 PROJECTS YEAR 2009 PROJECTS YEAR 2010 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.

 DESIGNED:
 BAL
 DRAWN:
 ALB
 CHECKED:
 EVV
 DATE:

 K (MP_Anterior) VGTP3007(ACRO/EXTRICATINGAN_CAS-HOSTORY.Adj
 ROTTOR Fillering 71, 2012 – 319 PM, 811 (Lense, CAS)
 ROTTOR Fillering 71, 2012 – 319 PM, 811 (Lense, CAS)
 ROTTOR Fillering 71, 2012 – 319 PM, 811 (Lense, CAS)





SYSTEM INVENTORY MAP CLEARWATER AIRPARK PINELLAS COUNTY, FLORIDA FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE



Table A-1: Pavement Inventory

Branch Name	Branch ID	Branch Use	Section ID	Length (ft)	Width (ft)	True Area (ft²)	Section Rank	Surface Type	Last Const. Date	Last Insp. Date	Total Samples
Center Apron	AP CENTER	APRON	4405	120	100	16,498	P	AC	1/1/2003	11/29/2011	1
Center Apron	AP CENTER	APRON	4410	625	25	17,175	P	AC	1/1/2003	11/29/2011	1
North Apron	AP N	APRON	4505	200	100	36,200	P	AC	1/1/2003	7/25/2007	1
Run-Up Apron at RW 34	AP RU RW34	APRON	5105	50	30	1,446	P	AC	1/1/2003	11/29/2011	9
Apron At T-Hangars 1	AP T-HAN 1	APRON	4305	1500	20	32,026	P	AC	1/1/2003	11/29/2011	3
Apron At T-Hangars 1	AP T-HAN 1	APRON	4310	200	50	12,550	P	AC	1/1/2003	11/29/2011	1
Apron At T-Hangars 2	AP T-HAN 2	APRON	4105	1800	20	37,331	P	AC	1/1/2003	11/29/2011	8
Apron At T-Hangars 3	AP T-HAN 3	APRON	4205	1200	20	24,739	P	AC	1/1/2003	11/29/2011	6
Runway 16-34	RW 16-34	RUNWAY	6105	200	75	15,000	P	AC	1/1/2003	11/29/2011	1
Runway 16-34	RW 16-34	RUNWAY	6110	2997	75	224,775	P	AAC	1/1/2003	11/29/2011	56
Runway 16-34	RW 16-34	RUNWAY	6120	300	50	15,000	P	AC	1/1/2003	11/29/2011	3
Taxiway A	TW A	TAXIWAY	105	2600	30	78,329	P	AAC	1/1/2003	11/29/2011	24
Taxiway A	TW A	TAXIWAY	110	475	30	14,667	P	AC	1/1/2003	11/29/2011	4
Taxiway A	TW A	TAXIWAY	130	900	30	27,298	P	AC	1/1/2003	11/29/2011	5
Taxiway A	TW A	TAXIWAY	135	700	30	22,265	P	AC	1/1/2003	11/29/2011	5
Taxiway A	TW A	TAXIWAY	140	400	30	12,540	P	AC	1/1/2003	11/29/2011	1
Taxiway A-1	TW A-1	TAXIWAY	115	100	50	6,928	P	AAC	1/1/2003	11/29/2011	1
Taxiway A-2	TW A-2	TAXIWAY	120	100	50	6,567	P	AAC	1/1/2003	11/29/2011	2
Taxiway A-3	TW A-3	TAXIWAY	125	100	50	6,967	P	AAC	1/1/2003	11/29/2011	2

^{*} Note: If 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:12/08/2011

Work History Report

Pavement Database:

1 of 4

Network: CLW Branch: AP CENTER (CENTER APRON) Section: 4405 Surface: AC L.C.D.: 12/25/1999 Use: APRON Rank: P Length: 120.00 Ft Width: 100.00 Ft True Area: 16,498.05 SqF Work Work Thickness Major Comments Cost Date Code Description (in) M&R 01/01/2003 SS-CT Surface Seal - Coal Tar \$0 0.00 False Seal coated with GRIPFLEX 12/25/1999 INITIAL **Initial Construction** \$0 0.00 True Section: 4410 Network: CLW Branch: AP CENTER (CENTER APRON) Surface: AC **L.C.D.**: 12/15/1999 **Use**: APRON True Area: 17.174.69 SqF Rank: P Length: 625.00 Ft Width: 25.00 Ft Work Work Work Thickness Major Comments Cost Date Code Description (in) M&R 01/01/2003 SS-CT Surface Seal - Coal Tar 0.00 Seal coated with GRIPFLEX 12/15/1999 INITIAL **Initial Construction** \$0 0.00 True Network: CLW (NORTH APRON) Branch: AP N Section: 4505 Surface: AC L.C.D.: 01/01/2003 Use: APRON Rank: P Length: 200.00 Ft Width: 100.00 Ft True Area: 36.200.00 SqF Work Work Work Thickness Major Cost Comments Date Code Description (in) M&R **Initial Construction** 01/01/2003 INITIAL 2"AC/6"Crushed PCC/9"Stab Subgrade 01/01/2003 SS-CT Surface Seal - Coal Tar \$0 0.00 False Seal coated with GRIPFLEX Branch: AP RU RW33 (RUN-UP APRON AT RW 33) Section: 5105 Surface: AC L.C.D.: 01/01/1991 Use: APRON 30.00 Ft **True Area:** 1,445.90 SqF Rank: P Length: 50.00 Ft Width: Work Work Work Thickness Major Comments Cost Date Description M&R Code (in) Surface Seal - Coal Tar 01/01/2003 SS-CT \$0 0.00 False Seal coated with GRIPFLEX 01/01/1991 **IMPORTED BUILT** True EST 1991 AC PAVEMENT Branch: AP T-HAN 1 Network: CLW (APRON AT T-HANGARS 1) Section: 4305 Surface: AC L.C.D.: 12/25/1999 Use: APRON Rank: P Length: 1.500.00 Ft Width: 20.00 Ft True Area: 32.026.11 SaF Work Work Thickness **Major** Comments Cost Code Date Description (in) M&R 01/01/2003 SS-CT Surface Seal - Coal Tar \$0 0.00 False Seal coated with GRIPFLEX 12/25/1999 INITIAL **Initial Construction** \$0 0.00 True Network: CLW Branch: AP T-HAN 1 Section: 4310 (APRON AT T-HANGARS 1) Surface: AC L.C.D.: 12/25/1999 Use: APRON Rank: P Length: 200.00 Ft Width: 50.00 Ft True Area: 12,549.66 SqF Work Work Work Thickness Major Comments Cost Date Code Description (in) M&R 01/01/2003 SS-CT Surface Seal - Coal Tar \$0 0.00 False Seal coated with GRIPFLEX 12/25/1999 INITIAL **Initial Construction** \$0 0.00 True (APRON AT T-HANGARS 2) Network: CLW Section: 4105 Branch: AP T-HAN 2 Surface: AC **L.C.D.**: 01/01/1996 **Use**: APRON True Area: 37.331.32 SqF Rank: P Length: 1.800.00 Ft Width: 20.00 Ft Work Work Work Thickness Major Comments Cost M&R Date Code Description (in) 01/01/2003 SS-CT Surface Seal - Coal Tar \$0 0.00 Seal coated with GRIPFLEX 01/01/1996 **IMPORTED BUILT** EST 1996: 2" FDOT P-331 2.00 Branch: AP T-HAN 3 (APRON AT T-HANGARS 3) Network: CLW Section: 4205 Surface: AC **L.C.D.**: 01/01/1996 **Use**: APRON Rank: P Length: 1.200.00 Ft Width: 20.00 Ft True Area: 24,739.20 SqF Work Work Work Thickness Major Comments Cost M&R Date Code Description (in) 01/01/2003 SS-CT Surface Seal - Coal Tar \$0 0.00 False Seal coated with GRIPFLEX 01/01/1996 **BUILT** 1996: 2" FDOT P-331 **IMPORTED** 2.00 True 01/01/1996 **IMPORTED OVERLAY** 6.00 1996: 6" P-211 ON 9" P-160 True

