STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

AVIATION OFFICE

Statewide Airfield Pavement Management Program

Valkaria Municipal Airport– X59
(General Aviation)
Malabar, Florida
(District 5)

May 2011

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EXECUTIVE SUMMARY

In 2010, the Florida Department of Transportation (FDOT) Aviation Office selected a Consultant team consisting of Kimley-Horn and Associates and their Subconsultants, 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 Statewide Airfield Pavement Management Program (SAPMP) to be completed over fiscal years 2011 and 2012.

The tasks required to achieve this objective at Valkaria Municipal Airport 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 Valkaria Municipal Airport, and
- Provide the estimated costs associated with the suggested immediate and future M&R activities

During February 2011, the PCI survey was performed at Valkaria Municipal Airport. 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 37, representing a Very Poor 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	Condition Rating	FDOT Minimum Service Level	MicroPAVER Minimum PCI	Action Required
Apron	27	Very Poor	60	65	X
Runway 10-28	19	Serious	75	65	X
Runway 14-32	70	Fair	75	65	X
Taxiway Between Runways	42	Poor	65	65	X
Connector Taxiways to Ramp	29	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	43	Poor
Taxiway	37	Very Poor
Apron	27	Very Poor
All (Weighted)	**37**	**Very Poor**

Table III: Condition Summary by Pavement Rank

Rank*	Average Area-Weighted PCI	Condition Rating
Primary	38	Very Poor
All (Weighted)	**37**	**Very Poor**

*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 Valkaria Municipal Airport, include: Apron, Runway 10-28, Runway 14-32, Taxiway Between Runways, and Connector Taxiways to Ramp. The pavement distresses exhibited along the east end of Runway 10-28, Runway 14-32 and the Taxiway between the runways justifies mill and overlay activity. The Apron, Taxiway connectors to the ramp and the majority of Runway 10-28 justify pavement reconstruction activity. The immediate needs are summarized in Table IV below.

Table IV: Immediate Major M&R Needs

Branch Name	Section ID	Surface Type	Section Area (ft^2)	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
Apron	4105	AC	264,780	$3,606,304.77	24	Reconstruction	100
Apron	4110	ACC	15,930	$181,936.59	33	Reconstruction	100
Runway 10-28	6205	AC	300,000	$4,086,001.33	11	Reconstruction	100
Runway 10-28	6210	ACC	45,525	$105,982.27	64	Mill and Overlay	100
Runway 14-32	6115	ACC	75,000	$278,025.17	59	Mill and Overlay	100
Taxiway Between Rws	105	AC	69,770	$438,853.33	41	Mill and Overlay	100
Connector Taxiways to Ramp	205	AC	22,460	$305,905.30	28	Reconstruction	100
Connector Taxiways to Ramp	206	AC	15,420	$210,020.47	27	Reconstruction	100
			Total	**$9,213,029.23**	**36**		**100**

* Costs are adjusted for inflation.

A forecast of Major M&R needs for a 10-year period, starting from 2011, 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
2011	$51,653.03	$9,213,029.22	$9,264,682.25
2012	$45,307.79	$0.00	$45,307.79
2013	$52,062.28	$0.00	$52,062.28
2014	$55,383.89	$33,579.08	$88,962.97
2015	$62,681.73	$0.00	$62,681.73
2016	$4,209.10	$655,822.04	$660,031.14
2017	$8,538.04	$0.00	$8,538.04
2018	$15,192.61	$0.00	$15,192.61
2019	$35,429.95	$0.00	$35,429.95
2020	$48,542.09	$0.00	$48,542.09
Total	**$379,000.51**	**$9,902,430.34**	**$10,281,430.85**

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 37 in 2011 to 87 in 2020. Appendix F lists the major M&R for the 10-Year program. Appendix G graphically depicts the 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 Valkaria Municipal Airport pavements in 2020 may remain near 87. 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 Valkaria Municipal Airport 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 (MACTEC 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.

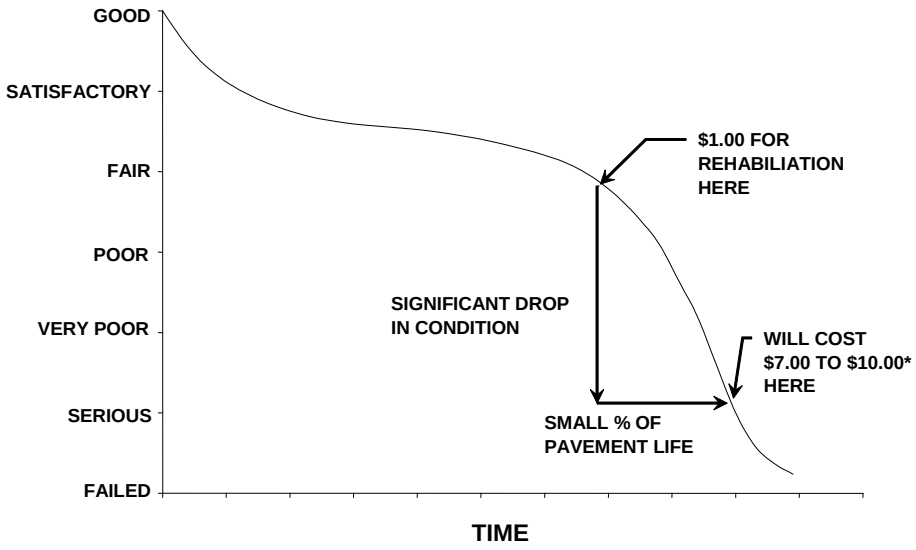
A small percentage of the airport pavements in Florida are composed of asphalt concrete surface over Portland Cement Concrete (APC). This pavement type is known as “composite” pavement.

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.

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			PCC Pavements		
N	**n**		**N**	**n**	
	Runway	**Others**		**Runway**	**Others**
1-4	1	1	1-3	1	1
5-10	2	1	4-6	2	1
11-15	3	2	7-10	3	2
16-30	5	3	11-15	4	2
31-40	7	4	16-20	5	3
41-50	8	5	21-30	7	3
≥51	20% but ≤20	10% but ≤10	31-40	8	4
			41-50	10	5
			≥51	20% but ≤20	10% but ≤10

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

The sample units to inspect are determined by a systematic random sampling technique. This means that the locations are determined such that they are distributed evenly throughout the Section. In the case when 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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Pavement Surface Type - The surface of pavement is identified as one of four types:

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

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

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

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

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

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

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

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

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

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

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

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

2. NETWORK DEFINITION AND PAVEMENT INVENTORY

Valkaria Municipal Airport (X59) consists of two runways; RW 10-28 and RW 14-32, each of which are 75-ft wide by 4,000-ft long. The apron pavement is the former runway 4-22 which ends at its intersection with RW 14-32. The pavement north of RW 14-32 of said former runway is utilized for recreational aviation related activities during public events. Valkaria Airport is served by a single 50-ft taxiway, which was formerly runway 18-36. Remnants of the runway outside the designated taxiway way are used as extended shoulders. Both runways have ±50-ft offset of each side of pavement designated as shoulder area. Currently the airport has 28 T-Hangar facilities and tie-down spaces located along the apron.

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.

Valkaria Airport was constructed by the United States Navy during World War II, originally designated as Outlying Field Valkaria (OLF Valkaria), as an auxiliary airfield to the Naval Air Station Melbourne, currently designated as Melbourne International Airport (MLB). Currently the airport is operated by Brevard County. Primary traffic is general aviation and general aviation training.

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

2.1 Network Definition

The pavements within the network are defined in MicroPAVER in terms of manageable units that help to organize the data into similar groups. An organizational hierarchy is used to establish these units.

2.1.1 *Branch Section Identification*

The airport pavement network is subdivided into separate Branches (runways, taxiways, or aprons) that have distinctly different uses. Branches are then further divided into Sections with similar pavement construction and performance that may share other common attributes.

Sections are manageable units used to organize the data collection and are treated individually during the rehabilitation planning stage. A pavement rank, consisting of primary, secondary, and tertiary levels, is assigned to each Section based on their level and type of use. The pavement rankings that were designated for each Section in the previous SAPMP update were again used for this update.

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

2.1.2 *System Inventory and Network Definition Update*

The System Inventory and Network Definition drawings are used to identify changes in the network since the most recent update from the 2006/2008 inspections and also to plan the field

inspection activities for the 2011 survey. Prior to the field inspection process, the System Inventory drawing was updated from the previous inspection with notes indicating recent construction projects on the various Sections of pavement throughout the airfield. This System Inventory drawing is used to update the Network Definition drawing.

The Network Definition drawing shows the airport pavement outline with Branch and Section boundaries. This drawing also includes the PCI sample units and is used to identify those sample units to be surveyed, i.e. the sampling plan. The previous airport configuration and history was compared with the current airport configuration, and the existing network branch, section and sample unit designations were revised to match the current configuration. This drawing serves not only as a primary guide for the airfield inspectors but also as an important historical record.

The updated System Inventory and Network Definition drawings for Valkaria Municipal Airport 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	New Apron	New Asphalt / Re-Surface Apron and Taxiway Bravo
2011	New Parallel Taxiway to Runway 14-32	New Construction
2012	Runway 10-28	Re-Surface

2.2 Pavement Inventory

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

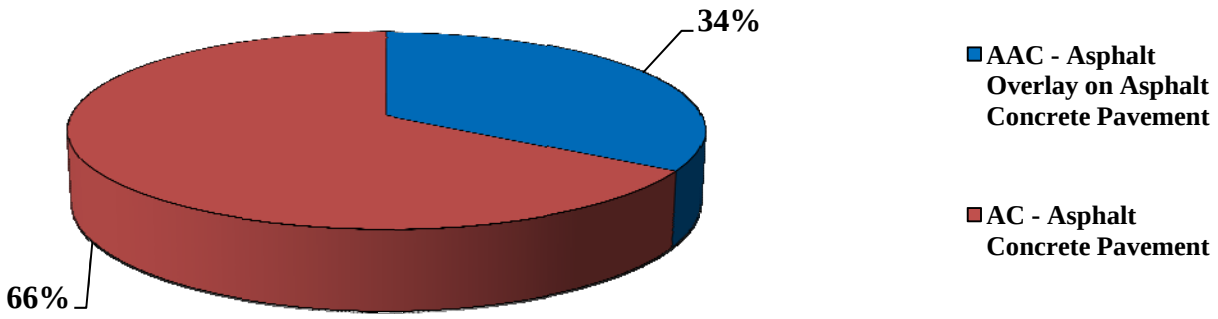
The total airfield pavement area in 2011 at Valkaria Municipal Airport is 1,039,585 square feet. The breakdown of pavement area for each pavement use is provided in Table 2-2.

Table 2-2: Pavement Area by Pavement Use

Use	Area (ft^2)	% of Total Area
Runway	638,025	61%
Taxiway	107,650	10%
Apron	293,910	28%
All (Weighted)	**1,039,585**	**100%**

Figure 2-1 presents the breakdown of the pavement area at Valkaria Municipal Airport 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 (ft^2)	Section Rank	Surface Type	Last Const. Date	Total Samples Inspected	Sample Units in Section
Apron	AP	4105	264,780	P	AC	1/1/1943	5	48
Apron	AP	4110	15,930	P	ACC	1/1/1990	1	2
Apron	AP	4115	13,200	P	AC	1/1/1996	2	12
Runway 10-28	RW 10-28	6205	300,000	P	AC	1/1/1943	14	68
Runway 10-28	RW 10-28	6210	45,525	P	ACC	1/1/1993	3	12
Runway 14-32	RW 14-32	6105	63,750	P	ACC	1/1/1993	5	18
Runway 14-32	RW 14-32	6110	153,750	P	ACC	1/1/1993	8	41
Runway 14-32	RW 14-32	6115	75,000	P	ACC	1/1/1993	5	20
Taxiway Between Rws	TW BETW RW	105	69,770	P	AC	1/1/1943	3	13
Connector Taxiways to Ramp	TW CONN	205	22,460	P	AC	1/1/1943	2	5
Connector Taxiways to Ramp	TW CONN	206	15,420	P	AC	1/1/1943	1	2

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

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

3. PAVEMENT CONDITION

Pavement conditions were inspected in accordance with the methods outlined in FAA AC 150/5380-6B and ASTM D 5340-04 "Standard Practice for Airport Pavement Condition Index Surveys." These procedures define distress type, severity and quantity for sampling areas within each section to determine the Pavement Condition Index (PCI).

3.1 Inspection Methodology

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

Table 3-1: Pavement Distresses for Asphalt Concrete Surfaces

Code	Distress	Mechanism
41	Alligator Cracking	Load
42	Bleeding	Construction Quality / Mix Design
43	Block Cracking	Climate / Age
44	Corrugation	Load / Construction Quality
45	Depression	Subgrade Quality
46	Jet Blast	Aircraft
47	Joint Reflection - Cracking	Climate / Prior Pavement
48	Longitudinal/Transverse Cracking	Climate / Age
49	Oil Spillage	Aircraft / Vehicle
50	Patching	Utility / Pavement Repair
51	Polished Aggregate	Load
52	Weathering/Raveling	Climate / Load
53	Rutting	Load
54	Shoving	Pavement Growth
55	Slippage Cracking	Load / Pavement Bond
56	Swelling	Climate / Subgrade Quality

Source: U.S. Army CERL, FDOT Airfield Inspection 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 Valkaria Municipal Airport were performed in February 2011. Data were 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 Valkaria Municipal Airport is 37, representing a Very Poor overall network condition.

Overall the airport exhibited pavement distresses associated with climate and age distresses. Asphalt Concrete pavement distresses include; weathering, raveling, and block cracking distresses of which are common of pavements of similar age.

