STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

AVIATION OFFICE

Statewide Airfield Pavement Management Program

Sebastian Municipal Airport– X26
(General Aviation)
Sebastian, Florida
(District 4)

January 2012

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EXECUTIVE SUMMARY

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

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

During January 2012, the PCI survey was performed at Sebastian 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 2012 is 82, representing a Satisfactory 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	PCI Range	Condition Rating	FDOT Minimum Service Level	MicroPAVER Minimum PCI	Action Required
East Run-Up Apron	86	86	Good	60	65	
SW Run-Up Apron	100	100	Good	60	65	
T-Hangar Apron	84	84	Satisfactory	60	65	
West Apron	84	29 - 95	Satisfactory	60	65	X
Runway 4-22	89	89	Good	75	65	
Runway 8-26	79	77 - 89	Satisfactory	75	65	
Taxiway Alpha	92	71 - 95	Good	65	65	
Taxiway Bravo	87	87	Good	65	65	
Taxiway Charlie	19	19 - 25	Serious	65	65	X
Taxiway Connector	94	94	Good	65	65	

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

Table II: Condition Summary by Pavement Use

Use	Average Area-Weighted PCI	Condition Rating
Runway	84	Satisfactory
Taxiway	74	Satisfactory
Apron	85	Satisfactory
All (Weighted)	**82**	**Satisfactory**

Table III: Condition Summary by Pavement Rank

Rank*	Average Area-Weighted PCI	Condition Rating
Primary	81	Satisfactory
Secondary	N/A	N/A
Tertiary	89	Good
All (Weighted)	**82**	**Satisfactory**

*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 Sebastian Municipal Airport, include: Taxiway C and the West Apron. These pavement sections exhibited distresses which justify full reconstruction. 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
West Apron	5115	AC	14,563	$198,343.08	28	Reconstruction	100
West Apron	410	AC	14,645	$124,324.67	37	Reconstruction	100
Taxiway C	306	AC	9,418	$128,278.65	24	Reconstruction	100
Taxiway C	305	AC	51,174	$696,994.74	18	Reconstruction	100
				$1,147,941.14	**27**		**100**

* Costs are adjusted for inflation.

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

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

Year	Preventative	Major M&R	Total Year Cost
2012	$53,229.31	$1,147,941.14	$1,201,170.45
2013	$63,464.86	$0.00	$63,464.86
2014	$81,540.70	$0.00	$81,540.70
2015	$98,946.05	$0.00	$98,946.05
2016	$119,062.29	$20,515.22	$139,577.51
2017	$140,246.61	$0.00	$140,246.61
2018	$162,090.37	$0.00	$162,090.37
2019	$192,367.18	$0.00	$192,367.18
2020	$219,151.47	$0.00	$219,151.47
2021	$186,823.67	$556,051.51	$742,875.18
Total	**$1,316,922.51**	**$1,724,507.87**	**$3,041,430.38**

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 only decrease

from 81 in 2012 to 78 in 2021. Appendix F lists the Major M&R for the 10-Year program. Appendix G graphically depicts the program activity.

It is important to note that although preventative and some major M&R activities would have to be conducted over several years, the area-weighted PCI value for all Sebastian Municipal Airport pavements in 2021 may remain near 74. 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 Sebastian 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 (AMEC Engineering and Consulting and All About Pavements, Inc.) provide technical and administrative assistance to the AO-PM during the execution of this program, which involves the continuing evaluation of airport pavements and updating of the SAPMP based upon procedures outlined in FAA Advisory Circular 150/5380-6B "Guidelines and Procedures for Maintenance of Airport Pavements" and ASTM D 5340 "Standard Test Method for Airport Pavement Condition Index Surveys" (2004).

1.3.3 *Airport Role*

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

1.4 Pavement Types and Pavement Management

1.4.1 *Pavement basics*

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

- Flexible pavement, composed of an asphalt concrete (AC) surface, and
- Rigid pavement composed of a Portland Cement Concrete (PCC) surface.

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

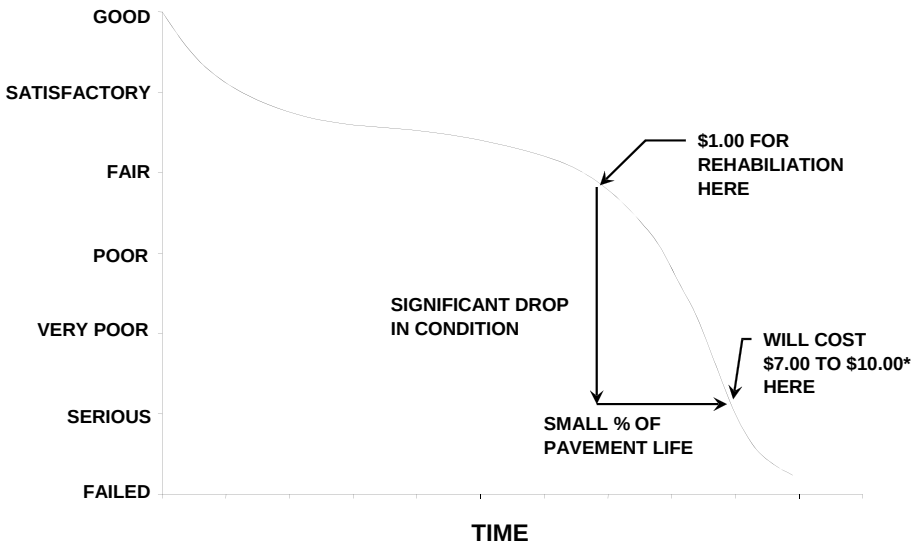
A small percentage of the airport pavements in Florida are composed of asphalt concrete surface over Portland Cement Concrete (APC). This pavement type is known as “composite” pavement.

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

1.4.2 *Pavement Management System Concept*

The SAPMP utilized a Pavement Management System (PMS) to develop the M&R recommendations discussed in this report. A PMS is a tool to assist engineers, planners and managing agencies in making decisions when planning pavement M&R. The management of pavements involves scheduling pavement maintenance and rehabilitation before pavements deteriorate to a condition where reconstruction (the most expensive alternative) is the only solution. Figure 1-1 below, taken from FAA/AC 5380-7A “Airport Pavement Management Program”, illustrates how a pavement generally deteriorates and the relative cost of rehabilitation at various times throughout its life. Note that during the first 75 percent of a pavement’s life, it performs relatively well. After that, however, it begins to deteriorate rapidly. The number of years a pavement stays in “good” condition depends on how well it is maintained. As the illustration demonstrates, the cost of maintaining the pavement above a critical condition before rapid deterioration occurs is much less compared to maintaining pavements after substantial deterioration has occurred.

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

Sebastian Municipal Airport (X26) consists of two runways. Runway 4-22 is 75-ft wide by 4,024-ft long. Runway 8-26 is 75-ft wide by 3,200-ft long. Runway 8-26 is served by parallel Taxiway B and multiple taxiway connectors. Taxiway A serves the western aprons and connects Runway 4-22 to Runway 8-26. Former Runway 13-31 and its parallel taxiway were abandoned. The airport has hangar facilities and aprons on the west side of the property. The airport runways, taxiways and aprons are constructed of asphalt concrete pavement. This airport is designated as a General Aviation airport and is located in District 4 of the Florida Department of Transportation.

Sebastian Municipal Airport was built out by the United States Navy in 1943 when it was known as Roseland Satellite Field or Outlying Field Roseland. It was built to support the naval training operations at Naval Air Station (NAS) Vero Beach and NAS Melbourne. It was inactivated as a naval facility after the war and transferred to the City of Sebastian in 1959.

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

2.1 Network Definition

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

2.1.1 *Branch Section Identification*

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

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

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

2.1.2 *System Inventory and Network Definition Update*

The System Inventory and Network Definition drawings are used to identify changes in the network since the most recent update from the 2006/2008 inspections and also to plan the field inspection activities for the 2012 survey. Prior to the field inspection process, the System Inventory drawing was updated from the previous inspection with notes indicating recent

construction projects on the various Sections of pavement throughout the airfield. This System Inventory drawing is used to update the Network Definition drawing.

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

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

The updated System Inventory and Network Definition drawings for Sebastian 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
2010	X26 East	New Road Construction - Industrial Park Cul de Sac
2010	Runway 4-22	Decrease Runway Width
2011	X26 East	New Hangar Construction

2.2 Pavement Inventory

The detailed pavement inventory was updated to reflect the network definition update and field inspection results. The total number of sample units designated to be inspected at the airport is 51 sample units.

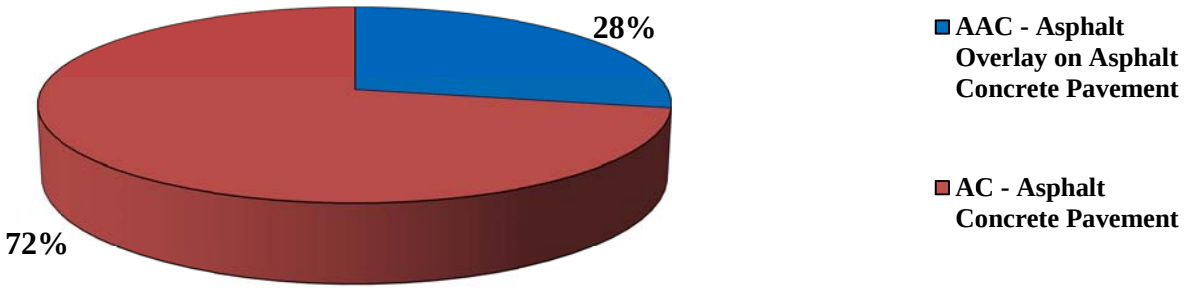
The total airfield pavement area in 2012 at Sebastian Municipal Airport is 1,132,914 square feet. The breakdown of pavement area for each pavement use is provided in Table 2-2.

Table 2-2: Pavement Area by Pavement Use

Use	Area (ft^2)	% of Total Area
Runway	533,887	47%
Taxiway	288,639	25%
Apron	310,388	27%
All (Weighted)	**1,132,914**	**100%**

Figure 2-1 presents the breakdown of the pavement area at Sebastian 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
East Run-Up Apron	AP RU E	5510	13,788	AC	T	1/1/2004	1	4
SW Run-Up Apron	AP RU SW	5405	19,740	AC	T	1/1/2005	1	6
T-Hangar Apron	AP T-HANG	5305	28,346	AC	T	1/1/2003	1	9
West Apron	AP W	410	14,645	AC	P	1/1/1943	1	3
West Apron	AP W	420	75,890	AC	P	1/1/2004	2	15
West Apron	AP W	5120	20,905	AC	P	1/1/2004	1	4
West Apron	AP W	5105	122,511	AC	P	1/1/2005	3	24
West Apron	AP W	5115	14,563	AC	P	1/1/2005	1	3
Runway 4-22	RW 4-22	6205	293,859	AAC	P	1/1/2003	16	78
Runway 8-26	RW 8-26	6305	134,532	AC	P	1/1/2004	5	18
Runway 8-26	RW 8-26	6310	43,436	AC	P	1/1/2004	2	6
Runway 8-26	RW 8-26	6315	46,013	AC	P	1/1/2004	2	6
Runway 8-26	RW 8-26	6320	16,047	AAC	P	1/1/2004	1	3
Taxiway Alpha	TW A	425	7,008	AAC	P	1/1/2004	1	2
Taxiway Alpha	TW A	405	62,195	AC	P	1/1/2005	3	16
Taxiway Alpha	TW A	415	16,537	AC	P	1/1/2005	1	4
Taxiway Bravo	TW B	610	119,315	AC	P	1/1/2004	4	32
Taxiway Charlie	TW C	305	51,174	AC	P	1/1/1943	2	10
Taxiway Charlie	TW C	306	9,418	AC	P	1/1/1943	1	2
Taxiway Connector	TW CONN	515	22,992	AC	P	1/1/2004	2	5

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 Sebastian Municipal Airport were performed in January 2012. Data was recorded in the field in accordance with FAA Advisory Circular 150/5380-6B "Guidelines and Procedures for Maintenance of Airport Pavements" and ASTM D 5340 "Standard Test Method for Airport Pavement Condition Index Surveys" (2004).

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

3.2 Pavement Condition Index Results

According to the 2012 survey, the overall area-weighted PCI at Sebastian Municipal Airport is 82, representing a Satisfactory overall network condition.

Overall the airport exhibited pavement distresses associated with climate, load and age distresses. Asphalt Concrete pavement distresses include; weathering, raveling, block cracking, longitudinal and transverse cracking and alligator cracking.

Runway 4-22 exhibited low severity longitudinal/transverse cracking, low and medium severity weathering/raveling and low severity patching. Runway 8-26 exhibited low and high severity weathering/raveling and low severity longitudinal/transverse cracking. These are age and climate related distresses.

Taxiway C and the northern areas of the West Apron exhibited low, medium and high severity weathering/raveling, low and medium severity block cracking, medium severity alligator cracking and low and medium severity patching. These pavements were by far the oldest on the airport and the stresses were indicative of their age.

The rest of the airport taxiways and aprons exhibited occasional low severity longitudinal/transverse cracking and low severity weathering and raveling. These pavements generally appear to be in Good condition.

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 Sebastian Municipal Airport.