Date:12/08/2011

Work History Report

2 of 4

Pavement Database:

Network: CLW (RUNWAY 16-34) **Branch**: RW 16-34 Section: 6105 Surface: AC L.C.D.: 01/01/2002 Use: RUNWAY Rank: P Length: 200.00 Ft Width: 75.00 Ft True Area: 15,000.00 SqF Work Work Thickness Major Comments Cost Date Code Description (in) M&R Seal coated with GRIPFLEX 01/01/2003 SS-CT Surface Seal - Coal Tar \$0 0.00 False 01/01/2002 INITIAL **Initial Construction** \$0 2.00 True 2"AC/6"Crushed PCC/9"Stab Subgrade (RUNWAY 16-34) Network: CLW Branch: RW 16-34 Section: 6110 Surface: AAC L.C.D.: 01/01/1991 Use: RUNWAY Rank: P Length: True Area: 224.775.00 SqF 2.997.00 Ft Width: 75.00 Ft Work Work Work Thickness Major Comments Cost Date Code Description (in) M&R 01/01/2003 SS-CT Surface Seal - Coal Tar 0.00 False Seal coated with GRIPFLEX 01/01/1991 **IMPORTED OVERLAY** True SOIL: SP **IMPORTED OVERLAY** 1991: 1.5" P-4O1 01/01/1991 1.50 True 01/01/1970 **IMPORTED** BUILT 1.00 1970: 1" AC ON 6" LIMEROCK True Branch: RW 16-34 (RUNWAY 16-34) Section: 6120 Network: CLW Surface: AC L.C.D.: 01/01/1992 Use: RUNWAY 300.00 Ft Rank: P Length: Width: 50.00 Ft True Area: 15.000.00 SaF Work Work Work Thickness Major Comments Cost Description Date Code (in) M&R 01/01/2003 Surface Seal - Coal Tar 0.00 False Seal coated with GRIPFLEX SS-CT \$0 01/01/1992 OVFRI AY SOIL SP **IMPORTED** True **BUILT** ASSUME 1992 AC RECONSTRUCTION 01/01/1992 **IMPORTED** True (TAXIWAY A) Network: CLW Branch: TW A Section: 105 Surface: AAC L.C.D.: 01/01/1991 Use: TAXIWAY Rank: P Length: 2,600.00 Ft Width: 30.00 Ft True Area: 78,328.71 SqF Work Work Work Thickness Major Comments Cost Date Code Description (in) M&R 01/01/2003 SS-CT Surface Seal - Coal Tar \$0 0.00 False Seal coated with GRIPFLEX 01/01/1991 **IMPORTED OVERLAY** SOIL TYPE: SP True **IMPORTED** 1991: 1.5" P-401 01/01/1991 **OVERLAY** 1.50 True 01/01/1970 **IMPORTED BUILT** 1970: 1" AC ON 6" LIMEROCK 1.00 True Branch: TW A (TAXIWAY A) Surface: AC Network: CLW Section: 110 L.C.D.: 01/01/1992 Use: TAXIWAY Rank: P Length: 475.00 Ft 30.00 Ft Width: True Area: 14.667.27 SqF Work Work Work Thickness Major Comments Cost Description Date Code (in) M&R Seal coated with GRIPFLEX 01/01/2003 Surface Seal - Coal Tar 0.00 SS-CT \$0 False 01/01/1992 **IMPORTED BUILT** 1992 AC PAVEMENT True 01/01/1992 **IMPORTED OVERLAY** True SOIL: SP 01/01/1984 **IMPORTED** ESTIMATE 1984 CEMENT STABILIZED **OVERLAY** True **LIMEROCK** Network: CLW Branch: TW A (TAXIWAY A) Section: 130 Surface: AC L.C.D.: 01/01/1996 Use: TAXIWAY Rank: P Length: 900.00 Ft Width: 30.00 Ft True Area: 27,297.98 SqF Work Work Work Thickness Major Comments Cost Date Code Description (in) M&R 01/01/2003 SS-CT Surface Seal - Coal Tar \$0 0.00 False Seal coated with GRIPFLEX SOIL: SP 01/01/1996 **IMPORTED OVERLAY** True 01/01/1996 **IMPORTED BUILT** 2.00 True 1996: 2" P-331 ON 6" P-211 ON 9" P-160 Network: CLW Branch: TW A (TAXIWAY A) Section: 135 Surface: AC L.C.D.: 01/01/1998 Use: TAXIWAY True Area: 22.264.83 SqF Rank: P Length: 700.00 Ft Width: 30.00 Ft Work Work Work Thickness Major Comments Cost M&R Date Code Description (in) 01/01/2003 SS-CT Surface Seal - Coal Tar \$0 0.00 Seal coated with GRIPFLEX 01/01/1998 **IMPORTED BUILT** True CONDITION/AGE FEATURE CHANGE FROM 1998 INSPECTION

Date:1	21	NA.	/20	1	1
Date. I	_	$\mathbf{U}\mathbf{U}$	\sim		- 1

Work History Report

3 of 4

		Paven	nent Database:		
01/01/1991	IMPORTED	OVERLAY			True EST 1991 AC PAVEMENT
Network: C L.C.D.: 01/01	LW Br. 1/2002 Use: TA	anch: TW A (TAXIWA XIWAY Rank: P Length:	YA) 400.00 Ft	Width:	Section: 140 Surface: AC 30.00 Ft True Area: 12.540.08 SqF
Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R Comments
01/01/2003 01/01/2002	SS-CT INITIAL	Surface Seal - Coal Tar Initial Construction	\$0 \$0	0.00 2.00	False Seal coated with GRIPFLEX True 2"AC/6"Crushed PCC/9"Stab Subgrade
Network: C L.C.D.: 01/01	LW Br 1/1991 Use: TA	anch: TW A-1 (TAXIWA XIWAY Rank: P Length:	Y A-1) 100.00 Ft	Width:	Section: 115 Surface: AAC 50.00 Ft True Area: 6.927.79 SqF
Work Date	Work Code	Work Description	Cost	Thickness (in)	Maj or M&R Comments
01/01/2003 01/01/1991 01/01/1991	SS-CT IMPORTED IMPORTED	Surface Seal - Coal Tar OVERLAY OVERLAY	\$0	0.00	False Seal coated with GRIPFLEX True SOIL: SP True 1991: AC PAVEMENT
01/01/1970	IMPORTED	BUILT		1.00	True 1970: 1" AC ON 6" LIMEROCK
01/01/1970 Network: C		anch: TW A-2 (TAXIWA	Y A-2) 100.00 Ft	1.00 Width:	Section: 120 Surface: AAC 50.00 Ft True Area: 6.566.58 SqF
01/01/1970 Network: C	LW Br	anch: TW A-2 (TAXIWA	•		Section: 120 Surface: AAC
01/01/1970 Network: C L.C.D.: 01/0^	LW Br 1/1991 Use: TA Work	anch: TW A-2 (TAXIWA XIWAY Rank:P Length: Work	100.00 Ft	Width: Thickness (in)	Section: 120 Surface: AAC 50.00 Ft True Area: 6.566.58 SqF Major
01/01/1970 Network: C L.C.D.: 01/0 Work Date 01/01/2003 01/01/1991 01/01/1991 01/01/1970 Network: C	LW Br. 1/1991 Use: TA Work Code SS-CT IMPORTED IMPORTED IMPORTED	anch: TW A-2 AXIWAY Rank: P Length: Work Description Surface Seal - Coal Tar OVERLAY OVERLAY BUILT anch: TW A-3 (TAXIWA	100.00 Ft Cost \$0	Width: Thickness (in) 0.00	Section: 120 Surface: AAC 50.00 Ft True Area: 6.566.58 SqF Major M&R Comments False Seal coated with GRIPFLEX True 1991: AC PAVEMENT True SOIL: SP
01/01/1970 Network: C L.C.D.: 01/0 Work Date 01/01/2003 01/01/1991 01/01/1991 01/01/1970 Network: C	Work Code SS-CT IMPORTED IMPORTED IMPORTED IMPORTED	anch: TW A-2 XIWAY Rank: P Length: Work Description Surface Seal - Coal Tar OVERLAY OVERLAY BUILT Anch: TW A-3 (TAXIWA	100.00 Ft Cost \$0 Y A-3)	Width: Thickness (in) 0.00	Section: 120 Surface: AAC 50.00 Ft True Area: 6.566.58 SqF Major M&R Comments False Seal coated with GRIPFLEX True 1991: AC PAVEMENT True SOIL: SP True 1970: 1" AC ON 6" LIMEROCK Section: 125 Surface: AAC