Runway 10-28, formerly 9-27, exhibited high severity weathering and raveling in addition to the longitudinal cracks along the paving joints. The pavement distresses observed indicates rehabilitative neglect. The surficial layer consists of aggregate with minimal bituminous binding material; inspectors observed aggregate to be easily dislodged with application of force. The shoulder pavement along RW 10-28, located between the runway and the golf course, appears to be in a neglected state with vegetation growing through the observed block cracking distresses with low to medium severity weathering and raveling. The condition analysis resulted in a PCI of 19 with a condition rating of 'Serious' for Runway 10-28. The PCI of 19 is significantly below both the FAA and FDOT minimum PCI values for runways.

Runway 14-32, exhibited low severity weathering and raveling in addition to longitudinal cracks primarily located along the paving joints. Similar to RW 10-28, RW 14-32 has paved shoulders that exhibits block cracking and weathering/raveling distresses that appear to have high severities perhaps due to neglect. The condition analysis resulted in a PCI of 70 with a condition rating of 'Fair' for Runway 14-32. Runway 14-32 meets the minimum PCI for the FAA criteria however is below the FDOT recommended PCI.

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 Valkaria Municipal Airport.

Figure 3-1: Network PCI Distribution by Rating Category

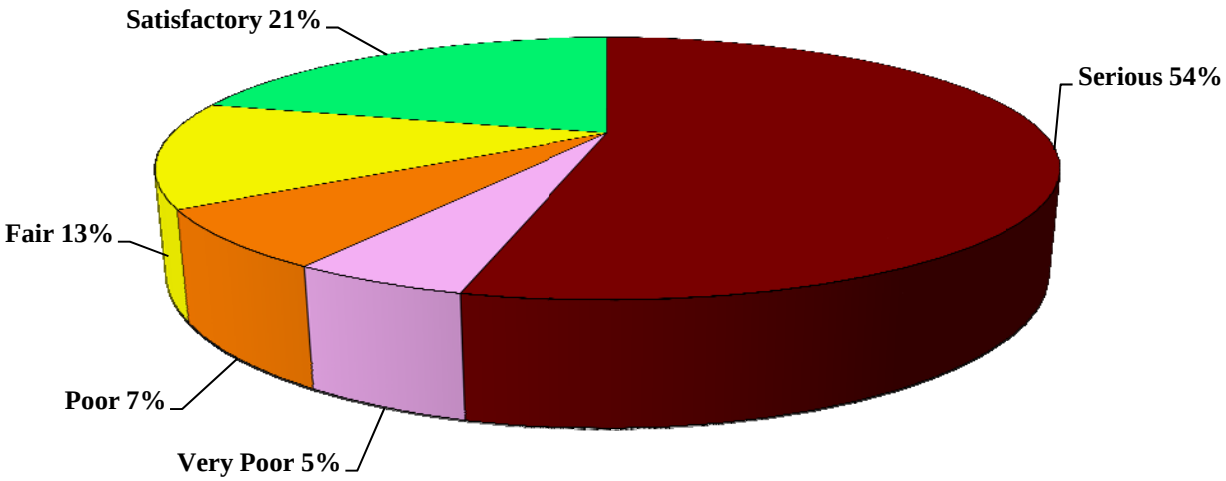


Figure 3-1a: Condition Rating Summary

Condition Rating	Total Area (ft^2)	Percent
Good	0	0%
Satisfactory	217,500	21%
Fair	133,725	13%
Poor	69,770	7%
Very Poor	53,810	5%
Serious	564,780	54%
Failed	0	0%

Approximately 34% of the network is in Satisfactory and Fair condition while 59% of the network is in Very Poor and Serious condition. Table 3-3 illustrates the area-weighted PCI computed individually for each pavement use.

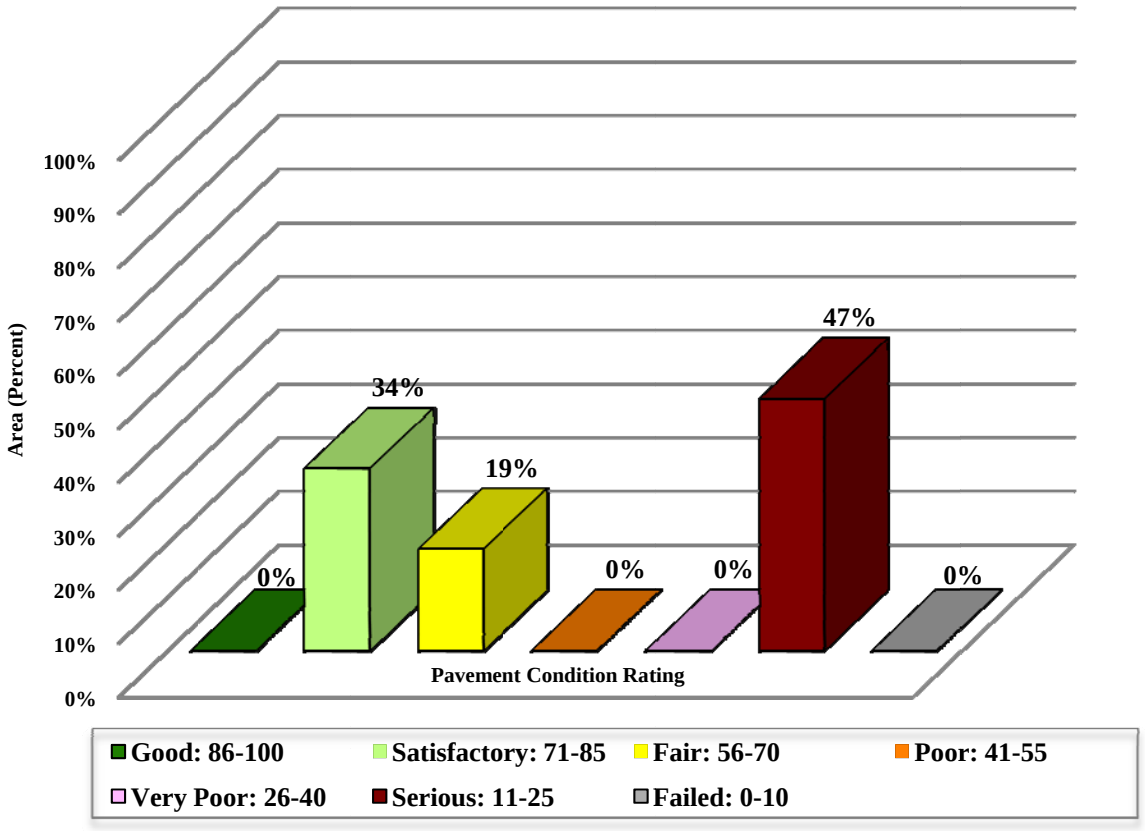
Table 3-2: Condition by Pavement Use

Use	Area-Weighted PCI	Condition Rating
Runway	43	Poor
Taxiway	37	Very Poor
Apron	27	Very Poor
All (Weighted)	**37**	**Very Poor**

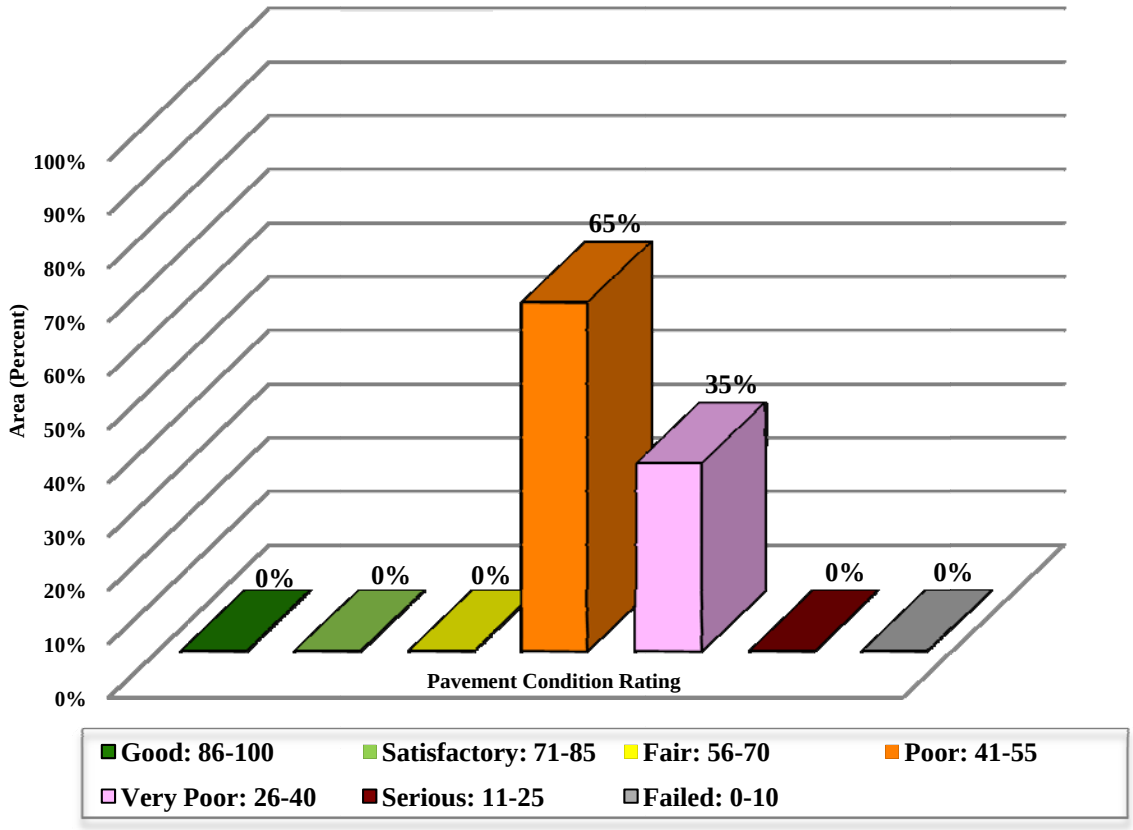
Figure 3-2 presents the breakdown of PCI by range for each pavement use.

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

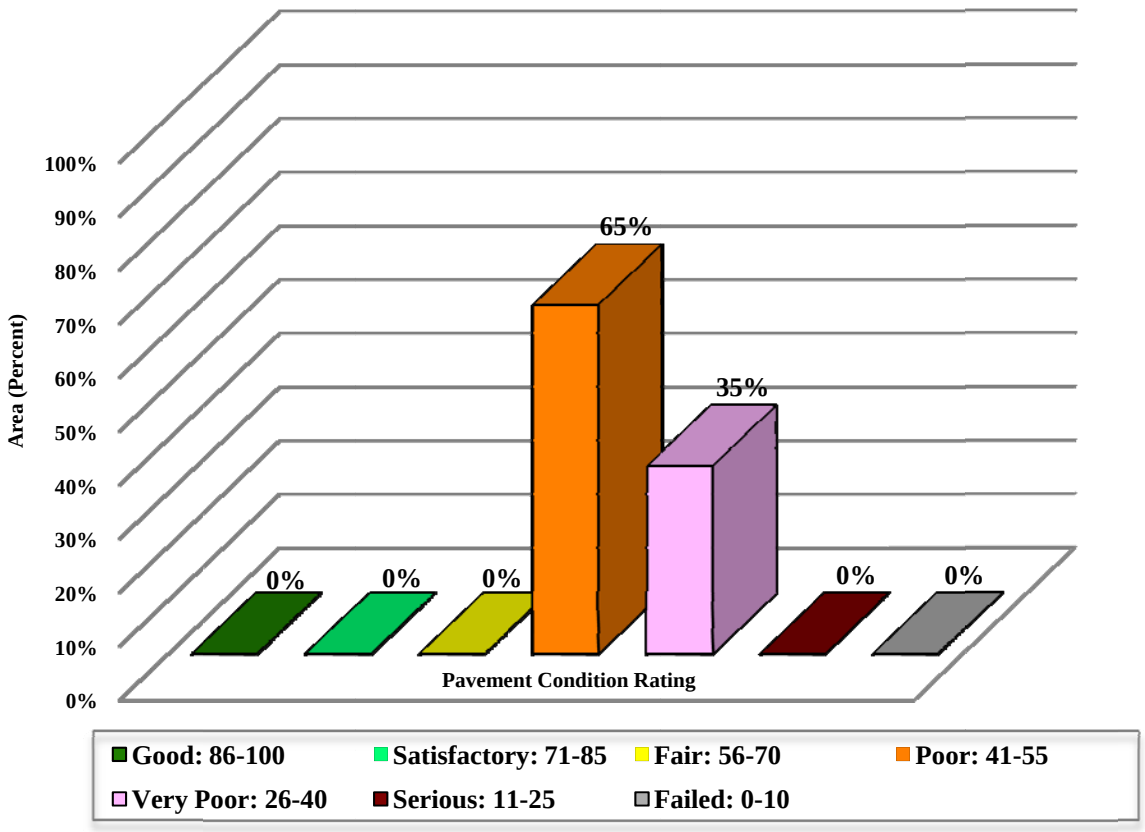
(a) Runway



(b) Taxiway


100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Area (Percent)
0%
0%
0%
65%
35%
0%
0%
Pavement Condition Rating
Good: 86-100
Satisfactory: 71-85
Fair: 56-70
Poor: 41-55
Very Poor: 26-40
Serious: 11-25
Failed: 0-10