Figure 3-1: Network PCI Distribution by Rating Category

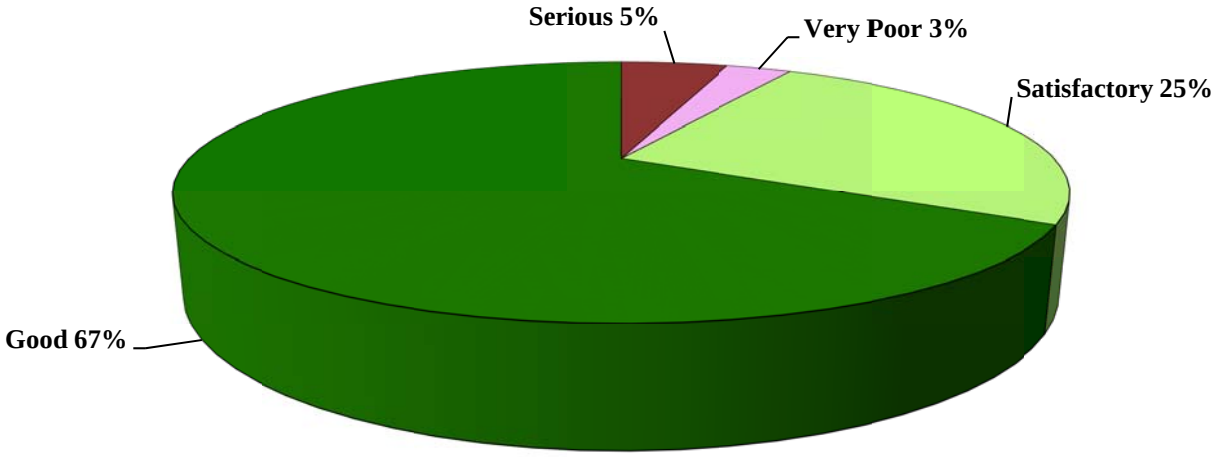


Figure 3-1a: Condition Rating Summary

Condition Rating	Total Area (ft^2)	Percent
Good	762,874	67%
Satisfactory	280,239	25%
Fair	0	0%
Poor	0	0%
Very Poor	29,208	3%
Serious	60,592	5%
Failed	0	0%

Approximately 92% of the network is in Good and Satisfactory condition while 8% of the network is in Serious and Very Poor condition. Table 3-3 illustrates the area-weighted PCI computed individually for each pavement use.

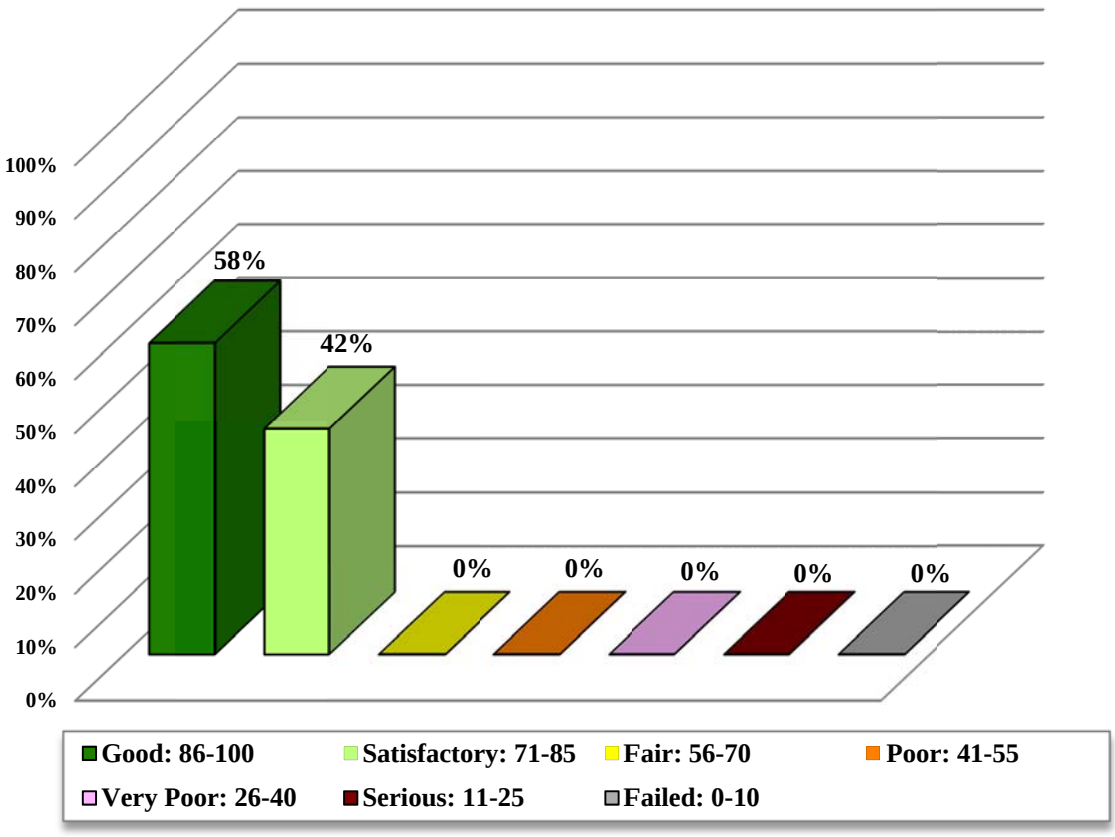
Table 3-3: Condition by Pavement Use

Use	Average Area-Weighted PCI	Condition Rating
Runway	84	Satisfactory
Taxiway	74	Satisfactory
Apron	85	Satisfactory
All (Weighted)	**82**	**Satisfactory**

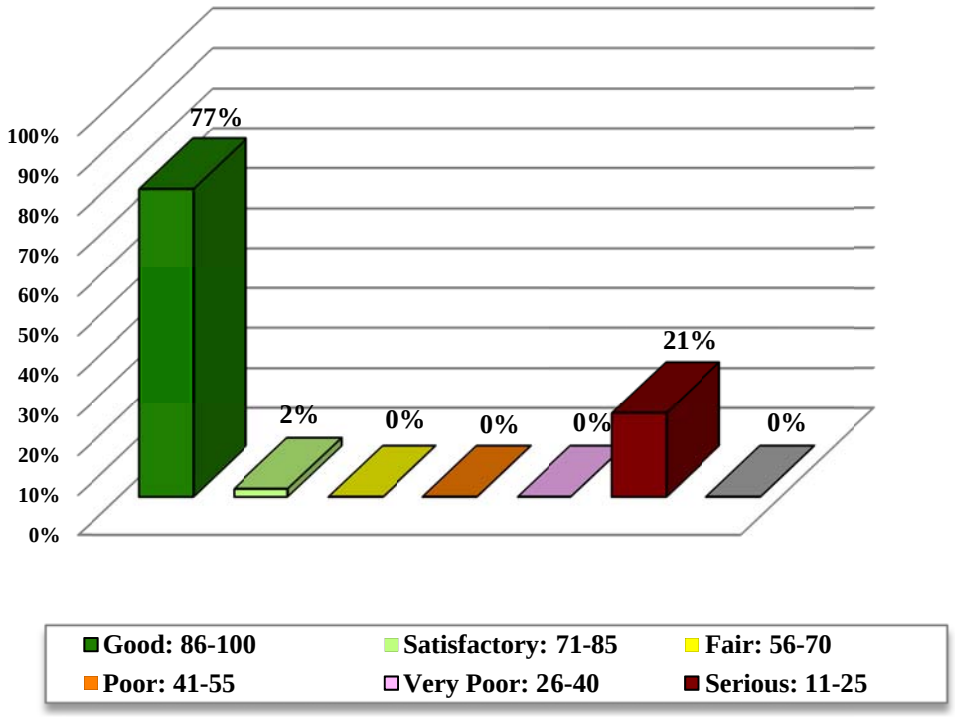
Figure 3-2 presents the breakdown of PCI by range for each pavement use.

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

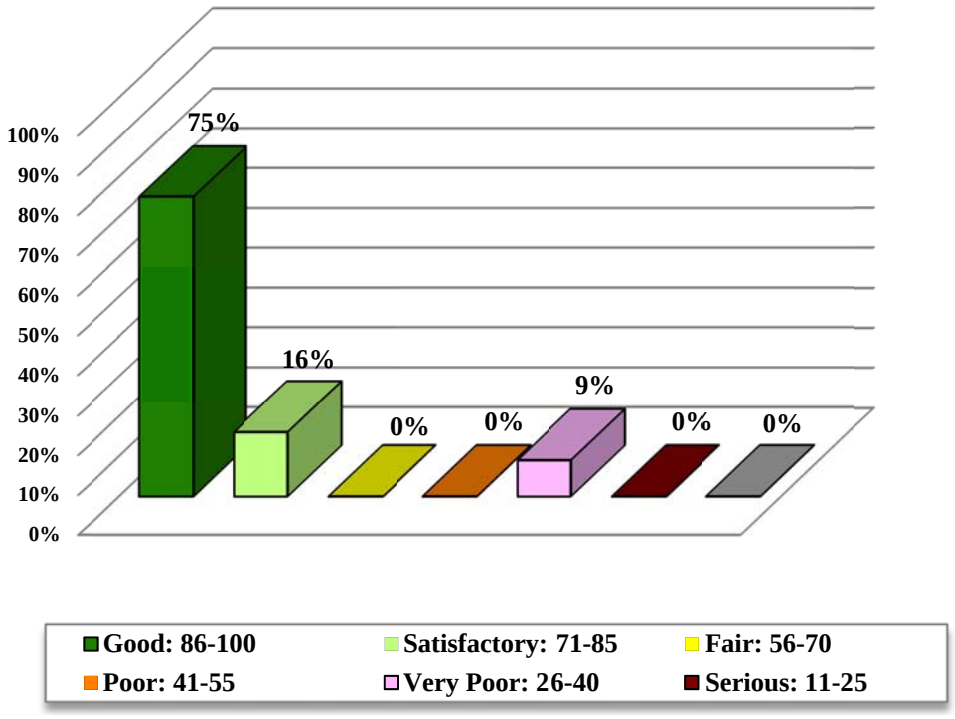
(a) Runway



(b) Taxiway



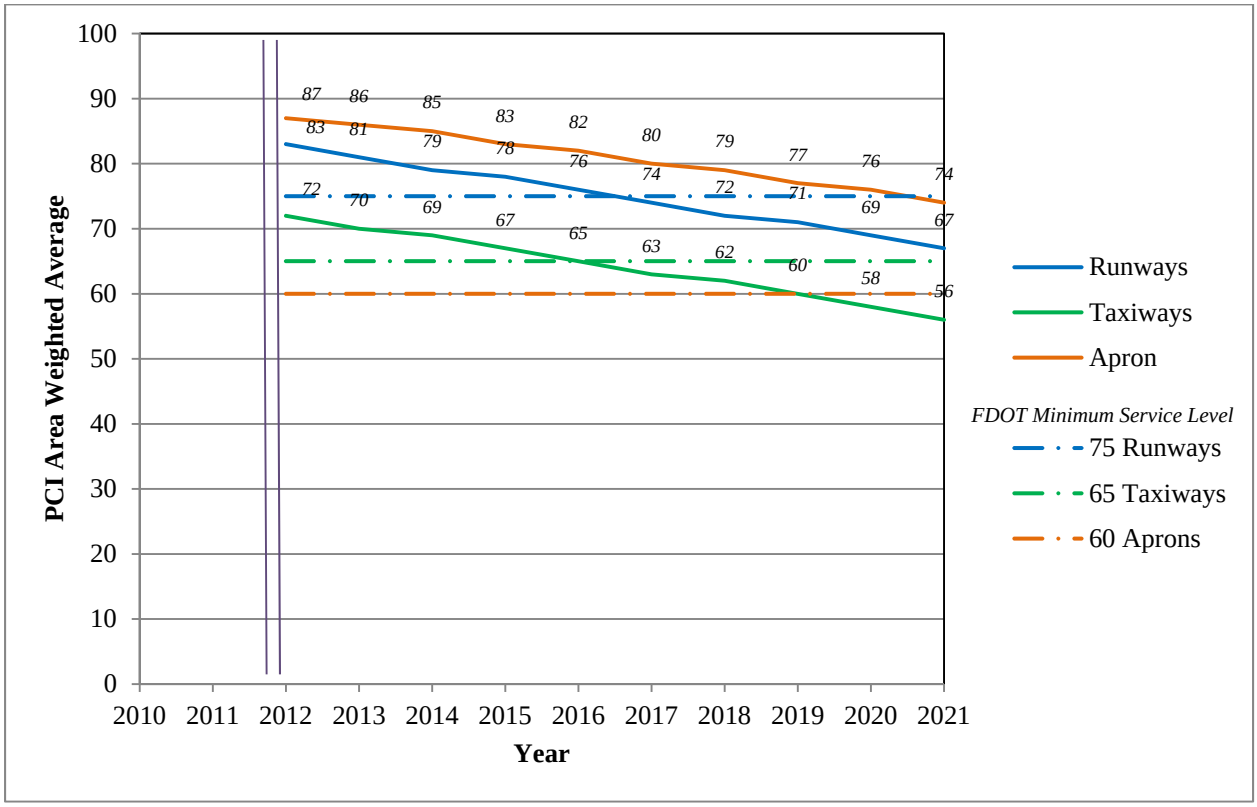
(c) Apron



4. PAVEMENT CONDITION PREDICTION

Performance prediction models or deterioration curves for PCI were used to develop a condition forecast. The performance models were developed for combinations of variables such as pavement use (runway, taxiway or apron), surface type (AC or PCC) and airport category (GA, RL, or PR). Figure 4-1 illustrates the predicted performance of pavements at Sebastian 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 2012 to 2021.