Date:12/08/2011

Work History Report

4 of 4

Pavement Database:

Summary:

Work Description	Section Count	Area Total (SqFt)	Thickness Avg (in)	Thickness STD (in)
BUILT	12	466,311.73	1.37	.52
Initial Construction	7	141,988.59	.86	1.07
OVERLAY	16	765,767.01	3.00	2.60
Surface Seal - Coal Tar	19	608,300.32	.00	.00

STD = Standard Deviation

APPENDIX B

2012 CONDITION MAP PAVEMENT CONDITION INDEX TABLE



Table B-1: Pavement Condition Index

Branch Name	Branch ID	Branch Use	Section ID	True Area (ft²)	Section Rank	Surface Type	Total Samples Inspected	Total Samples	PCI	PCI Category
Center Apron	AP CENTER	APRON	4405	16,498	P	AC	1	1	30	Very Poor
Center Apron	AP CENTER	APRON	4410	17,175	P	AC	1	1	59	Fair
North Apron	AP N	APRON	4505	36,200	P	AC	1	1	80	Satisfactory
Run-Up Apron at RW 34	AP RU RW34	APRON	5105	1,446	P	AC	1	9	45	Poor
Apron At T-Hangars 1	AP T-HAN 1	APRON	4305	32,026	P	AC	3	3	61	Fair
Apron At T-Hangars 1	AP T-HAN 1	APRON	4310	12,550	P	AC	1	1	45	Poor
Apron At T-Hangars 2	AP T-HAN 2	APRON	4105	37,331	P	AC	3	8	66	Fair
Apron At T-Hangars 3	AP T-HAN 3	APRON	4205	24,739	P	AC	3	6	68	Fair
Runway 16-34	RW 16-34	RUNWAY	6105	15,000	P	AC	1	1	53	Poor
Runway 16-34	RW 16-34	RUNWAY	6110	224,775	P	AAC	12	56	65	Fair
Runway 16-34	RW 16-34	RUNWAY	6120	15,000	P	AC	1	3	69	Fair
Taxiway A	TW A	TAXIWAY	105	78,329	P	AAC	5	24	55	Poor
Taxiway A	TW A	TAXIWAY	110	14,667	P	AC	1	4	59	Fair
Taxiway A	TW A	TAXIWAY	130	27,298	P	AC	2	5	59	Fair
Taxiway A	TW A	TAXIWAY	135	22,265	P	AC	2	5	53	Poor
Taxiway A	TW A	TAXIWAY	140	12,540	P	AC	1	1	69	Fair
Taxiway A-1	TW A-1	TAXIWAY	115	6,928	P	AAC	1	1	67	Fair
Taxiway A-2	TW A-2	TAXIWAY	120	6,567	P	AAC	1	2	36	Very Poor
Taxiway A-3	TW A-3	TAXIWAY	125	6,967	P	AAC	1	2	33	Very Poor

Note: If 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.

APPENDIX C

BRANCH CONDITION REPORT SECTION CONDITION REPORT

Date: 12 /8/2011

Branch Condition Report

Pavement Database: NetworkID: CLW

Sum Section Avg Section Number of PCI Weighted True Area Average **Branch ID** Use Average PCI Sections Length Width Standard (SqFt) PCI (Ft) (Ft) Deviation AP CENTER (CENTER APRON) 2 745.00 62.50 **APRON** 33,672.74 44.50 14.50 44.79 AP N (NORTH APRON) 200.00 100.00 36,200.00 **APRON** 80.00 0.00 80.00 AP RU RW33 (RUN-UP APRON AT 1,445.90 APRON 0.00 45.00 1 50.00 30.00 45.00 RW 33) APRON AP T-HAN 1 (APRON AT 2 1,700.00 44,575.77 8.00 56.50 35.00 53.00 T-HANGARS 1) AP T-HAN 2 (APRON AT 1,800.00 20.00 37,331.32 **APRON** 66.00 0.00 66.00 T-HANGARS 2) AP T-HAN 3 (APRON AT 1,200.00 24,739.20 **APRON** 68.00 1 20.00 68.00 0.00 T-HANGARS 3) RW 16-34 (RUNWAY 16-34) 3,497.00 254,775.00 **RUNWAY** 3 66.67 62.33 6.80 64.53 TW A (TAXIWAY A) 5 5,075.00 30.00 155,098.87 **TAXIWAY** 59.00 5.51 56.93 100.00 **TAXIWAY** 67.00 TW A-1 (TAXIWAY A-1) 1 50.00 6,927.79 67.00 0.00 TW A-2 (TAXIWAY A-2) 6,566.58 **TAXIWAY** 1 100.00 50.00 36.00 0.00 36.00 TW A-3 (TAXIWAY A-3) **TAXIWAY** 1 100.00 50.00 6,967.15 33.00 0.00 33.00

1 of 2

Branch Condition Report

Pavement Database:

Use Category	Number of Sections	Total Area (SqFt)	Arithmetic Average PCI	Average PCI STD.	Weighted Average PCI
APRON	8	177,964.93	56.75	14.86	62.56
RUNWAY	3	254,775.00	62.33	6.80	64.53
TAXIWAY	8	175,560.39	53.88	12.30	55.59
All	19	608,300.32	56.42	13.13	61.37

STD = Standard Deviation

Date: 12 /8/2011

Section Condition Report

Pavement Database:

NetworkID: CLW

Last Age **Branch ID** Section ID Last **Surface** Use Rank Lanes **True Area** PCI Inspection Αt Const. (SqFt) **Date** Inspection Date AP CENTER (CENTER APRON) Р 16,498.05 11/29/2011 **APRON** 4405 12/25/1999 AC 0 12 30.00 AP CENTER (CENTER APRON) 4410 12/15/1999 AC **APRON** Ρ 17,174.69 11/29/2011 12 59.00 AP N (NORTH APRON) **APRON** Р 0 36,200.00 07/25/2007 4 4505 01/01/2003 AC 80.00 AP RU RW33 (RUN-UP APRON AT 5105 01/01/1991 AC **APRON** Р 0 1,445.90 11/29/2011 20 45.00 RW 33) AP T-HAN 1 (APRON AT Ρ 32,026.11 11/29/2011 4305 12/25/1999 AC **APRON** 0 12 61.00 T-HANGARS 1) AP T-HAN 1 (APRON AT AC Р 4310 12/25/1999 **APRON** 0 12,549.66 11/29/2011 12 45.00 T-HANGARS 1) AP T-HAN 2 (APRON AT 4105 01/01/1996 AC **APRON** Ρ 0 37,331.32 11/29/2011 15 66.00 T-HANGARS 2) AP T-HAN 3 (APRON AT 4205 01/01/1996 AC **APRON** Ρ 0 24,739.20 11/29/2011 68.00 15 T-HANGARS 3) RW 16-34 (RUNWAY 16-34) 01/01/2002 AC **RUNWAY** Ρ 0 15,000.00 11/29/2011 9 53.00 6105 Ρ RW 16-34 (RUNWAY 16-34) 6110 01/01/1991 AAC **RUNWAY** 0 224,775.00 11/29/2011 20 65.00 RW 16-34 (RUNWAY 16-34) 6120 01/01/1992 AC **RUNWAY** Р 0 15,000.00 11/29/2011 19 69.00 Р 01/01/1991 AAC **TAXIWAY** TW A (TAXIWAY A) 105 0 78,328.71 11/29/2011 20 55.00 Ρ TW A (TAXIWAY A) 01/01/1992 **TAXIWAY** 0 14,667.27 11/29/2011 110 AC 19 59.00 TW A (TAXIWAY A) 130 01/01/1996 AC **TAXIWAY** Ρ 27,297.98 11/29/2011 15 59.00 TW A (TAXIWAY A) **TAXIWAY** Ρ 135 01/01/1998 AC 0 22,264.83 11/29/2011 13 53.00 TW A (TAXIWAY A) Ρ 140 01/01/2002 AC **TAXIWAY** 0 12,540.08 11/29/2011 9 69.00 TW A-1 (TAXIWAY A-1) 115 01/01/1991 AAC **TAXIWAY** Р 0 6,927.79 11/29/2011 20 67.00 01/01/1991 AAC **TAXIWAY** Р 0 6,566.58 11/29/2011 20 TW A-2 (TAXIWAY A-2) 120 36.00 TW A-3 (TAXIWAY A-3) 125 01/01/1991 AAC **TAXIWAY** Р 0 6,967.15 11/29/2011 20 33.00