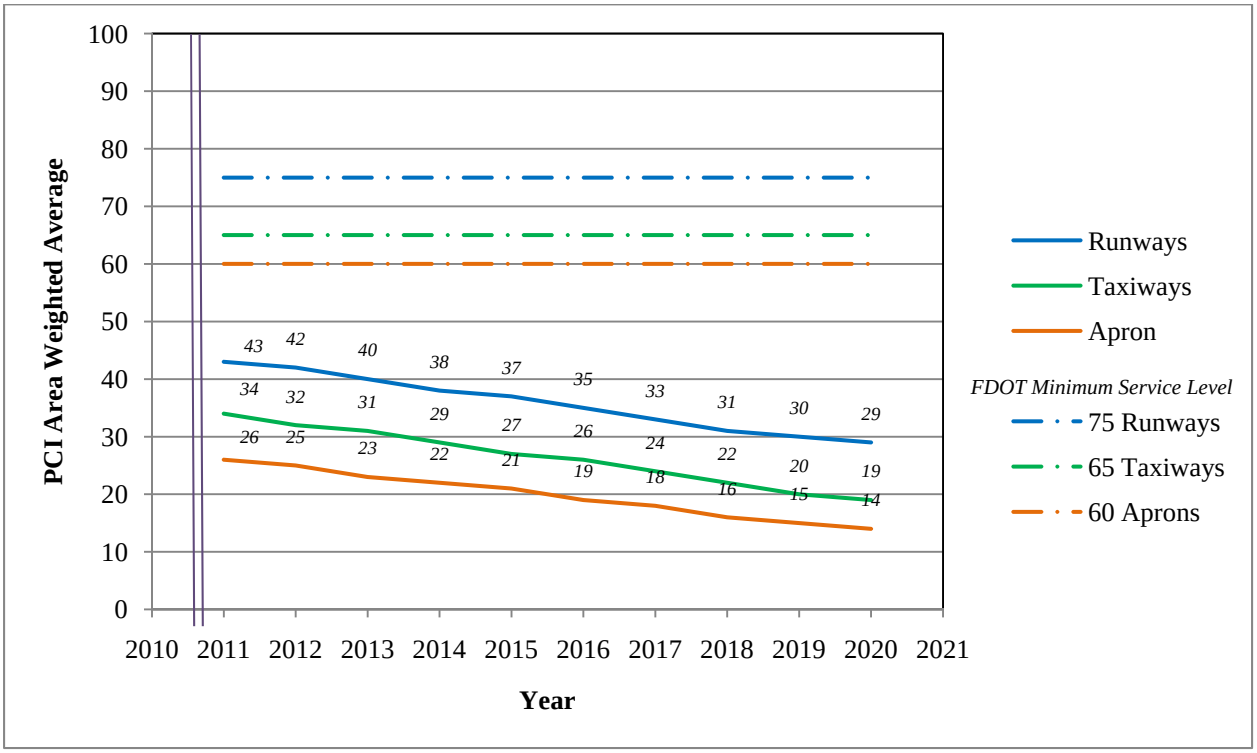
(c) Apron


100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Area (Percent)
0%
0%
0%
65%
35%
0%
0%
Pavement Condition Rating
Good: 86-100
Satisfactory: 71-85
Fair: 56-70
Poor: 41-55
Very Poor: 26-40
Serious: 11-25
Failed: 0-10

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 Valkaria Municipal Airport based on current condition, age since last construction and the deterioration model appropriate for the type of pavement. The figure presents the forecast for each pavement use and displays the FDOT minimum service level for General Aviation (GA) airports.

Figure 4-1: Predicted PCI by Pavement Use



Appendix D presents the tabular summary of the predicted Section PCI for each year from 2011 to 2020.

5. MAINTENANCE POLICIES AND COSTS

5.1 Policies

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

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

Table 5-1 provides the list of the maintenance activities used in MicroPAVER to treat specific distress types. MicroPAVER applies repairs to these distresses and adjusts the PCI based on specific rules. These repairs are used only in the first year of an analysis.

Rehabilitation is warranted when the pavement condition decreases below a critical point such that the deterioration is extensive or the rate of deterioration is so great that routine maintenance is no longer cost-efficient. This critical point is called "Critical PCI." The critical PCI levels for different pavement and branch types established in the previous SAPMP update were used in this update for the development of the M&R plan for the airport. Sections above critical PCI levels receive routine maintenances while pavements predicted to deteriorate below their respective critical PCI level during the analysis period will be identified for Major M&R. Table 5-2 gives the critical PCI levels for General Aviation Airports.

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

Table 5-1: Routine Maintenance Activities for Airfield Pavements

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

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

Table 5-2: Critical PCI for General Aviation Airports

Use	Critical PCI
Runway	65
Taxiway	65
Apron	65

It should be noted that critical PCI is not the same as Minimum PCI or Minimum Condition. The Minimum PCI is a value set by the user so pavement sections are rehabilitated before they fall below the set minimum. Table 5-3 gives the targeted, or desired, Minimum PCI values for runways, taxiways, and aprons of General Aviation Airports.

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

Minimum PCI		
Runway	**Taxiway**	**Apron**
75	65	60

Typical Major M&R activities range from overlays to reconstruction. Based on the critical PCI values in Table 5-2 the PCI trigger range when the likely activity would be a mill and resurface was 40 to 79 and reconstruction at a PCI of 39 or lower. One important concept of pavement management systems is that it is cost effective to maintain pavements that are already in good condition rather than wait for them to get worse and require more expensive rehabilitation.

Crack sealing and full-depth patching are the M&R activities recommended to repair pavements with PCI values between 80 and 90. MicroPAVER considers these as preventative M&R with their primary objective being to slow the rate of pavement deterioration. While the trigger PCI for mill and overlay has been set to 55, MicroPAVER also assigns mill and overlay to sections with a PCI greater than 55 if they exhibit some structural distress. Table 5-4 summarizes the M&R activities for General Aviation Airports based on PCI value.

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

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

5.2 Unit Costs

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

5.3 M&R Activities

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

Table 5-5: Maintenance Unit Costs for FDOT

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 General Aviation Airports

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

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

6. PAVEMENT REHABILITATION NEEDS ANALYSIS

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

The objective of the M&R analysis is to observe the effect of different fiscal scenarios on the network condition, over a period of ten years, starting from 2011. 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
Apron	4105	AC	264,780	$3,606,304.77	24	Reconstruction	100
Apron	4110	ACC	15,930	$181,936.59	33	Reconstruction	100
Runway 10-28	6205	AC	300,000	$4,086,001.33	11	Reconstruction	100
Runway 10-28	6210	ACC	45,525	$105,982.27	64	Mill and Overlay	100
Runway 14-32	6115	ACC	75,000	$278,025.17	59	Mill and Overlay	100
Taxiway Between Rws	105	AC	69,770	$438,853.33	41	Mill and Overlay	100
Connector Taxiways to Ramp	205	AC	22,460	$305,905.30	28	Reconstruction	100
Connector Taxiways to Ramp	206	AC	15,420	$210,020.47	27	Reconstruction	100
			Total	**$9,213,029.23**	**36**		**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
Apron	4105	AC	264,780	$3,606,304.77	24	Reconstruction	100
Apron	4110	ACC	15,930	$181,936.59	33	Reconstruction	100
Runway 10-28	6205	AC	300,000	$4,086,001.33	11	Reconstruction	100
Runway 10-28	6210	ACC	45,525	$29,591.25	64	Microsurfacing	100
Runway 14-32	6115	ACC	75,000	$48,750.00	59	Microsurfacing	100
Taxiway Between Rws	105	AC	69,770	$45,350.50	41	Microsurfacing	100
Connector Taxiways to Ramp	205	AC	22,460	$305,905.30	28	Reconstruction	100
Connector Taxiways to Ramp	206	AC	15,420	$210,020.47	27	Reconstruction	100
			Total	**$8,513,860.21**	**36**		**100**

* Costs are adjusted for inflation.

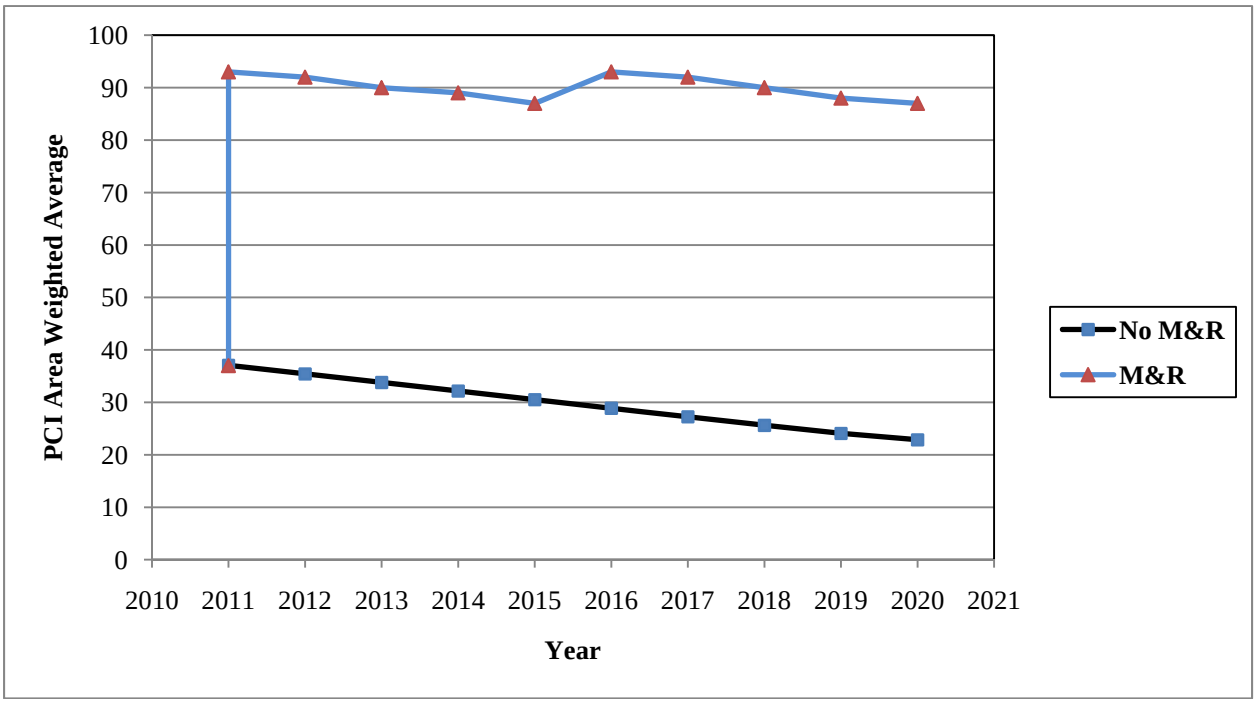
In addition to the immediate Major M&R needs, maintenance activities for pavement areas above critical PCI have been recommended by MicroPAVER for Year 1 and are shown in Table 6-3 below. The costs provided in Table 5-5 were used to calculate the costs associated with this work, which is intended to 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
Apron	AP	4115	WEATH/RAVEL	L	Surface Seal - Rejuvenating	10,560.00	SqFt	$0.40	$4,224.04
Apron	AP	4115	BLOCK CR	M	Crack Sealing - AC	40.30	Ft	$2.25	$90.58
Runway 14-32	RW 14-32	6105	WEATH/RAVEL	L	Surface Seal - Rejuvenating	36,344.90	SqFt	$0.40	$14,538.08
Runway 14-32	RW 14-32	6110	WEATH/RAVEL	L	Surface Seal - Rejuvenating	82,000.10	SqFt	$0.40	$32,800.33
								Total =	$51,653.03

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 37 in 2011 to 22 in ten years if no M&R activities are performed.
- The PCI will remain at or above 87 through the 10-year analysis period under the unlimited budget scenario. A 2020 PCI of 87 with this scenario is 65 PCI points higher than a "No M&R" scenario. The total cost for Major M&R over this 10-year period is about $9.9 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
2011	$51,653.03	$9,213,029.22	$9,264,682.25
2012	$45,307.79	$0.00	$45,307.79
2013	$52,062.28	$0.00	$52,062.28
2014	$55,383.89	$33,579.08	$88,962.97
2015	$62,681.73	$0.00	$62,681.73
2016	$4,209.10	$655,822.04	$660,031.14
2017	$8,538.04	$0.00	$8,538.04
2018	$15,192.61	$0.00	$15,192.61
2019	$35,429.95	$0.00	$35,429.95
2020	$48,542.09	$0.00	$48,542.09
Total	**$379,000.51**	**$9,902,430.34**	**$10,281,430.85**

Note: Costs are adjusted for inflation.

Approximately 93% of the total Major M&R cost is required in the first year (2011). According to the 2011 inspections, the following pavement sections were in immediate need of Major M&R Activity:

- **Apron** – Asphalt Pavement reconstruction activity per the FAA P-401 Specification.
- **Runway 10-28** – Asphalt Pavement mill and overlay activity per the FAA P-401 Specification.
- **Runway 14-32** – Asphalt Pavement mill and overlay activity per the FAA P-401 Specification.
- **Taxiway Between Runways** – Asphalt Pavement mill and overlay activity per the FAA P-401 Specification.
- **Connector Taxiways to Ramp** – Asphalt Pavement reconstruction activity per the FAA P-401 Specification.

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 Valkaria Municipal Airport, 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:

- **Apron** – Asphalt Pavement reconstruction activity per the FAA P-401 Specification.
- **Runway 10-28** – Asphalt Pavement mill and overlay activity per the FAA P-401 Specification.
- **Runway 14-32** – Asphalt Pavement mill and overlay activity per the FAA P-401 Specification.
- **Taxiway Between Runways** – Asphalt Pavement mill and overlay activity per the FAA P-401 Specification.
- **Connector Taxiways to Ramp** – Asphalt Pavement reconstruction activity per the FAA P-401 Specification.

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.