5. MAINTENANCE POLICIES AND COSTS

5.1 Policies

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

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

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

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

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

Table 5-1: Routine Maintenance Activities for Airfield Pavements

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

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

Table 5-2: Critical PCI for General Aviation Airports

Use	Critical PCI
Runway	65
Taxiway	65
Apron	65

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

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

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

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

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

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

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

5.2 Unit Costs

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

5.3 M&R Activities

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

Table 5-5: Maintenance Unit Costs for FDOT

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 2012. The analysis was conducted using an unlimited budget. An unlimited budget allows all M&R needs to be identified along with the associated cost regardless of priority.

Table 6-1 presents the M&R list of immediate needs for Major M&R, i.e. Year 1 of the forecast. The importance of this listing is that it points out the major activities triggered by the current condition of the pavements.

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

Branch Name	Section ID	Surface Type	Section Area (ft^2)	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
West Apron	5115	AC	14,563	$198,343.08	28	Reconstruction	100
West Apron	410	AC	14,645	$124,324.67	37	Reconstruction	100
Taxiway Charlie	306	AC	9,418	$128,278.65	24	Reconstruction	100
Taxiway Charlie	305	AC	51,174	$696,994.74	18	Reconstruction	100
				$1,147,941.14	**27**		**100**

* Costs are adjusted for inflation.

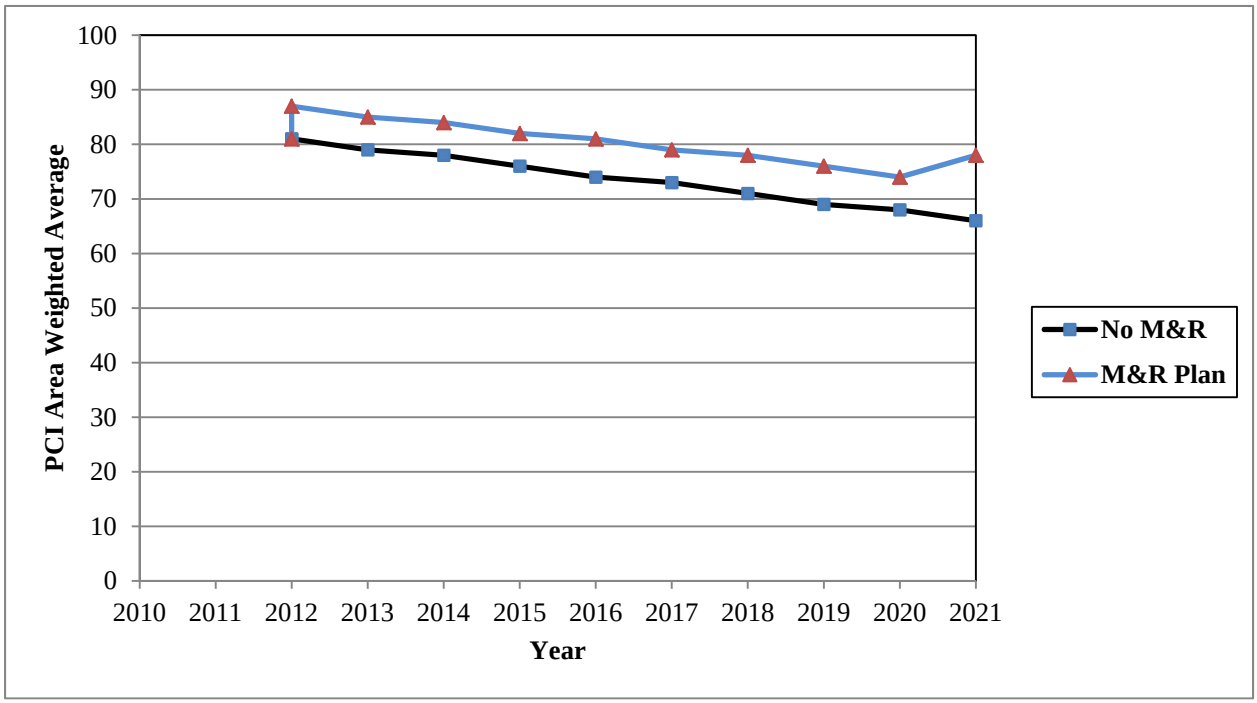
In addition to the immediate Major M&R needs, maintenance activities for pavement areas above critical PCI have been recommended by MicroPAVER for Year 1 and are shown in Table 6-3 below. The costs provided in Table 5-5 were used to calculate the costs associated with this work, which is intended to 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
Runway 8-26	RW 8-26	6320	WEATH/RAVEL	L	Surface Seal - Rejuvenating	1,054.80	SqFt	$0.40	$421.92
Runway 8-26	RW 8-26	6315	WEATH/RAVEL	L	Surface Seal - Rejuvenating	10,736.30	SqFt	$0.40	$4,294.55
Runway 8-26	RW 8-26	6310	WEATH/RAVEL	L	Surface Seal - Rejuvenating	17,084.60	SqFt	$0.40	$6,833.91
Runway 8-26	RW 8-26	6305	WEATH/RAVEL	H	Microsurfacing - AC	3.60	SqFt	$0.65	$2.33
Runway 8-26	RW 8-26	6305	WEATH/RAVEL	L	Surface Seal - Rejuvenating	44,484.80	SqFt	$0.40	$17,794.08
Runway 4-22	RW 4-22	6205	WEATH/RAVEL	M	Surface Seal - Coat Tar	1,883.00	SqFt	$0.40	$753.19
Runway 4-22	RW 4-22	6205	WEATH/RAVEL	L	Surface Seal - Rejuvenating	12,049.00	SqFt	$0.40	$4,819.64
East Run-Up Apron	AP RU E	5510	WEATH/RAVEL	L	Surface Seal - Rejuvenating	1,378.80	SqFt	$0.40	$551.52
T-Hangar Apron	AP T-HANG	5305	WEATH/RAVEL	L	Surface Seal - Rejuvenating	8,503.70	SqFt	$0.40	$3,401.50
West Apron	AP W	5120	WEATH/RAVEL	M	Surface Seal - Coat Tar	565.40	SqFt	$0.40	$226.15
West Apron	AP W	5120	WEATH/RAVEL	L	Surface Seal - Rejuvenating	6,271.30	SqFt	$0.40	$2,508.55
West Apron	AP W	5105	WEATH/RAVEL	L	Surface Seal - Rejuvenating	7,350.60	SqFt	$0.40	$2,940.27
Taxiway Bravo	TW B	610	WEATH/RAVEL	L	Surface Seal - Rejuvenating	16,192.60	SqFt	$0.40	$6,477.10
Taxiway Connector	TW CONN	515	WEATH/RAVEL	H	Microsurfacing - AC	2.30	SqFt	$0.65	$1.47
Taxiway Connector	TW CONN	515	WEATH/RAVEL	L	Surface Seal - Rejuvenating	283.30	SqFt	$0.40	$113.31
Taxiway Alpha	TW A	425	L & T CR	M	Crack Sealing - AC	200.30	Ft	$2.25	$450.62
Taxiway Alpha	TW A	425	WEATH/RAVEL	L	Surface Seal - Rejuvenating	600.70	SqFt	$0.40	$240.27
West Apron	AP W	420	WEATH/RAVEL	L	Surface Seal - Rejuvenating	2,049.00	SqFt	$0.40	$819.61
Taxiway Alpha	TW A	415	WEATH/RAVEL	L	Surface Seal - Rejuvenating	888.40	SqFt	$0.40	$355.37
Taxiway Alpha	TW A	405	WEATH/RAVEL	L	Surface Seal - Rejuvenating	559.80	SqFt	$0.40	$223.93
								Total =	$53,229.29

The 10 year forecast results are shown in Figure 6-1, illustrating the effect on pavement condition (PCI) of doing no maintenance versus having unlimited funds and performing all M&R actions based on the policies.

Figure 6-1: Budget Scenario Analysis



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

- The PCI will deteriorate from an average of 81 in 2012 to an average of 66 in ten years if no M&R activities are performed. Specific pavement sections may be closer to critical condition as identified by the immediate needs in Table IV. Estimated PCI ratings are presented in Appendix D.
- The PCI will remain at or above an average of 74 through the 10-year analysis period under the unlimited budget scenario. A 2021 PCI average of 78 PCI points higher than a "No M&R" scenario. The total cost for Major M&R over this 10-year period is about $1,724,507.87.

7. MAINTENANCE AND REHABILITATION PLAN

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

Table 7-1 provides the summary results under the critical PCI unlimited funding scenario.

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

Year	Preventative	Major M&R	Total Year Cost
2012	$53,229.31	$1,147,941.14	$1,201,170.45
2013	$63,464.86	$0.00	$63,464.86
2014	$81,540.70	$0.00	$81,540.70
2015	$98,946.05	$0.00	$98,946.05
2016	$119,062.29	$20,515.22	$139,577.51
2017	$140,246.61	$0.00	$140,246.61
2018	$162,090.37	$0.00	$162,090.37
2019	$192,367.18	$0.00	$192,367.18
2020	$219,151.47	$0.00	$219,151.47
2021	$186,823.67	$556,051.51	$742,875.18
Total	**$1,316,922.51**	**$1,724,507.87**	**$3,041,430.38**

Note: Costs are adjusted for inflation.

Approximately 67% of the total Major M&R cost is required in the first year (2012). According to the 2012 inspections, the following pavement sections were in immediate need of Major M&R Activity:

- **Taxiway C** – Asphalt Pavement Reconstruction
- **West Apron** – Asphalt Pavement Reconstruction

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

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

8. VISUAL AIDS

8.1 System Inventory and Network Definition Drawings

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

8.2 Condition Map

A Condition Map that has been prepared based on data linked to the airport's shape file is included in Appendix B. The Condition Map graphically show the inventory and condition of the airport via color coding shown on the shape file. The coding provides a visual representation that illustrates the PCIs for each pavement section.

8.3 10-Year M&R Map

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

8.4 Photographs

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

9. RECOMMENDATIONS

Pavement condition inspections were performed at Sebastian 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 2012 condition inspection and M&R analysis results:

- **Taxiway C** – Asphalt Pavement Reconstruction
- **West Apron** – Asphalt Pavement Reconstruction

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

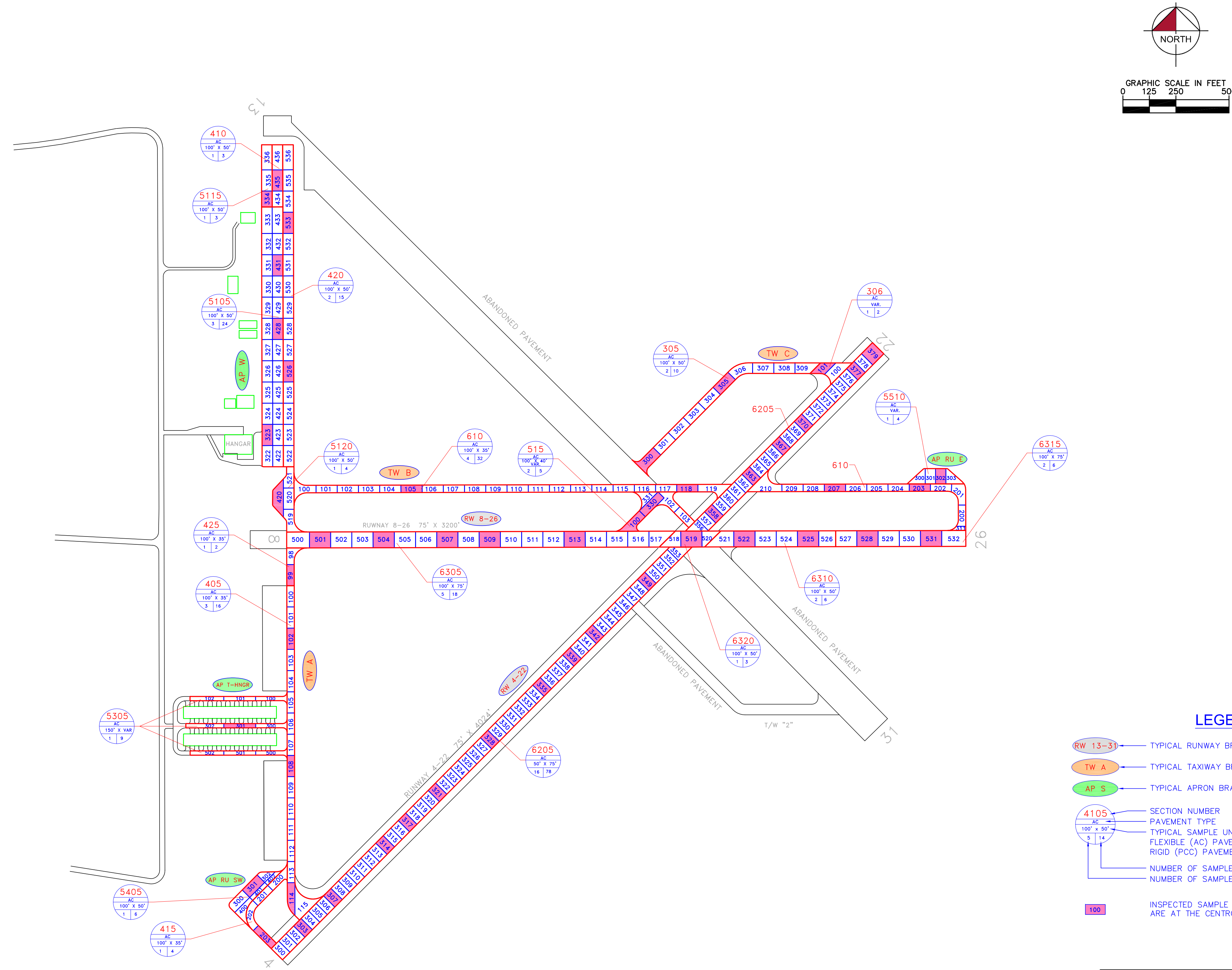
APPENDIX A

NETWORK DEFINITION MAP

SYSTEM INVENTORY MAP

PAVEMENT INVENTORY TABLE

WORK HISTORY REPORT



LEGEND

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

TOTAL SAMPLES INSPECTED = 51

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

NUMBER	DATE	REVISIONS

DESIGNED: BAM DRAWN: ALB CHECKED: EVV DATE:

NETWORK DEFINITION MAP

SEBASTIAN MUNICIPAL AIRPORT
INDIAN RIVER COUNTY, FLORIDA

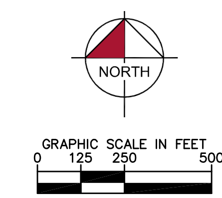
FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

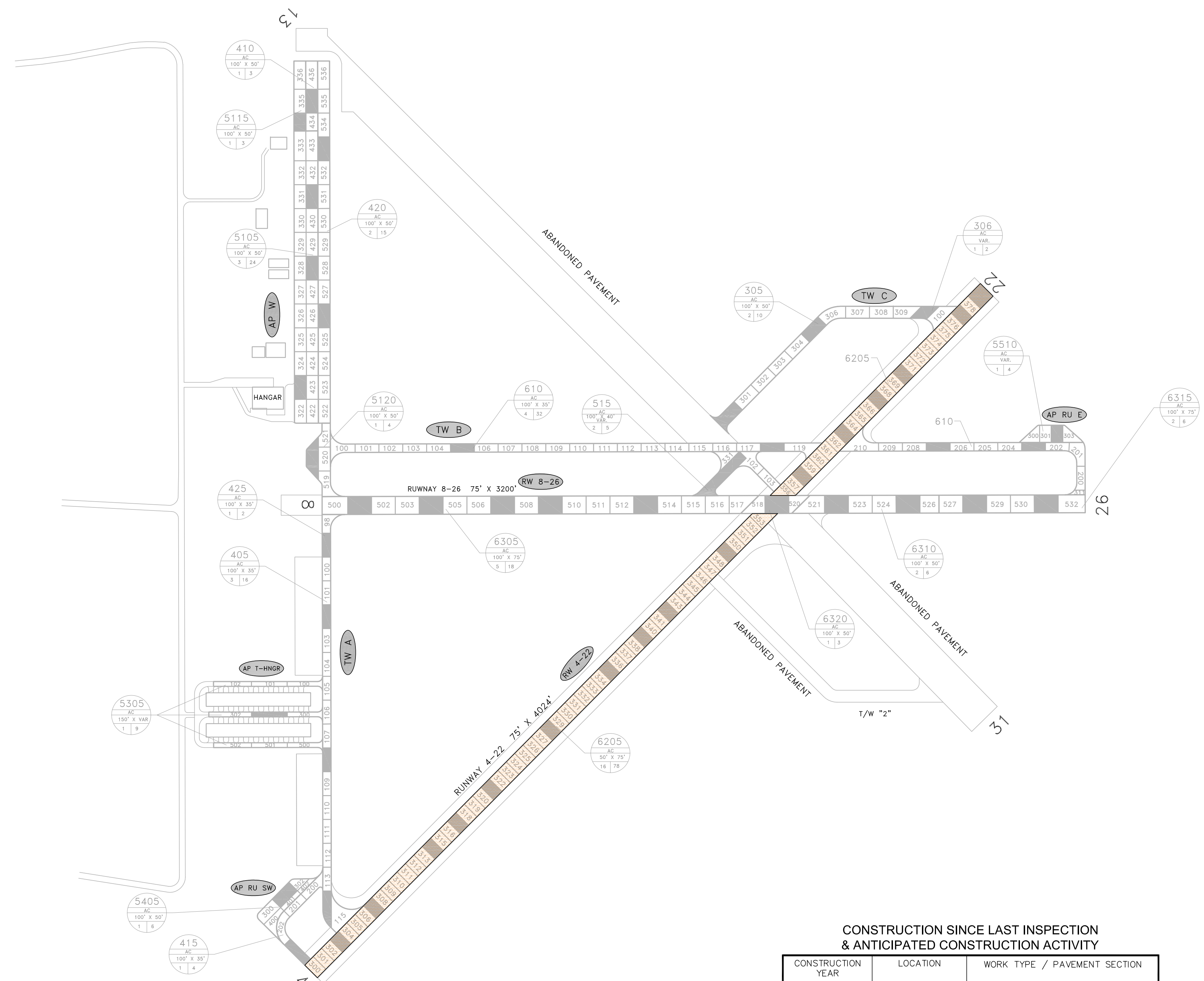
IDENTIFIER **X26**

FDOT DISTRICT 4

Sample Unit Centroid Coordinates

Branch	Section	Sample	Latitude	Longitude
RW 8-26	6305	513	27.8140479	-80.4959371
RW 8-26	6305	501	27.8140536	-80.4996494
RW 8-26	6305	504	27.8140522	-80.4987213
RW 8-26	6305	507	27.8140508	-80.4977932
RW 8-26	6305	509	27.8140498	-80.4971745
RW 8-26	6320	519	27.8140452	-80.4942356
RW 8-26	6310	522	27.8140440	-80.4934623
RW 8-26	6310	525	27.8140425	-80.4925342
RW 8-26	6315	528	27.8140412	-80.4916687
RW 8-26	6315	531	27.8140397	-80.4907406
RW CONN	515	330	27.8144975	-80.4948119
RW CONN	515	100	27.8142429	-80.4950971
TW 6	610	207	27.8147018	-80.4921394
TW 6	610	203	27.8146999	-80.4909020
TW 6	610	118	27.8147052	-80.4942911
TW 6	610	105	27.8147115	-80.4983128
AP RU E	5510	302	27.8148466	-80.4905967
TW 3	305	305	27.8160608	-80.4937475
TW 3	305	300	27.8150534	-80.4948798
TW 3	306	101	27.8162528	-80.4923070
RW 4-22	6205	342	27.8128171	-80.4956553
RW 4-22	6205	335	27.8121364	-80.4964209
RW 4-22	6205	339	27.8125254	-80.4959834
RW 4-22	6205	321	27.8107749	-80.4979522
RW 4-22	6205	328	27.8114557	-80.4971865
RW 4-22	6205	317	27.8103860	-80.4983896
RW 4-22	6205	314	27.8100942	-80.4987178
RW 4-22	6205	307	27.8094135	-80.4994833
RW 4-22	6205	303	27.8090245	-80.4999208
RW 4-22	6205	349	27.8134978	-80.4948897
RW 4-22	6205	358	27.8143730	-80.4939052
RW 4-22	6205	363	27.8148592	-80.4933583
RW 4-22	6205	367	27.8152482	-80.4929208
RW 4-22	6205	370	27.8155399	-80.4925927
RW 4-22	6205	377	27.8162206	-80.4918270
RW 4-22	6205	379	27.8164384	-80.4915820
TW 4	425	99	27.8135987	-80.5000822
TW 4	405	114	27.8094141	-80.5000850
TW 4	405	108	27.8111232	-80.5000878
TW 4	405	102	27.8127735	-80.5000841
AP T-HNGR	5305	301	27.8116490	-80.5008309
TW 4	5120	420	27.8145985	-80.5002375
AP W	420	533	27.8181671	-80.5000951
AP W	420	526	27.8162417	-80.5000994
AP W	5105	323	27.8154170	-80.5004107
AP W	5105	428	27.8167921	-80.5002528
AP W	5105	431	27.8176173	-80.5002510
AP W	410	435	27.8187175	-80.5002485
AP W	5115	334	27.8184770	-80.5004036
AP RU SW	5405	301	27.8095674	-80.5006408
AP RU SW	415	203	27.8089075	-80.5004782





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

CONSTRUCTION SINCE LAST INSPECTION & ANTICIPATED CONSTRUCTION ACTIVITY

CONSTRUCTION YEAR	LOCATION	WORK TYPE / PAVEMENT SECTION
2010	RUNWAY 4–22	NARROW RUNWAY. REMOVE OLD ASPHALT.
2010–2011	EAST APRON	NEW HANGAR

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

NUMBER	DATE	REVISIONS

DESIGNED: BAM DRAWN: ALB CHECKED: EVV DATE:

SYSTEM INVENTORY MAP

SEBASTIAN MUNICIPAL AIRPORT
INDIAN RIVER COUNTY, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

IDENTIFIER **X26**

FDOT DISTRICT 4

Table A-1: Pavement Inventory

Branch Name	Branch ID	Branch Use	Section ID	Length (ft)	Width (ft)	True Area (ft^2)	Section Type	Section Rank	Last Const. Date	Last Insp. Date	Total Samples
East Run-Up Apron	AP RU E	APRON	5510	200	50	13,788	AC	T	1/1/2004	1/10/2012	4
SW Run-Up Apron	AP RU SW	APRON	5405	195	100	19,740	AC	T	1/1/2005	1/10/2012	6
T-Hangar Apron	AP T-HANG	APRON	5305	1000	20	28,346	AC	T	1/1/2003	1/10/2012	9
West Apron	AP W	APRON	410	290	50	14,645	AC	P	1/1/1943	1/10/2012	3
West Apron	AP W	APRON	420	1500	50	75,890	AC	P	1/1/2004	1/10/2012	15
West Apron	AP W	APRON	5120	400	50	20,905	AC	P	1/1/2004	1/10/2012	4
West Apron	AP W	APRON	5105	1200	100	122,511	AC	P	1/1/2005	1/10/2012	24
West Apron	AP W	APRON	5115	240	50	14,563	AC	P	1/1/2005	1/10/2012	3
Runway 4-22	RW 4-22	RUNWAY	6205	2938	100	293,859	AAC	P	1/1/2003	1/10/2012	78
Runway 8-26	RW 8-26	RUNWAY	6305	1800	75	134,532	AC	P	1/1/2004	1/10/2012	18
Runway 8-26	RW 8-26	RUNWAY	6310	575	75	43,436	AC	P	1/1/2004	1/10/2012	6
Runway 8-26	RW 8-26	RUNWAY	6315	613	75	46,013	AC	P	1/1/2004	1/10/2012	6
Runway 8-26	RW 8-26	RUNWAY	6320	213	75	16,047	AAC	P	1/1/2004	1/10/2012	3
Taxiway Alpha	TW A	TAXIWAY	425	180	35	7,008	AAC	P	1/1/2004	1/10/2012	2
Taxiway Alpha	TW A	TAXIWAY	405	1700	35	62,195	AC	P	1/1/2005	1/10/2012	16
Taxiway Alpha	TW A	TAXIWAY	415	410	40	16,537	AC	P	1/1/2005	1/10/2012	4
Taxiway Bravo	TW B	TAXIWAY	610	4770	25	119,315	AC	P	1/1/2004	1/10/2012	32
Taxiway Charlie	TW C	TAXIWAY	305	1020	50	51,174	AC	P	1/1/1943	1/10/2012	10
Taxiway Charlie	TW C	TAXIWAY	306	120	75	9,418	AC	P	1/1/1943	1/10/2012	2
Taxiway Connector	TW CONN	TAXIWAY	515	750	30	22,992	AC	P	1/1/2004	1/10/2012	5

* Note: If new construction, then survey date = last construction date and PCI is set to 100 by MicroPAVER.
*Sections not surveyed due to reasons such as re-sectioning, no escort, not accessible at the time of survey.

Network: X26 **Branch**: AP RU E (E RUN UP APRON) **Section:** 5510 **Surface:** AC
L.C.D.: 01/01/2004 **Use:** APRON **Rank** T **Length:** 200.00 Ft **Width:** 50.00 Ft **True Area:** 13,788.07 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2004	NC-AC	New Construction - AC	$0	0.00	True	
01/01/2001	INITIAL	Initial Construction	$0	0.00	True	

Network: X26 **Branch**: AP RU SW (SW RUN UP APRON) **Section:** 5405 **Surface:** AC
L.C.D.: 01/01/2005 **Use:** APRON **Rank** T **Length:** 195.00 Ft **Width:** 100.00 Ft **True Area:** 19,740.39 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2005	INITIAL	Initial Construction	$0	2.00	True	2" AC/4" Shell Rock Base/12" Stabilization

Network: X26 **Branch**: AP T-HANG (T-HANGAR APRON AREA) **Section:** 5305 **Surface:** AC
L.C.D.: 01/01/2003 **Use:** APRON **Rank** T **Length:** 1,000.00 Ft **Width:** 20.00 Ft **True Area:** 28,345.83 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2003	INITIAL	Initial Construction	$0	2.00	True	2"AC/4" Limerock/6" Stabilization

Network: X26 **Branch**: AP W (WEST APRON) **Section:** 410 **Surface:** AC
L.C.D.: 01/01/1943 **Use:** APRON **Rank** P **Length:** 290.00 Ft **Width:** 50.00 Ft **True Area:** 14,645.38 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1943	INITIAL	Initial Construction	$0	0.00	True	

Network: X26 **Branch**: AP W (WEST APRON) **Section:** 420 **Surface:** AC
L.C.D.: 01/01/2004 **Use:** APRON **Rank** P **Length:** 1,500.00 Ft **Width:** 50.00 Ft **True Area:** 75,890.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2004	NC-AC	New Construction - AC	$0	0.00	True	
01/01/2000	INITIAL	Initial Construction	$0	0.00	True	