1 of 2

Date: 12 /8/2011

Section Condition Report

on Report 2 of 2

Pavement	Database:

Age Category	Average Age At Inspection	Total Area (SqFt)	Number of Sections	Arithmetic Average PCI	PCI Standard Deviation	Weighted Average PCI
03-05	4.00	36,200.00	1	80.00	0.00	80.00
06-10	9.00	27,540.08	2	61.00	8.00	60.29
11-15	13.25	189,881.84	8	55.13	11.66	57.74
16-20	19.75	354,678.40	8	53.63	13.16	61.50
All	15.05	608,300.32	19	56.42	13.13	61.37

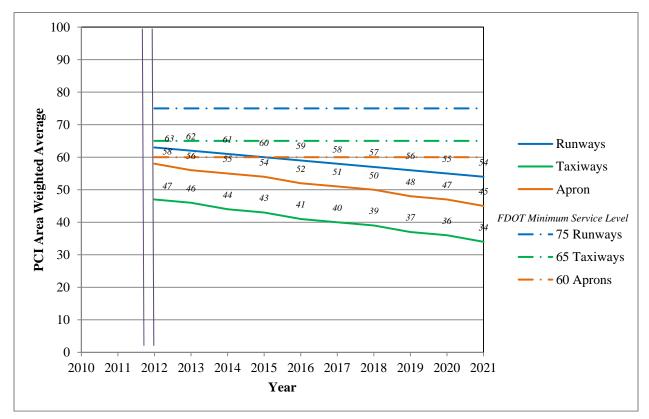
APPENDIX D

PAVEMENT CONDITION PREDICTION TABLE PREDICTED PCI BY PAVEMENT USE GRAPH

Table D-1: Pavement Condition Prediction

Down It Name	Branch ID	Section ID	Current PCI	PCI Forecast									
Branch Name				2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Center Apron	AP CENTER	4405	30	29	27	24	22	19	17	14	11	8	5
Center Apron	AP CENTER	4410	59	58	57	56	55	54	53	52	50	49	48
North Apron	AP N	4505	80	73	71	70	69	68	66	65	64	63	62
Run-Up Apron at RW 34	AP RU RW34	5105	45	44	43	41	39	38	36	34	32	30	28
Apron at T-Hangars 1	AP T-HAN 1	4305	61	60	59	58	57	56	55	54	53	51	50
Apron at T-Hangars 1	AP T-HAN 1	4310	45	44	43	41	39	38	36	34	32	30	28
Apron at T-Hangars 2	AP T-HAN 2	4105	66	65	64	63	62	61	60	59	58	57	56
Apron at T-Hangars 3	AP T-HAN 3	4205	68	67	66	65	64	63	62	61	60	59	57
Runway 16-34	RW 16-34	6105	53	52	51	50	48	47	46	45	44	43	42
Runway 16-34	RW 16-34	6110	65	64	63	62	61	60	59	58	57	56	56
Runway 16-34	RW 16-34	6120	69	68	66	64	62	60	59	57	55	54	52
Taxiway Alpha	TW A	105	55	54	52	50	49	47	45	43	42	40	38
Taxiway Alpha	TW A	110	59	58	57	56	55	54	53	52	51	50	49
Taxiway Alpha	TW A	130	59	58	57	56	55	54	53	52	51	50	49
Taxiway Alpha	TW A	135	53	52	51	50	49	48	47	46	45	44	42
Taxiway Alpha	TW A	140	69	68	67	66	65	64	63	62	61	60	59
Taxiway A-1	TW A-1	115	67	67	66	65	65	64	64	63	62	62	61
Taxiway A-2	TW A-2	120	36	35	33	31	30	28	26	24	23	21	19
Taxiway A-3	TW A-3	125	33	32	30	28	27	25	23	21	20	18	16





APPENDIX E

YEAR 1 MAINTENANCE ACTIVITIES TABLE

Table E-1: Year 1 Maintenance Activities

Branch Name	ranch Name Kranch II)		Distress Description	Distress Severity	Work Description	Work Quantity	Work Unit	Unit Cost	Work Cost
North Apron	AP N	4505	WEATH/RAVEL	L	Surface Seal - Rejuvenating	18,100.00	SqFt	\$0.40	\$7,240.06
Apron at T-Hangars 2	AP T-HAN 2	4105	WEATH/RAVEL	L	Surface Seal - Rejuvenating	36,680.50	SqFt	\$0.40	\$14,672.31
Apron at T-Hangars 3	AP T-HAN 3	4205	L & T CR	M	Crack Sealing - AC	155.80	Ft	\$2.25	\$350.45
Apron at T-Hangars 3	AP T-HAN 3	4205	WEATH/RAVEL	L	Surface Seal - Rejuvenating	24,737.80	SqFt	\$0.40	\$9,895.19
Runway 16-34	RW 16-34	6120	WEATH/RAVEL	L	Surface Seal - Rejuvenating	7,499.90	SqFt	\$0.40	\$3,000.00
Taxiway Alpha	TW A	140	WEATH/RAVEL	L	Surface Seal - Rejuvenating	12,540.00	SqFt	\$0.40	\$5,016.03
Taxiway A-1	TW A-1	115	WEATH/RAVEL	L	Surface Seal - Rejuvenating	6,927.50	SqFt	\$0.40	\$2,771.03
Total =									\$42,945.07