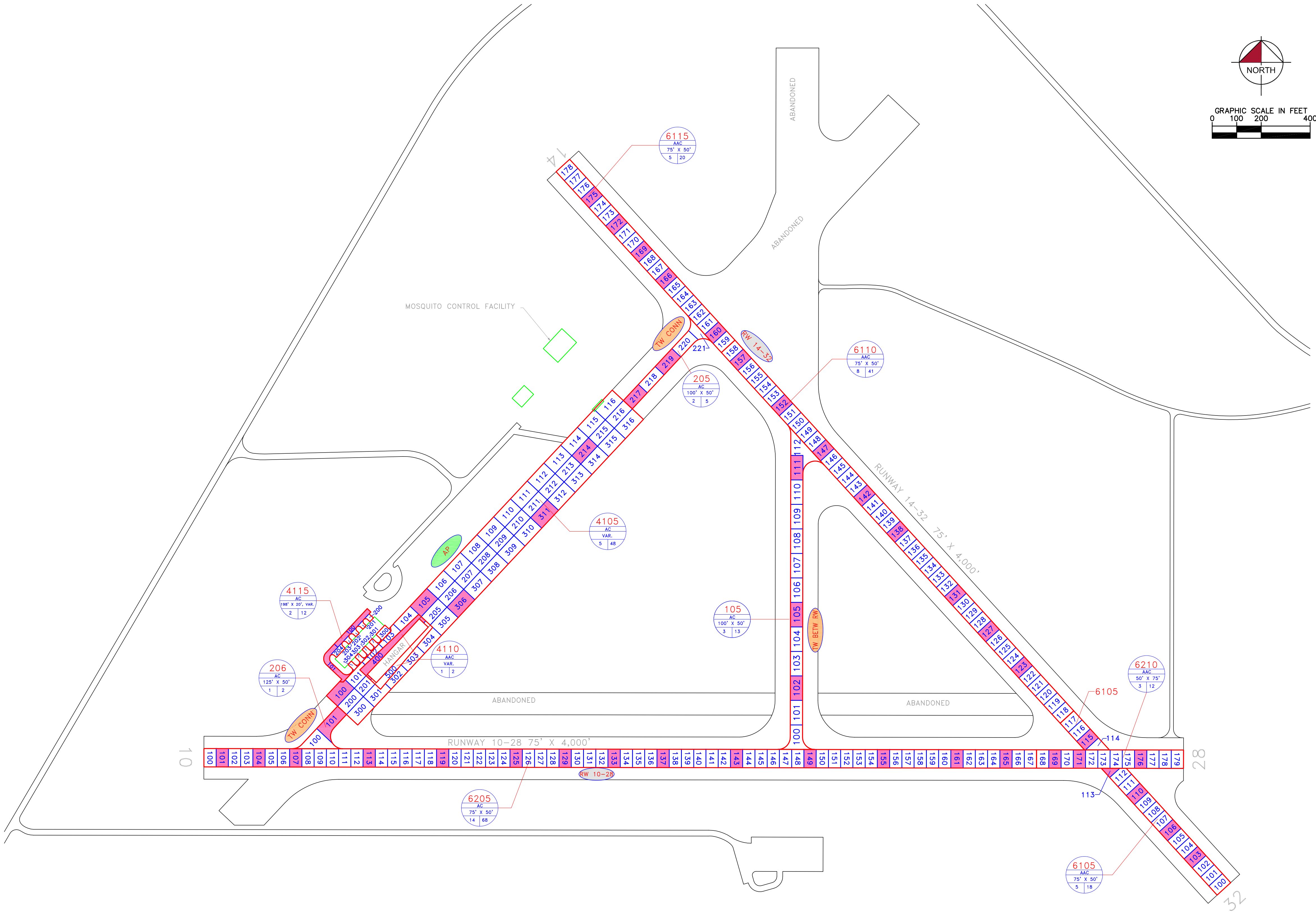
APPENDIX A

NETWORK DEFINITION MAP

SYSTEM INVENTORY MAP

PAVEMENT INVENTORY TABLE

WORK HISTORY REPORT



GPS COORDINATES - VALKARIA AIRPORT				
LOCATION	SECTION	SAMPLE	LATITUDE	LONGITUDE
Runway 9-27	6210	169	27.95955655	-80.55502874
Runway 9-27	6210	171	27.95955512	-80.55471897
Runway 9-27	6210	176	27.95955156	-80.55394455
Runway 9-27	6205	101	27.95960457	-80.56556086
Runway 9-27	6205	104	27.95960247	-80.56509621
Runway 9-27	6205	107	27.95960037	-80.56463155
Runway 9-27	6205	113	27.95959615	-80.56370225
Runway 9-27	6205	119	27.95959194	-80.56277294
Runway 9-27	6205	125	27.95958771	-80.56184364
Runway 9-27	6205	129	27.95958489	-80.5612241
Runway 9-27	6205	133	27.95958207	-80.56060457
Runway 9-27	6205	137	27.95957925	-80.55998503
Runway 9-27	6205	143	27.959575	-80.55905572
Runway 9-27	6205	149	27.95957076	-80.55812642
Runway 9-27	6205	155	27.9595665	-80.55719712
Runway 9-27	6205	161	27.95956224	-80.55626781
Runway 9-27	6205	165	27.95955939	-80.55564827
Runway 14-32	6115	160	27.96435507	-80.55929951
Runway 14-32	6115	166	27.96496605	-80.55992417
Runway 14-32	6115	169	27.96527153	-80.5602365
Runway 14-32	6115	172	27.96557702	-80.56054883
Runway 14-32	6115	175	27.9658825	-80.56086116
Runway 14-32	6110	115	27.95977351	-80.5546146
Runway 14-32	6110	123	27.96058734	-80.55544763
Runway 14-32	6110	127	27.96099467	-80.55586404
Runway 14-32	6110	131	27.96140199	-80.55628045
Runway 14-32	6110	138	27.96211481	-80.55700917
Runway 14-32	6110	142	27.96252213	-80.55742559
Runway 14-32	6110	147	27.96303129	-80.55794612
Runway 14-32	6110	152	27.96354044	-80.55846665
Runway 14-32	6110	157	27.96404958	-80.55898719
Runway 14-32	6105	103	27.95844885	-80.55326154
Runway 14-32	6105	106	27.95875435	-80.55357384
Runway 14-32	6105	110	27.95916168	-80.55399023
Runway 14-32	6105	113	27.95941994	-80.55432747
AP	4115	100	27.961056	-80.56390747
AP	4115	101	27.96064299	-80.56412191
AP	4110	400	27.96085715	-80.56341715
AP	4105	100	27.96033317	-80.5640642
AP	4105	105	27.96133887	-80.56300186
AP	4105	214	27.96303448	-80.5609631
AP	4105	306	27.96132686	-80.56253578
AP	4105	311	27.96232781	-80.5614736
TW CONN	206	101	27.95997352	-80.56417663
TW CONN	205	217	27.96364104	-80.5603194
TW CONN	205	219	27.96403141	-80.55990514
TW BETW RW	105	102	27.96036231	-80.55829447
TW BETW RW	105	105	27.96118747	-80.55828968
TW BETW RW	105	111	27.96283777	-80.5582801

NOTE: GEODETICS REPRESENT DECIMAL DEGREES (NAD 83 FLORIDA STATE PLANES, EAST ZONE, US FOOT). ALL GPS COORDINATES ARE AT THE CENTROID OF THE SAMPLE UNITS.

LEGEND

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

TOTAL SAMPLES INSPECTED = 49

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

NUMBER	DATE	REVISIONS

DESIGNED: ELT | DRAWN: ALB | CHECKED: DRB | DATE:

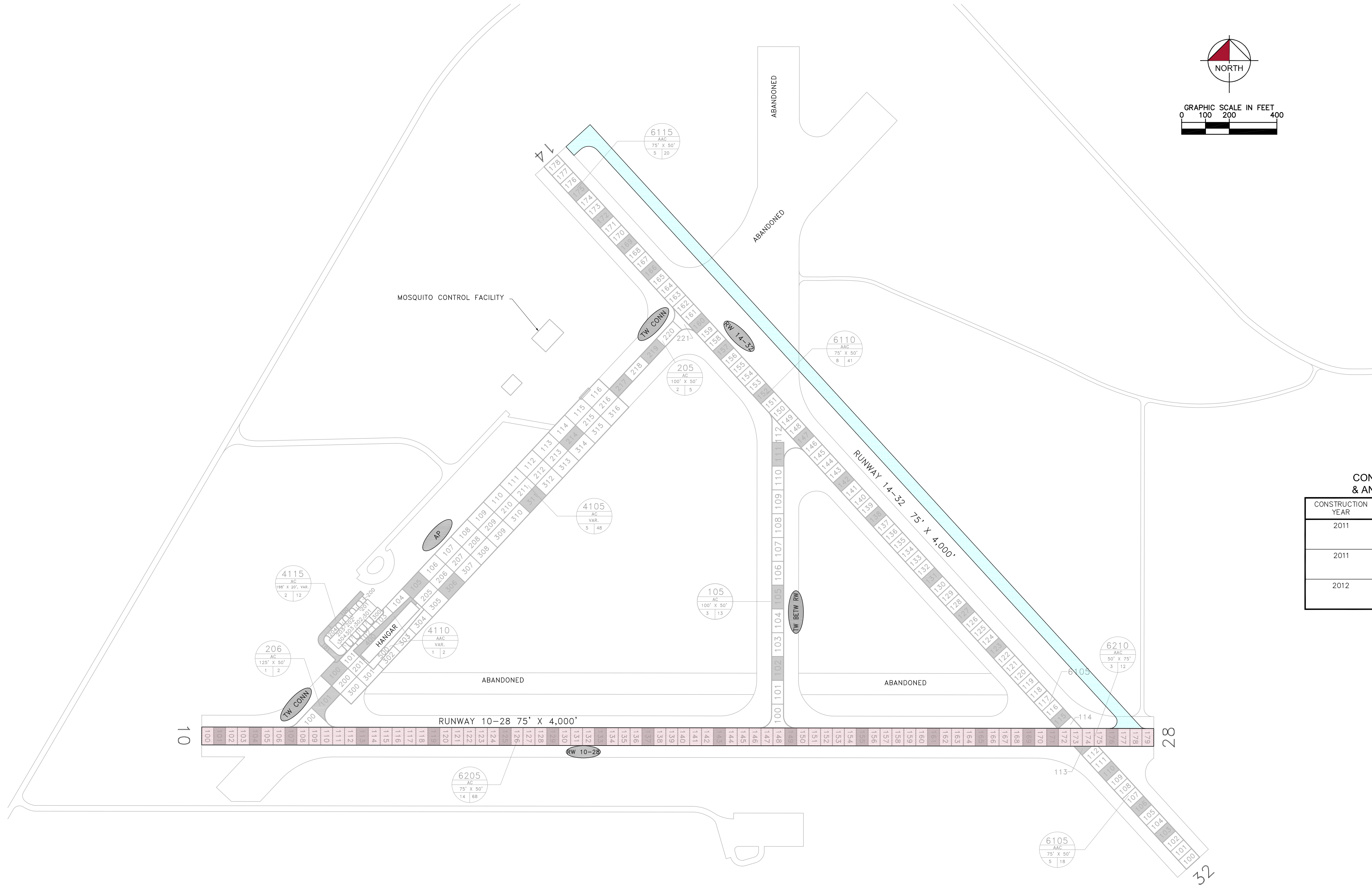
NETWORK DEFINITION MAP

VALKARIA AIRPORT
BREVARD COUNTY, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

IDENTIFIER **X59**

FDOT DISTRICT 5



CONSTRUCTION SINCE LAST INSPECTION
& ANTICIPATED CONSTRUCTION ACTIVITY

CONSTRUCTION YEAR	LOCATION	WORK TYPE / PAVEMENT SECTION
2011	NEW APRON	NEW ASPHALT / RE-SURFACE APRON, AND TAXIWAY BRAVO
2011	NEW PARALLEL TAXIWAY TO RUNWAY 14/32	NEW CONSTRUCTION
2012	RUNWAY 10-28	RE-SURFACE

LEGEND

- PROJECTS YEAR 2006
- PROJECTS YEAR 2007
- PROJECTS YEAR 2008
- PROJECTS YEAR 2009
- PROJECTS YEAR 2010
- PROJECTS YEAR 2011
- PROJECTS YEAR 2012
- PROJECTS YEAR 2013
- PROJECTS YEAR 2014
- PROJECTS YEAR 2015
- PROJECTS YEAR 2016
- PROJECTS YEAR 2017

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

NUMBER	DATE	REVISIONS

DESIGNED: ELT DRAWN: ALB CHECKED: DRB DATE:

SYSTEM INVENTORY MAP

VALKARIA AIRPORT
BREVARD COUNTY, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

IDENTIFIER **X59**

FDOT DISTRICT 5

Table A-1: Pavement Inventory

Branch Name	Branch ID	Branch Use	Section ID	Length (ft)	Width (ft)	True Area (ft^2)	Section Rank	Surface Type	Last Const. Date	Last Insp. Date	Total Samples
Apron	AP	APRON	4105	1,700	175	264,780	P	AC	1/1/1943	2/3/2011	48
Apron	AP	APRON	4110	335	50	15,930	P	ACC	1/1/1990	2/3/2011	2
Apron	AP	APRON	4115	600	22	13,200	P	AC	1/1/1996	2/3/2011	12
Runway 10-28	RW 10-28	RUNWAY	6205	4,000	75	300,000	P	AC	1/1/1943	2/3/2011	68
Runway 10-28	RW 10-28	RUNWAY	6210	607	75	45,525	P	ACC	1/1/1993	2/3/2011	12
Runway 14-32	RW 14-32	RUNWAY	6105	850	75	63,750	P	ACC	1/1/1993	2/3/2011	18
Runway 14-32	RW 14-32	RUNWAY	6110	2,050	75	153,750	P	ACC	1/1/1993	2/3/2011	41
Runway 14-32	RW 14-32	RUNWAY	6115	1,000	75	75,000	P	ACC	1/1/1993	2/3/2011	20
Taxiway Between Rws	TW BETW RW	TAXIWAY	105	1,300	50	69,770	P	AC	1/1/1943	2/3/2011	13
Connector Taxiways to Ramp	TW CONN	TAXIWAY	205	430	50	22,460	P	AC	1/1/1943	2/3/2011	5
Connector Taxiways to Ramp	TW CONN	TAXIWAY	206	250	50	15,420	P	AC	1/1/1943	2/3/2011	2