Network: X26 **Branch**: AP W (WEST APRON) **Section:** 5105 **Surface:** AC
L.C.D.: 01/01/2005 **Use:** APRON **Rank** P **Length:** 1,200.00 Ft **Width:** 100.00 Ft **True Area:** 122,511.27 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2005	CR-AC	Complete Reconstruction - AC	$0	2.00	True	2"AC/4" Shell Rock Base/4" Stabilization
01/01/1943	IMPORTED	BUILT		2.00	True	1943 2" BIT 6-8" SHELL BASE

Network: X26 **Branch**: AP W (WEST APRON) **Section:** 5115 **Surface:** AC
L.C.D.: 01/01/2005 **Use:** APRON **Rank** P **Length:** 240.00 Ft **Width:** 50.00 Ft **True Area:** 14,562.63 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2005	INITIAL	Initial Construction	$0	2.00	True	2"AC/4" Shell Rock Base/4" Stabilization

Network: X26 **Branch**: AP W (WEST APRON) **Section:** 5120 **Surface:** AC
L.C.D.: 01/01/2004 **Use:** APRON **Rank** P **Length:** 400.00 Ft **Width:** 50.00 Ft **True Area:** 20,904.54 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2004	NC-AC	New Construction - AC	$0	0.00	True	
01/01/2000	INITIAL	Initial Construction	$0	0.00	True	

Network: X26 **Branch**: RW 4-22 (RUNWAY 4-22) **Section:** 6205 **Surface:** AAC
L.C.D.: 01/01/2003 **Use:** RUNWAY **Rank** P **Length:** 2,938.00 Ft **Width:** 100.00 Ft **True Area:** 293,859.13 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments

01/01/2003	ML-OL	Mill and Overlay	$0	0.00	True	
01/01/1943	IMPORTED	BUILT		2.00	True	1943 2" BIT 6-8"' SHELL BASE

Network: X26 **Branch**: RW 8-26 (Runway 8-26) **Section:** 6305 **Surface:** AC
L.C.D.: 01/01/2004 **Use:** RUNWAY **Rank** P **Length:** 1,800.00 Ft **Width:** 75.00 Ft **True Area:** 134,531.88 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2004	NC-AC	New Construction - AC	$0	0.00	True	
01/01/2000	INITIAL	Initial Construction	$0	0.00	True	2" AC/4" Shell Rock/12" Stab
01/01/1943	IMPORTED	BUILT		2.00	True	1943 2" BIT 6-8" SHELL BASE

Network: X26 **Branch**: RW 8-26 (Runway 8-26) **Section:** 6310 **Surface:** AC
L.C.D.: 01/01/2004 **Use:** RUNWAY **Rank** P **Length:** 575.00 Ft **Width:** 75.00 Ft **True Area:** 43,435.87 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2004	NC-AC	New Construction - AC	$0	0.00	True	
01/01/2000	INITIAL	Initial Construction	$0	0.00	True	2" AC/4" Shell Rock/12" Stab
01/01/1943	IMPORTED	BUILT		2.00	True	1943 2"' BIT 6-8" SHELL BASE

Network: X26 **Branch**: RW 8-26 (Runway 8-26) **Section:** 6315 **Surface:** AC
L.C.D.: 01/01/2004 **Use:** RUNWAY **Rank** P **Length:** 613.00 Ft **Width:** 75.00 Ft **True Area:** 46,013.06 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2004	NC-AC	New Construction - AC	$0	2.00	True	
01/01/2000	INITIAL	Initial Construction	$0	0.00	True	

Network: X26 **Branch**: RW 8-26 (Runway 8-26) **Section:** 6320 **Surface:** AAC
L.C.D.: 01/01/2004 **Use:** RUNWAY **Rank** P **Length:** 213.00 Ft **Width:** 75.00 Ft **True Area:** 16,046.74 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2004	NC-AC	New Construction - AC	$0	0.00	True	
01/01/1943	INITIAL	Initial Construction	$0	2.00	True	1943 2" BIT 6-8" SHELL BASE

Network: X26 **Branch**: TW A (TAXIWAY ALPHA) **Section:** 405 **Surface:** AC
L.C.D.: 01/01/2005 **Use:** TAXIWAY **Rank** P **Length:** 1,700.00 Ft **Width:** 35.00 Ft **True Area:** 62,194.77 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2005	OL-AS	Overlay - AC Structural	$0	2.00	True	2" AC/4" Shell Rock Base/4" Stabilization
01/01/1943	IMPORTED	BUILT		2.00	True	1943 2" BIT 6-8" SHELL BASE

Network: X26 **Branch**: TW A (TAXIWAY ALPHA) **Section:** 415 **Surface:** AC
L.C.D.: 01/01/2005 **Use:** TAXIWAY **Rank** P **Length:** 410.00 Ft **Width:** 40.00 Ft **True Area:** 16,536.74 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2005	INITIAL	Initial Construction	$0	0.00	True	

Network: X26 **Branch**: TW A (TAXIWAY ALPHA) **Section:** 425 **Surface:** AAC
L.C.D.: 01/01/2004 **Use:** TAXIWAY **Rank** P **Length:** 180.00 Ft **Width:** 35.00 Ft **True Area:** 7,007.88 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2004	HI-AG	New Construction	$0	0.00	True	
01/01/1943	INITIAL	Initial Construction	$0	0.00	True	

Network: X26 **Branch**: TW B (TAXIWAY BRAVO) **Section:** 610 **Surface:** AC
L.C.D.: 01/01/2004 **Use:** TAXIWAY **Rank** P **Length:** 4,770.00 Ft **Width:** 25.00 Ft **True Area:** 119,315.03 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2004	NC-AC	New Construction - AC	$0	0.00	True	

01/01/2000	INITIAL	Initial Construction	$0	0.00	True	2" AC/4" Shell Rock/12" Stab

Network: X26 **Branch**: TW C (TAXIWAY CHARLIE) **Section:** 305 **Surface:** AC
L.C.D.: 01/01/1943 **Use:** TAXIWAY **Rank** P **Length:** 1,020.00 Ft **Width:** 50.00 Ft **True Area:** 51,174.34 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1943	IMPORTED	BUILT		2.00	True	1943 2" BIT 6-8" SHELL BASE

Network: X26 **Branch**: TW C (TAXIWAY CHARLIE) **Section:** 306 **Surface:** AC
L.C.D.: 01/01/1943 **Use:** TAXIWAY **Rank** P **Length:** 120.00 Ft **Width:** 75.00 Ft **True Area:** 9,418.40 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1943	IMPORTED	BUILT		2.00	True	1943 2" BIT 6-8" SHELL BASE

Network: X26 **Branch**: TW CONN (TAXIWAY CONNECTOR) **Section:** 515 **Surface:** AC
L.C.D.: 01/01/2004 **Use:** TAXIWAY **Rank** P **Length:** 750.00 Ft **Width:** 30.00 Ft **True Area:** 22,992.06 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2004	NC-AC	New Construction - AC	$0	0.00	True	
01/01/2000	INITIAL	Initial Construction	$0	0.00	True	
01/01/2000	INITIAL	Initial Construction	$0	0.00	True	2" AC/4" Shell Rock/12" Stab

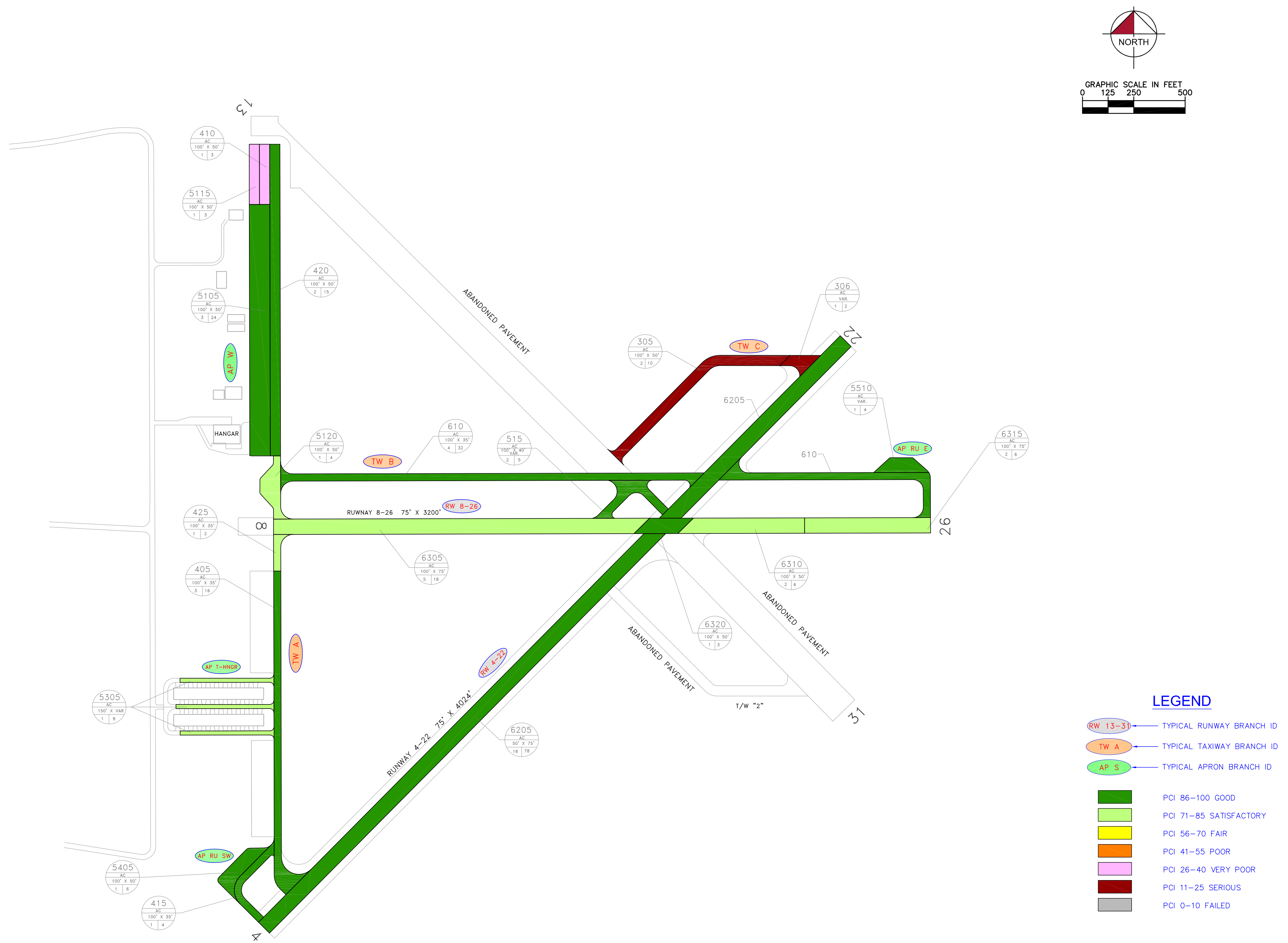
Summary:

Work Description	Section Count	Area Total (SqFt)	Thickness Avg (in)	Thickness STD (in)
BUILT	7	717,125.66	2.00	.00
Complete Reconstruction - AC	1	122,511.27	2.00	
Initial Construction	16	616,748.16	.50	.89
Mill and Overlay	1	293,859.13	.00	
New Construction	1	7,007.88	.00	
New Construction - AC	9	492,917.25	.22	.67
Overlay - AC Structural	1	62,194.77	2.00	

STD = Standard Deviation

APPENDIX B

2012 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: BAM | DRAWN: ALB | CHECKED: EVV | DATE:

2012 CONDITION MAP

SEBASTIAN MUNICIPAL AIRPORT
INDIAN RIVER COUNTY, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

IDENTIFIER **X26**

FDOT DISTRICT 4

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
East Run-Up Apron	AP RU E	APRON	5510	13,788	T	AC	1	4	86	Good
Southwest Run-Up Apron	AP RU SW	APRON	5405	19,740	T	AC	1	6	100	Good
T-Hangar Apron	AP T-HANG	APRON	5305	28,346	T	AC	1	9	84	Satisfactory
West Apron	AP W	APRON	410	14,645	P	AC	1	3	38	Very Poor
West Apron	AP W	APRON	420	75,890	P	AC	2	15	95	Good
West Apron	AP W	APRON	5120	20,905	P	AC	1	4	79	Satisfactory
West Apron	AP W	APRON	5105	122,511	P	AC	3	24	91	Good
West Apron	AP W	APRON	5115	14,563	P	AC	1	3	29	Very Poor
Runway 4-22	RW 4-22	RUNWAY	6205	293,859	P	AAC	16	78	89	Good
Runway 8-26	RW 8-26	RUNWAY	6305	134,532	P	AC	5	18	78	Satisfactory
Runway 8-26	RW 8-26	RUNWAY	6310	43,436	P	AC	2	6	77	Satisfactory
Runway 8-26	RW 8-26	RUNWAY	6315	46,013	P	AC	2	6	81	Satisfactory
Runway 8-26	RW 8-26	RUNWAY	6320	16,047	P	AAC	1	3	89	Good
Taxiway Alpha	TW A	TAXIWAY	425	7,008	P	AAC	1	2	71	Satisfactory
Taxiway Alpha	TW A	TAXIWAY	405	62,195	P	AC	3	16	95	Good
Taxiway Alpha	TW A	TAXIWAY	415	16,537	P	AC	1	4	90	Good
Taxiway Bravo	TW B	TAXIWAY	610	119,315	P	AC	4	32	87	Good
Taxiway Charlie	TW C	TAXIWAY	305	51,174	P	AC	2	10	19	Serious
Taxiway Charlie	TW C	TAXIWAY	306	9,418	P	AC	1	2	25	Serious
Taxiway Connector	TW CONN	TAXIWAY	515	22,992	P	AC	2	5	94	Good

Note: If new construction, then survey date = last construction date and PCI is set to 100 by MicroPAVER.
* Sections not surveyed due to reasons such as re-sectioning, no escort, not accessible at the time of survey.

APPENDIX C

BRANCH CONDITION REPORT
SECTION CONDITION REPORT

Branch Condition Report

Pavement Database: NetworkID: X26

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 RU E (E RUN UP APRON)	1	200.00	50.00	13,788.07	APRON	86.00	0.00	86.00
AP RU SW (SW RUN UP APRON)	1	195.00	100.00	19,740.39	APRON	100.00	0.00	100.00
AP T-HANG (T-HANGAR APRON AREA)	1	1,000.00	20.00	28,345.83	APRON	84.00	0.00	84.00
AP W (WEST APRON)	5	3,630.00	60.00	248,513.82	APRON	66.40	27.52	84.46
RW 4-22 (RUNWAY 4-22)	1	2,938.00	100.00	293,859.13	RUNWAY	89.00	0.00	89.00
RW 8-26 (Runway 8-26)	4	3,201.00	75.00	240,027.55	RUNWAY	81.25	4.71	79.13
TW A (TAXIWAY ALPHA)	3	2,290.00	36.67	85,739.39	TAXIWAY	85.33	10.34	92.07
TW B (TAXIWAY BRAVO)	1	4,770.00	25.00	119,315.03	TAXIWAY	87.00	0.00	87.00
TW C (TAXIWAY CHARLIE)	2	1,140.00	62.50	60,592.74	TAXIWAY	22.00	3.00	19.93
TW CONN (TAXIWAY CONNECTOR)	1	750.00	30.00	22,992.06	TAXIWAY	94.00	0.00	94.00

Use Category	Number of Sections	Total Area (SqFt)	Arithmetic Average PCI	Average PCI STD.	Weighted Average PCI
APRON	8	310,388.11	75.25	24.96	85.47
RUNWAY	5	533,886.68	82.80	5.23	84.56
TAXIWAY	7	288,639.22	68.71	30.49	74.99
All	20	1,132,914.01	74.85	24.70	82.37

STD = Standard Deviation

Date: 2 /3/2012

Section Condition Report

Pavement Database: *NetworkID: X26*

Branch ID	Section ID	Last Const. Date	Surface	Use	Rank	Lanes	True Area (SqFt)	Last Inspection Date	Age At Inspection	PCI
AP RU E (E RUN UP APRON)	5510	01/01/2004	AC	APRON	T	0	13,788.07	01/10/2012	8	86.00
AP RU SW (SW RUN UP APRON)	5405	01/01/2005	AC	APRON	T	0	19,740.39	01/10/2012	7	100.00
AP T-HANG (T-HANGAR APRON AREA)	5305	01/01/2003	AC	APRON	T	0	28,345.83	01/10/2012	9	84.00
AP W (WEST APRON)	410	01/01/1943	AC	APRON	P	0	14,645.38	01/10/2012	69	38.00
AP W (WEST APRON)	420	01/01/2004	AC	APRON	P	0	75,890.00	01/10/2012	8	95.00
AP W (WEST APRON)	5105	01/01/2005	AC	APRON	P	0	122,511.27	01/10/2012	7	91.00
AP W (WEST APRON)	5115	01/01/2005	AC	APRON	P	0	14,562.63	01/10/2012	7	29.00
AP W (WEST APRON)	5120	01/01/2004	AC	APRON	P	0	20,904.54	01/10/2012	8	79.00
RW 4-22 (RUNWAY 4-22)	6205	01/01/2003	AAC	RUNWAY	P	0	293,859.13	01/10/2012	9	89.00
RW 8-26 (Runway 8-26)	6305	01/01/2004	AC	RUNWAY	P	0	134,531.88	01/10/2012	8	78.00
RW 8-26 (Runway 8-26)	6310	01/01/2004	AC	RUNWAY	P	0	43,435.87	01/10/2012	8	77.00
RW 8-26 (Runway 8-26)	6315	01/01/2004	AC	RUNWAY	P	0	46,013.06	01/10/2012	8	81.00
RW 8-26 (Runway 8-26)	6320	01/01/2004	AAC	RUNWAY	P	0	16,046.74	01/10/2012	8	89.00
TW A (TAXIWAY ALPHA)	405	01/01/2005	AC	TAXIWAY	P	0	62,194.77	01/10/2012	7	95.00
TW A (TAXIWAY ALPHA)	415	01/01/2005	AC	TAXIWAY	P	0	16,536.74	01/10/2012	7	90.00
TW A (TAXIWAY ALPHA)	425	01/01/2004	AAC	TAXIWAY	P	0	7,007.88	01/10/2012	8	71.00
TW B (TAXIWAY BRAVO)	610	01/01/2004	AC	TAXIWAY	P	0	119,315.03	01/10/2012	8	87.00
TW C (TAXIWAY CHARLIE)	305	01/01/1943	AC	TAXIWAY	P	0	51,174.34	01/10/2012	69	19.00
TW C (TAXIWAY CHARLIE)	306	01/01/1943	AC	TAXIWAY	P	0	9,418.40	01/10/2012	69	25.00
TW CONN (TAXIWAY CONNECTOR)	515	01/01/2004	AC	TAXIWAY	P	0	22,992.06	01/10/2012	8	94.00

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
06-10	**7.82**	**1,057,675.89**	**17**	**83.24**	**15.43**	**86.56**
over 40	**69.00**	**75,238.12**	**3**	**27.33**	**7.93**	**23.45**
All	**17.00**	**1,132,914.01**	**20**	**74.85**	**24.70**	**82.37**

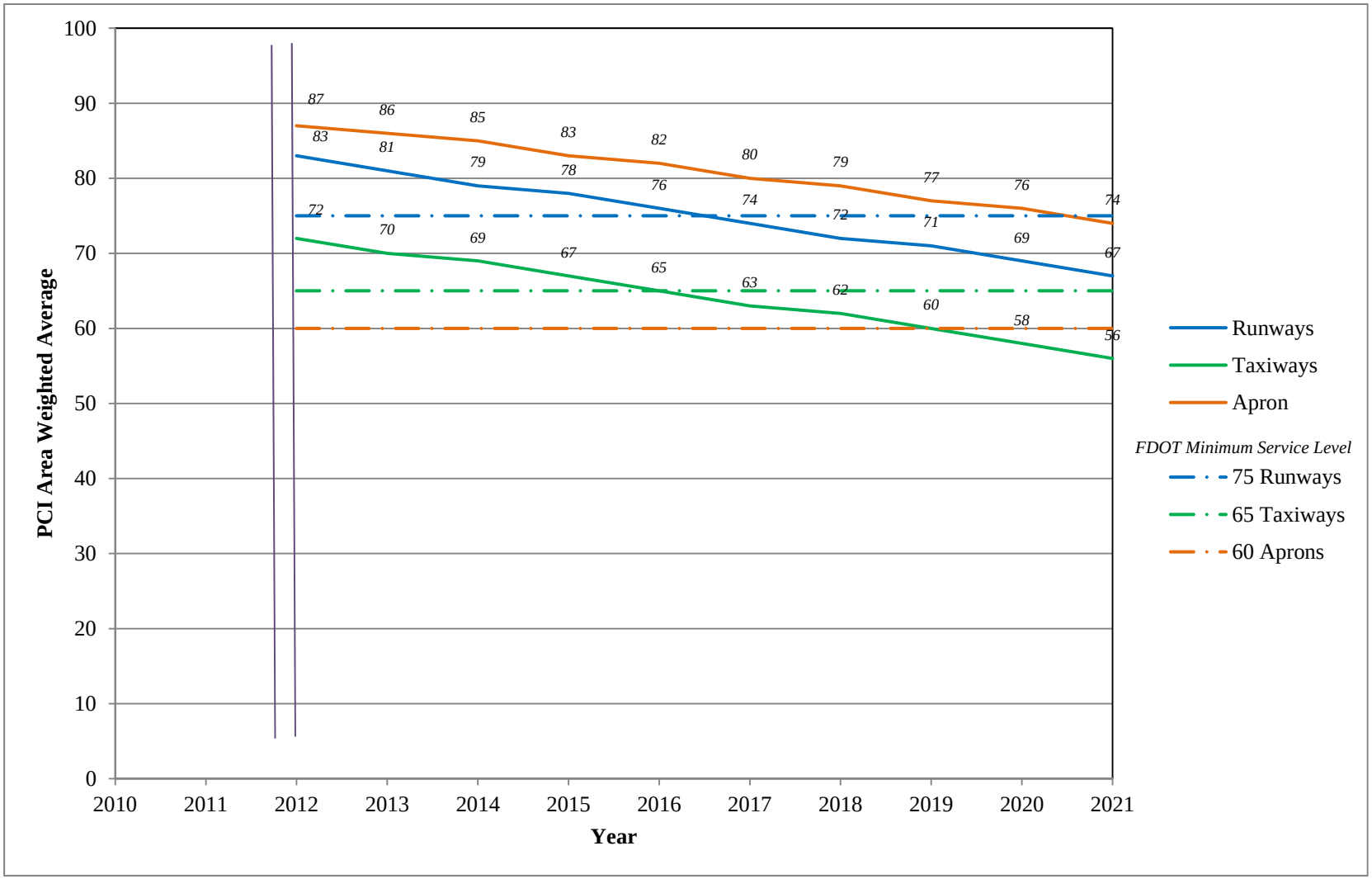
APPENDIX D

PAVEMENT CONDITION PREDICTION TABLE
PREDICTED PCI BY PAVEMENT USE GRAPH

Table D-1: Pavement Condition Prediction

Branch Name	Branch ID	Section ID	Current PCI	PCI Forecast									
				2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
East Run-Up Apron	AP RU E	5510	86	85	84	82	81	80	78	77	75	74	72
SW Run-Up Apron	AP RU SW	5405	100	99	98	96	95	94	92	91	89	88	86
T-Hangar Apron	AP T-HANG	5305	84	83	82	80	79	78	76	75	73	72	70
West Apron	AP W	410	38	37	36	34	33	32	30	29	27	26	24
West Apron	AP W	420	95	94	93	91	90	89	87	86	84	83	81
West Apron	AP W	5105	91	90	89	87	86	85	83	82	80	79	77
West Apron	AP W	5115	29	28	27	25	24	23	21	20	18	17	15
West Apron	AP W	5120	79	78	77	75	74	73	71	70	68	67	65
Runway 4-22	RW 4-22	6205	89	88	86	84	82	80	78	76	74	72	71
Runway 8-26	RW 8-26	6305	78	77	76	74	73	71	70	69	67	66	64
Runway 8-26	RW 8-26	6310	77	76	75	73	72	70	69	68	66	65	63
Runway 8-26	RW 8-26	6315	81	80	79	77	76	74	73	72	70	69	67
Runway 8-26	RW 8-26	6320	89	88	86	84	82	80	78	76	74	72	71
Taxiway Alpha	TW A	405	95	94	92	91	89	87	86	84	82	80	79
Taxiway Alpha	TW A	415	90	89	87	86	84	82	81	79	77	75	74
Taxiway Alpha	TW A	425	71	70	68	67	65	63	61	60	58	56	54
Taxiway Bravo	TW B	610	87	86	84	83	81	79	78	76	74	72	71
Taxiway Charlie	TW C	305	19	18	16	15	13	11	10	8	6	4	3
Taxiway Charlie	TW C	306	25	24	22	21	19	17	16	14	12	10	9
Taxiway Connector	TW CONN	515	94	93	91	90	88	86	85	83	81	79	78

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
Runway 8-26	RW 8-26	6320	WEATH/RAVEL	L	Surface Seal - Rejuvenating	1,054.80	SqFt	$0.40	$421.92
Runway 8-26	RW 8-26	6315	WEATH/RAVEL	L	Surface Seal - Rejuvenating	10,736.30	SqFt	$0.40	$4,294.55
Runway 8-26	RW 8-26	6310	WEATH/RAVEL	L	Surface Seal - Rejuvenating	17,084.60	SqFt	$0.40	$6,833.91
Runway 8-26	RW 8-26	6305	WEATH/RAVEL	H	Microsurfacing - AC	3.60	SqFt	$0.65	$2.33
Runway 8-26	RW 8-26	6305	WEATH/RAVEL	L	Surface Seal - Rejuvenating	44,484.80	SqFt	$0.40	$17,794.08
Runway 4-22	RW 4-22	6205	WEATH/RAVEL	M	Surface Seal - Coat Tar	1,883.00	SqFt	$0.40	$753.19
Runway 4-22	RW 4-22	6205	WEATH/RAVEL	L	Surface Seal - Rejuvenating	12,049.00	SqFt	$0.40	$4,819.64
East Run-Up Apron	AP RU E	5510	WEATH/RAVEL	L	Surface Seal - Rejuvenating	1,378.80	SqFt	$0.40	$551.52
T-Hangar Apron	AP T-HANG	5305	WEATH/RAVEL	L	Surface Seal - Rejuvenating	8,503.70	SqFt	$0.40	$3,401.50
West Apron	AP W	5120	WEATH/RAVEL	M	Surface Seal - Coat Tar	565.40	SqFt	$0.40	$226.15
West Apron	AP W	5120	WEATH/RAVEL	L	Surface Seal - Rejuvenating	6,271.30	SqFt	$0.40	$2,508.55
West Apron	AP W	5105	WEATH/RAVEL	L	Surface Seal - Rejuvenating	7,350.60	SqFt	$0.40	$2,940.27
Taxiway Bravo	TW B	610	WEATH/RAVEL	L	Surface Seal - Rejuvenating	16,192.60	SqFt	$0.40	$6,477.10
Taxiway Connector	TW CONN	515	WEATH/RAVEL	H	Microsurfacing - AC	2.30	SqFt	$0.65	$1.47
Taxiway Connector	TW CONN	515	WEATH/RAVEL	L	Surface Seal - Rejuvenating	283.30	SqFt	$0.40	$113.31
Taxiway Alpha	TW A	425	L & T CR	M	Crack Sealing - AC	200.30	Ft	$2.25	$450.62
Taxiway Alpha	TW A	425	WEATH/RAVEL	L	Surface Seal - Rejuvenating	600.70	SqFt	$0.40	$240.27
West Apron	AP W	420	WEATH/RAVEL	L	Surface Seal - Rejuvenating	2,049.00	SqFt	$0.40	$819.61
Taxiway Alpha	TW A	415	WEATH/RAVEL	L	Surface Seal - Rejuvenating	888.40	SqFt	$0.40	$355.37
Taxiway Alpha	TW A	405	WEATH/RAVEL	L	Surface Seal - Rejuvenating	559.80	SqFt	$0.40	$223.93
								Total =	$53,229.29

APPENDIX F

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

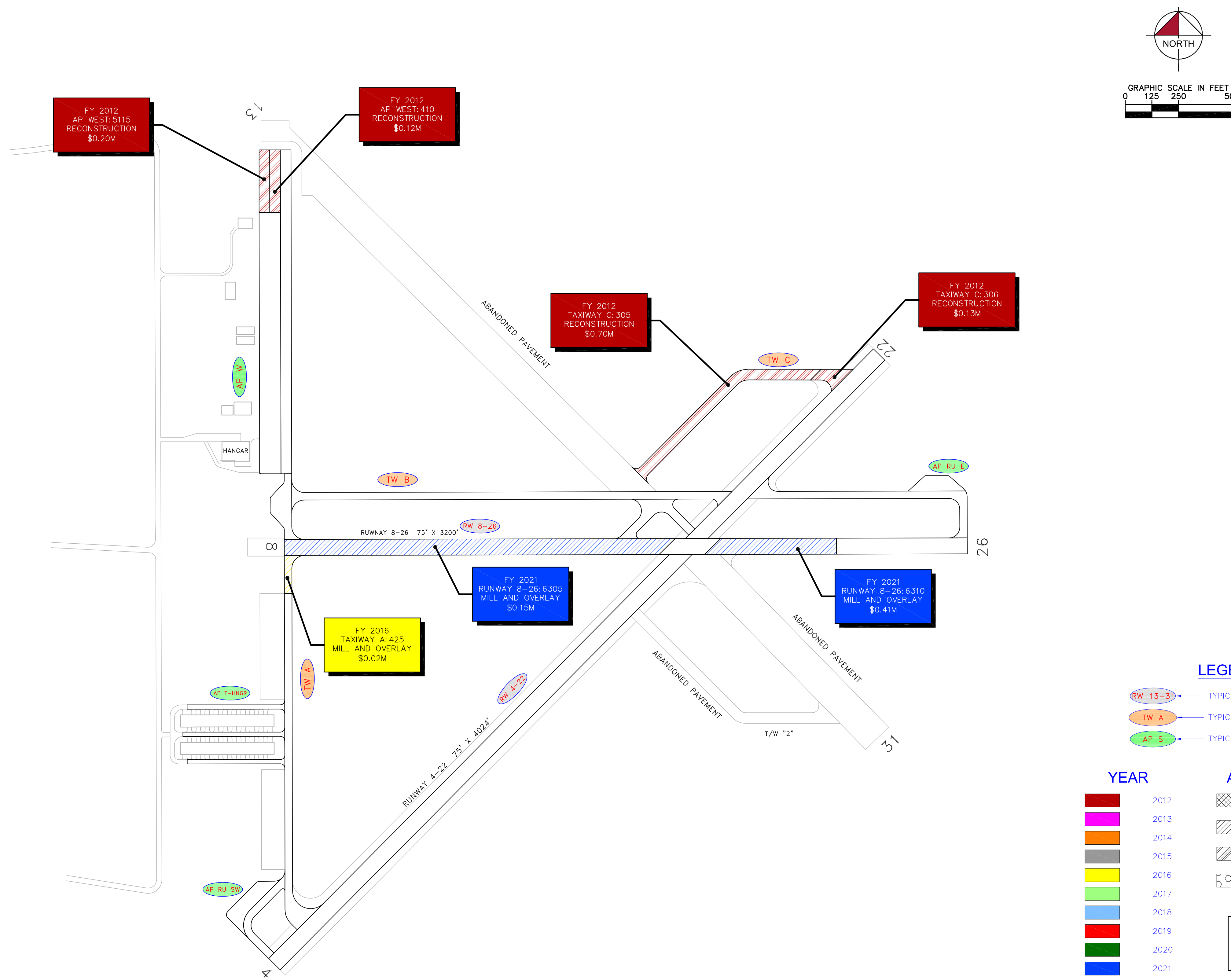
Table F-1: Major M&R Plan by Year under Unlimited Funding Scenario

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

* Costs are adjusted for inflation.

APPENDIX G

10-YEAR M&R MAP



LEGEND

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

YEAR	ACTIVITY
2012	MICROSURFACING
2013	MILL AND OVERLAY
2014	RECONSTRUCTION
2015	CONCRETE PAVEMENT RESTORATION
2016	
2017	
2018	
2019	
2020	
2021	

"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: BAM | DRAWN: ALB | CHECKED: EVV | DATE:

10-YEAR M&R MAP

SEBASTIAN MUNICIPAL AIRPORT
INDIAN RIVER COUNTY, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

IDENTIFIER: X26

FDOT DISTRICT: 4

APPENDIX H

PHOTOGRAPHS

Runway 8-26, Section 6305, Sample Unit 504 – Low severity (48) Longitudinal and Transverse Cracking, low severity (52) Weathering and Raveling

West Apron, Section 410, Sample Unit 435 – Medium severity (43) Block Cracking, low severity (52) Weathering and Raveling, low severity (50) patching

West Apron, Section 5105, Sample Unit 431 – Low severity (48) Longitudinal and Transverse Cracking

Runway 4-22, Section 6205, Sample Unit 379 – Low and medium severity (52) Weathering and Raveling, low severity (50) patching, low severity (48) Longitudinal and Transverse Cracking

Taxiway C, Section 305, Sample Unit 300 – Medium severity (52) Weathering and Raveling, medium severity (41) Alligator Cracking, medium severity (43) Block Cracking

APPENDIX I

PCI RE-INSPECTION REPORT

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: AP RU E Name: E RUN UP APRON Use: APRON Area: 13,788.07SqFt

Section: 5510 of 1 From: To: Last Const.: 1/1/2004
Surface: AC Family: FDOT-GA-AP-AC Zone: Category: Rank: T
Area: 13,788.07SqFt Length: 200.00Ft Width: 50.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 4 Surveyed: 1
Conditions: PCI:86.00 |

Sample Number: 302 Type: R Area: 3,517.02SqFt PCI = 86

48	LONGITUDINAL/TRANSVERSE CRACKING	L	17.00 Ft
52	WEATHERING/RAVELING	L	351.70 SqFt

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: AP RU SW Name: SW RUN UP APRON Use: APRON Area: 19,740.39SqFt

Section: 5405 of 1 From: To: Last Const.: 1/1/2005
Surface: AC Family: FDOT-GA-AP-AC Zone: Category: Rank: T
Area: 19,740.39SqFt Length: 195.00Ft Width: 100.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 6 Surveyed: 1
Conditions: PCI:100.00 |

Sample Number: 301 Type: R Area: 5,000.00SqFt PCI = 100
<NO DISTRESSES>

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: AP T-HANG Name: T-HANGAR APRON AREA Use: APRON Area: 28,345.83SqFt

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Section: 5305 of 1 From: To: Last Const.: 1/1/2003
Surface: AC Family: FDOT-GA-AP-AC Zone: Category: Rank: T
Area: 28,345.83SqFt Length: 1,000.00Ft Width: 20.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 9 Surveyed: 1
Conditions: PCI:84.00 |

Sample Number: 301 Type: R Area: 3,000.00SqFt PCI = 84

52	WEATHERING/RAVELING	L	899.99 SqFt

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: AP W Name: WEST APRON Use: APRON Area: 248,513.82SqFt

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Section: 410 of 5 From: - To: - Last Const.: 1/1/1943
Surface: AC Family: FDOT-GA-AP-AC Zone: Category: Rank: P
Area: 14,645.38SqFt Length: 290.00Ft Width: 50.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 3 Surveyed: 1
Conditions: PCI:38.00 |

Sample Number: 435 Type: R Area: 5,000.00SqFt PCI = 38

43	BLOCK CRACKING	M	4,999.96 SqFt
52	WEATHERING/RAVELING	L	4,999.96 SqFt
50	PATCHING	L	56.00 SqFt

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: AP W Name: WEST APRON Use: APRON Area: 248,513.82SqFt

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Section: 420 of 5 From: - To: - Last Const.: 1/1/2004
Surface: AC Family: FDOT-GA-AP-AC Zone: Category: Rank: P
Area: 75,890.00SqFt Length: 1,500.00Ft Width: 50.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 15 Surveyed: 2
Conditions: PCI:95.00 |

Sample Number: 526 Type: R Area: 5,000.00SqFt PCI = 89

52	WEATHERING/RAVELING	L	270.00 SqFt
48	LONGITUDINAL/TRANSVERSE CRACKING	L	20.01 Ft

Sample Number: 533 Type: R Area: 5,000.00SqFt PCI = 100

<NO DISTRESSES>

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: AP W Name: WEST APRON Use: APRON Area: 248,513.82SqFt

Section: 5105 of 5 From: - To: - Last Const.: 1/1/2005
Surface: AC Family: FDOT-GA-AP-AC Zone: Category: Rank: P
Area: 122,511.27SqFt Length: 1,200.00Ft Width: 100.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 24 Surveyed: 3
Conditions: PCI:91.00 |

Sample Number: 323 Type: R Area: 5,000.00SqFt PCI = 100
<NO DISTRESSES>

Sample Number: 428 Type: R Area: 5,000.00SqFt PCI = 88

52	WEATHERING/RAVELING	L	400.00 SqFt
48	LONGITUDINAL/TRANSVERSE CRACKING	L	15.00 Ft

Sample Number: 431 Type: R Area: 5,000.00SqFt PCI = 85

52	WEATHERING/RAVELING	L	500.00 SqFt
48	LONGITUDINAL/TRANSVERSE CRACKING	L	120.03 Ft

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: AP W Name: WEST APRON Use: APRON Area: 248,513.82SqFt

Section: 5115 of 5 From: To: Last Const.: 1/1/2005
Surface: AC Family: FDOT-GA-AP-AC Zone: Category: Rank: P
Area: 14,562.63SqFt Length: 240.00Ft Width: 50.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 3 Surveyed: 1
Conditions: PCI:29.00 |

Sample Number: 334 Type: R Area: 3,744.33SqFt PCI = 29

43	BLOCK CRACKING	L	1,872.15 SqFt
43	BLOCK CRACKING	M	1,872.14 SqFt
50	PATCHING	M	35.00 SqFt
52	WEATHERING/RAVELING	H	180.00 SqFt

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: AP W Name: WEST APRON Use: APRON Area: 248,513.82SqFt

Section: 5120 of 5 From: To: Last Const.: 1/1/2004
Surface: AC Family: FDOT-GA-AP-AC Zone: Category: Rank: P
Area: 20,904.54SqFt Length: 400.00Ft Width: 50.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 4 Surveyed: 1
Conditions: PCI:79.00 |

Sample Number: 420 Type: R Area: 6,396.55SqFt PCI = 79

52	WEATHERING/RAVELING	M	128.00 SqFt
52	WEATHERING/RAVELING	M	45.00 SqFt
52	WEATHERING/RAVELING	L	1,918.95 SqFt

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: RW 4-22 Name: RUNWAY 4-22 Use: RUNWAY Area: 293,859.13SqFt

Section: 6205 of 1 From: - To: - Last Const.: 1/1/2003
Surface: AAC Family: FDOT-GA-RW-AAC Zone: Category: Rank: P
Area: 293,859.13SqFt Length: 2,938.00Ft Width: 100.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 78 Surveyed: 16
Conditions: PCI:89.00 |

Sample Number: 303	Type: R	Area:	3,750.00SqFt		PCI = 88
48 LONGITUDINAL/TRANSVERSE CRACKING		L	66.02	Ft	
52 WEATHERING/RAVELING		L	50.00	SqFt	
52 WEATHERING/RAVELING		L	50.00	SqFt	
Sample Number: 307	Type: R	Area:	3,750.00SqFt		PCI = 84
48 LONGITUDINAL/TRANSVERSE CRACKING		L	77.02	Ft	
52 WEATHERING/RAVELING		L	450.00	SqFt	
Sample Number: 314	Type: R	Area:	3,750.00SqFt		PCI = 79
48 LONGITUDINAL/TRANSVERSE CRACKING		L	86.02	Ft	
52 WEATHERING/RAVELING		L	100.00	SqFt	
52 WEATHERING/RAVELING		M	96.00	SqFt	
52 WEATHERING/RAVELING		L	62.00	SqFt	
Sample Number: 317	Type: R	Area:	3,750.00SqFt		PCI = 91
48 LONGITUDINAL/TRANSVERSE CRACKING		L	48.01	Ft	
52 WEATHERING/RAVELING		L	50.00	SqFt	
Sample Number: 321	Type: R	Area:	3,750.00SqFt		PCI = 91
52 WEATHERING/RAVELING		L	100.00	SqFt	
48 LONGITUDINAL/TRANSVERSE CRACKING		L	14.00	Ft	
Sample Number: 328	Type: R	Area:	3,750.00SqFt		PCI = 90
48 LONGITUDINAL/TRANSVERSE CRACKING		L	37.01	Ft	
52 WEATHERING/RAVELING		L	100.00	SqFt	
Sample Number: 335	Type: R	Area:	3,750.00SqFt		PCI = 93
48 LONGITUDINAL/TRANSVERSE CRACKING		L	43.01	Ft	
52 WEATHERING/RAVELING		L	20.00	SqFt	
Sample Number: 339	Type: R	Area:	3,750.00SqFt		PCI = 93
48 LONGITUDINAL/TRANSVERSE CRACKING		L	15.00	Ft	
52 WEATHERING/RAVELING		L	50.00	SqFt	
Sample Number: 342	Type: R	Area:	3,750.00SqFt		PCI = 93
48 LONGITUDINAL/TRANSVERSE CRACKING		L	2.00	Ft	
52 WEATHERING/RAVELING		L	56.00	SqFt	
52 WEATHERING/RAVELING		L	30.00	SqFt	
Sample Number: 349	Type: R	Area:	3,750.00SqFt		PCI = 96
52 WEATHERING/RAVELING		L	50.00	SqFt	
52 WEATHERING/RAVELING		L	14.00	SqFt	

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Sample Number: 358 Type: R Area: 3,750.00SqFt PCI = 92

48	LONGITUDINAL/TRANSVERSE CRACKING	L	32.01 Ft
52	WEATHERING/RAVELING	L	50.00 SqFt
52	WEATHERING/RAVELING	L	2.00 SqFt

Sample Number: 363 Type: R Area: 3,750.00SqFt PCI = 93

52	WEATHERING/RAVELING	L	50.00 SqFt
48	LONGITUDINAL/TRANSVERSE CRACKING	L	18.00 Ft

Sample Number: 367 Type: R Area: 3,750.00SqFt PCI = 93

52	WEATHERING/RAVELING	L	50.00 SqFt
48	LONGITUDINAL/TRANSVERSE CRACKING	L	24.01 Ft

Sample Number: 370 Type: R Area: 3,750.00SqFt PCI = 88

48	LONGITUDINAL/TRANSVERSE CRACKING	L	43.01 Ft
52	WEATHERING/RAVELING	M	3.00 SqFt
52	WEATHERING/RAVELING	L	50.00 SqFt

Sample Number: 377 Type: R Area: 3,750.00SqFt PCI = 86

48	LONGITUDINAL/TRANSVERSE CRACKING	L	64.02 Ft
52	WEATHERING/RAVELING	L	50.00 SqFt
52	WEATHERING/RAVELING	M	3.00 SqFt
52	WEATHERING/RAVELING	L	10.00 SqFt

Sample Number: 379 Type: R Area: 5,550.42SqFt PCI = 73

52	WEATHERING/RAVELING	L	1,089.99 SqFt
52	WEATHERING/RAVELING	M	294.00 SqFt
50	PATCHING	L	35.00 SqFt
48	LONGITUDINAL/TRANSVERSE CRACKING	L	13.00 Ft

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: RW 8-26 Name: Runway 8-26 Use: RUNWAY Area: 240,027.55SqFt

Section: 6305 of 4 From: - To: - Last Const.: 1/1/2004
Surface: AC Family: FDOT-GA-RW-AC Zone: Category: Rank: P
Area: 134,531.88SqFt Length: 1,800.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 18 Surveyed: 5
Conditions: PCI:78.00 |

Sample Number: 501 Type: R Area: 7,500.00SqFt PCI = 86

52	WEATHERING/RAVELING	L	600.00 SqFt
48	LONGITUDINAL/TRANSVERSE CRACKING	L	92.02 Ft

Sample Number: 504 Type: R Area: 7,500.00SqFt PCI = 77

52	WEATHERING/RAVELING	L	600.00 SqFt
52	WEATHERING/RAVELING	L	2,499.98 SqFt
48	LONGITUDINAL/TRANSVERSE CRACKING	L	67.02 Ft

Sample Number: 507 Type: R Area: 7,500.00SqFt PCI = 71

52	WEATHERING/RAVELING	H	1.00 SqFt
48	LONGITUDINAL/TRANSVERSE CRACKING	L	111.03 Ft
52	WEATHERING/RAVELING	L	600.00 SqFt
52	WEATHERING/RAVELING	L	2,499.98 SqFt

Sample Number: 509 Type: R Area: 7,500.00SqFt PCI = 76

52	WEATHERING/RAVELING	L	600.00 SqFt
52	WEATHERING/RAVELING	L	2,499.98 SqFt
48	LONGITUDINAL/TRANSVERSE CRACKING	L	148.04 Ft

Sample Number: 513 Type: R Area: 7,500.00SqFt PCI = 78

48	LONGITUDINAL/TRANSVERSE CRACKING	L	131.03 Ft
52	WEATHERING/RAVELING	L	2,499.98 SqFt

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: RW 8-26 Name: Runway 8-26 Use: RUNWAY Area: 240,027.55SqFt

Section: 6310 of 4 From: - To: - Last Const.: 1/1/2004
Surface: AC Family: FDOT-GA-RW-AC Zone: Category: Rank: P
Area: 43,435.87SqFt Length: 575.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 6 Surveyed: 2
Conditions: PCI:77.00 |

Sample Number: 522 Type: R Area: 7,500.00SqFt PCI = 77

48	LONGITUDINAL/TRANSVERSE CRACKING	L	52.01 Ft
52	WEATHERING/RAVELING	L	400.00 SqFt
52	WEATHERING/RAVELING	L	2,499.98 SqFt

Sample Number: 525 Type: R Area: 7,500.00SqFt PCI = 77

48	LONGITUDINAL/TRANSVERSE CRACKING	L	75.02 Ft
52	WEATHERING/RAVELING	L	500.00 SqFt
52	WEATHERING/RAVELING	L	2,499.98 SqFt

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: RW 8-26 Name: Runway 8-26 Use: RUNWAY Area: 240,027.55SqFt

Section: 6315 of 4 From: - To: - Last Const.: 1/1/2004
Surface: AC Family: FDOT-GA-RW-AC Zone: Category: Rank: P
Area: 46,013.06SqFt Length: 613.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 6 Surveyed: 2
Conditions: PCI:81.00 |

Sample Number: 528 Type: R Area: 7,500.00SqFt PCI = 79

48	LONGITUDINAL/TRANSVERSE CRACKING	L	26.01 Ft
52	WEATHERING/RAVELING	L	2,499.98 SqFt

Sample Number: 531 Type: R Area: 7,500.00SqFt PCI = 84

52	WEATHERING/RAVELING	L	999.99 SqFt
48	LONGITUDINAL/TRANSVERSE CRACKING	L	77.02 Ft

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: RW 8-26 Name: Runway 8-26 Use: RUNWAY Area: 240,027.55SqFt

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Section: 6320 of 4 From: - To: - Last Const.: 1/1/2004
Surface: AAC Family: FDOT-GA-RW-AAC Zone: Category: Rank: P
Area: 16,046.74SqFt Length: 213.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 3 Surveyed: 1
Conditions: PCI:89.00 |

Sample Number: 519 Type: R Area: 7,500.00SqFt PCI = 89

48	LONGITUDINAL/TRANSVERSE CRACKING	L	17.00 Ft
52	WEATHERING/RAVELING	L	93.00 SqFt
52	WEATHERING/RAVELING	L	400.00 SqFt

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: TW A Name: TAXIWAY ALPHA Use: TAXIWAY Area: 85,739.39SqFt

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Section: 405 of 3 From: - To: - Last Const.: 1/1/2005
Surface: AC Family: FDOT-GA-TW-AC Zone: Category: Rank: P
Area: 62,194.77SqFt Length: 1,700.00Ft Width: 35.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 16 Surveyed: 3
Conditions: PCI:95.00 |

Sample Number: 102 Type: R Area: 3,500.00SqFt PCI = 100
<NO DISTRESSES>

Sample Number: 108 Type: R Area: 3,500.00SqFt PCI = 95

48	LONGITUDINAL/TRANSVERSE CRACKING	L	41.01 Ft

Sample Number: 114 Type: R Area: 4,665.06SqFt PCI = 91

48	LONGITUDINAL/TRANSVERSE CRACKING	L	48.01 Ft
52	WEATHERING/RAVELING	L	105.00 SqFt

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: TW A Name: TAXIWAY ALPHA Use: TAXIWAY Area: 85,739.39SqFt

Section: 415 of 3 From: - To: - Last Const.: 1/1/2005
Surface: AC Family: FDOT-GA-TW-AC Zone: Category: Rank: P
Area: 16,536.74SqFt Length: 410.00Ft Width: 40.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 4 Surveyed: 1
Conditions: PCI:90.00 |

Sample Number: 203 Type: R Area: 4,188.07SqFt PCI = 90

48	LONGITUDINAL/TRANSVERSE CRACKING	L	8.00 Ft
52	WEATHERING/RAVELING	L	105.00 SqFt
52	WEATHERING/RAVELING	L	120.00 SqFt

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: TW A Name: TAXIWAY ALPHA Use: TAXIWAY Area: 85,739.39SqFt

Section: 425 of 3 From: - To: - Last Const.: 1/1/2004
Surface: AAC Family: FDOT-GA-TW-AAC Zone: Category: Rank: P
Area: 7,007.88SqFt Length: 180.00Ft Width: 35.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 2 Surveyed: 1
Conditions: PCI:71.00 |

Sample Number: 99 Type: R Area: 3,500.00SqFt PCI = 71

52	WEATHERING/RAVELING	L	300.00 SqFt
48	LONGITUDINAL/TRANSVERSE CRACKING	M	100.03 Ft
48	LONGITUDINAL/TRANSVERSE CRACKING	L	100.03 Ft

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: TW B Name: TAXIWAY BRAVO Use: TAXIWAY Area: 119,315.03SqFt

Section: 610 of 1 From: To: Last Const.: 1/1/2004
Surface: AC Family: FDOT-GA-TW-AC Zone: Category: Rank: P
Area: 119,315.03SqFt Length: 4,770.00Ft Width: 25.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 32 Surveyed: 4
Conditions: PCI:87.00 |

Sample Number: 105 Type: R Area: 3,500.00SqFt PCI = 89
52 WEATHERING/RAVELING L 400.00 SqFt

Sample Number: 118 Type: R Area: 3,500.00SqFt PCI = 87
52 WEATHERING/RAVELING L 600.00 SqFt

Sample Number: 203 Type: R Area: 3,500.00SqFt PCI = 85
52 WEATHERING/RAVELING L 300.00 SqFt
48 LONGITUDINAL/TRANSVERSE CRACKING L 100.03 Ft

Sample Number: 207 Type: R Area: 3,500.00SqFt PCI = 87
52 WEATHERING/RAVELING L 600.00 SqFt

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: TW C Name: TAXIWAY CHARLIE Use: TAXIWAY Area: 60,592.74SqFt

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Section: 305 of 2 From: - To: - Last Const.: 1/1/1943
Surface: AC Family: FDOT-GA-TW-AC Zone: Category: Rank: P
Area: 51,174.34SqFt Length: 1,020.00Ft Width: 50.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 10 Surveyed: 2
Conditions: PCI:19.00 |

Sample Number: 300 Type: R Area: 5,936.52SqFt PCI = 14

52	WEATHERING/RAVELING	M	5,936.47 SqFt
41	ALLIGATOR CRACKING	M	66.00 SqFt
41	ALLIGATOR CRACKING	M	81.00 SqFt
43	BLOCK CRACKING	M	5,789.47 SqFt

Sample Number: 305 Type: R Area: 5,000.00SqFt PCI = 25

52	WEATHERING/RAVELING	M	4,999.96 SqFt
43	BLOCK CRACKING	M	4,999.96 SqFt

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: TW C Name: TAXIWAY CHARLIE Use: TAXIWAY Area: 60,592.74SqFt

Section: 306 of 2 From: - To: - Last Const.: 1/1/1943
Surface: AC Family: FDOT-GA-TW-AC Zone: Category: Rank: P
Area: 9,418.40SqFt Length: 120.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 2 Surveyed: 1
Conditions: PCI:25.00 |

Sample Number: 101 Type: R Area: 3,675.58SqFt PCI = 25

52	WEATHERING/RAVELING	M	3,675.55 SqFt
43	BLOCK CRACKING	M	3,675.55 SqFt

Re-inspection Report

FDOT
Report Generated Date: 2/3/2012
Site Name:

Network: X26 Name: SEBASTIAN MUNICIPAL AIRPORT

Branch: TW CONN Name: TAXIWAY CONNECTOR Use: TAXIWAY Area: 22,992.06SqFt

Section: 515 of 1 From: To: Last Const.: 1/1/2004
Surface: AC Family: FDOT-GA-TW-AC Zone: Category: Rank: P
Area: 22,992.06SqFt Length: 750.00Ft Width: 30.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0
Section Comments:

Last Insp. Date1/10/2012 Total Samples: 5 Surveyed: 2
Conditions: PCI:94.00 |

Sample Number: 100 Type: R Area: 5,145.64SqFt PCI = 90

52	WEATHERING/RAVELING	H	1.00 SqFt
52	WEATHERING/RAVELING	L	100.00 SqFt

Sample Number: 330 Type: R Area: 5,000.00SqFt PCI = 98

52	WEATHERING/RAVELING	L	25.00 SqFt