APPENDIX F

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

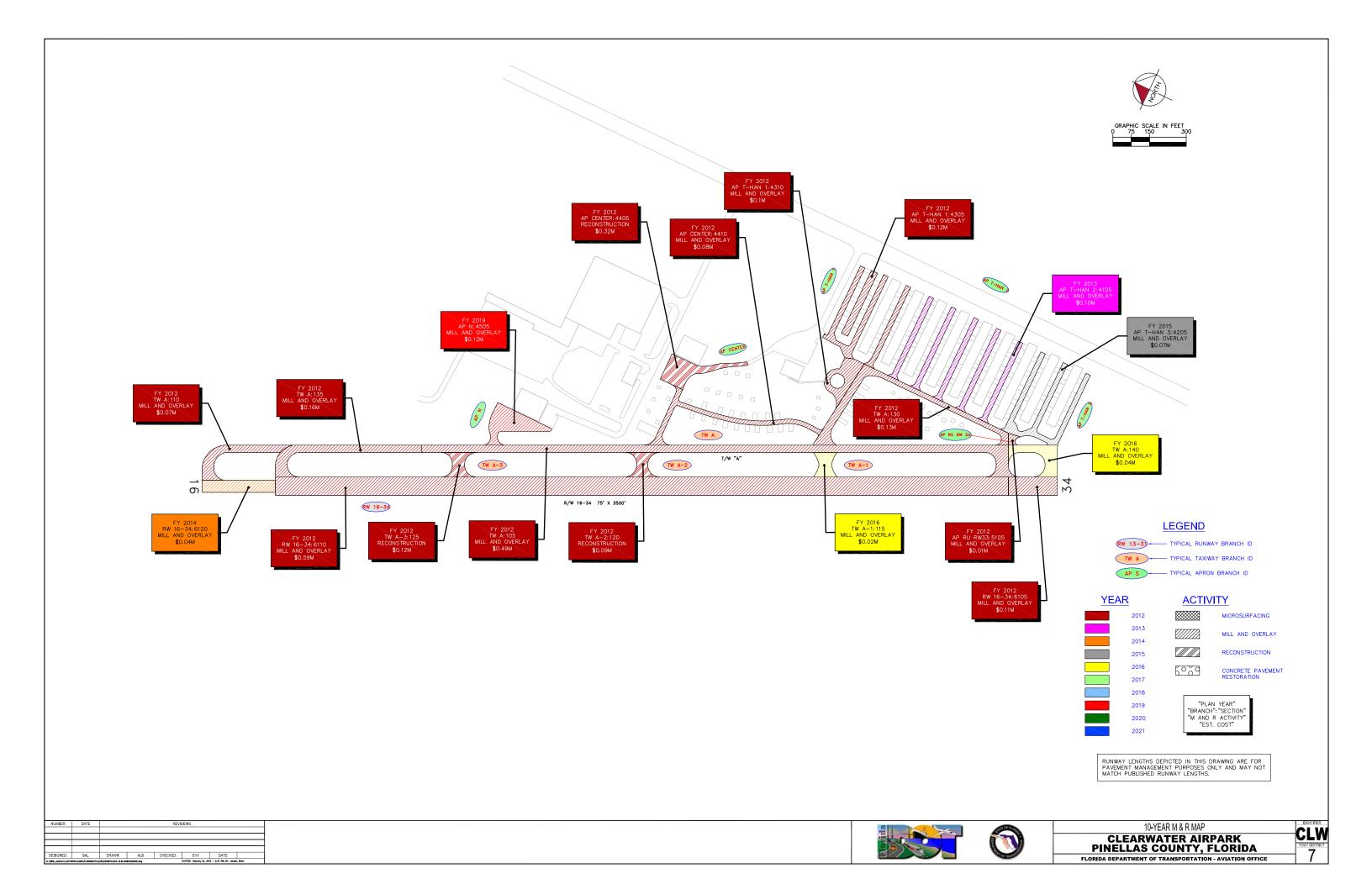
Table F-1: Major M&R Plan by Year under Unlimited Funding Scenario

Year	Branch Name	Section ID	Surface Type	Section Area (ft ²)	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2012	Center Apron	4405	AC	16,498	\$315,559.83	29	Reconstruction	100
2012	Center Apron	4410	AC	17,175	\$79,003.26	58	Mill and Overlay	100
2012	Run-Up Apron at RW 34	5105	AC	1,446	\$11,333.40	44	Mill and Overlay	100
2012	AP at T-Hangars 1	4305	AC	32,026	\$121,391.79	60	Mill and Overlay	100
2012	AP at T-Hangars 1	4310	AC	12,550	\$98,368.05	44	Mill and Overlay	100
2012	Runway 16-34	6105	AC	15,000	\$105,430.85	52	Mill and Overlay	100
2012	Runway 16-34	6110	AAC	224,775	\$594,538.82	64	Mill and Overlay	100
2012	Taxiway A	105	AAC	78,329	\$487,137.45	54	Mill and Overlay	100
2012	Taxiway A	110	AC	14,667	\$67,469.17	58	Mill and Overlay	100
2012	Taxiway A	130	AC	27,298	\$125,570.20	58	Mill and Overlay	100
2012	Taxiway A	135	AC	22,265	\$156,493.33	52	Mill and Overlay	100
2012	Taxiway A-2	120	AAC	6,567	\$88,535.23	35	Reconstruction	100
2012	Taxiway A-3	125	AAC	6,967	\$117,531.22	32	Reconstruction	100
2013	AP at T-Hangars 2	4105	AC	37,331	\$101,705.11	64	Mill and Overlay	100
2014	Runway 16-34	6120	AC	15,000	\$42,091.84	64	Mill and Overlay	100
2015	AP at T-Hangars 3	4205	AC	24,739	\$71,503.87	64	Mill and Overlay	100
2016	Taxiway A	140	AC	12,540	\$37,332.01	64	Mill and Overlay	100
2016	Taxiway A-1	115	AAC	6,928	\$20,624.14	64	Mill and Overlay	100
2019	North Apron	4505	AC	36,200	\$117,760.96	64	Mill and Overlay	100
				Total	\$2,759,380.53	54		100

^{*} Costs are adjusted for inflation.

APPENDIX G

10-YEAR M&R MAP



APPENDIX H

PHOTOGRAPHS



Runway 16-34, Section 6110, Sample Unit 158 - Low severity (48) Longitudinal and Transverse Cracking, (52) Weathering and Raveling



Runway 16-34, Section 6110, Sample Unit 155 – Low severity (43) Block Cracking, (48) Longitudinal and Transverse Cracking



Taxiway Alpha, Section 105, Sample Unit 114 – Low severity (43) Block Cracking, High severity (48) Longitudinal and Transverse Cracking, Low severity (52) Raveling and Weathering



Taxiway Connector A-2, Section 120, Sample Unit 200 – Medium severity (48) Longitudinal and Transverse Cracking, (52) Raveling and Weathering



Apron Center, Section 4405, Sample Unit 200 - Medium severity (43) Block Cracking, Low severity (52) Raveling and Weathering



Apron T-Hangar, Section 4105, Sample Unit 201 – Low severity (48) Longitudinal and Transverse Cracking, (52) Raveling and Weathering

APPENDIX I

PCI RE-INSPECTION REPORT

Re-inspection Report

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: AP CENTER Name: CENTER APRON Use: APRON Area: 33,672.74SqFt

Section: 4405 of 2 From: - To: - Last Const.: 12/25/199

Surface: AC Family: FDOT-RL-AP-AC Zone: Category: Rank: P Area: 16,498.05SqFt Length: 120.00Ft Width: 100.00Ft

Area: 16,498.05SqFt Length: 120.00Ft V Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date11/29/2011 Total Samples: 1 Surveyed: 1

Conditions: PCI:30.00 | Inspection Comments:

Sample Number: 501 Type: R Area: 4,900.00SqFt PCI = 30

 Sample Comments:

 43 BLOCK CRACKING
 M
 4,499.96 SqFt

 52 WEATHERING/RAVELING
 M
 2,249.98 SqFt

 52 WEATHERING/RAVELING
 L
 2,249.98 SqFt

 49 OIL SPILLAGE
 N
 4.00 SqFt

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: AP CENTER Name: CENTER APRON Use: APRON Area: 33,672.74SqFt

Section: of 2 To: -4410 From: -Last Const.: 12/15/199

25.00Ft

Family: FDOT-RL-AP-AC Surface: AC Zone: Category: Rank: P Width:

Area: Length: 625.00Ft 17,174.69SqFt

Shoulder: Street Type: Grade: 0.00 Lanes: 0 Section Comments:

Last Insp. Date11/29/2011 Total Samples: 1 Surveyed: 1

Conditions: PCI:59.00 | Inspection Comments:

PCI = 59Sample Number: 304 Type: R Area: 2,000.00SqFt

Sample Comments:

43 BLOCK CRACKING L 1,999.98 SqFt 1,999.98 SqFt 52 WEATHERING/RAVELING L

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: AP N Name: NORTH APRON Use: APRON Area: 36,200.00SqFt

Section: 4505 of 1 From: - To: - Last Const.: 1/1/2003

Surface: AC Family: FDOT-RL-AP-AC Zone: Category: Rank: P Area: 36,200.00SqFt Length: 200.00Ft Width: 100.00Ft

Area: 36,200.00SqFt Length: 200.00Ft W Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date7/25/2007 Total Samples: 1 Surveyed: 1