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

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

Work History Report

Pavement Database:

Network: X59 **Branch:** AP (APRON) **Section:** 4105 **Surface:** AC
L.C.D.: 01/01/1943 **Use:** APRON **Rank:** P **Length:** 1,700.00 Ft **Width:** 175.00 Ft **True Area:** 264,780.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1943	IMPORTED	BUILT			True	1943: AC PAVEMENT

Network: X59 **Branch:** AP (APRON) **Section:** 4110 **Surface:** AAC
L.C.D.: 01/01/1990 **Use:** APRON **Rank:** P **Length:** 335.00 Ft **Width:** 50.00 Ft **True Area:** 15,930.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1990	IMPORTED	BUILT			True	EST 1990 BIT OL

Network: X59 **Branch:** AP (APRON) **Section:** 4115 **Surface:** AC
L.C.D.: 01/01/1996 **Use:** APRON **Rank:** P **Length:** 600.00 Ft **Width:** 22.00 Ft **True Area:** 13,200.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1996	INITIAL	Initial Construction	$0	0.00	True	

Network: X59 **Branch:** RW 10-28 (RUNWAY 10-28) **Section:** 6205 **Surface:** AC
L.C.D.: 01/01/1943 **Use:** RUNWAY **Rank:** P **Length:** 4,000.00 Ft **Width:** 75.00 Ft **True Area:** 300,000.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1943	IMPORTED	BUILT			True	1943 AC PAVEMENT

Network: X59 **Branch:** RW 10-28 (RUNWAY 10-28) **Section:** 6210 **Surface:** AAC
L.C.D.: 01/01/1993 **Use:** RUNWAY **Rank:** P **Length:** 607.00 Ft **Width:** 75.00 Ft **True Area:** 45,525.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1993	IMPORTED	OVERLAY			True	1993 FEATHERED AC OVERLAY
01/01/1943	IMPORTED	BUILT			True	1943 AC PAVEMENT

Network: X59 **Branch:** RW 14-32 (RUNWAY 14-32) **Section:** 6105 **Surface:** AAC
L.C.D.: 01/01/1993 **Use:** RUNWAY **Rank:** P **Length:** 850.00 Ft **Width:** 75.00 Ft **True Area:** 63,750.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1993	IMPORTED	OVERLAY			True	1993 AC OVERLAY
01/01/1943	IMPORTED	BUILT			True	1943 AC PAVEMENT

Network: X59 **Branch:** RW 14-32 (RUNWAY 14-32) **Section:** 6110 **Surface:** AAC
L.C.D.: 01/01/1993 **Use:** RUNWAY **Rank:** P **Length:** 2,050.00 Ft **Width:** 75.00 Ft **True Area:** 153,750.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1993	IMPORTED	OVERLAY			True	1993 AC OVERLAY
01/01/1975	IMPORTED	OVERLAY			True	1975 AC OVERLAY
01/01/1943	IMPORTED	BUILT			True	1943 AC PAVEMENT

Network: X59 **Branch:** RW 14-32 (RUNWAY 14-32) **Section:** 6115 **Surface:** AAC
L.C.D.: 01/01/1993 **Use:** RUNWAY **Rank:** P **Length:** 1,000.00 Ft **Width:** 75.00 Ft **True Area:** 75,000.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1993	IMPORTED	OVERLAY			True	1993 AC OVERLAY
01/01/1943	IMPORTED	BUILT			True	1943 AC PAVEMENT

Network: X59 **Branch:** TW BETW (TAXIWAY BETWEEN RWS) **Section:** 105 **Surface:** AC
L.C.D.: 01/01/1943 **Use:** TAXIWAY **Rank:** P **Length:** 1,300.00 Ft **Width:** 50.00 Ft **True Area:** 69,770.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1943	IMPORTED	BUILT			True	1943: AC PAVEMENT

Network: X59 **Branch:** TW CONN (CONNECTOR TAXIWAYS TO RAMP) **Section:** 205 **Surface:** AC
L.C.D.: 01/01/1943 **Use:** TAXIWAY **Rank:** P **Length:** 430.00 Ft **Width:** 50.00 Ft **True Area:** 22,460.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1943	IMPORTED	BUILT			True	1943: AC PAVEMENT

Network: X59 **Branch:** TW CONN (CONNECTOR TAXIWAYS TO RAMP) **Section:** 206 **Surface:** AC
L.C.D.: 01/01/1943 **Use:** TAXIWAY **Rank:** P **Length:** 250.00 Ft **Width:** 50.00 Ft **True Area:** 15,420.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1943	IMPORTED	BUILT			True	1943: AC PAVEMENT

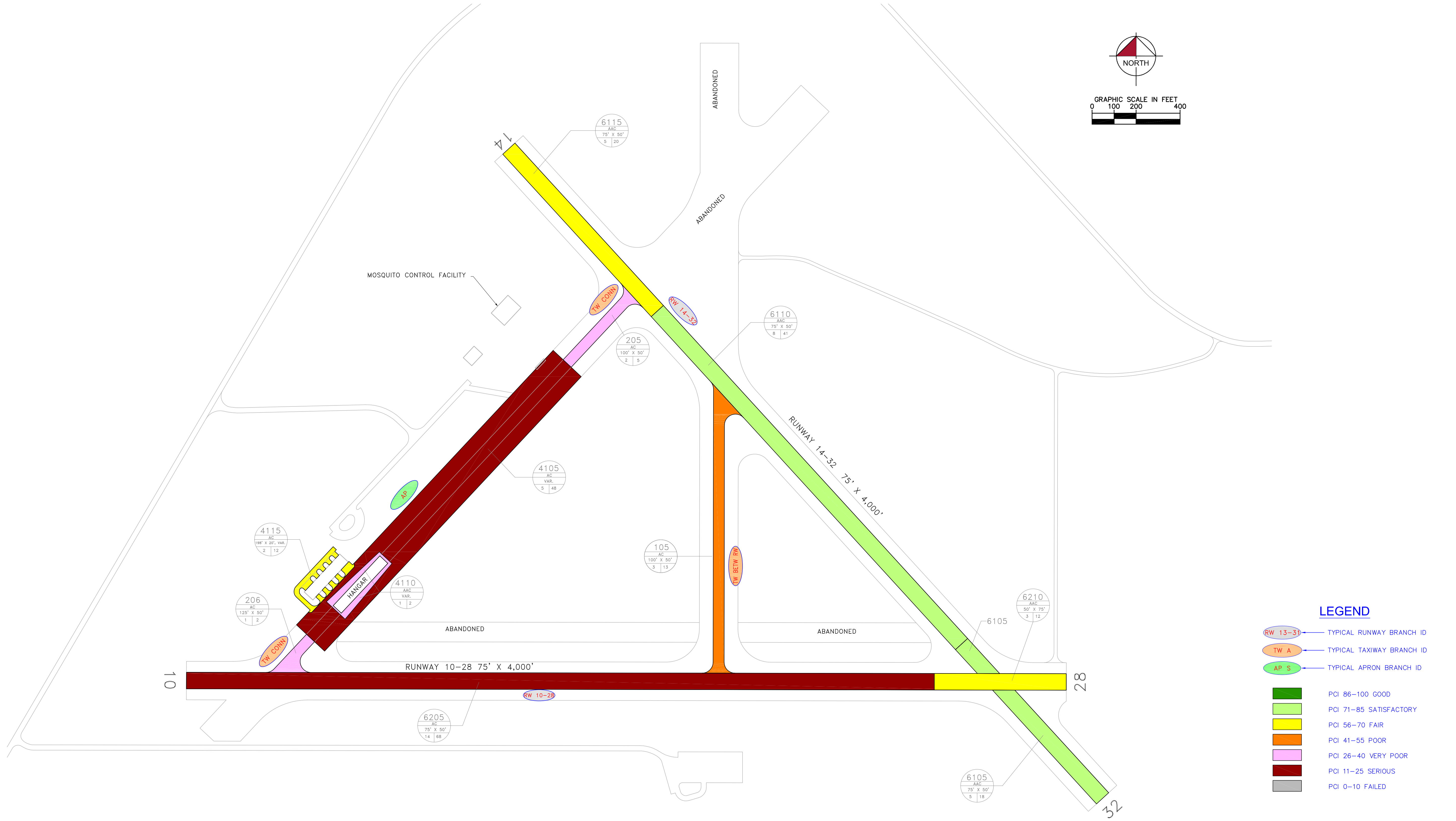
Summary:

Work Description	Section Count	Area Total (SqFt)	Thickness Avg (in)	Thickness STD (in)
BUILT	10	1,026,385.00		
Initial Construction	1	13,200.00	.00	
OVERLAY	5	491,775.00		

STD = Standard Deviation

APPENDIX B

2011 CONDITION MAP
PAVEMENT CONDITION INDEX TABLE



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

NUMBER	DATE	REVISIONS
DESIGNED: ELT	DRAWN: ALB	CHECKED: DRB	DATE:

2011 CONDITION MAP

VALKARIA AIRPORT
BREVARD COUNTY, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

IDENTIFIER: **X59**

FDOT DISTRICT: 5

Table B-1: Pavement Condition Index

Branch Name	Branch ID	Branch Use	Section ID	True Area (ft^2)	Section Rank	Surface Type	Total Samples Inspected	Total Samples	PCI	PCI Category
Apron	AP	APRON	4105	264,780	P	AC	5	48	25	Serious
Apron	AP	APRON	4110	15,930	P	ACC	1	2	33	Very Poor
Apron	AP	APRON	4115	13,200	P	AC	2	12	69	Fair
Runway 10-28	RW 10-28	RUNWAY	6205	300,000	P	AC	14	68	12	Serious
Runway 10-28	RW 10-28	RUNWAY	6210	45,525	P	ACC	3	12	65	Fair
Runway 14-32	RW 14-32	RUNWAY	6105	63,750	P	ACC	5	18	74	Satisfactory
Runway 14-32	RW 14-32	RUNWAY	6110	153,750	P	ACC	8	41	74	Satisfactory
Runway 14-32	RW 14-32	RUNWAY	6115	75,000	P	ACC	5	20	60	Fair
Taxiway Between Rws	TW BETW RW	TAXIWAY	105	69,770	P	AC	3	13	42	Poor
Connector Taxiways to Ramp	TW CONN	TAXIWAY	205	22,460	P	AC	2	5	29	Very Poor
Connector Taxiways to Ramp	TW CONN	TAXIWAY	206	15,420	P	AC	1	2	28	Very Poor

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

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

APPENDIX C

BRANCH CONDITION REPORT
SECTION CONDITION REPORT

Branch Condition Report

Pavement Database: NetworkID: X59

Branch ID	Number of Sections	Sum Section Length (Ft)	Avg Section Width (Ft)	True Area (SqFt)	Use	Average PCI	PCI Standard Deviation	Weighted Average PCI
AP (APRON)	3	2,635.00	82.33	293,910.00	APRON	42.33	19.14	27.41
RW 10-28 (RUNWAY 10-28)	2	4,607.00	75.00	345,525.00	RUNWAY	38.50	26.50	18.98
RW 14-32 (RUNWAY 14-32)	3	3,900.00	75.00	292,500.00	RUNWAY	69.33	6.60	70.41
TW BETW RW (TAXIWAY BETWEEN RWS)	1	1,300.00	50.00	69,770.00	TAXIWAY	42.00	0.00	42.00
TW CONN (CONNECTOR TAXIWAYS TO RAMP)	2	680.00	50.00	37,880.00	TAXIWAY	28.50	0.50	28.59

Branch Condition Report

Pavement Database:

Use Category	Number of Sections	Total Area (SqFt)	Arithmetic Average PCI	Average PCI STD.	Weighted Average PCI
APRON	3	293,910.00	42.33	19.14	27.41
RUNWAY	5	638,025.00	57.00	23.13	42.56
TAXIWAY	3	107,650.00	33.00	6.38	37.28
All	11	1,039,585.00	46.45	21.42	37.73

STD = Standard Deviation

Date: 3 /17/2011

Section Condition Report

Pavement Database: *NetworkID: X59*

Branch ID	Section ID	Last Const. Date	Surface	Use	Rank	Lanes	True Area (SqFt)	Last Inspection Date	Age At Inspection	PCI
AP (APRON)	4105	01/01/1943	AC	APRON	P	0	264,780.00	02/03/2011	68	25.00
AP (APRON)	4110	01/01/1990	AAC	APRON	P	0	15,930.00	02/03/2011	21	33.00
AP (APRON)	4115	01/01/1996	AC	APRON	P	0	13,200.00	02/03/2011	15	69.00
RW 10-28 (RUNWAY 10-28)	6205	01/01/1943	AC	RUNWAY	P	0	300,000.00	02/03/2011	68	12.00
RW 10-28 (RUNWAY 10-28)	6210	01/01/1993	AAC	RUNWAY	P	0	45,525.00	02/03/2011	18	65.00
RW 14-32 (RUNWAY 14-32)	6105	01/01/1993	AAC	RUNWAY	P	0	63,750.00	02/03/2011	18	74.00
RW 14-32 (RUNWAY 14-32)	6110	01/01/1993	AAC	RUNWAY	P	0	153,750.00	02/03/2011	18	74.00
RW 14-32 (RUNWAY 14-32)	6115	01/01/1993	AAC	RUNWAY	P	0	75,000.00	02/03/2011	18	60.00
TW BETW RW (TAXIWAY BETWEEN RWS)	105	01/01/1943	AC	TAXIWAY	P	0	69,770.00	02/03/2011	68	42.00
TW CONN (CONNECTOR TAXIWAYS TO RAMP)	205	01/01/1943	AC	TAXIWAY	P	0	22,460.00	02/03/2011	68	29.00
TW CONN (CONNECTOR TAXIWAYS TO RAMP)	206	01/01/1943	AC	TAXIWAY	P	0	15,420.00	02/03/2011	68	28.00

Section Condition Report

Pavement Database:

Age Category	Average Age At Inspection	Total Area (SqFt)	Number of Sections	Arithmetic Average PCI	PCI Standard Deviation	Weighted Average PCI
11-15	15.00	13,200.00	1	69.00	0.00	69.00
16-20	18.00	338,025.00	4	68.25	6.02	69.68
21-25	21.00	15,930.00	1	33.00	0.00	33.00
over 40	68.00	672,430.00	5	27.20	9.58	21.17
All	40.73	1,039,585.00	11	46.45	21.42	37.73

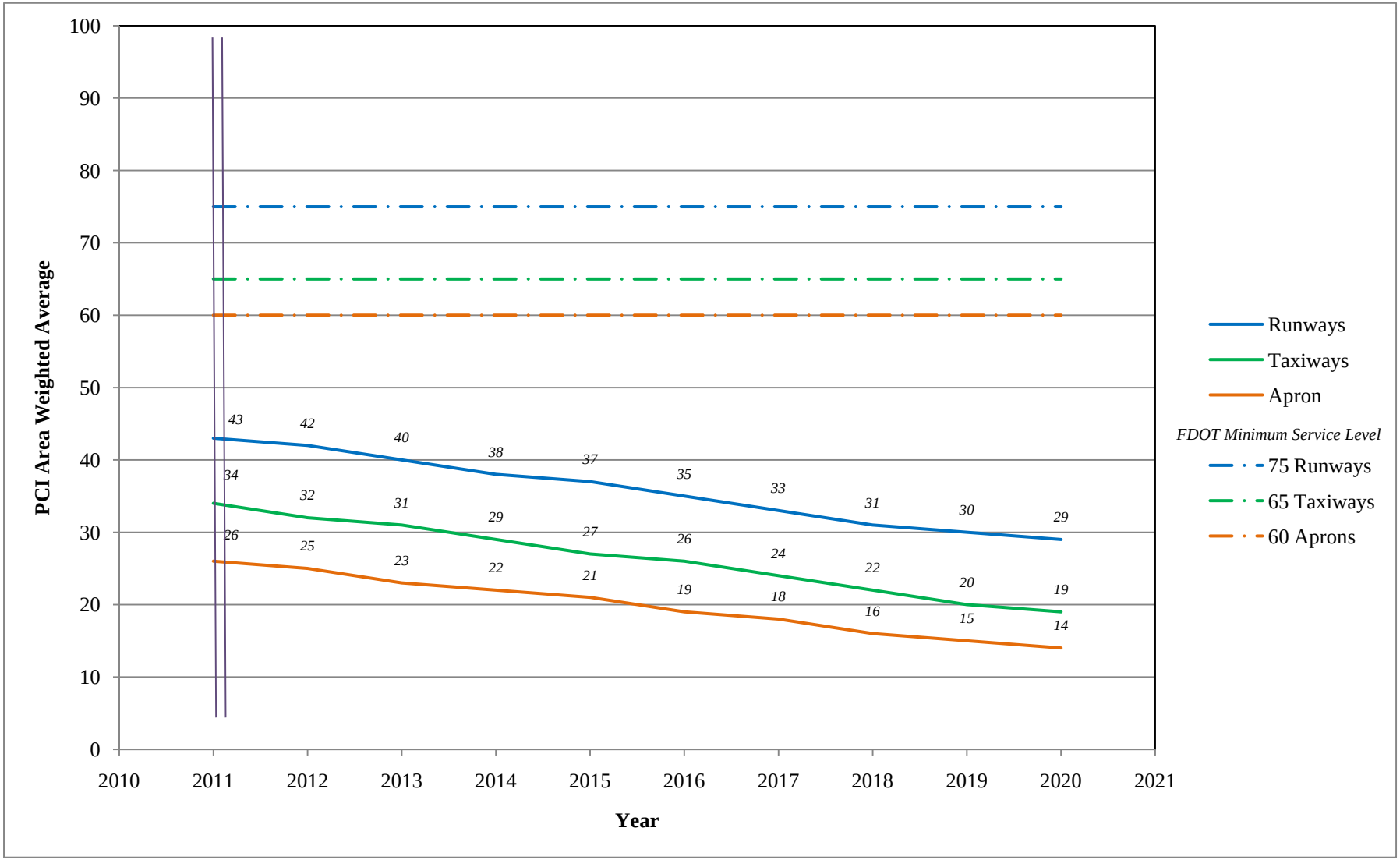
APPENDIX D

PAVEMENT CONDITION PREDICTION TABLE
PREDICTED PCI BY PAVEMENT USE GRAPH

Table D-1: Pavement Condition Prediction

Branch Name	Branch ID	Section ID	Current PCI	PCI Forecast									
				2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Apron	AP	4105	25	24	23	22	20	19	17	16	14	13	11
Apron	AP	4110	33	33	32	31	30	29	29	28	27	27	26
Apron	AP	4115	69	68	67	66	64	63	61	60	58	57	55
Runway 10-28	RW 10-28	6205	12	11	10	8	7	6	4	3	1	0	0
Runway 10-28	RW 10-28	6210	65	64	62	60	58	56	54	52	51	49	47
Runway 14-32	RW 14-32	6105	74	73	71	69	67	65	63	61	60	58	56
Runway 14-32	RW 14-32	6110	74	73	71	69	67	65	63	61	60	58	56
Runway 14-32	RW 14-32	6115	60	59	57	55	53	51	49	47	46	44	42
Taxiway Between Rws	TW BETW RW	105	42	41	40	38	36	34	33	31	29	28	26
Connector Taxiways to Ramp	TW CONN	205	29	28	27	25	23	21	20	18	16	15	13
Connector Taxiways to Ramp	TW CONN	206	28	27	26	24	22	20	19	17	15	14	12

Figure D-1: Predicted PCI by Pavement Use



APPENDIX E

YEAR 1 MAINTENANCE ACTIVITIES TABLE

Table E-1: Year 1 Maintenance Activities

Branch Name	Branch ID	Section ID	Distress Description	Distress Severity	Work Description	Work Quantity	Work Unit	Unit Cost	Work Cost
Apron	AP	4115	WEATH/RAVEL	L	Surface Seal - Rejuvenating	10,560.00	SqFt	$0.40	$4,224.04
Apron	AP	4115	BLOCK CR	M	Crack Sealing - AC	40.30	Ft	$2.25	$90.58
Runway 14-32	RW 14-32	6105	WEATH/RAVEL	L	Surface Seal - Rejuvenating	36,344.90	SqFt	$0.40	$14,538.08
Runway 14-32	RW 14-32	6110	WEATH/RAVEL	L	Surface Seal - Rejuvenating	82,000.10	SqFt	$0.40	$32,800.33
								Total =	$51,653.03

APPENDIX F

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

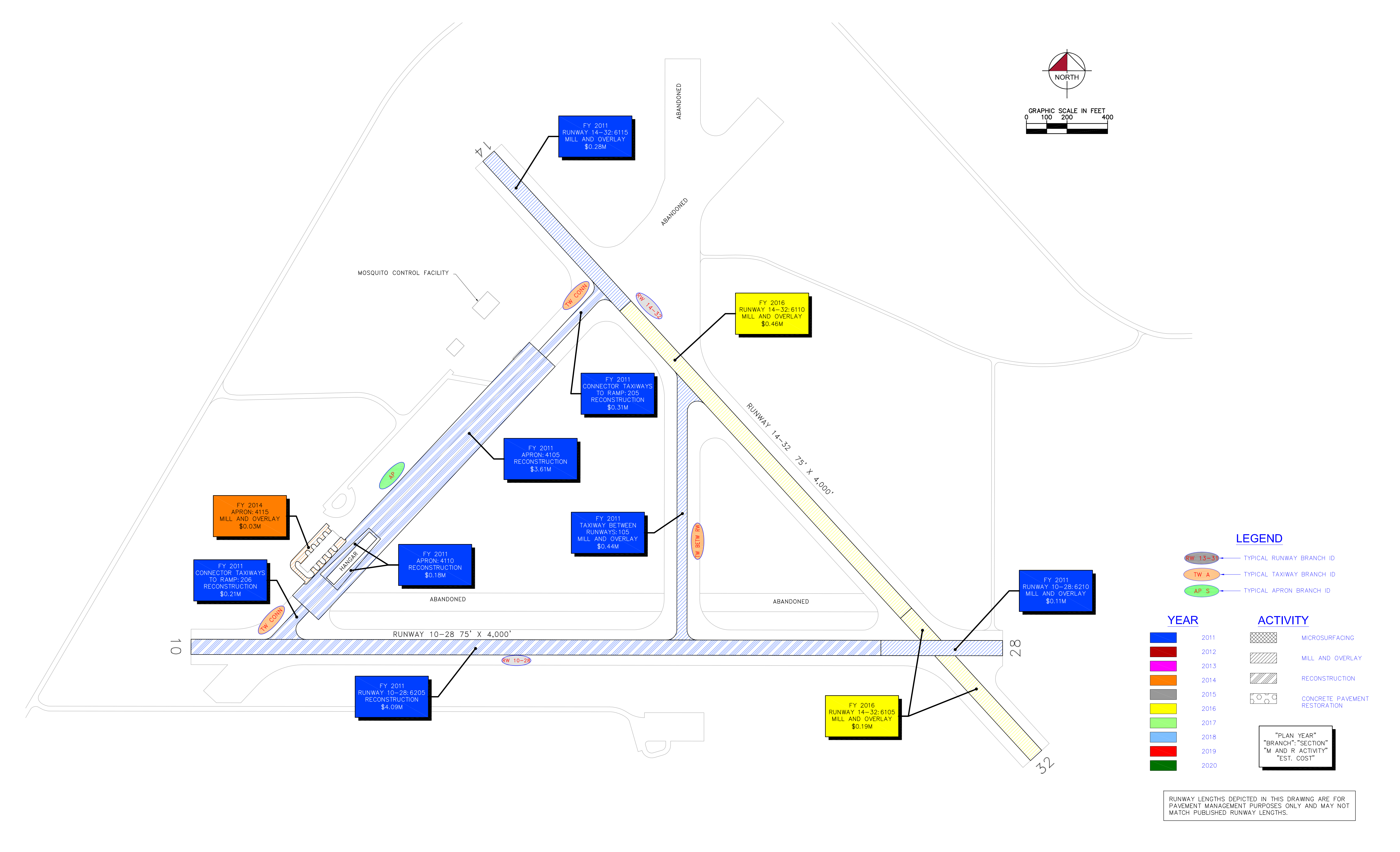
Table F-1: Major M&R Plan by Year under Unlimited Funding Scenario

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
2011	Apron	4105	AC	264,780	$3,606,304.77	24	Reconstruction	100
2011	Apron	4110	ACC	15,930	$181,936.59	33	Reconstruction	100
2011	Runway 10-28	6205	AC	300,000	$4,086,001.33	11	Reconstruction	100
2011	Runway 10-28	6210	ACC	45,525	$105,982.27	64	Mill and Overlay	100
2011	Runway 14-32	6115	ACC	75,000	$278,025.17	59	Mill and Overlay	100
2011	Taxiway Between Rws	105	AC	69,770	$438,853.33	41	Mill and Overlay	100
2011	Connector Taxiways to Ramp	205	AC	22,460	$305,905.30	28	Reconstruction	100
2011	Connector Taxiways to Ramp	206	AC	15,420	$210,020.47	27	Reconstruction	100
2014	Apron	4115	AC	13,200	$33,579.08	64	Mill and Overlay	100
2016	Runway 14-32	6105	ACC	63,750	$192,223.70	63	Mill and Overlay	100
2016	Runway 14-32	6110	ACC	153,750	$463,598.34	63	Mill and Overlay	100
				Total	**$9,902,430.35**	**43**		**100**

* Costs are adjusted for inflation.

APPENDIX G

10-YEAR M&R MAP


NORTH
GRAPHIC SCALE IN FEET
0 100 200 400
FY 2011
RUNWAY 14-32: 6115
MILL AND OVERLAY
$0.28M
ABANDONED
ABANDONED
MOSQUITO CONTROL FACILITY
TW CONN
RW 14-32
FY 2016
RUNWAY 14-32: 6110
MILL AND OVERLAY
$0.46M
FY 2011
CONNECTOR TAXIWAYS
TO RAMP: 205
RECONSTRUCTION
$0.31M
FY 2011
APRON: 4105
RECONSTRUCTION
$3.61M
RUNWAY 14-32 75' X 4,000'
AP
FY 2014
APRON: 4115
MILL AND OVERLAY
$0.03M
HANGAR
FY 2011
APRON: 4110
RECONSTRUCTION
$0.18M
FY 2011
TAXIWAY BETWEEN
RUNWAYS: 105
MILL AND OVERLAY
$0.44M
TW BETW RW
FY 2011
CONNECTOR TAXIWAYS
TO RAMP: 206
RECONSTRUCTION
$0.21M
ABANDONED
ABANDONED
TW CONN
RUNWAY 10-28 75' X 4,000'
10
28
14
32
RW 10-28
FY 2011
RUNWAY 10-28: 6210
MILL AND OVERLAY
$0.11M
FY 2011
RUNWAY 10-28: 6205
RECONSTRUCTION
$4.09M
FY 2016
RUNWAY 14-32: 6105
MILL AND OVERLAY
$0.19M
LEGEND
RW 13-31 TYPICAL RUNWAY BRANCH ID
TW A TYPICAL TAXIWAY BRANCH ID
AP S TYPICAL APRON BRANCH ID
YEAR
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
ACTIVITY
MICROSURFACING
MILL AND OVERLAY
RECONSTRUCTION
CONCRETE PAVEMENT RESTORATION
"PLAN YEAR"
"BRANCH":"SECTION"
"M AND R ACTIVITY"
"EST. COST"
RUNWAY LENGTHS DEPICTED IN THIS DRAWING ARE FOR PAVEMENT MANAGEMENT PURPOSES ONLY AND MAY NOT MATCH PUBLISHED RUNWAY LENGTHS.