Conditions: PCI:80.00 | Inspection Comments:

Sample Number: 400 Type: R Area: 4,950.00SqFt PCI = 80

Sample Comments:

52 WEATH/RAVEL L 2,475.00 SqFt

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: AP RU RW33 Name: RUN-UP APRON AT RW 33 Use: APRON Area: 1,445.90SqFt

Section: of 1 To: -Last Const.: 1/1/1991 5105 From: -

Family: FDOT-RL-AP-AC Zone: Surface: AC Category: Rank: P 30.00Ft

Length: Width: Area: 50.00Ft 1,445.90SqFt

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Dat(11/29/2011 Total Samples: 9 Surveyed: 1

Conditions: PCI:45.00 | Inspection Comments:

Sample Number: 1	102	Type: R	Area:	1,445.90SqFt	PCI = 45
0 1 0 4					

Sample Comments:		
48 LONGITUDINAL/TRANSVERSE CRACKING	M	86.02 Ft
43 BLOCK CRACKING	L	115.00 SqFt
48 LONGITUDINAL/TRANSVERSE CRACKING	L	41.01 Ft
43 BLOCK CRACKING	L	500.00 SqFt
52 WEATHERING/RAVELING	L	1,445.89 SqFt

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: AP T-HAN 1 Name: APRON AT T-HANGARS 1 Use: APRON Area: 44,575.77SqFt

Section: 4305 of 2 From: - To: - Last Const.: 12/25/199

Surface: AC Family: FDOT-RL-AP-AC Zone: Category: Rank: P
Area: 32,026.11SqFt Length: 1,500.00Ft Width: 20.00Ft

Area: 32,026.11SqFt Length: 1,500.00Ft V Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Dat611/29/2011 Total Samples: 3 Surveyed: 3

Conditions: PCI:61.00 | Inspection Comments:

52 WEATHERING/RAVELING

Area:	2,060.00SqFt	PCI = 52
Т.	40 01 F+	
Т —		
M	7	
L	1,999.98 SqFt	
A		DCI (0
Area:	2,000.00SqFt	PCI = 69
	2,000.00SqFt 151.04 Ft	PC1 = 69
Area:	, 1	PC1 = 69
L	151.04 Ft	PCI = 69 PCI = 62
L L	151.04 Ft 1,999.98 SqFt	
L L	151.04 Ft 1,999.98 SqFt	
	L L M L L	L 40.01 Ft L 500.00 SqFt M 32.01 Ft L 171.04 Ft L 1,999.98 SqFt

L

1,999.98 SqFt

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: AP T-HAN 1 Name: APRON AT T-HANGARS 1 Use: APRON Area: 44,575.778qFt

Section: 4310 of 2 From: - To: - Last Const.: 12/25/199

Surface: AC Family: FDOT-RL-AP-AC Zone: Category: Rank: P
Area: 12,549.66SqFt Length: 200.00Ft Width: 50.00Ft

Area: 12,549.66SqFt Length: 200.00Ft V Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Dat(11/29/2011 Total Samples: 1 Surveyed: 1

Conditions: PCI:45.00 | Inspection Comments:

Sample Number: 100 Type: R Sample Comments:	Area:	2,591.87SqFt	PCI = 45
48 LONGITUDINAL/TRANSVERSE CRACKING	L	49.01 Ft	
43 BLOCK CRACKING	L	195.00 SqFt	
50 PATCHING	M	96.00 SqFt	
50 PATCHING	M	40.00 SqFt	
48 LONGITUDINAL/TRANSVERSE CRACKING	M	59.02 Ft	
43 BLOCK CRACKING	L	1,199.99 SqFt	
52 WEATHERING/RAVELING	L	2,591.85 SqFt	

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: AP T-HAN 2 Name: APRON AT T-HANGARS 2 Use: APRON Area: 37,331.32SqFt

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

Surface: AC Family: FDOT-RL-AP-AC Zone: Category: Rank: P Area: 37,331.32SqFt Length: 1,800.00Ft Width: 20.00Ft

Area: 37,331.32SqFt Length: 1,800.00Ft V Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date11/29/2011 Total Samples: 8 Surveyed: 3

Conditions: PCI:66.00 | Inspection Comments:

Sample Number: 201 Type: R Area: 2,000.00SqFt PCI = 68

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING L 193.05 Ft

52 WEATHERING/RAVELING L 1,999.98 SqFt

Sample Number: 400 Type: R Area: 2,095.77SqFt PCI = 64

Sample Comments:

43 BLOCK CRACKING L 10.00 SqFt

48 LONGITUDINAL/TRANSVERSE CRACKING L 178.05 Ft

52 WEATHERING/RAVELING L 1,999.98 SqFt

Sample Number: 503 Type: R Area: 1,400.00SqFt PCI = 67

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING L 137.04 Ft

52 WEATHERING/RAVELING L 1,399.99 SqFt

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: AP T-HAN 3 Name: APRON AT T-HANGARS 3 Use: APRON Area: 24,739.20SqFt

Section: 4205 of 1 From: - To: - Last Const.: 1/1/1996

20.00Ft

Surface: AC Family: FDOT-RL-AP-AC Zone: Category: Rank: P

Area: 24,739.20SqFt Length: 1,200.00Ft Width:

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Dat611/29/2011 Total Samples: 6 Surveyed: 3

Conditions: PCI:68.00 | Inspection Comments:

Sample Number: 101 Sample Comments:	Type: R	Area:	2,000.00SqFt	PCI = 64
48 LONGITUDINAL/TR.	ANSVERSE CRACKING	L	45.01 Ft	
48 LONGITUDINAL/TR		L	64.02 Ft	
48 LONGITUDINAL/TR	ANSVERSE CRACKING	M	37.01 Ft	
52 WEATHERING/RAVE	LING	L	1,999.98 SqFt	
Sample Number: 400 Sample Comments:	Type: R	Area:	1,878.29SqFt	PCI = 70
10 TONCTOUDING / TO	ANCUEDCE CDACKING	т	0 00 E+	

48 LONGITUDINAL/TRANSVERSE CRACKING L 8.00 Ft

52 WEATHERING/RAVELING L 1,877.98 SqFt

Sample Number: 502 Type: R Area: 2,000.00SqFt PCI = 70

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING L 9.00 Ft 52 WEATHERING/RAVELING L 1,999.98 SqFt

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: RW 16-34 Name: RUNWAY 16-34 Use: RUNWAY Area: 254,775.00SqFt

Section: 6105 of 3 From: - To: - Last Const.: 1/1/2002

Surface: AC Family: FDOT-RL-RW-AC Zone: Category: Rank: P
Area: 15,000.00SqFt Length: 200.00Ft Width: 75.00Ft

Area: 15,000.00SqFt Length: 200.00Ft W Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date11/29/2011 Total Samples: 1 Surveyed: 1

Conditions: PCI:53.00 | Inspection Comments:

Sample Number: 97 Type: R Area: 3,750.00SqFt PCI = 53

Sample Comments:
52 WEATHERING/RAVELING M 1,874.98 SqFt

52 WEATHERING/RAVELING M 1,874.98 Sqft 52 WEATHERING/RAVELING L 1,874.98 Sqft

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK Name: RUNWAY 16-34 Use: RUNWAY Branch: RW 16-34 Area: 254,775.00SqFt Section: 6110 of 3 From: -To: -Last Const.: 1/1/1991 Surface: Family: FDOT-RL-RW-AAC Zone: Category: Rank: P AAC Area: 224,775.00SqFt Length: 2,997.00Ft Width: 75.00Ft Shoulder: Street Type: Grade: 0.00 Lanes: 0 Section Comments: Last Insp. Date11/29/2011 Total Samples: 56 Surveyed: 12 Conditions: PCI:65.00 | Inspection Comments: Sample Number: 105 Type: R Area: 3,750.00SqFt PCI = 62Sample Comments: 48 LONGITUDINAL/TRANSVERSE CRACKING 200.05 Ft \mathbf{L} 48 LONGITUDINAL/TRANSVERSE CRACKING 50.01 Ft Μ 48 LONGITUDINAL/TRANSVERSE CRACKING \mathbf{L} 7.00 Ft 56 SWELLING \mathbf{L} 12.00 SqFt 52 WEATHERING/RAVELING 3,749.97 SqFt PCI = 49Sample Number: 110 Type: R Area: 3,750.00SqFt Sample Comments: 48 LONGITUDINAL/TRANSVERSE CRACKING 200.05 Ft L 48 LONGITUDINAL/TRANSVERSE CRACKING 125.03 Ft L 48 LONGITUDINAL/TRANSVERSE CRACKING 40.01 Ft Μ 52 WEATHERING/RAVELING \mathbf{L} 3,749.97 SqFt 43 BLOCK CRACKING L 537.50 SqFt 56 SWELLING \mathbf{L} 375.00 SqFt 50 PATCHING \mathbf{L} 2.25 SqFt Sample Number: 115 PCI = 69Type: R Area: 3,750.00SqFt Sample Comments: 48 LONGITUDINAL/TRANSVERSE CRACKING \mathbf{L} 250.06 Ft 48 LONGITUDINAL/TRANSVERSE CRACKING L 69.02 Ft 52 WEATHERING/RAVELING \mathbf{L} 3,749.97 SqFt Sample Number: 120 PCI = 59Type: R Area: 3,750.00SqFt Sample Comments: 48 LONGITUDINAL/TRANSVERSE CRACKING 200.05 Ft \mathbf{L} 48 LONGITUDINAL/TRANSVERSE CRACKING Μ 50.01 Ft 43 BLOCK CRACKING L 500.00 SqFt 52 WEATHERING/RAVELING L 3,749.97 SqFt Sample Number: 125 Type: R Area: 3,750.00SqFt PCI = 100Sample Comments: <NO DISTRESSES> PCI = 54Sample Number: 130 Type: R Area: 3,750.00SqFt Sample Comments: 43 BLOCK CRACKING L 3,749.97 SqFt 52 WEATHERING/RAVELING 3,749.97 SqFt L 48 LONGITUDINAL/TRANSVERSE CRACKING T. 64.02 Ft Sample Number: 135 PCI = 58Type: R Area: 3,750.00SqFt Sample Comments: 48 LONGITUDINAL/TRANSVERSE CRACKING 36.01 Ft L 48 LONGITUDINAL/TRANSVERSE CRACKING

Μ

9.00 Ft

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Report Generated Date: 12/8/2011

Site Name:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	75.02 Ft	
52 WEATHERING/RAVELING	M		
43 BLOCK CRACKING	L	342.00 SqFt	
- BLOCK CRACKING	П	542.00 5qrc	
Sample Number: 140 Type: R Sample Comments:	Area:	3,750.00SqFt	PCI = 55
48 LONGITUDINAL/TRANSVERSE CRACKING	L	200.05 Ft	
52 WEATHERING/RAVELING	L	3,749.97 SqFt	
56 SWELLING	L	42.00 SqFt	
43 BLOCK CRACKING	L	624.99 SqFt	
48 LONGITUDINAL/TRANSVERSE CRACKING	M	=	
- LONGITODINAL/ INANSVENSE CIACITING	1.1	J0.01 FC	
Sample Number: 145 Type: R Sample Comments:	Area:	3,750.00SqFt	PCI = 58
48 LONGITUDINAL/TRANSVERSE CRACKING	L	200.05 Ft	
48 LONGITUDINAL/TRANSVERSE CRACKING	M	17.00 Ft	
52 WEATHERING/RAVELING	L	3,749.97 SqFt	
43 BLOCK CRACKING	L	312.50 SqFt	
43 BLOCK CRACKING	L	525.00 SqFt	
Sample Number: 150 Type: R Sample Comments: <no distresses=""></no>	Area:	3,750.00SqFt	PCI = 100
Sample Number: 155 Type: R Sample Comments:	Area:	3,750.00SqFt	PCI = 54
48 LONGITUDINAL/TRANSVERSE CRACKING	L	150.04 Ft	
48 LONGITUDINAL/TRANSVERSE CRACKING	_ M		
43 BLOCK CRACKING	L	1,899.98 SqFt	
52 WEATHERING/RAVELING	_ L	3,749.97 SqFt	
56 SWELLING	L	24.00 SqFt	
Sample Number: 158 Type: R		•	PCI = 64
Sample Number: 158 Type: R Sample Comments:	L	24.00 SqFt 3,750.00SqFt	PCI = 64
Sample Number: 158 Type: R Sample Comments: 48 LONGITUDINAL/TRANSVERSE CRACKING	Area:	24.00 SqFt 3,750.00SqFt 150.04 Ft	PCI = 64
Sample Number: 158 Type: R Sample Comments: 48 LONGITUDINAL/TRANSVERSE CRACKING 48 LONGITUDINAL/TRANSVERSE CRACKING	Area:	24.00 SqFt 3,750.00SqFt 150.04 Ft 63.02 Ft	PCI = 64
Sample Number: 158 Type: R Sample Comments: 48 LONGITUDINAL/TRANSVERSE CRACKING	Area:	24.00 SqFt 3,750.00SqFt 150.04 Ft	PCI = 64

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: RW 16-34 Name: RUNWAY 16-34 Use: RUNWAY Area: 254,775.00SqFt

Section: 6120 of 3 From: - To: - Last Const.: 1/1/1992

Surface: AC Family: FDOT-RL-RW-AC Zone: Category: Rank: P
Area: 15,000.00SqFt Length: 300.00Ft Width: 50.00Ft

Area: 15,000.00SqFt Length: 300.00Ft V Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date11/29/2011 Total Samples: 3 Surveyed: 1

Conditions: PCI:69.00 | Inspection Comments:

Sample Number: 160 Type: R Area: 5,000.00SqFt PCI = 69

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING L 592.15 Ft 52 WEATHERING/RAVELING L 2,499.98 SqFt

FDOT

Report Generated Date: 12/8/2011

43 BLOCK CRACKING

52 WEATHERING/RAVELING

48 LONGITUDINAL/TRANSVERSE CRACKING

Site Name:

Network: CLW Name: CLEARWATER AIR PARK Branch: TW A Name: TAXIWAY A Use: TAXIWAY Area: 155,098.87SqFt Section: 105 of 5 From: -To: -Last Const.: 1/1/1991 Surface: Family: FDOT-RL-TW-AAC Zone: Category: AAC Rank: P Width: 30.00Ft Area: 78,328.71SqFt Length: 2,600.00Ft Shoulder: Street Type: Grade: 0.00 Lanes: 0 Section Comments: Last Insp. Date11/29/2011 Total Samples: 24 Surveyed: 5 Conditions: PCI:55.00 | Inspection Comments: Sample Number: 102 Type: R Area: 3,000.00SqFt PCI = 68Sample Comments: 48 LONGITUDINAL/TRANSVERSE CRACKING L 271.07 Ft 52 WEATHERING/RAVELING \mathbf{L} 2,999.98 SqFt Sample Number: 106 PCI = 69Type: R Area: 3,000.00SqFt Sample Comments: 48 LONGITUDINAL/TRANSVERSE CRACKING L 237.06 Ft 52 WEATHERING/RAVELING 2,999.98 SqFt L Sample Number: 114 PCI = 50Type: R Area: 3,000.00SqFt Sample Comments: 48 LONGITUDINAL/TRANSVERSE CRACKING 365.09 Ft L 48 LONGITUDINAL/TRANSVERSE CRACKING 19.00 Ft Η 43 BLOCK CRACKING L 390.00 SqFt 56 SWELLING 54.00 SqFt \mathbf{L} 52 WEATHERING/RAVELING L 2,999.98 SqFt Sample Number: 122 PCI = 33Type: R 3,000.00SqFt Area: Sample Comments: 43 BLOCK CRACKING 749.99 SqFt L 43 BLOCK CRACKING L 749.99 SqFt 52 WEATHERING/RAVELING 2,999.98 SqFt Μ 48 LONGITUDINAL/TRANSVERSE CRACKING 253.06 Ft PCI = 55Sample Number: 124 Area: 3,000.00SqFt Type: R Sample Comments: 48 LONGITUDINAL/TRANSVERSE CRACKING 185.05 Ft L 48 LONGITUDINAL/TRANSVERSE CRACKING L 100.03 Ft

L

L

629.99 SqFt

53.01 Ft

2,999.98 SqFt

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: TW A Name: TAXIWAY A Use: TAXIWAY Area: 155,098.87SqFt

Section: 110 of 5 From: - To: - Last Const.: 1/1/1992

30.00Ft

Surface: AC Family: FDOT-RL-TW-AC Zone: Category: Rank: P

Area: 14,667.27SqFt Length: 475.00Ft Width: Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date11/29/2011 Total Samples: 4 Surveyed: 1

Conditions: PCI:59.00 | Inspection Comments:

Sample N	Number: 102	Type: R		Area:	3,000.00SqFt	PCI = 59	
Sample Con	nments:						
50 PAT	CHING			M	45.00	SqFt	
48 LON	GITUDINAL/T	RANSVERSE (CRACKING	L	150.04	Ft	
48 LON	GITUDINAL/T	RANSVERSE (CRACKING	L	112.03	Ft	
48 LON	GITUDINAL/T	RANSVERSE (CRACKING	M	25.01	Ft	
52 WEA'	THERING/RAV	ELING		L	2,999.98	SqFt	

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: TW A Name: TAXIWAY A Use: TAXIWAY Area: 155,098.87SqFt

Section: 130 of 5 To: -From: -Last Const.: 1/1/1996

30.00Ft

Family: FDOT-RL-TW-AC Surface: AC Zone: Category: Rank: P Width:

Area: 27,297.98SqFt Length: 900.00Ft Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date11/29/2011 Total Samples: 5 Surveyed: 2

Conditions: PCI:59.00 | Inspection Comments:

Sample Number: 101 Type: R	Area:	3,000.00SqFt	PCI = 63
Sample Comments:			
48 LONGITUDINAL/TRANSVERSE CRACKING	L	237.06 Ft	
48 LONGITUDINAL/TRANSVERSE CRACKING	M	10.00 Ft	
52 WEATHERING/RAVELING	L	2,999.98 SqFt	
45 DEPRESSION	L	1.00 SqFt	

Sample Number: 106	Type: R	Area:	2,000.00SqFt	PCI = 53
Sample Comments:				
48 LONGITUDINAL/TR	ANSVERSE CRACKING	L	311.08	Ft
43 BLOCK CRACKING		L	12.00	SqFt
48 LONGITUDINAL/TR	ANSVERSE CRACKING	M	36.01	Ft
52 WEATHERING/RAVE	LING	L	1,999.98	SqFt

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: TW A Name: TAXIWAY A Use: TAXIWAY Area: 155,098.87SqFt

Section: 135 of 5 From: - To: - Last Const.: 1/1/1998

30.00Ft

Surface: AC Family: FDOT-RL-TW-AC Zone: Category: Rank: P

Area: 22,264.83SqFt Length: 700.00Ft Width: Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date11/29/2011 Total Samples: 5 Surveyed: 2

Conditions: PCI:53.00 | Inspection Comments:

Sample Number: 128 Type: R Sample Comments:	Area:	3,000.00SqFt	PCI = 51
43 BLOCK CRACKING	L	400.00 SqFt	
48 LONGITUDINAL/TRANSVERSE CRACKING	L	213.05 Ft	
48 LONGITUDINAL/TRANSVERSE CRACKING	L	100.03 Ft	
48 LONGITUDINAL/TRANSVERSE CRACKING	L	78.02 Ft	
43 BLOCK CRACKING	L	689.99 SqFt	
52 WEATHERING/RAVELING	L	2,999.98 SqFt	
Sample Number: 130 Type: R	Area:	3,000.00SqFt	PCI = 56

Sample Number: 130 Type: R Area: 3,000.00sqrt PCI - Sample Comments:

43 BLOCK CRACKING L 1,999.98 SqFt 48 LONGITUDINAL/TRANSVERSE CRACKING L 137.04 Ft

52 WEATHERING/RAVELING L 2,999.98 Sqft

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: TW A Name: TAXIWAY A Use: TAXIWAY Area: 155,098.87SqFt

Section: of 5 To: -140 From: -Last Const.: 1/1/2002

30.00Ft

Family: FDOT-RL-TW-AC Surface: AC Zone: Category: Rank: P Width:

Area: Length: 400.00Ft 12,540.08SqFt Shoulder: Grade: 0.00 Lanes: 0

Street Type: Section Comments:

Last Insp. Date11/29/2011 Total Samples: 1 Surveyed: 1

Conditions: PCI:69.00 | Inspection Comments:

PCI = 69Sample Number: 401 Type: R Area: 3,036.50SqFt

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING L 53.01 Ft 52 WEATHERING/RAVELING 3,036.47 SqFt L

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: TW A-1 Name: TAXIWAY A-1 Use: TAXIWAY Area: 6,927.79SqFt

Section: of To: -115 1 From: -Last Const.: 1/1/1991

50.00Ft

Surface: Family: FDOT-RL-TW-AAC Zone: Category: Rank: P AAC Width:

Area: Length: 6,927.79SqFt 100.00Ft Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date11/29/2011 Total Samples: 1 Surveyed: 1

Conditions: PCI:67.00 | Inspection Comments:

PCI = 67Sample Number: 101 Type: R Area: 3,451.11SqFt

Sample Comments: 48 LONGITUDINAL/TRANSVERSE CRACKING L 150.04 Ft 48 LONGITUDINAL/TRANSVERSE CRACKING L 220.06 Ft 52 WEATHERING/RAVELING L 3,450.97 SqFt

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: TW A-2 Name: TAXIWAY A-2 Use: TAXIWAY Area: 6,566.58SqFt

Section: 120 of 1 From: - To: - Last Const.: 1/1/1991

Surface: AAC Family: FDOT-RL-TW-AAC Zone: Category: Rank: P Area: 6,566.58SqFt Length: 100.00Ft Width: 50.00Ft

Area: 6,566.58SqFt Length: 100.00Ft V Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date11/29/2011 Total Samples: 2 Surveyed: 1

Conditions: PCI:36.00 | Inspection Comments:

Inspection Comments:

Sample Number: 200 Type: R Sample Comments:	Area:	3,345.51SqFt	PCI = 36
48 LONGITUDINAL/TRANSVERSE CRACKING	L	95.02	Ft
48 LONGITUDINAL/TRANSVERSE CRACKING	M	100.03	Ft
43 BLOCK CRACKING	L	899.99	SqFt
52 WEATHERING/RAVELING	M	899.99	SqFt
52 WEATHERING/RAVELING	M	561.00	SqFt
48 LONGITUDINAL/TRANSVERSE CRACKING	L	101.03	Ft
43 BLOCK CRACKING	L	520.00	SqFt
52 WEATHERING/RAVELING	L	520.00	SqFt
48 LONGITUDINAL/TRANSVERSE CRACKING	M	61.02	Ft

FDOT

Report Generated Date: 12/8/2011

Site Name:

Network: CLW Name: CLEARWATER AIR PARK

Branch: TW A-3 Name: TAXIWAY A-3 Use: TAXIWAY Area: 6,967.15SqFt

Section: 125 of 1 From: - To: - Last Const.: 1/1/1991

50.00Ft

Surface: AAC Family: FDOT-RL-TW-AAC Zone: Category: Rank: P

Area: 6,967.15SqFt Length: 100.00Ft Width: Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date11/29/2011 Total Samples: 2 Surveyed: 1

Conditions: PCI:33.00 | Inspection Comments:

Sample Number: 301 Type: R Area: 3,471.07SqFt PCI = 33

Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING
52 WEATHERING/RAVELING
48 LONGITUDINAL/TRANSVERSE CRACKING
M
192.05 Ft