NUMBER	DATE	REVISIONS

DESIGNED: ELT DRAWN: ALB CHECKED: DRB DATE:

10-YEAR M & R MAP

VALKARIA AIRPORT
BREVARD COUNTY, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

IDENTIFIER X59

FDOT DISTRICT 5

APPENDIX H

PHOTOGRAPH

Runway 10-28, Section 6205, Sample Unit 101 – High Severity (52) Weathering and Raveling

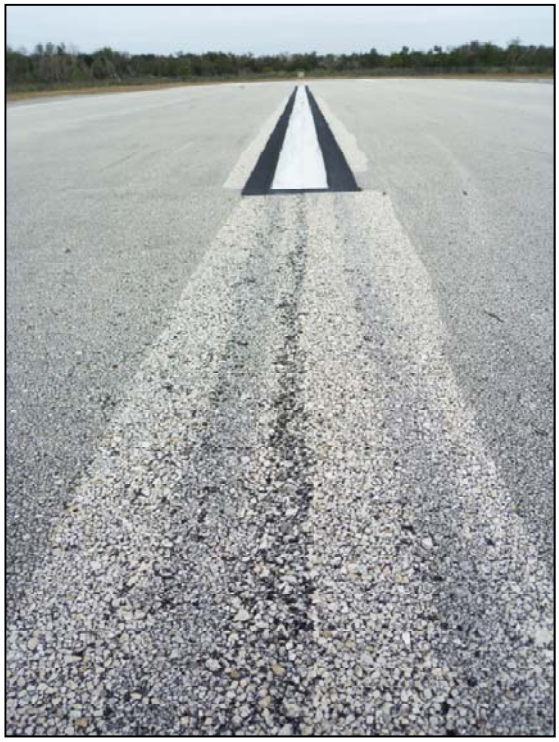
Runway 10-28, Section 6205, Sample Unit 101 – High Severity (52) Weathering and Raveling, Medium Severity (43) Block Cracking

Runway 10-28, Section 6205, Sample Unit 125 – High Severity (52) Weathering and Raveling, Medium Severity (43) Block Cracking

Runway 10-28, Section 6205, Sample Unit 125 – High Severity (52) Weathering and Raveling, Medium Severity (43) Block Cracking

Runway 14-32, Section 6105, Sample Unit 103 – Low Severity (48) Longitudinal/Transverse Cracking and low severity (52) Weathering and Raveling

Runway 14-32, Section 6105, Sample Unit 103 – Low Severity (48) Longitudinal/Transverse Cracking and low severity (52) Weathering and Raveling



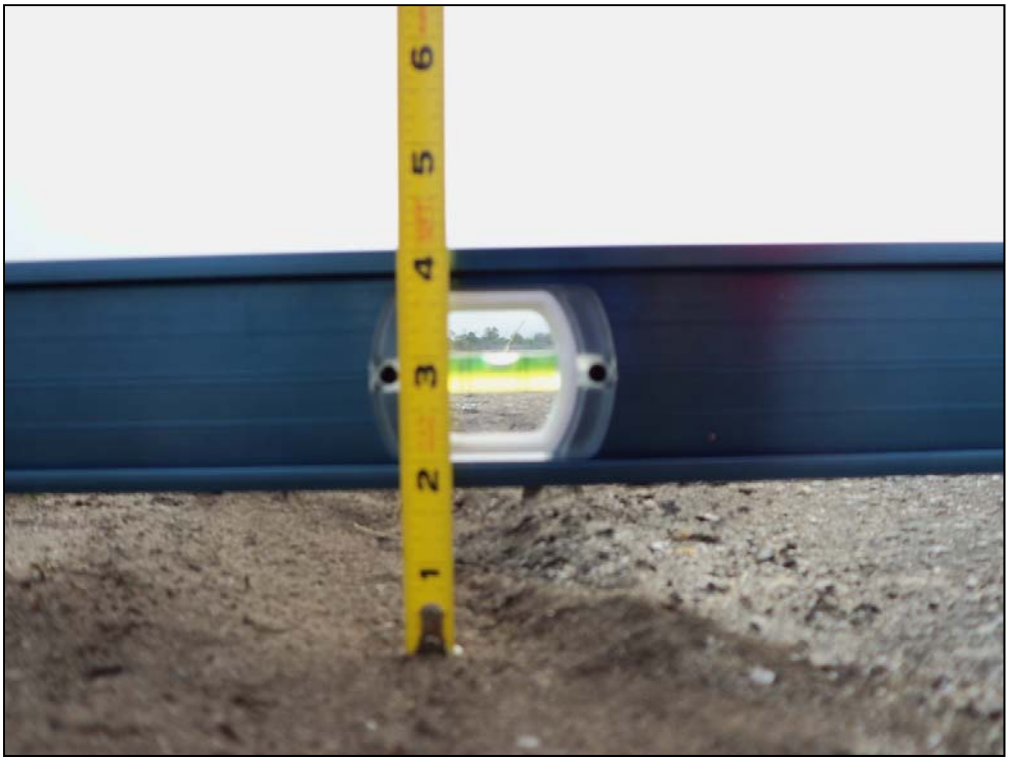
Runway 14-32, Section 6115, Sample Unit 175 – Low Severity (48) Longitudinal/Transverse Cracking and low severity (52) Weathering and Raveling

Taxiway Bravo, Section 105, Sample Unit 111 – Medium Severity (43) Block Cracking and low severity (52) Weathering and Raveling

Taxiway Bravo, Section 105, Sample Unit 111 – Medium Severity (43) Block Cracking and low severity (52) Weathering and Raveling

Taxiway Bravo, Section 105, Sample Unit 105 – Medium Severity (43) Block Cracking, high severity (45) Depression, and low severity (52) Weathering and Raveling

Taxiway Bravo, Section 105, Sample Unit 111 – Medium Severity (43) Block Cracking and low severity (52) Weathering and Raveling



Taxiway Bravo, Section 105, Sample Unit 111 – Medium Severity (43) Block Cracking and low severity (52) Weathering and Raveling

Apron, Section 4105, Sample Unit 306 – Medium/High Severity (43) Block Cracking, medium severity (52) Weathering and Raveling, and medium severity (45) Depression

Apron, Section 4105, Sample Unit 306 – Medium/High Severity (43) Block Cracking, medium severity (52) Weathering and Raveling, and medium severity (45) Depression

Shoulder pavement of Runway 10-28, located between runway and golf course. High Severity Block Cracking and High Severity Weathering and Raveling.

houlder pavement of Runway 14-32, located north of runway. High Severity Block Cracking and High Severity Weathering and Raveling.

Former Runway 4-22, apron extension beyond Runway 14-32. High Severity Block Cracking and High Severity Weathering and Raveling.

Former Runway 4-22, apron extension beyond Runway 14-32. High Severity Block Cracking and High Severity Weathering and Raveling.

Former Runway 18-36, extension of Taxiway Bravo north of Runway 14-32. High Severity Block Cracking and High Severity Weathering and Raveling.

Former Runway 18-36, extension of Taxiway Bravo north of Runway 14-32. High Severity Block Cracking and High Severity Weathering and Raveling.

APPENDIX I

PCI RE-INSPECTION REPORT

Re-inspection Report

FDOT
Report Generated Date: 3/17/2011
Site Name:

Network: X59 Name: VALKARIA AIRPORT

Branch: AP Name: APRON Use: APRON Area: 293,910.00SqFt

Section: 4105 of 3 From: - To: - Last Const.: 1/1/1943
Surface: AC Family: FDOT-GA-AP-AC Zone: Category: Rank: P
Area: 264,780.00SqFt Length: 1,700.00Ft Width: 175.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date: 2/3/2011 Total Samples: 48 Surveyed: 5
Conditions: PCI:25.00 |
Inspection Comments: KHA

Sample Number: 100 Type: R Area: 6,250.00SqFt
Sample Comments:

43 BLOCK CRACKING	M	5,000.00 SqFt	Comments:
52 WEATHERING/RAVELING	M	5,625.00 SqFt	Comments:

Sample Number: 105 Type: R Area: 6,250.00SqFt
Sample Comments:

43 BLOCK CRACKING	M	5,625.00 SqFt	Comments:
52 WEATHERING/RAVELING	M	5,625.00 SqFt	Comments:

Sample Number: 214 Type: R Area: 5,000.00SqFt
Sample Comments:

43 BLOCK CRACKING	M	4,000.00 SqFt	Comments:
52 WEATHERING/RAVELING	M	3,600.00 SqFt	Comments:
52 WEATHERING/RAVELING	H	400.00 SqFt	Comments:

Sample Number: 306 Type: R Area: 6,250.00SqFt
Sample Comments:

43 BLOCK CRACKING	M	5,000.00 SqFt	Comments:
43 BLOCK CRACKING	H	625.00 SqFt	Comments:
52 WEATHERING/RAVELING	M	5,625.00 SqFt	Comments:
45 DEPRESSION	M	140.00 SqFt	Comments:

Sample Number: 311 Type: R Area: 6,250.00SqFt
Sample Comments:

43 BLOCK CRACKING	M	4,000.00 SqFt	Comments:
52 WEATHERING/RAVELING	M	4,000.00 SqFt	Comments:

Re-inspection Report

FDOT
Report Generated Date: 3/17/2011
Site Name:

Network: X59 Name: VALKARIA AIRPORT

Branch: AP Name: APRON Use: APRON Area: 293,910.00SqFt

Section: 4110 of 3 From: - To: - Last Const.: 1/1/1990
Surface: AAC Family: FDOT-GA-AP-AAC Zone: Category: Rank: P
Area: 15,930.00SqFt Length: 335.00Ft Width: 50.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date: 2/3/2011 Total Samples: 2 Surveyed: 1
Conditions: PCI:33.00 |
Inspection Comments: KHA

Sample Number: 400 Type: R Area: 7,950.00SqFt
Sample Comments:

52	WEATHERING/RAVELING	M	7,949.86	SqFt	Comments:
48	LONGITUDINAL/TRANSVERSE CRACKING	L	81.00	Ft	Comments:
43	BLOCK CRACKING	L	20.00	SqFt	Comments:

Re-inspection Report

FDOT
Report Generated Date: 3/17/2011
Site Name:

Network: X59 Name: VALKARIA AIRPORT

Branch: AP Name: APRON Use: APRON Area: 293,910.00SqFt

Section: 4115 of 3 From: - To: - Last Const.: 1/1/1996
Surface: AC Family: FDOT-GA-AP-AC Zone: Category: Rank: P
Area: 13,200.00SqFt Length: 600.00Ft Width: 22.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date: 2/3/2011 Total Samples: 12 Surveyed: 2
Conditions: PCI:69.00 |
Inspection Comments: KHA

Sample Number: 100 Type: R Area: 3,820.00SqFt
Sample Comments:

43 BLOCK CRACKING	L	528.00	SqFt	Comments:
52 WEATHERING/RAVELING	L	3,056.00	SqFt	Comments:

Sample Number: 101 Type: R Area: 3,875.00SqFt
Sample Comments:

43 BLOCK CRACKING	M	77.00	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	L	8.00	Ft	Comments:
52 WEATHERING/RAVELING	L	3,100.00	SqFt	Comments:

Re-inspection Report

FDOT
Report Generated Date: 3/17/2011
Site Name:

Network: X59 Name: VALKARIA AIRPORT

Branch: RW 10-28 Name: RUNWAY 10-28 Use: RUNWAY Area: 345,525.00SqFt

Section: 6205 of 2 From: - To: - Last Const.: 1/1/1943
Surface: AC Family: FDOT-GA-RW-AC Zone: Category: Rank: P
Area: 300,000.00SqFt Length: 4,000.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date2/3/2011 Total Samples: 68 Surveyed: 14
Conditions: PCI:12.00 |
Inspection Comments: KHA

Sample Number: 101 Type: R Area: 3,750.00SqFt
Sample Comments:

52 WEATHERING/RAVELING	H	3,500.00	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	L	82.00	Ft	Comments:
43 BLOCK CRACKING	M	1,520.00	SqFt	Comments:
51 POLISHED AGGREGATE	N	3,500.00	SqFt	Comments:

Sample Number: 104 Type: R Area: 3,750.00SqFt
Sample Comments:

43 BLOCK CRACKING	L	3,000.00	SqFt	Comments:
52 WEATHERING/RAVELING	H	3,500.00	SqFt	Comments:
51 POLISHED AGGREGATE	N	3,500.00	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	L	26.00	Ft	Comments:

Sample Number: 107 Type: R Area: 3,750.00SqFt
Sample Comments:

43 BLOCK CRACKING	L	3,000.00	SqFt	Comments:
52 WEATHERING/RAVELING	H	3,500.00	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	L	11.00	Ft	Comments:
51 POLISHED AGGREGATE	N	3,500.00	SqFt	Comments:

Sample Number: 113 Type: R Area: 3,750.00SqFt
Sample Comments:

43 BLOCK CRACKING	L	2,000.00	SqFt	Comments:
52 WEATHERING/RAVELING	H	3,500.00	SqFt	Comments:
50 PATCHING	M	8.00	SqFt	Comments:
51 POLISHED AGGREGATE	N	3,500.00	SqFt	Comments:

Sample Number: 119 Type: R Area: 3,750.00SqFt
Sample Comments:

43 BLOCK CRACKING	L	1,500.00	SqFt	Comments:
52 WEATHERING/RAVELING	H	3,500.00	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	L	20.00	Ft	Comments:
51 POLISHED AGGREGATE	N	3,500.00	SqFt	Comments:

Sample Number: 125 Type: R Area: 3,750.00SqFt
Sample Comments:

43 BLOCK CRACKING	M	1,500.00	SqFt	Comments:
52 WEATHERING/RAVELING	H	3,000.00	SqFt	Comments:
52 WEATHERING/RAVELING	M	300.00	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	M	16.00	Ft	Comments:
51 POLISHED AGGREGATE	N	2,000.00	SqFt	Comments:

Sample Number: 129 Type: R Area: 3,750.00SqFt
Sample Comments:

Re-inspection Report

FDOT
Report Generated Date: 3/17/2011
Site Name:

50 PATCHING	M	8.00	SqFt	Comments:
43 BLOCK CRACKING	L	2,100.00	SqFt	Comments:
52 WEATHERING/RAVELING	H	3,200.00	SqFt	Comments:
52 WEATHERING/RAVELING	M	200.00	SqFt	Comments:
51 POLISHED AGGREGATE	N	3,000.00	SqFt	Comments:

Sample Number: 133 Type: R Area: 3,750.00SqFt
Sample Comments:

50 PATCHING	M	12.00	SqFt	Comments:
43 BLOCK CRACKING	M	1,800.00	SqFt	Comments:
52 WEATHERING/RAVELING	H	3,000.00	SqFt	Comments:
52 WEATHERING/RAVELING	M	400.00	SqFt	Comments:
51 POLISHED AGGREGATE	N	2,000.00	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	M	11.00	Ft	Comments:

Sample Number: 137 Type: R Area: 3,750.00SqFt
Sample Comments:

43 BLOCK CRACKING	M	3,100.00	SqFt	Comments:
52 WEATHERING/RAVELING	H	3,000.00	SqFt	Comments:
50 PATCHING	M	12.00	SqFt	Comments:
51 POLISHED AGGREGATE	N	1,800.00	SqFt	Comments:

Sample Number: 143 Type: R Area: 3,750.00SqFt
Sample Comments:

52 WEATHERING/RAVELING	H	3,000.00	SqFt	Comments:
43 BLOCK CRACKING	M	1,800.00	SqFt	Comments:
51 POLISHED AGGREGATE	N	1,800.00	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	M	19.00	Ft	Comments:

Sample Number: 149 Type: R Area: 3,750.00SqFt
Sample Comments:

43 BLOCK CRACKING	L	1,600.00	SqFt	Comments:
52 WEATHERING/RAVELING	H	2,600.00	SqFt	Comments:
52 WEATHERING/RAVELING	M	300.00	SqFt	Comments:
51 POLISHED AGGREGATE	N	2,600.00	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	L	21.00	Ft	Comments:

Sample Number: 155 Type: R Area: 3,750.00SqFt
Sample Comments:

43 BLOCK CRACKING	L	1,600.00	SqFt	Comments:
52 WEATHERING/RAVELING	H	2,400.00	SqFt	Comments:
52 WEATHERING/RAVELING	M	300.00	SqFt	Comments:
51 POLISHED AGGREGATE	N	2,400.00	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	L	56.00	Ft	Comments:

Sample Number: 161 Type: R Area: 3,750.00SqFt
Sample Comments:

50 PATCHING	M	12.00	SqFt	Comments:
43 BLOCK CRACKING	M	2,900.00	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	M	31.00	Ft	Comments:
52 WEATHERING/RAVELING	H	3,000.00	SqFt	Comments:
51 POLISHED AGGREGATE	N	3,000.00	SqFt	Comments:

Sample Number: 165 Type: R Area: 3,750.00SqFt
Sample Comments:

43 BLOCK CRACKING	M	2,000.00	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	M	19.00	Ft	Comments:
52 WEATHERING/RAVELING	H	2,000.00	SqFt	Comments:
52 WEATHERING/RAVELING	M	1,000.00	SqFt	Comments:
51 POLISHED AGGREGATE	N	2,500.00	SqFt	Comments:

Re-inspection Report

FDOT
Report Generated Date: 3/17/2011
Site Name:

Network: X59 Name: VALKARIA AIRPORT

Branch: RW 10-28 Name: RUNWAY 10-28 Use: RUNWAY Area: 345,525.00SqFt

Section: 6210 of 2 From: - To: - Last Const.: 1/1/1993
Surface: AAC Family: FDOT-GA-RW-AAC Zone: Category: Rank: P
Area: 45,525.00SqFt Length: 607.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date: 2/3/2011 Total Samples: 12 Surveyed: 3
Conditions: PCI:65.00 |
Inspection Comments: KHA

Sample Number: 169 Type: R Area: 3,750.00SqFt
Sample Comments:

52 WEATHERING/RAVELING	L	3,749.97	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	L	125.00	Ft	Comments:

Sample Number: 171 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	150.00	Ft	Comments:
52 WEATHERING/RAVELING	M	800.00	SqFt	Comments:
52 WEATHERING/RAVELING	L	2,200.00	SqFt	Comments:

Sample Number: 176 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	150.00	Ft	Comments:
52 WEATHERING/RAVELING	L	3,200.00	SqFt	Comments:
52 WEATHERING/RAVELING	M	200.00	SqFt	Comments:

Re-inspection Report

FDOT
Report Generated Date: 3/17/2011
Site Name:

Network: X59 Name: VALKARIA AIRPORT

Branch: RW 14-32 Name: RUNWAY 14-32 Use: RUNWAY Area: 292,500.00SqFt

Section: 6105 of 3 From: - To: - Last Const.: 1/1/1993
Surface: AAC Family: FDOT-GA-RW-AAC Zone: Category: Rank: P
Area: 63,750.00SqFt Length: 850.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date: 2/3/2011 Total Samples: 18 Surveyed: 5
Conditions: PCI:74.00 |
Inspection Comments: KHA

Sample Number: 103 Type: R Area: 3,750.00SqFt
Sample Comments:

52 WEATHERING/RAVELING	L	2,000.00	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	L	200.00	Ft	Comments:

Sample Number: 106 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	250.00	Ft	Comments:
52 WEATHERING/RAVELING	L	2,000.00	SqFt	Comments:

Sample Number: 110 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	250.00	Ft	Comments:
52 WEATHERING/RAVELING	L	2,000.00	SqFt	Comments:

Sample Number: 113 Type: R Area: 2,400.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	104.00	Ft	Comments:
52 WEATHERING/RAVELING	L	1,920.00	SqFt	Comments:

Sample Number: 115 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	225.00	Ft	Comments:
52 WEATHERING/RAVELING	L	2,000.00	SqFt	Comments:

Re-inspection Report

FDOT
Report Generated Date: 3/17/2011
Site Name:

Network: X59 Name: VALKARIA AIRPORT

Branch: RW 14-32 Name: RUNWAY 14-32 Use: RUNWAY Area: 292,500.00SqFt

Section: 6110 of 3 From: - To: - Last Const.: 1/1/1993
Surface: AAC Family: FDOT-GA-RW-AAC Zone: Category: Rank: P
Area: 153,750.00SqFt Length: 2,050.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date2/3/2011 Total Samples: 41 Surveyed: 8
Conditions: PCI:74.00 |
Inspection Comments: KHA

Sample Number: 123 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	218.00 Ft	Comments:
52 WEATHERING/RAVELING	L	2,000.00 SqFt	Comments:

Sample Number: 127 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	250.00 Ft	Comments:
52 WEATHERING/RAVELING	L	2,000.00 SqFt	Comments:

Sample Number: 131 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	250.00 Ft	Comments:
52 WEATHERING/RAVELING	L	2,000.00 SqFt	Comments:

Sample Number: 138 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	230.00 Ft	Comments:
52 WEATHERING/RAVELING	L	2,000.00 SqFt	Comments:

Sample Number: 142 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	200.00 Ft	Comments:
52 WEATHERING/RAVELING	L	2,000.00 SqFt	Comments:

Sample Number: 147 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	250.00 Ft	Comments:
52 WEATHERING/RAVELING	L	2,000.00 SqFt	Comments:

Sample Number: 152 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	250.00 Ft	Comments:
52 WEATHERING/RAVELING	L	2,000.00 SqFt	Comments:

Sample Number: 157 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	250.00 Ft	Comments:
52 WEATHERING/RAVELING	L	2,000.00 SqFt	Comments:

Re-inspection Report

FDOT
Report Generated Date: 3/17/2011
Site Name:

Network: X59 Name: VALKARIA AIRPORT

Branch: RW 14-32 Name: RUNWAY 14-32 Use: RUNWAY Area: 292,500.00SqFt

Section: 6115 of 3 From: - To: - Last Const.: 1/1/1993
Surface: AAC Family: FDOT-GA-RW-AAC Zone: Category: Rank: P
Area: 75,000.00SqFt Length: 1,000.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date: 2/3/2011 Total Samples: 20 Surveyed: 5
Conditions: PCI:60.00 |
Inspection Comments: KHA

Sample Number: 160 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	750.00	Ft	Comments:
52 WEATHERING/RAVELING	L	2,000.00	SqFt	Comments:

Sample Number: 166 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	250.00	Ft	Comments:
52 WEATHERING/RAVELING	L	2,000.00	SqFt	Comments:

Sample Number: 169 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	250.00	Ft	Comments:
52 WEATHERING/RAVELING	M	200.00	SqFt	Comments:
52 WEATHERING/RAVELING	H	1,800.00	SqFt	Comments:

Sample Number: 172 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	250.00	Ft	Comments:
52 WEATHERING/RAVELING	M	300.00	SqFt	Comments:
52 WEATHERING/RAVELING	L	1,700.00	SqFt	Comments:

Sample Number: 175 Type: R Area: 3,750.00SqFt
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	L	268.00	Ft	Comments:
52 WEATHERING/RAVELING	L	2,000.00	SqFt	Comments:

Re-inspection Report

FDOT
Report Generated Date: 3/17/2011
Site Name:

Network: X59 Name: VALKARIA AIRPORT

Branch: TW BETW RW Name: TAXIWAY BETWEEN RWS Use: TAXIWAY Area: 69,770.00SqFt

Section: 105 of 1 From: - To: - Last Const.: 1/1/1943
Surface: AC Family: FDOT-GA-TW-AC Zone: Category: Rank: P
Area: 69,770.00SqFt Length: 1,300.00Ft Width: 50.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date: 2/3/2011 Total Samples: 13 Surveyed: 3
Conditions: PCI:42.00 |
Inspection Comments: KHA

Sample Number: 102 Type: R Area: 5,000.00SqFt
Sample Comments:

43 BLOCK CRACKING	M	4,500.00 SqFt	Comments:
52 WEATHERING/RAVELING	L	4,000.00 SqFt	Comments:

Sample Number: 105 Type: R Area: 5,000.00SqFt
Sample Comments:

43 BLOCK CRACKING	M	4,500.00 SqFt	Comments:
52 WEATHERING/RAVELING	L	4,000.00 SqFt	Comments:
45 DEPRESSION	H	16.00 SqFt	Comments:

Sample Number: 111 Type: R Area: 5,000.00SqFt
Sample Comments:

43 BLOCK CRACKING	M	4,500.00 SqFt	Comments:
52 WEATHERING/RAVELING	L	4,000.00 SqFt	Comments:

Re-inspection Report

FDOT
Report Generated Date: 3/17/2011
Site Name:

Network: X59 Name: VALKARIA AIRPORT

Branch: TW CONN Name: CONNECTOR TAXIWAYS TO RAM Use: TAXIWAY Area: 37,880.00SqFt

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Section: 205 of 2 From: - To: - Last Const.: 1/1/1943
Surface: AC Family: FDOT-GA-TW-AC Zone: Category: Rank: P
Area: 22,460.00SqFt Length: 430.00Ft Width: 50.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date: 2/3/2011 Total Samples: 5 Surveyed: 2
Conditions: PCI:29.00 |
Inspection Comments: KHA

Sample Number: 217 Type: R Area: 4,660.00SqFt
Sample Comments:

43 BLOCK CRACKING	M	4,000.00 SqFt	Comments:
52 WEATHERING/RAVELING	M	4,000.00 SqFt	Comments:

Sample Number: 219 Type: R Area: 5,000.00SqFt
Sample Comments:

43 BLOCK CRACKING	M	4,500.00 SqFt	Comments:
52 WEATHERING/RAVELING	M	4,500.00 SqFt	Comments:

Re-inspection Report

FDOT
Report Generated Date: 3/17/2011
Site Name:

Network: X59 Name: VALKARIA AIRPORT

Branch: TW CONN Name: CONNECTOR TAXIWAYS TO RAM Use: TAXIWAY Area: 37,880.00SqFt

Section: 206 of 2 From: - To: - Last Const.: 1/1/1943
Surface: AC Family: FDOT-GA-TW-AC Zone: Category: Rank: P
Area: 15,420.00SqFt Length: 250.00Ft Width: 50.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date: 2/3/2011 Total Samples: 2 Surveyed: 1
Conditions: PCI:28.00 |
Inspection Comments: KHA

Sample Number: 101 Type: R Area: 6,260.00SqFt
Sample Comments:

43 BLOCK CRACKING	M	5,643.00 SqFt	Comments:
52 WEATHERING/RAVELING	M	5,643.00 SqFt	Comments: