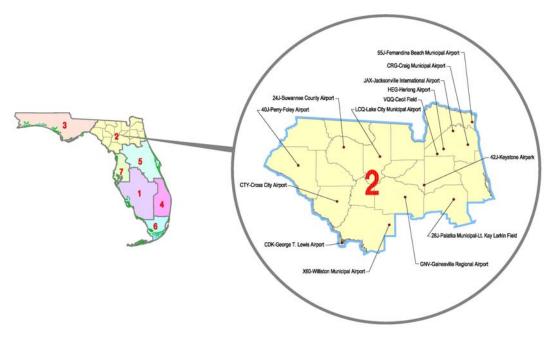


STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION AVIATION OFFICE

Statewide Airfield Pavement Management Program District 2 Report

June 13, 2008



Prepared for:
Florida Department of Transportation
Aviation Office

by:

URS Corporation Inc. / MACTEC Engineering & Consulting, Inc. / Planning Technology, Inc. / ASC Geosciences, Inc.







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EXECUTIVE SUMMARY

URS Corporation, Inc. with team members MACTEC Engineering and Consulting, Inc. (MACTEC), Planning Technology, Inc. (PTI), and ASC Geosciences, Inc. (ASCG) was awarded a contract to provide services in support of the Florida Department of Transportation (FDOT) Aviation Office for Phase II of the Statewide Aviation Pavement Management Program. As part of this contract, MACTEC conducted pavement condition surveys for airside pavements for airports located in District 2, evaluated the conditions and developed a maintenance and rehabilitation program to improve conditions to prescribed minimum levels. District 2 has 2 Primary (PR), 4 Regional Reliever (RL), and 8 General Aviation (GA) airports participating in the Statewide Pavement Management Program.

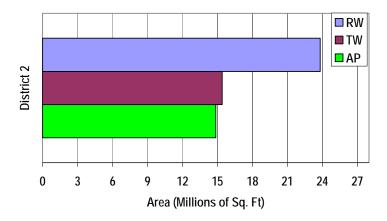
Pavement Area and Use

The total pavement area in 2006/2007 for airports located in District 2 is approximately 54,080,920 square feet. The breakdown of pavement area for each pavement use is provided as follows:

Table E-1: Pavement Area by Pavement Use – District 2

Use	Area, SqFt
Runway	23,817,800
Taxiway	15,402,454
Apron	14,860,666
Total	54,080,920

Figure E-1: Pavement Area by Use – District 2



24J **1** RW ■ TW 28J AP 40J 42J 55J CDK 1 CRG CTY GNV HEG JAX LCQ VQQ X60 0 3 9 12 15 18 Pavement Area (Millions of Sq. Ft)

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

Pavement Condition Index (PCI)

The overall area-weighted Pavement Condition Index (PCI) of the airports in District 2 in 2006/2007 is 74, representing a Satisfactory overall network condition.

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

Table E-3 and Figure E-3 provide the weighted-average PCI by pavement use for airports participating in the program from District 2. Figure E-4 provides the distribution PCI by pavement use by airport. Figure E-5 provides the area-weighted PCI by surface type..

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

Table E-2: Participating Airports Summary– District 2

Airport	Area-Weighted PCI	Pavement Area, SqFt
24J	90	573,610
28J	65	2,016,238
40J	57	3,067,410
42J	73	1,620,001
55J	80	3,047,627
CDK	48	264,790
CRG	62	2,676,465
CTY	66	1,673,280
GNV	78	4,574,418
HEG	65	1,872,518
JAX	90	10,897,588
LCQ	73	3,524,445
VQQ	68	16,055,230
X60	75	2,217,300
District 2	74	54,080,920

Figure E-3: PCI by Pavement Use – District 2

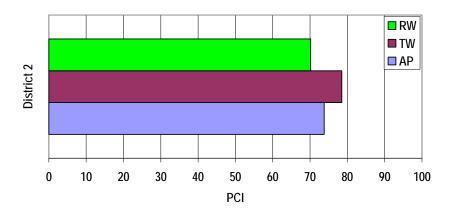


Table E-3: Condition Summary by Pavement Use – District 2

Use	Area-Weighted PCI
Runway	70
Taxiway	79
Apron	74
All	74

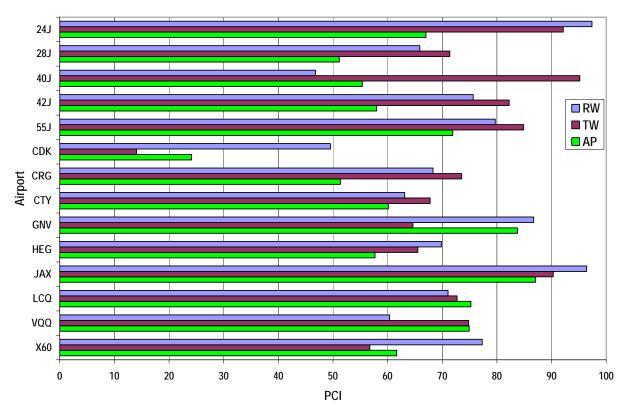
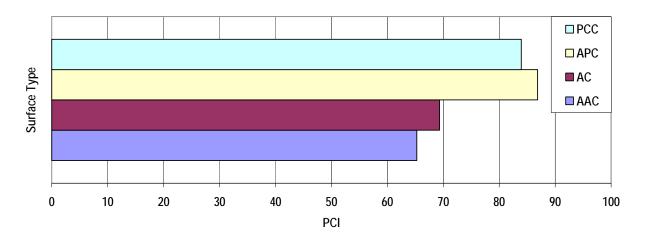


Figure E-4: PCI by Use by Airport – District 2





Maintenance and Rehabilitation Costs

Airports in District 2 with immediate M&R needs (2008 needs) include 24J (Suwannee County Airport), 28J (Kay Larkin Airport), 40J (Perry-Foley Airport, 42J (Keystone Airport), 55J (Fernandina Beach Municipal Airport), CDK (George T. Lewis Airport), CRG (Craig Municipal Airport), CTY (Cross City Airport), GNV (Gainesville Regional Airport), HEG (Herlong Airport – Jacksonville), JAX (Jacksonville International Airport), LCQ (Lake City Municipal Airport), VQQ (Cecil Field Airport), and X60 (Williston Municipal Airport). Some of these needs may not be the highest priority for funding but would need to be programmed over several years. These immediate needs based on FDOT criteria are summarized in the following table.

Table E-4: Immediate Major M&R Cost - District 2

Airport	Avg PCI - Before M&R	Immediate M&R Total **	Avg PCI -1st Year After M&R
24J	90	\$82,000	88
28J	65	\$7,096,000	92
40J	57	\$15,513,000	88
42J	73	\$2,003,000	82
55J	80	\$9,172,000	95
CDK	48	\$1,883,000	100
CRG	61	\$18,271,000	94
CTY	66	\$3,019,000	84
GNV	78	\$14,388,000	95
HEG	65	\$4,569,000	80
JAX	90	\$2,011,000	91
LCQ	73	\$3,301,000	80
VQQ	68	\$41,632,000	85
X60	75	\$5,456,000	96
District 2	74	\$128,394,000	88

^{*} This table shows the area-weighted PCI before and after Major M&R and routine maintenance work for the first year of the 10-year plan. It includes all airports participating in the program from District 2.

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

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

Table E-5: 10 Year M&R Costs under Unlimited Funding Scenario – District 2

Year	Preventive	Major M&R >= Critical	Major M&R < Critical	Total
2008	\$3,576,000	\$241,000	\$128,153,000	\$131,970,000
2009	\$5,112,000	\$0	\$6,250,000	\$11,362,000
2010	\$3,603,000	\$0	\$5,492,000	\$9,094,000
2011	\$3,892,000	\$0	\$4,008,000	\$7,900,000
2012	\$4,637,000	\$0	\$2,044,000	\$6,681,000
2013	\$5,551,000	\$0	\$961,000	\$6,513,000
2014	\$6,669,000	\$0	\$995,000	\$7,664,000
2015	\$7,234,000	\$0	\$2,711,000	\$9,946,000
2016	\$8,020,000	\$0	\$1,965,000	\$9,984,000
2017	\$8,457,000	\$0	\$4,970,000	\$13,428,000
Total	\$56,752,000	\$241,000	\$157,549,000	\$214,542,000

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

The 10 year analysis suggests an annual budget on the order of \$21 million would be expected to provide an improvement in the overall condition, where the area-weighted PCI would increase from 74 in 2006/2007 to 80 in 2017. However, as stated above, a number of large projects exist that would need to be programmed over multiple years.

It is important to note that although preventative and some major M&R activities would have to be conducted over several years, the area-weighted PCI value for all airport pavements in District 2 in 2017 may remain near 80. What is most important is that the pavement repair work (preventative and major M&R) that has been identified for airports in District 2 is conducted at some point in the 10-year plan.

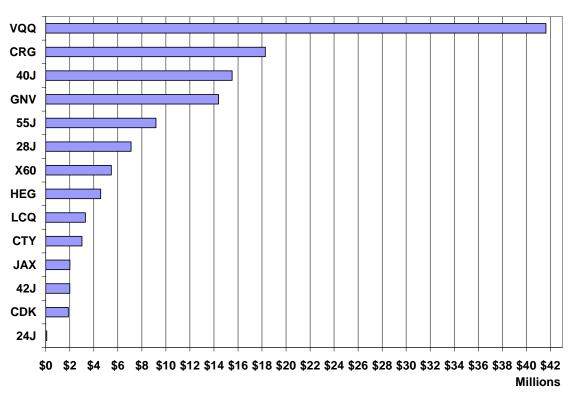
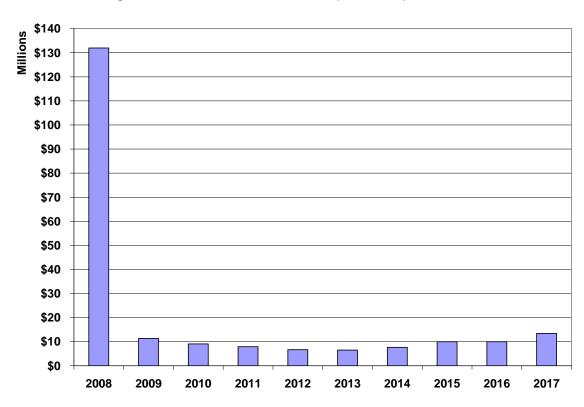


Figure E-6: Immediate M&R Costs by Airport – District 2





1. INTRODUCTION

The State of Florida has more than 100 public airports that are vital to the Florida economy as well as the economy of the United States. These public airports range from small general aviation airports to large international hub airports. These airports serve business travelers, tourism, and cargo operations crucial to the daily life of the people of Florida.

There are millions of square yards of pavement for the runways, taxiways, aprons and other areas that support aircraft operations. The timely and proper maintenance and rehabilitation (M&R) of these pavements allows the airports to operate efficiently, economically and without excessive down time. In order to support the planning, scheduling, and design of the M&R activities, FDOT has implemented pavement management system technology.

This report describes the procedures used to develop the appropriate engineering and scientific standards of care, quality, budget, and schedule requirements implemented at airports in District 2 as a result of their participation in the Statewide Aviation Pavement Management Program.

1.1 Purpose

This Florida Airport Pavement Evaluation Report is intended to:

- Describe, briefly, the Florida Department of Transportation (FDOT) Aviation Office Statewide Pavement Management Program and the roles and responsibilities of the program's participants
- Provide background information on pavement management principles, objectives, and benefits to the participating airports
- Outline the procedures used to collect, evaluate and report pavement inspection results at the airports
- Present the findings from the inspection and analysis of the needs for maintenance and rehabilitation activities for the airports in District 2 in this report.

1.2 FDOT Aviation PMS Program

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

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

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

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

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

1.3 Organization

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

1.3.1 Consultant Role

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

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

1.3.2 Airport Role

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

1.4 Pavement Types and Pavement Management

1.4.1 Pavement basics

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

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

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

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

1.4.2 Pavement Management System Concept

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

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

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

There are several components or elements that are essential to a PMS. The first steps in the implementation of a PMS are to know and clearly identify what needs to be managed, the limits of the managing agency's responsibilities and the condition of the existing pavements. Once the cause and the extent of pavement problems are known, the appropriate maintenance and/or rehabilitation can be planned. By using local unit costs and expected yearly budgets, a multi year M&R plan can be developed.

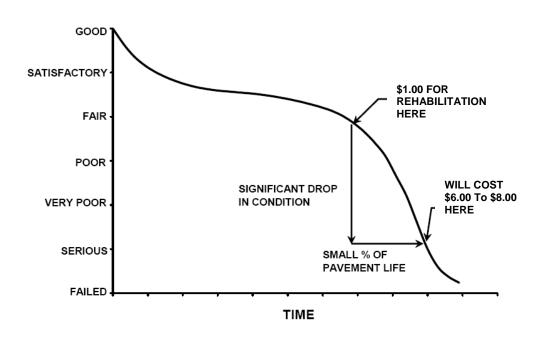


Figure 1-1: Pavement Life Cycle

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

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

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

1.4.3 Pavement Inspection Methodology for PMS

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

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

Table 1-1: Sampling Rate for FDOT Condition Surveys

AC Pavements			PCC Pavements		
N	n		N	n	
IN	Runway	Others	IN	Runway	Others
1-4	1	1	1-3	1	1
5-10	2	1	4-6	2	1
11-15	3	2	7-10	3	2
16-30	5	3	11-15	4	2
31-40	7	4	16-20	5	3
41-50	8	5	21-30	7	3
<u>></u> 51	20% but <20	10% but <u><</u> 10	31-40	8	4
	_	_	41-50	10	5
			<u>></u> 51	20% but <20	10% but <u><</u> 10
				_	_

Where N = total number of sample units in section <math>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. MicroPAVER provides a rating scale that relates PCI to pavement condition, with a PCI between 0 and 10 considered 'Failed'

pavement and a PCI between 86 and 100 considered 'Good' pavement, with five other conditions for PCI values between 11 and 85.

Figure 1-2 shows the PCI scale.

86 - 100 Good 71 - 85 Satisfactory 56 - 70 Fair 41 - 55 Poor 26 - 40 Very Poor

11 - 25

0 - 10

Serious

Failed

Figure 1-2: PCI Rating Scale

1.5 Definitions

Aviation Office - The Aviation Office is charged with responsibility for promoting the safe development of aviation to serve the people of the State of Florida. The Aviation Office worked closely with FDOT District Aviation Specialists, during development of this project. District Aviation Specialists will consult with airport owners in implementation of project recommendations.

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

<u>Branch</u> – (Facility in prior system) - A runway, taxiway or apron is called a Branch. This is an easy reference to a recognizable component of airport pavement. In this report, Branch ID maintains the original AirPAV identification where 100 series through 3000 series facilities are taxiways, 4000 and 5000 series facilities are aprons (the 5000 series represent runup aprons and turn-

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arounds), and 6000 series facilities are runways. It also includes the common designation for the item e.g. RW 18-36.

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

- GA for general aviation or community airports
- RL for regional relievers or small hubs
- PR for primary

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

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

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

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

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

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

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

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

<u>Network Definition</u> – (Airport Sketch in prior system) – A Network Definition is a CAD drawing which shows the airport pavement outline with Branch and Section boundaries. This sketch is intended to assist the user of the report to quickly associate information from the text to a location on the airport. This drawing also includes the PCI sample units and is used to identify those sample units to be surveyed, i.e. the sampling plan. The Network Definition for the airport in this report is in Appendix A along with a table of inventory data.

<u>Pavement Condition Index (PCI)</u> – The Pavement Condition Index is a number which represents the condition of a pavement segment at an instant in time. It is based on visual identification and measurement of specific distress types commonly found in pavement which has been in service for a period of time. The definitions and procedures for determining the PCI are found in ASTM D 5340-04, "Standard Test Method for Airport Pavement Condition Index Surveys," published by ASTM International.

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

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

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

- P for Primary pavements, such as primary runways, primary taxiways, and primary aprons
- S or Secondary pavements, such as secondary runways, secondary taxiways, and secondary aprons
- T for Tertiary pavements such as "T' hangars and slightly used aprons

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

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

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

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

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

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

2. NETWORK DEFINITION

The airports inspected in District 2 include:

- Suwannee County Airport (24J)
- Kay Larkin Airport (28J)
- Perry-Foley Airport (40J)
- Keystone Airport (42J)
- Fernandina Beach Municipal Airport (55J)
- George T. Lewis Airport (CDK)
- Craig Municipal Airport (CRG)
- Cross City Airport (CTY)
- Gainesville Regional Airport (GNV)
- Herlong Airport Jacksonville (HEG)
- Jacksonville International Airport (JAX)
- Lake City Municipal Airport (LCQ)
- Cecil Field Airport (VQQ)
- Williston Municipal Airport (X60)

These airports are categorized as 2 Primary (PR), 4 Regional Reliever (RL), and 8 General Aviation (GA) airports.

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

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

The updated network definition fields and network definition drawings for airports participating from District 2 are included in Appendix A of each individual airport report.

3. PAVEMENT INVENTORY

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

The total pavement area in 2006/2007 for airports participating in the program from District 2 is approximately 54,080,920 square feet. The breakdown of pavement area for each pavement use is provided in Table 3-1.

Use	Area, SqFt
Runway	23,817,800
Taxiway	15,402,454
Apron	14,860,666

54,080,920

Total

Table 3-1: Pavement Area by Pavement Use - District 2

Figure 3-1 presents the breakdown of the pavement area for airports in District 2 by pavement use.

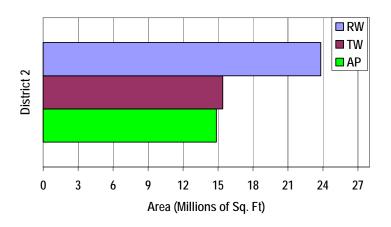


Figure 3-1: Pavement Area by Use - District 2

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

4. PAVEMENT CONDITION

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

Pavement condition inspections for airports in District 2 were performed in 2006/2007. Data were recorded in the field using hand-held PDA (personal digital assistant) technology. The identifying information for each sample unit was pre-loaded into the PDA, and the survey results were entered directly, at the time of inspection. This simplified data handling and management.

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

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

According to the 2006/2007 survey, the overall the average area-weighted PCI for airports in District 2 is 74, representing a Satisfactory overall network condition.

Table 4-1 and Figure 4 1 provide the PCI distribution by rating and surface type for District 2.

AIRPORT RW TW AP **AVG PCI PCI Category** 99 24J 95 73 90 Good 28J 66 71 51 65 Fair 40J 49 98 56 57 Fair 42J 74 81 57 73 Satisfactory 73 Satisfactory 55J 80 85 80 CDK 51 16 25 48 Poor **CRG** 68 74 51 61 Fair CTY 65 66 Fair 69 61 **GNV** 87 64 78 Satisfactory 84 70 HEG 65 Fair 66 58 JAX 96 90 87 90 Good 71 LCQ 73 75 73 Satisfactory VQQ 60 75 75 68 Fair

Table 4-1: Airport Pavement PCI by Use and Rating Category – District 2

63

74

75

74

79

70

X60

District 2

59

79

Satisfactory

Satisfactory

□ PCC □ APC Surface Type ■ AC AAC 0 10 20 30 40 50 60 70 80 90 100 PCI

Figure 4-1: Network PCI Distribution by Surface Type Category – District 2

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

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

Use	Area-Weighted PCI
Runway	70
Taxiway	79
Apron	74
All	74

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

5. PAVEMENT CONDITION PREDICTION

Performance prediction models or deterioration curves for PCI were used to develop a condition forecast. The performance models were developed for combinations of variables such as pavement use (runway, taxiway or apron), surface type (AC or PCC) and airport category (GA, RL, or PR). Figures 5-1 to 5-3 illustrate the predicted performance of pavements at airports participating in the program from District 2 based on current condition, age since last construction and the deterioration model appropriate for the type of pavement. The figure presents the forecast for each pavement use and displays the FDOT minimum condition criteria for District 2 airports.

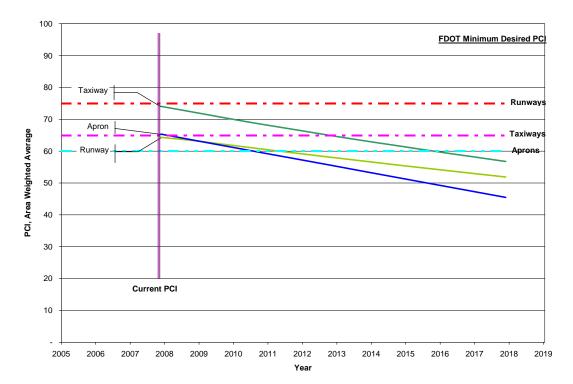


Figure 5-1: Predicted PCI for GA Airports by Pavement Use - District 2

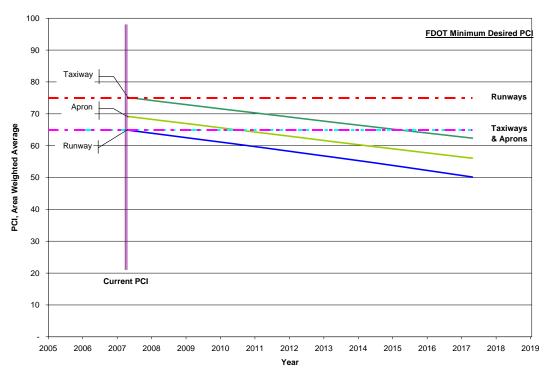
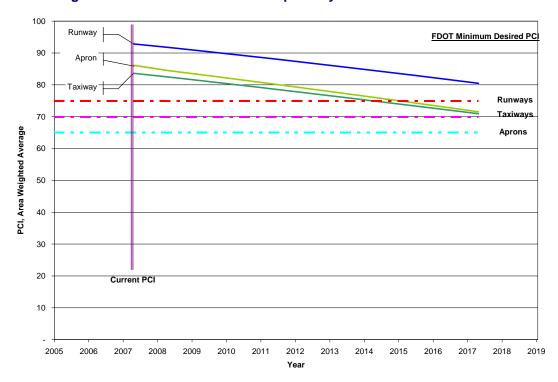


Figure 5-2: Predicted PCI for RL Airports by Pavement Use – District 2





6. MAINTENANCE POLICIES AND COSTS

6.1 Policies

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

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

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

Table 6-1: Routine Maintenance Activities for Airfield Pavements

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

^{*}L = Low, M = Medium, H = High

Rehabilitation is warranted when the pavement condition decreases below a critical point such that the deterioration is extensive or rate of deterioration is so great that routine maintenance is no longer cost-efficient. This critical point is called "Critical PCI." The Critical PCI levels for different pavement and branch types established in Phase I of Statewide Pavement Management Program were reviewed and updated for development of the M&R plan for the airport. Sections above critical PCI levels receive routine maintenances while pavements predicted to deteriorate below their respective critical PCI level during the analysis period will be identified for Major M&R. Based on the existing condition, the Critical PCI levels for all pavements are set at 65.

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

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

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

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

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

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

Table 6-3: M&R Activities for Airports

6.2 Unit Costs

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

Table 6-4: Maintenance Unit Costs for FDOT

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

The improvement in condition due to maintenance actions applied to specific distresses is only performed when an inspection is recent and only in the first year of the M&R analysis. In subsequent years MicroPAVER calculates M&R costs based on expected unit costs for pavements in a range of PCI. That is, for low PCI it is expected that the repair would be significant (e.g. reconstruction) and therefore very costly. Using available unit cost data the Major M&R Cost By Condition table was set up as shown in Table 6-5. The cost assigned to each range of PCI is based on a Transportation Cost Report provided by Office of Planning Policy of FDOT where the unit costs of reconstruction and resurfacing of airfield pavements were included. These costs were then assigned to the appropriate PCI range to arrive at a cost per square foot necessary to restore pavements at that PCI level to new condition, i.e. a PCI of 100.

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

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

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

7. PAVEMENT REHABILITATION NEEDS ANALYSIS

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

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

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

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

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

- The average PCI for airports in District 2 will deteriorate from 74 to 59 in ten years if no M&R activities are performed.
- The PCI will remain at or above 80 through the 10-year analysis period under the unlimited budget scenario. A 2017 PCI of 80 with this scenario is 21 PCI points higher than a "No M&R" scenario. The total cost for Major M&R over this 10-year period is about \$158 million.

Table 7-1: Summary of Immediate Major M&R Needs - District 2

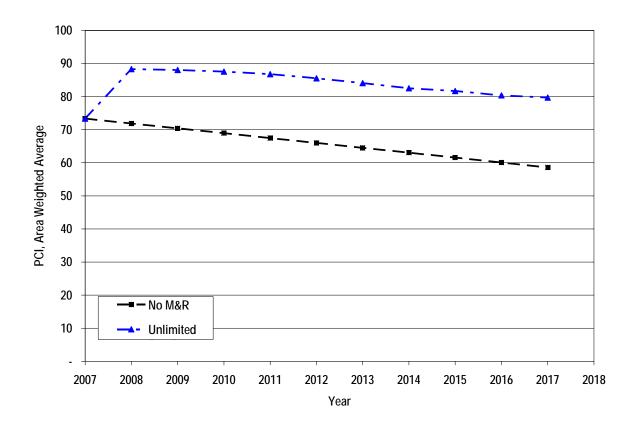
Airport	Avg PCI - Before M&R	Immediate M&R Total **	Avg PCI -1st Year After M&R
24J	90	\$82,000	88
28J	62	\$7,096,000	92
40J	57	\$15,513,000	88
42J	73	\$2,003,000	82
55J	80	\$9,172,000	95
CDK	48	\$1,883,000	100
CRG	61	\$18,271,000	94
CTY	66	\$3,019,000	84
GNV	78	\$14,388,000	95
HEG	65	\$4,569,000	80
JAX	90	\$2,011,000	91
LCQ	73	\$3,301,000	80
VQQ	68	\$41,632,000	85
X60	75	\$5,456,000	96
District 2	74	\$128,394,000	88

^{*} This table shows the area-weighted PCI before and after Major M&R and routine maintenance work for the first year of the 10-year plan. It includes all airports participating in the program from District 2.

pating in the program from District 2.

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

Figure 7-1: Budget Scenario Analysis



8. MAINTENANCE AND REHABILITATION PLAN

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

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

Approximately 84% of the total Major M&R cost is required in the first year (2008). This is a consequence of several large areas of pavement at 24J (Suwannee County Airport), 28J (Kay Larkin Airport), 40J (Perry-Foley Airport), 42J (Keystone Airport), 55J (Fernandina Beach Municipal Airport), CDK (George T. Lewis Airport), CRG (Craig Municipal Airport), CTY (Cross City Airport), GNV (Gainesville Regional Airport), HEG (Herlong Airport – Jacksonville), JAX (Jacksonville International Airport), LCQ (Lake City Municipal Airport), VQQ (Cecil Field Airport), and X60 (Williston Municipal Airport) airports being below Critical PCI.

24J (Suwannee County Airport), and JAX (Jacksonville International Airport) are currently in overall Good condition with an average PCI value of 90 each, while 42J (Keystone Airport), 55J (Fernandina Beach Municipal Airport), GNV (Gainesville Regional Airport), LCQ (Lake City Municipal Airport), and X60 (Williston Municipal Airport) airports are currently in Satisfactory condition with an average PCI value of 73, 80, 78, 73 and 75, respectively. 28J (Kay Larkin Airport), 40J (Perry-Foley Airport), CRG (Craig Municipal Airport), CTY (Cross City Airport), HEG (Herlong Airport – Jacksonville), and VQQ (Cecil Field Airport) are currently in overall Fair condition with an average PCI value of 62, 57, 62, 66, 65, and 68 respectively, while CDK (George T. Lewis Airport) is currently in Poor condition with an average PCI value of 48. The majority of major repair needs in 2008 are identified from the following airports: VQQ (Cecil Field Airport), JAX (Jacksonville International Airport), CRG (Craig Municipal Airport), 40J (Perry-Foley Airport), GNV (Gainesville Regional Airport), 55J (Fernandina Beach Municipal Airport), and 28J (Kay Larkin Airport). The unlimited budget scenario provides the basis for estimating the total repair cost. In reality, it is neither operationally nor fiscally prudent.

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

Table 8-1: M&R Costs under Unlimited Funding Scenario – District 2

Year	Preventive	Major M&R >= Critical	Major M&R < Critical	Total
2008	\$3,576,000	\$241,000	\$128,153,000	\$131,970,000
2009	\$5,112,000	\$0	\$6,250,000	\$11,362,000
2010	\$3,603,000	\$0	\$5,492,000	\$9,094,000
2011	\$3,892,000	\$0	\$4,008,000	\$7,900,000
2012	\$4,637,000	\$0	\$2,044,000	\$6,681,000
2013	\$5,551,000	\$0	\$961,000	\$6,513,000
2014	\$6,669,000	\$0	\$995,000	\$7,664,000
2015	\$7,234,000	\$0	\$2,711,000	\$9,946,000
2016	\$8,020,000	\$0	\$1,965,000	\$9,984,000
2017	\$8,457,000	\$0	\$4,970,000	\$13,428,000
Total	\$56,752,000	\$241,000	\$157,549,000	\$214,542,000

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

9. VISUAL AIDS

9.1 GIS Linked Shape File

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

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

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

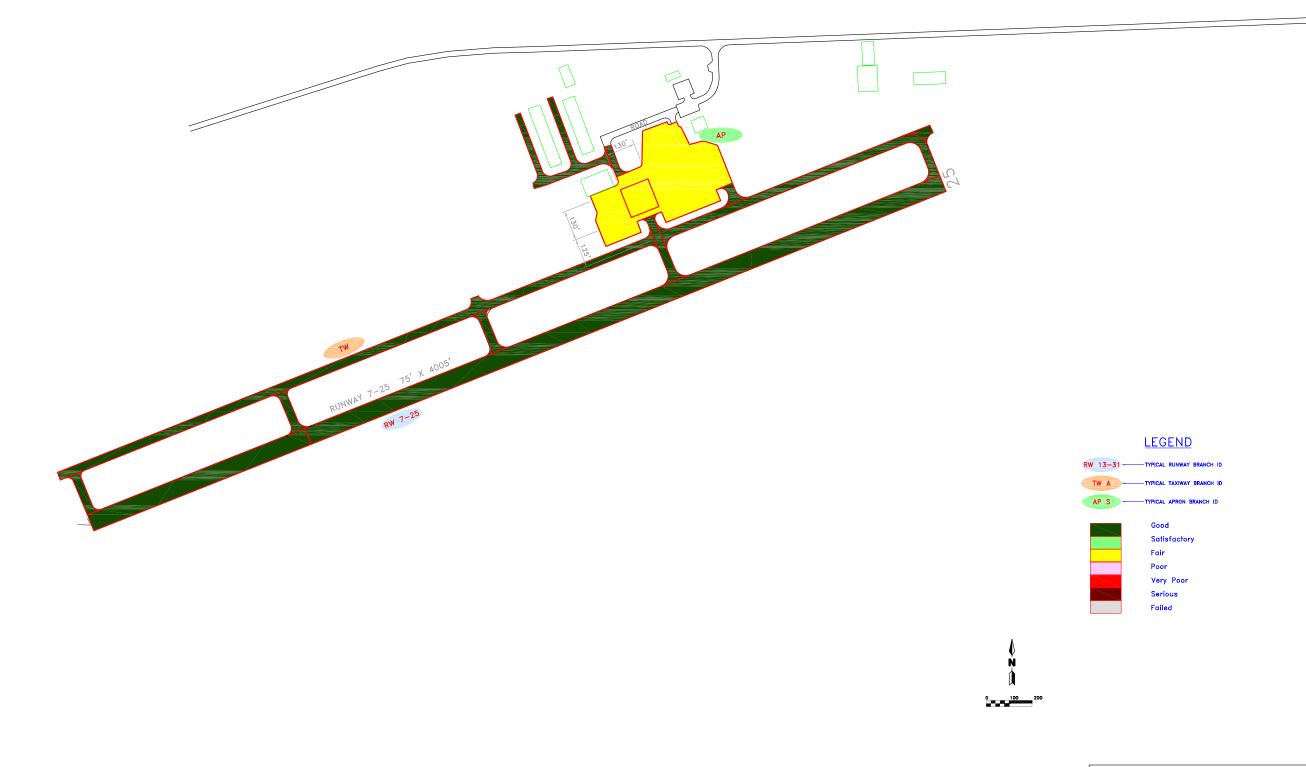
10. **RECOMMENDATIONS**

Pavement condition inspections were performed at airports participating in the program from District 2 and a 10-year M&R plan was developed based on the unlimited funding scenario.

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

- 24J Suwannee County Airport: Apron
- 28J Kay Larkin Airport: Runway 13-30, Runway 9-27, and Apron
- 40J Perry-Foley Airport: Runway 6-24, Runway 18-36, Runway 12-30, and Apron
- 42J Keystone Airport: Runway 5-23 and Apron
- 55J Fernandina Beach Municipal Airport: Runway 13-31, Taxiway B, and North Apron
- CDK George T. Lewis Airport: Runway 5-23
- CRG Craig Municipal Airport: Runway 5-23, Southwest Apron, North Apron, and Northwest Apron
- CTY Cross City Airport: Runway 13-31 and Runway 4-22
- GNV Gainesville Regional Airport: Runway 7-25, Taxiway A, Taxiway B, and Taxiway E
- HEG Herlong Airport: North Apron
- JAX Jacksonville International Airport: Terminal Apron
- LCQ Lake City Municipal Airport: Taxiway B2 and East Apron
- VQQ Cecil Field Airport: Runway 18L-36R, Runway 18R-36L, Runway 9L-27R, and Runway 9R-27L
- X60 Williston Municipal Airport: Runway 14-32 and Taxiway C

APPENDIX A 2006/2007 CONDITION MAPS















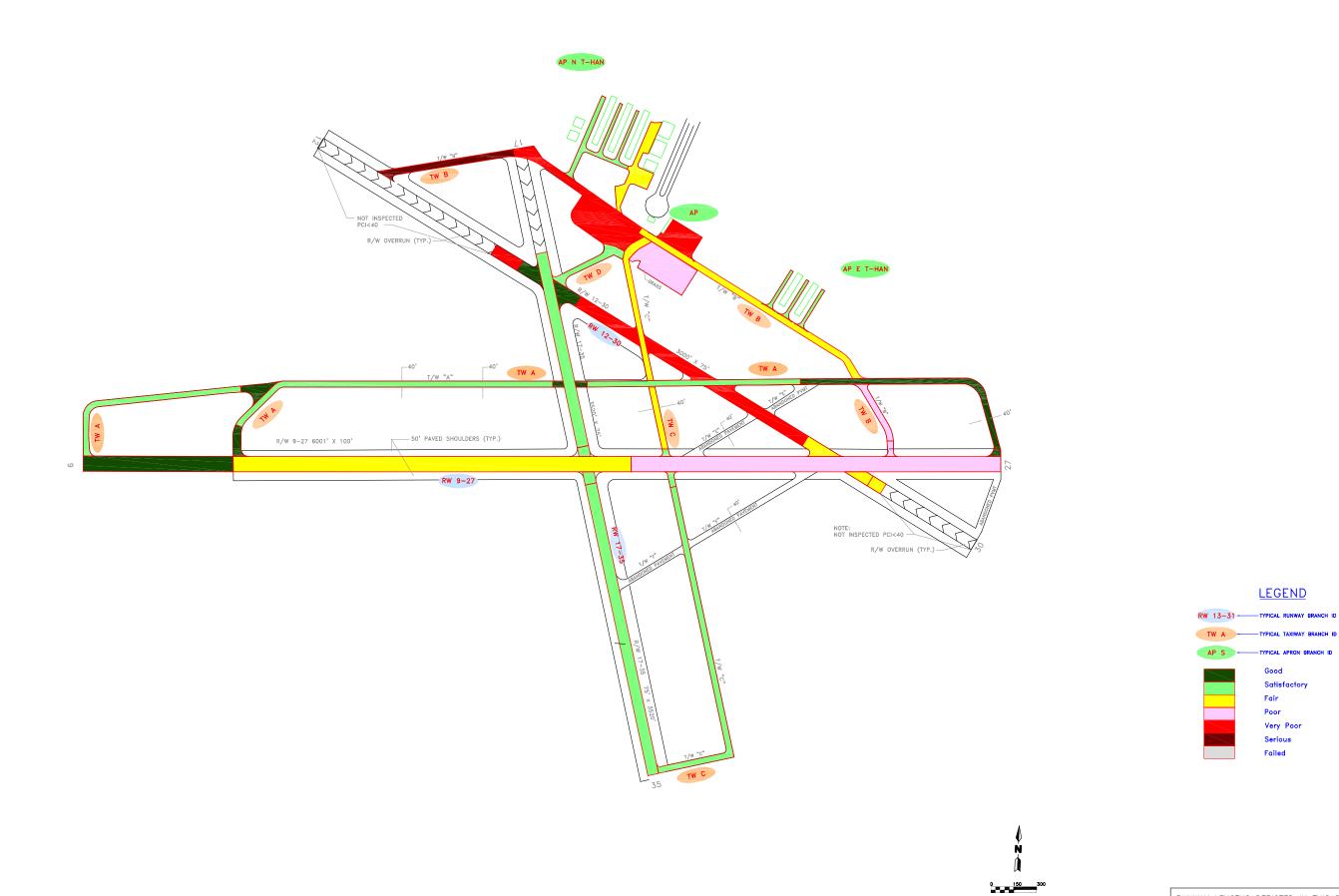


Engineering and Consulting, Inc. Tallahassee, Florida 850-656-1293 2006 Condition Map

SUWANNEE COUNTY AIRPORT SUWANNEE COUNTY, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION AVIATION OFFICE

PORT 24J
PRIDA FOOT DISTRICT
TION OFFICE 82













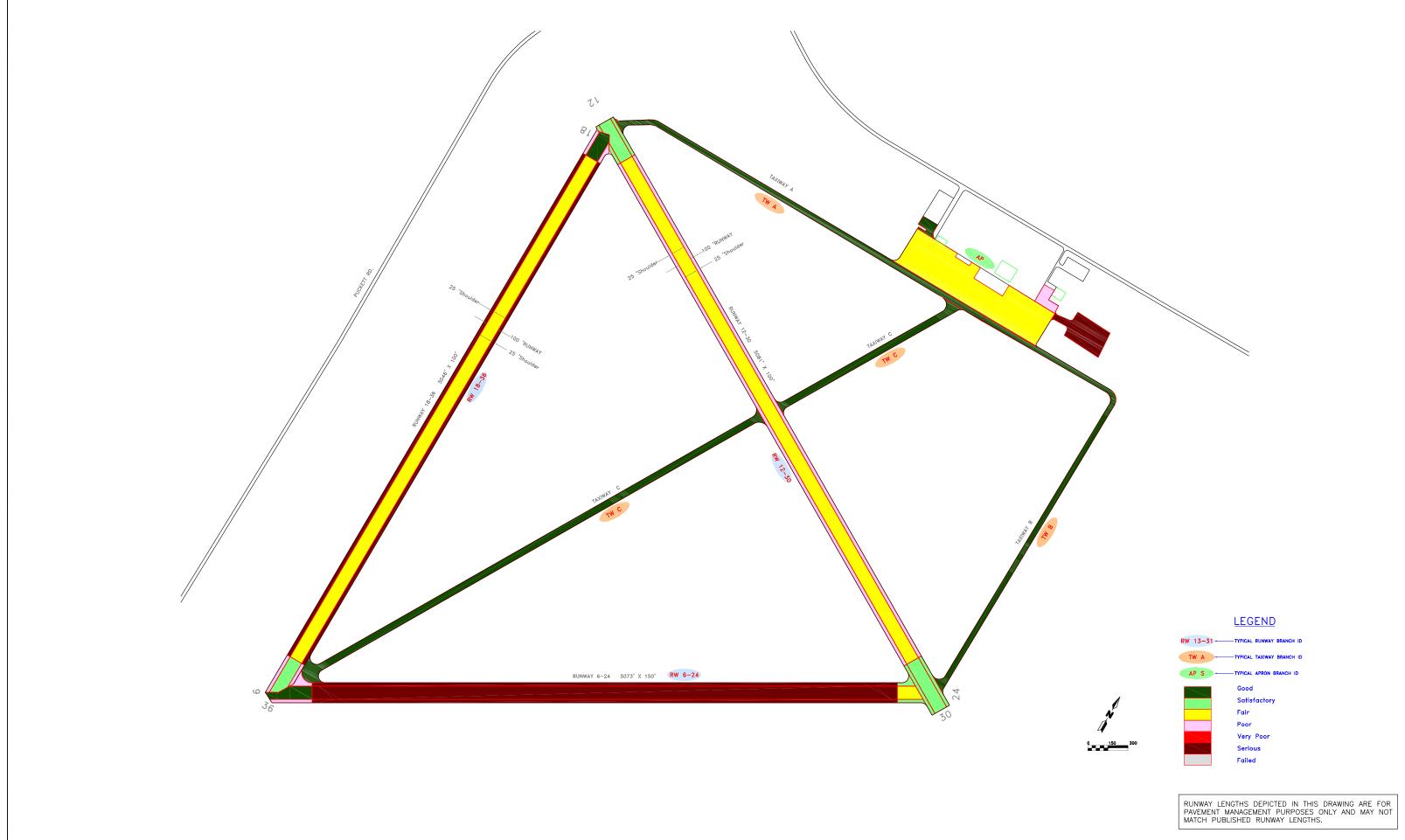




Engineering and Consulting, Inc. Tallahassee, Florida 850-656-1293

PALATKA MUNICIPAL - LT. KAY LARKIN FIELD PUTNAM COUNTY, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION AND TR













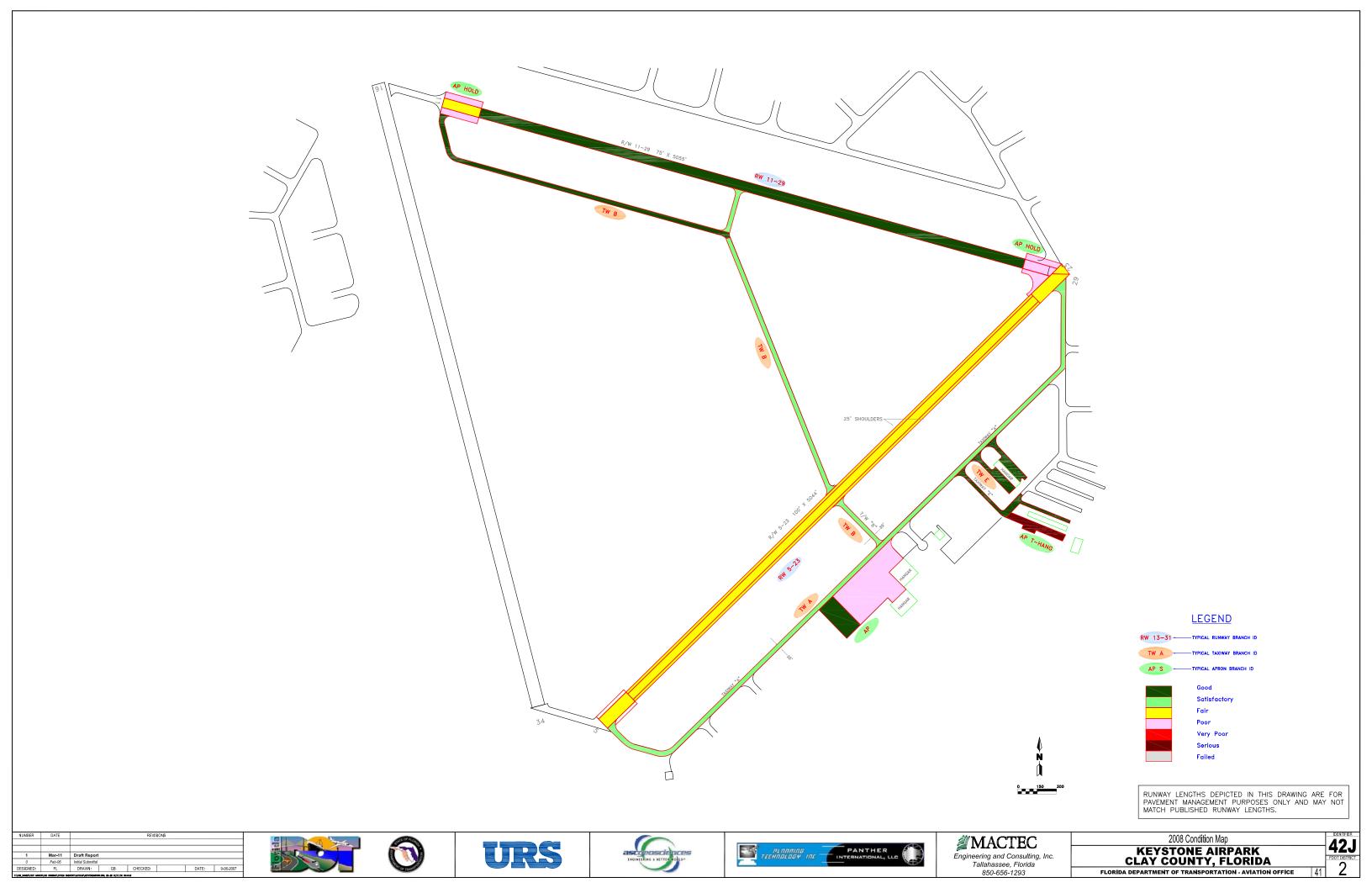


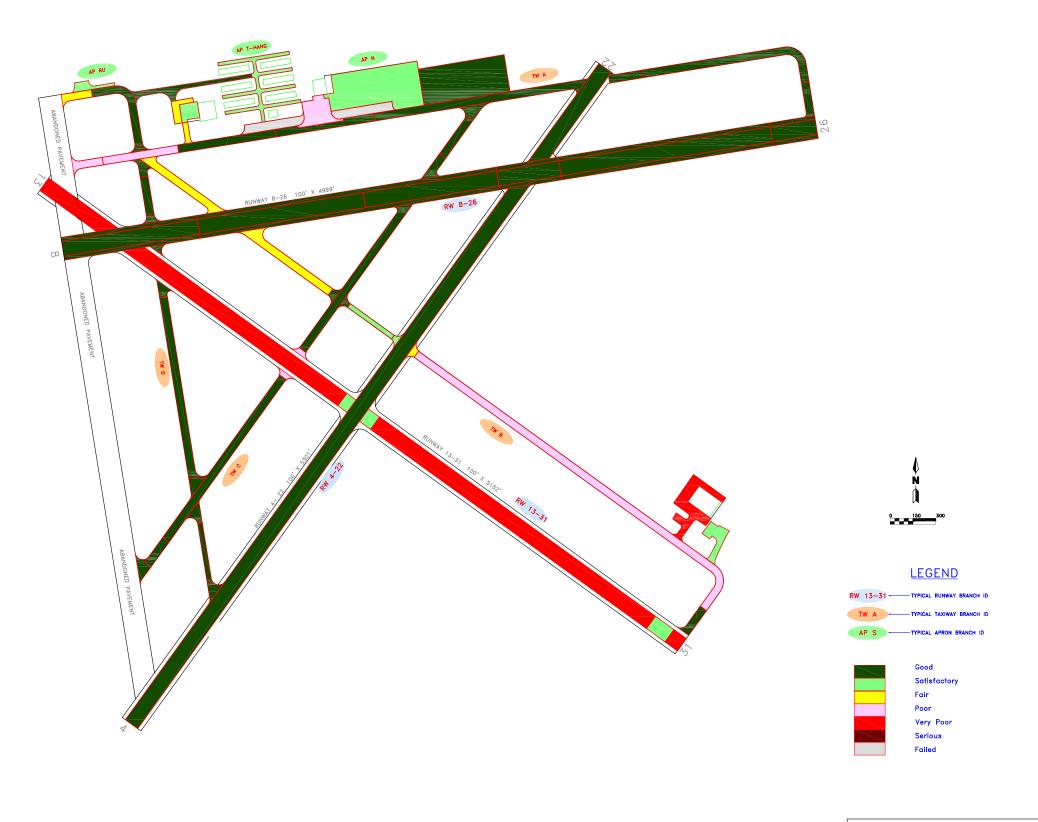
2006 Condition Map

PERRY-FOLEY AIRPORT
PERRY, TAYLOR, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

40J





NUMBER	DATE			REVIS	SIONS		
1	Jan-10	Draft Report					
0	Feb-06	Initial Submittal					
DESIGNED:	FL	DRAWN:	GB	CHECKED:		DATE:	9-07-2007
1 0 DESIGNED:	Feb-06	Initial Submittal		CHECKED:		DATE:	9-07-200





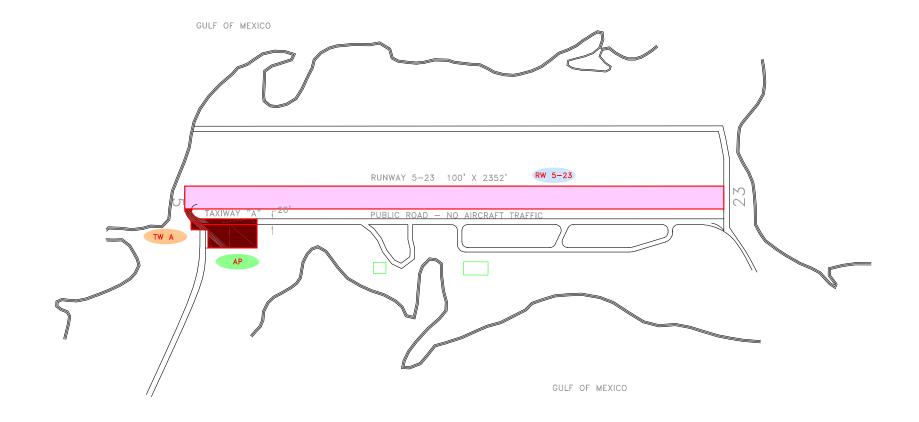








2007 Condition Map	IDENTIFIER
FERNANDINA BEACH MUNICIPAL AIRPORT NASSAU COUNTY, FLORIDA	FDOT DISTRICT
FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE 26	2



<u>LEGEND</u>







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

NUMBER	DATE			REVI	SIONS		
1	Mar-18	Draft Report					
0	Feb-06	Initial Submittal					
DESIGNED:	FL	DRAWN:	GB	CHECKED:		DATE:	9-06-2007









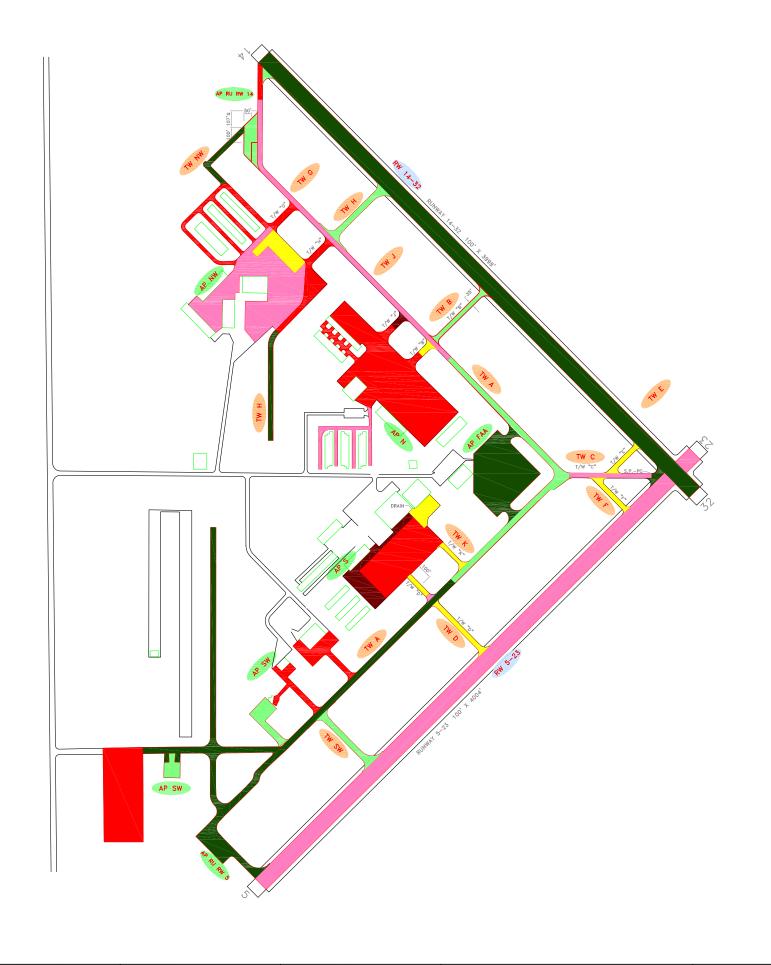




2006 Condition Map GEORGE T. LEWIS AIRPORT LEVY COUNTY, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE





<u>LEGEND</u>



Serious



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

NUMBER	DATE			REVI	SIONS		
1	Oct-07	Draft Report, Dr	awn by KJ, Checke	ed by BX			
0	Feb-06	Initial Submittal					
DESIGNED:	FL	DRAWN:	BB	CHECKED:		DATE:	9-07-2007











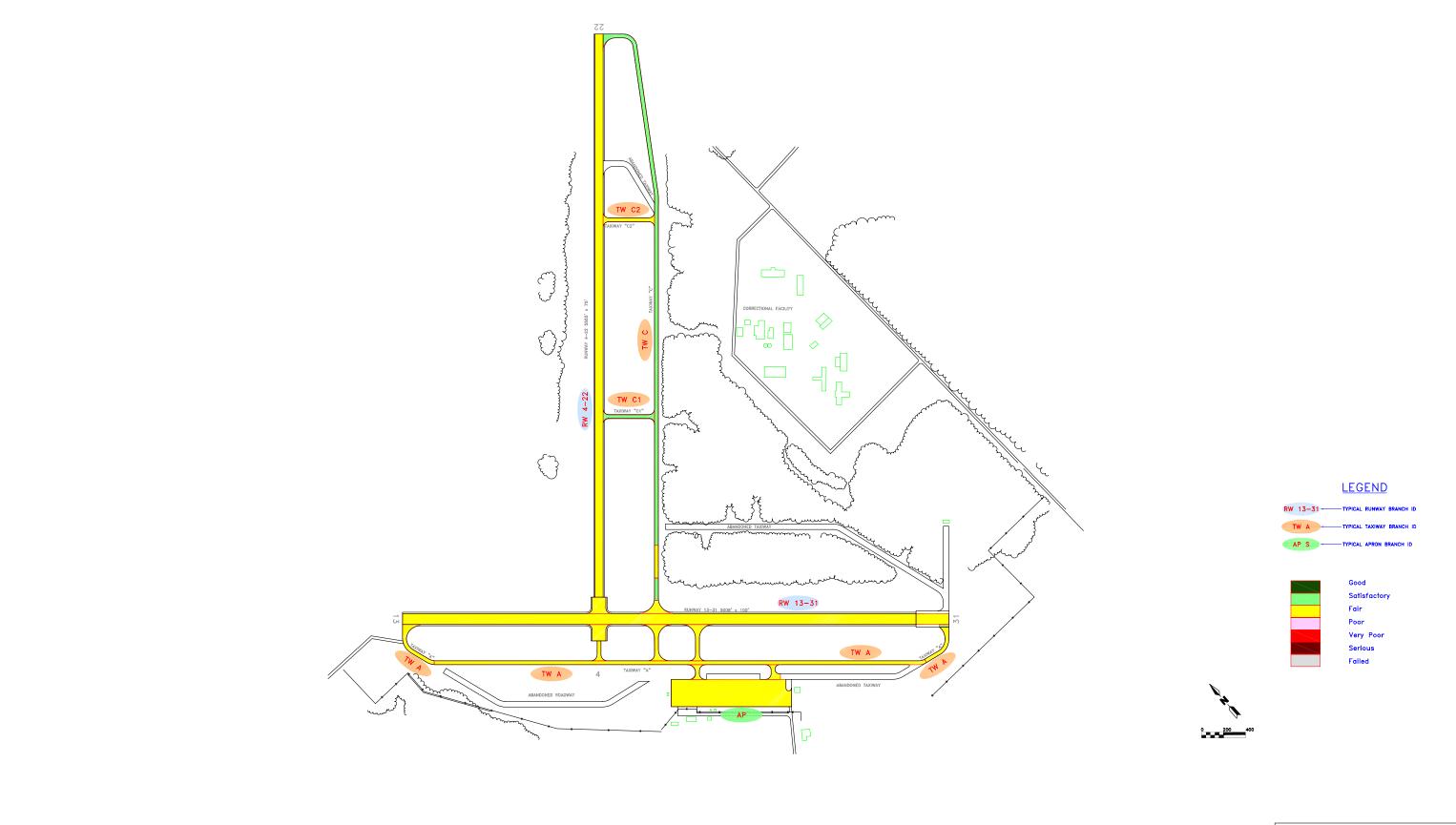


Engineering and Consulting, Inc. Tallahassee, Florida 850-656-1293

2007 Condition Map

CRAIG MUNICIPAL AIRPORT DUVAL COUNTY, FLORIDA FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE





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1	Mar-18	Draft Report					
0	Feb-06	Initial Submittal					
DESIGNED:	FL	DRAWN:	BB	CHECKED:		DATE:	9-06-2007









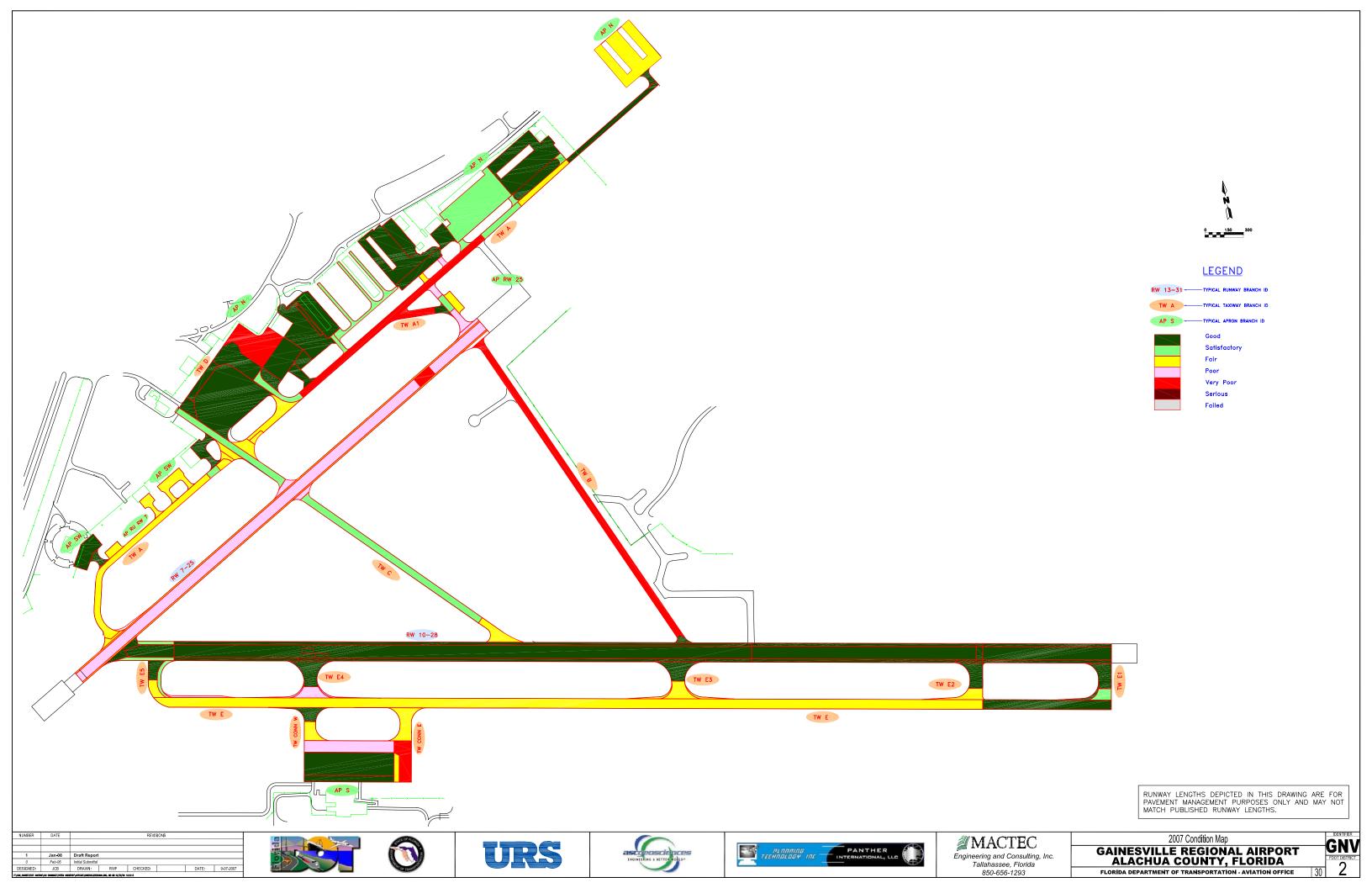


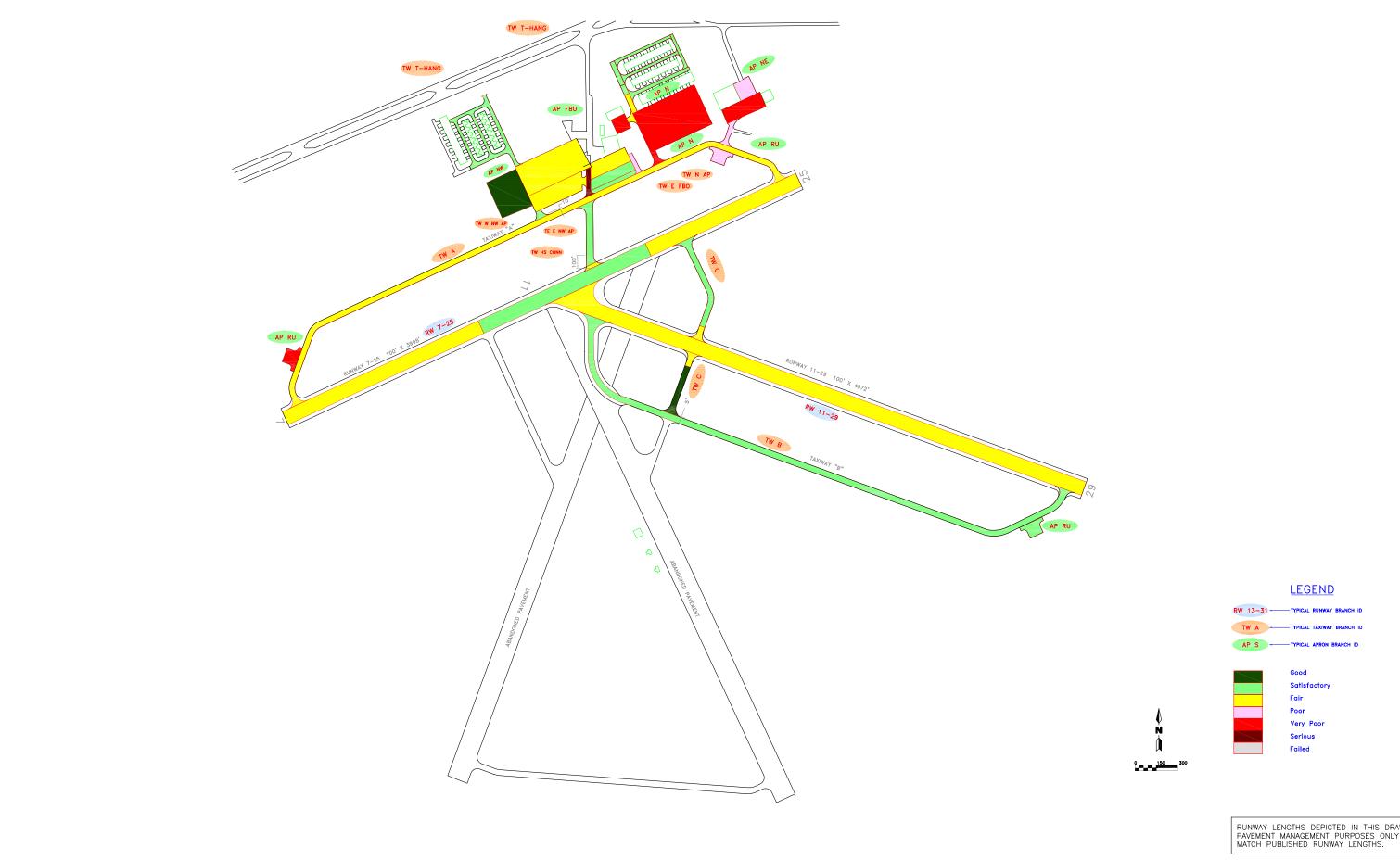


2006 Condition Map CROSS CITY AIRPORT DIXIE COUNTY, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

CTY





NUMBER	DATE			REVI	SIONS		
1	Jan-08	Draft Report					
0	Feb-06	Initial Submittal					
DESIGNED:	FL	DRAWN:	RF	CHECKED:		DATE:	9-07-2007







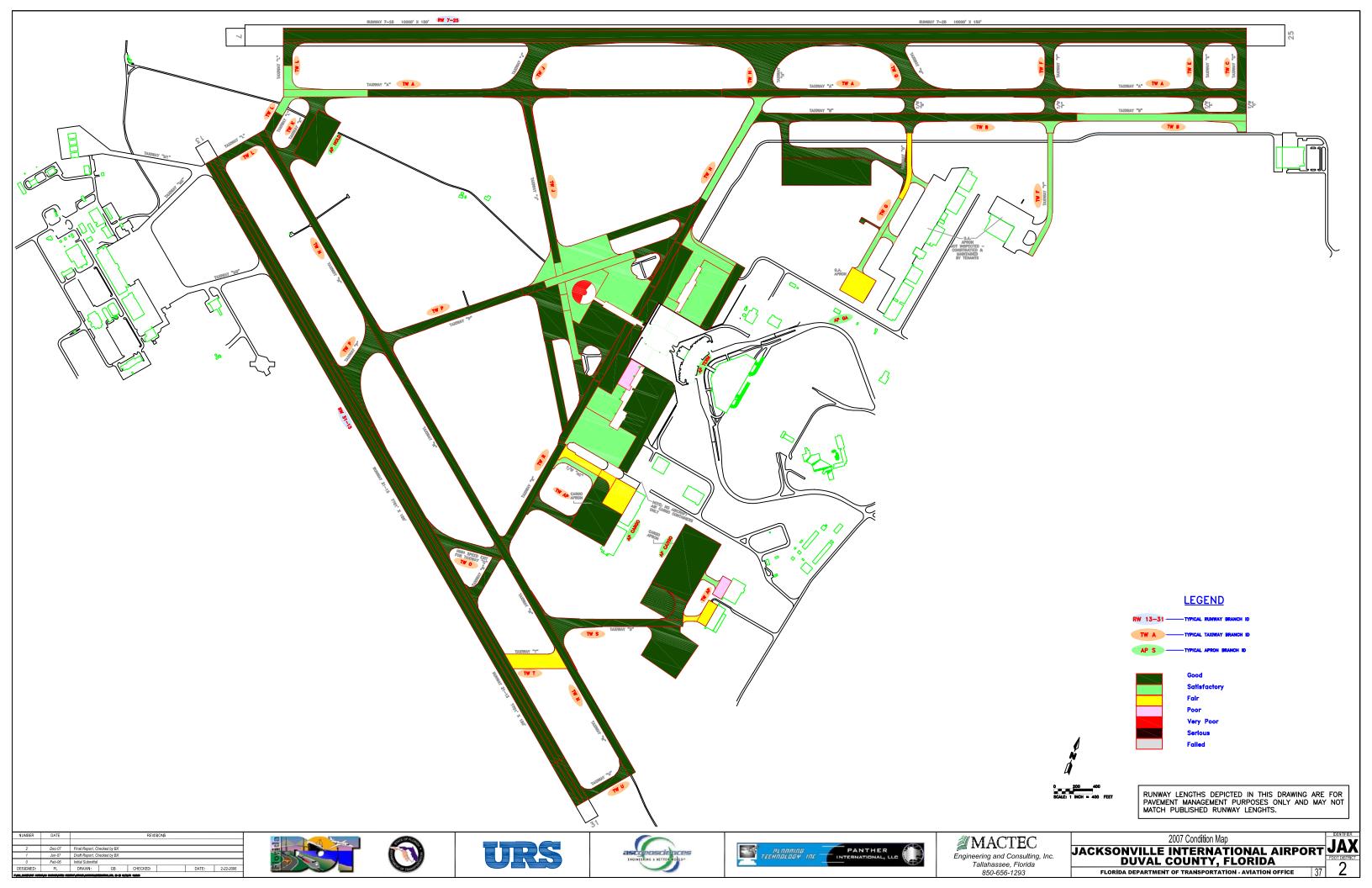


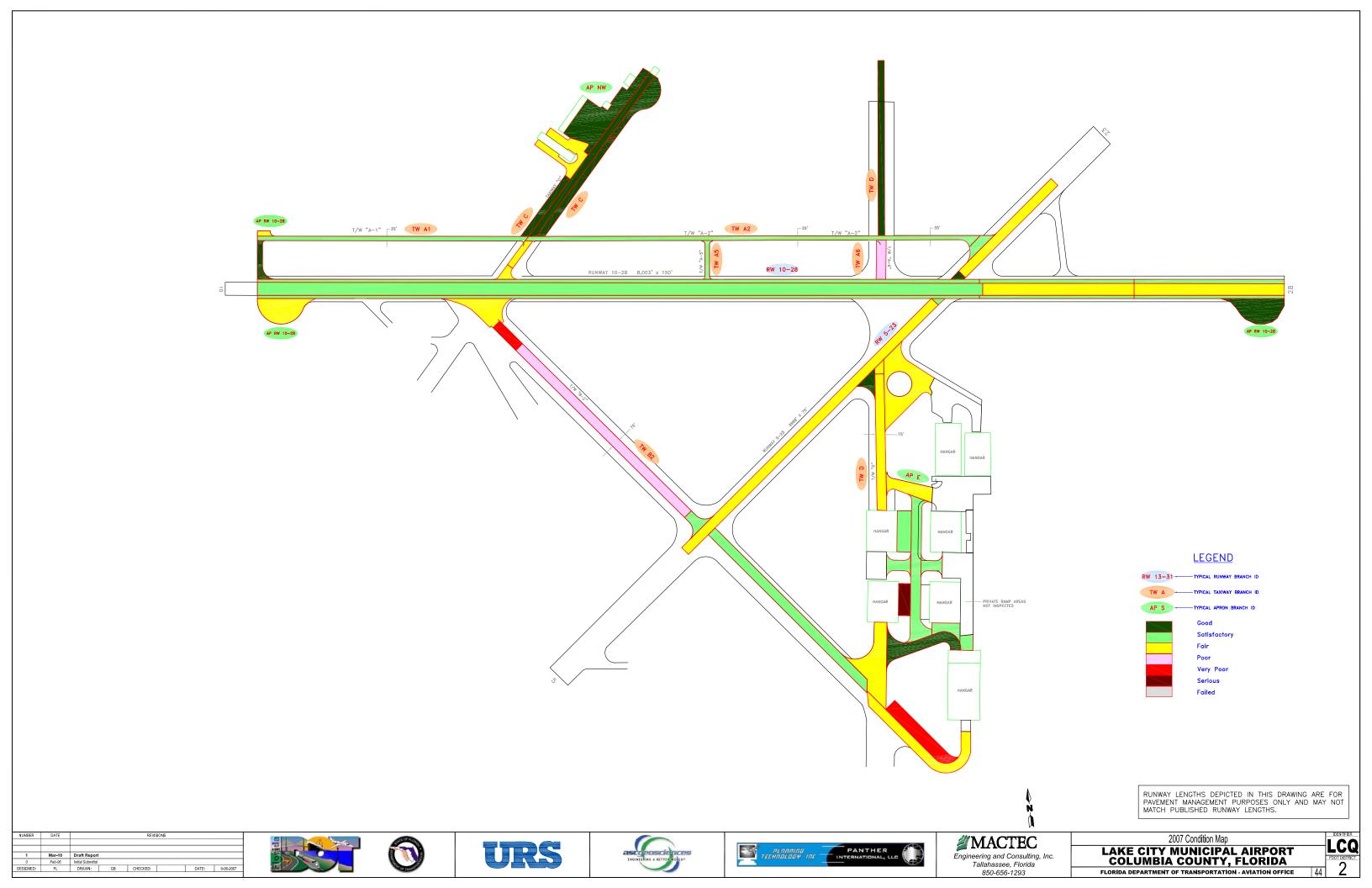


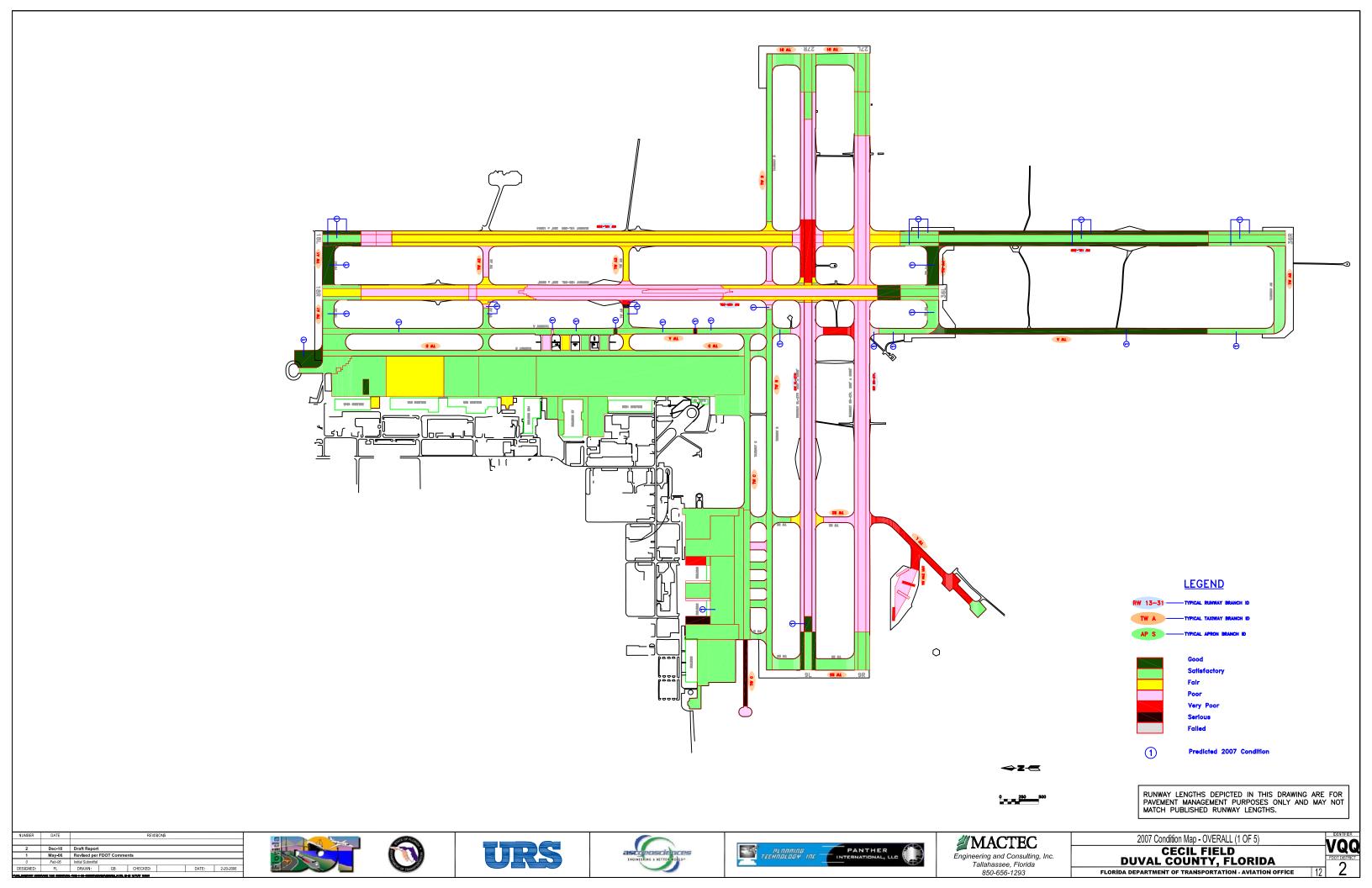


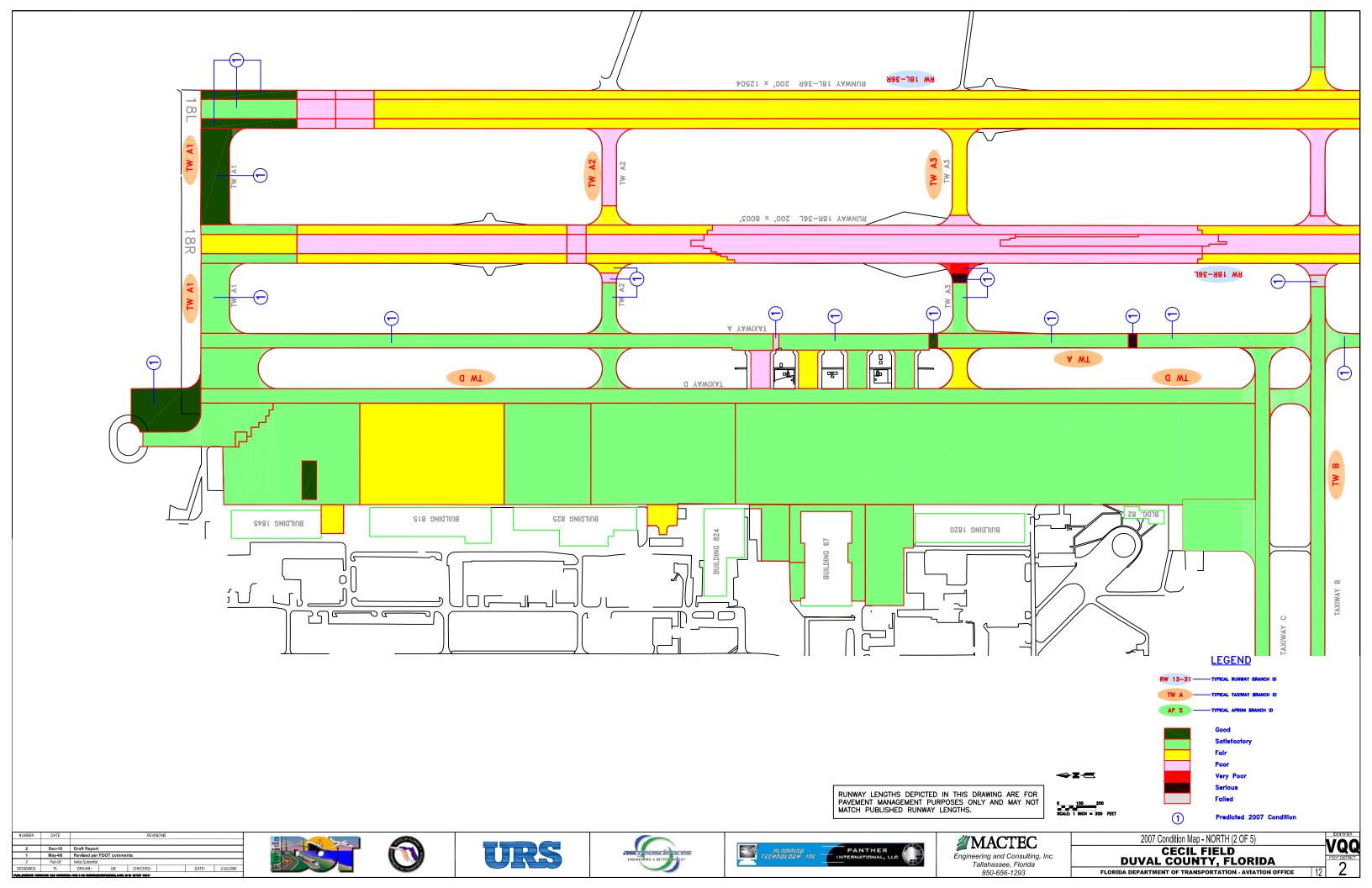
2007 Condition Map HERLONG AIRPORT
JACKSONVILLE, DUVAL, FLORIDA
FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

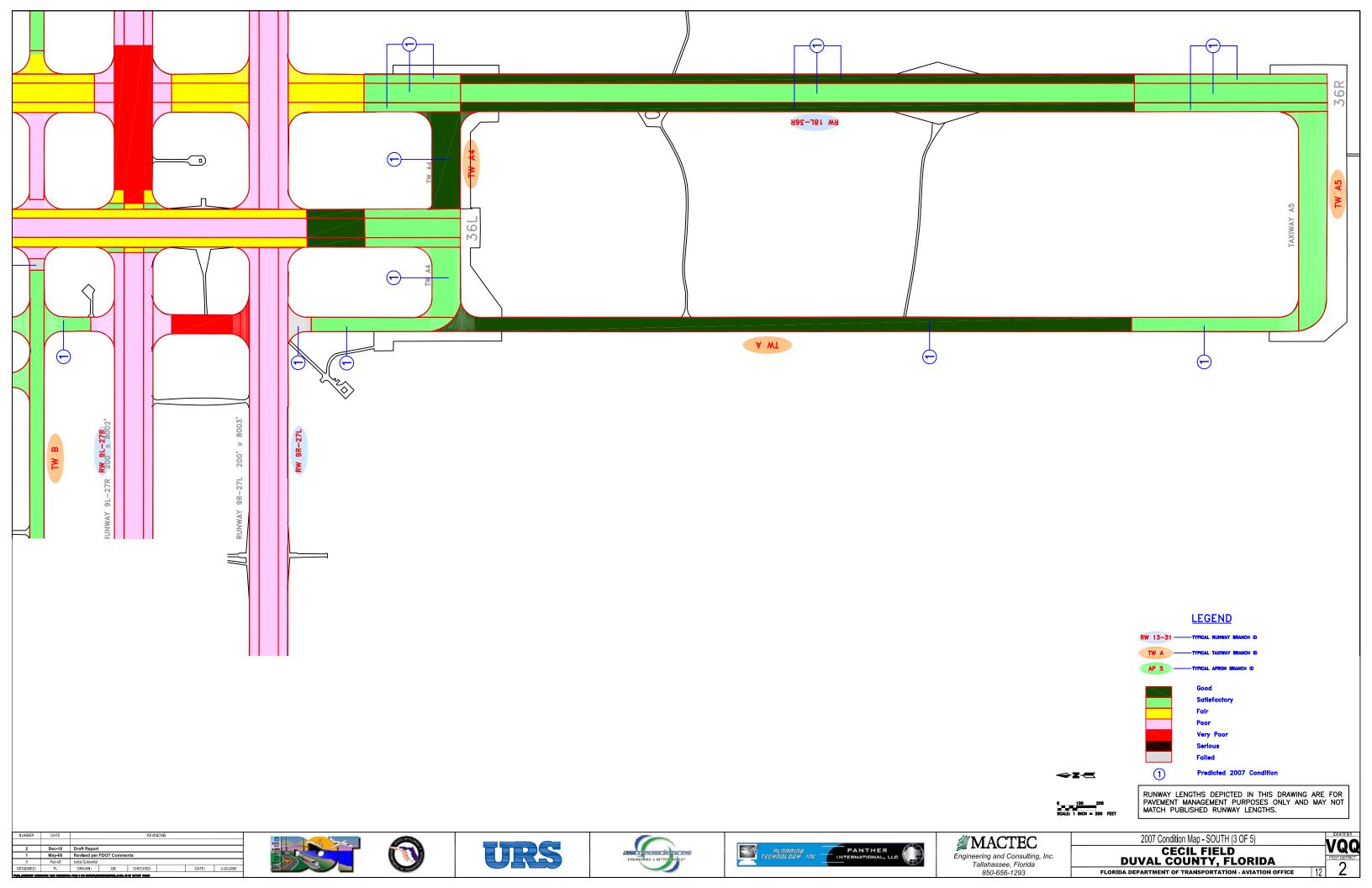
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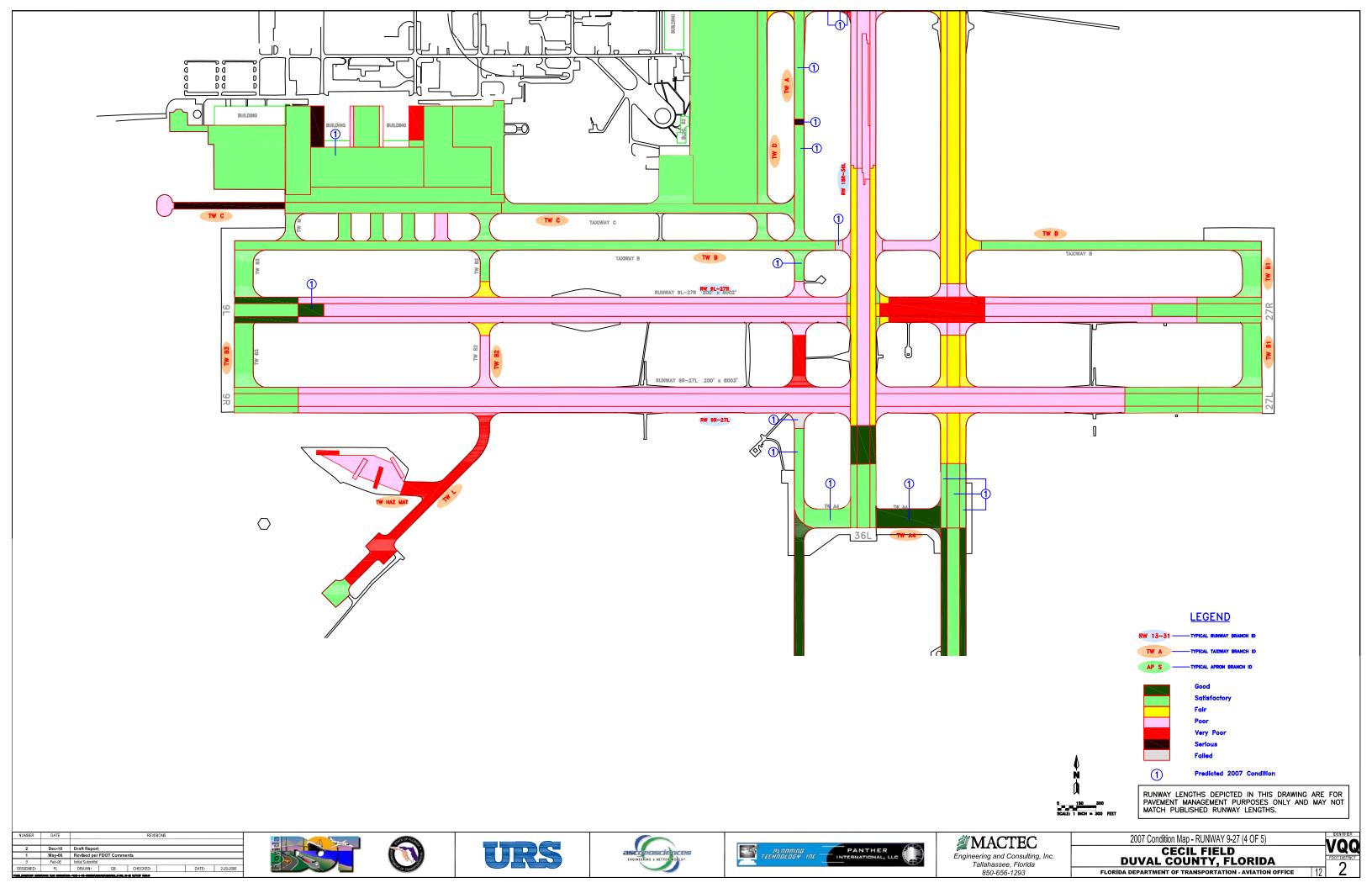












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		AP	4260	403	30.22118409	-81.88863107	RW 18L/36R	6235		30.20776183					30.21539888						-81.88112511		6325			-81.8679813	
		AP	4250	555	30.22140928	-81.89186934	RW 181/36R	6235				KVV 18K/36L			30.21049700						-01.00299011		0323			-01.00000728	

4250 555 30.22140928 -81.89186934





RW 18L/36R 6235 601 30.2090236 81.87396731 RW 18R/36L 6120 167 30.21649766 81.87592096 RW 9L/27R 6420 727 30.21743587 81.88299877





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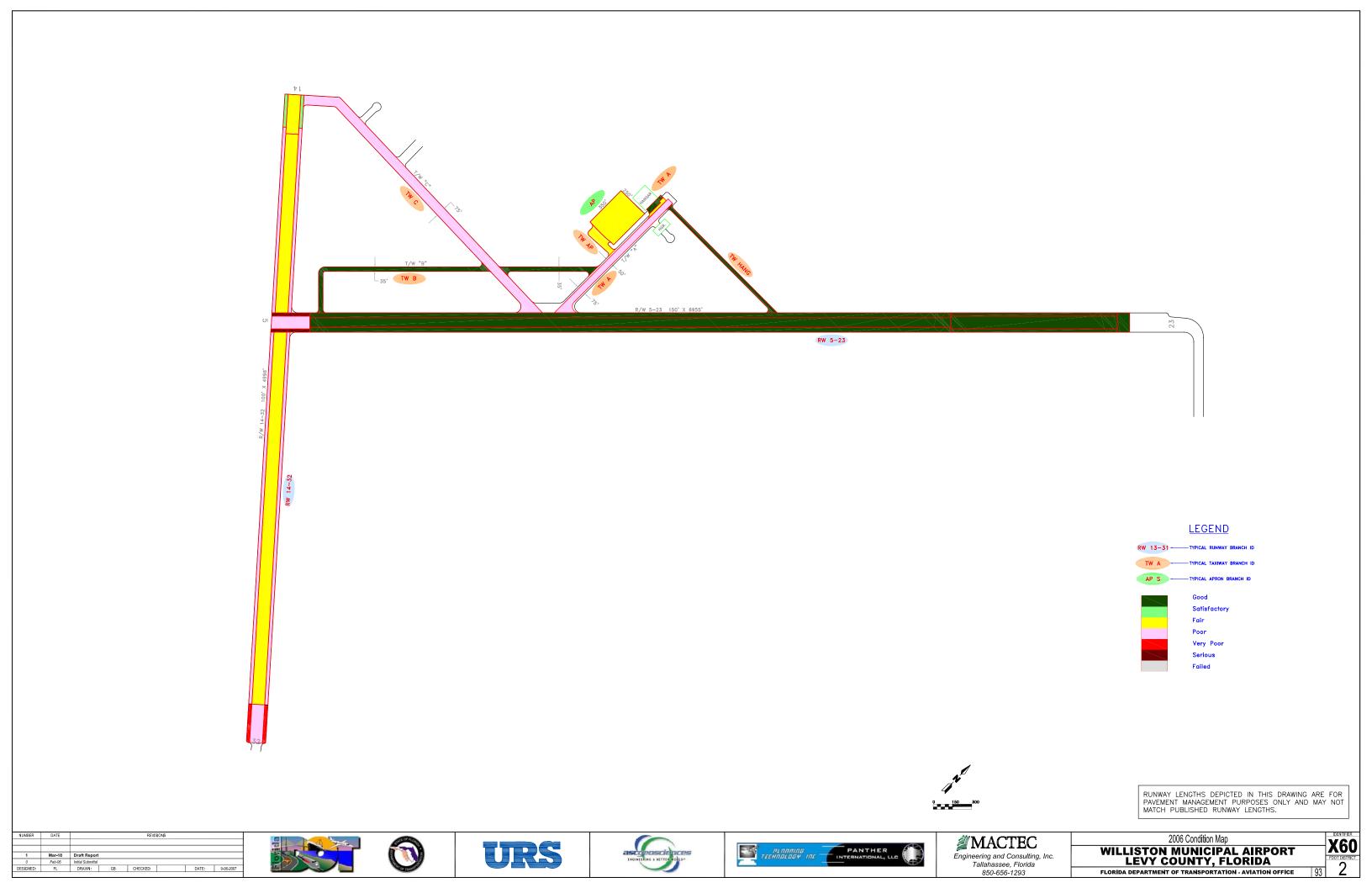
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> **DUVAL COUNTY, FLORIDA** FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION OFFICE

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APPENDIX B MAJOR M&R PLAN

Table B-1: 24J Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
24J	APRON	AP	4110	AAC	16,900	2008	55	Mill & Overlay	100	\$82,050
24J	APRON	AP	4105	AC	146,000	2010	64	Microsurfacing	100	\$360,587

Table B-2: 28J Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
28J	APRON	AP	4105	AC	35,500	2008	25	Reconstruction	100	\$483,510
28J	APRON	AP	4110	AC	84,325	2008	49	Mill & Overlay	100	\$530,404
28J	APRON	AP	4115	AC	80,125	2008	30	Reconstruction	100	\$1,091,303
28J	RUNWAY	RW 12-30	6305	AC	7,500	2008	62	Microsurfacing	100	\$21,555
28J	RUNWAY	RW 12-30	6310	AC	23,250	2008	59	Microsurfacing	100	\$86,188
28J	RUNWAY	RW 12-30	6315	AC	138,750	2008	35	Mill & Overlay	100	\$1,381,257
28J	RUNWAY	RW 9-27	6105	AAC	260,000	2008	63	Microsurfacing	100	\$676,260
28J	RUNWAY	RW 9-27	6110	AAC	240,000	2008	49	Mill & Overlay	100	\$1,509,600
28J	TAXIWAY	TW B	2003	AAC	2,812	2008	47	Mill & Overlay	100	\$17,687
28J	TAXIWAY	TW B	2005	AC	18,473	2008	48	Mill & Overlay	100	\$116,194
28J	TAXIWAY	TW B	210	AC	24,300	2008	24	Reconstruction	100	\$330,966
28J	TAXIWAY	TW B	215	AC	24,300	2008	35	Mill & Overlay	100	\$241,907
28J	TAXIWAY	TW B	705	AC	36,000	2008	8	Reconstruction	100	\$490,320
28J	TAXIWAY	TW C	305	AC	57,800	2008	65	Microsurfacing	100	\$118,779
28J	APRON	AP N T-HAN	4210	AC	46,400	2010	63	Microsurfacing	100	\$128,036
28J	TAXIWAY	TW B	205	AC	68,000	2010	64	Microsurfacing	100	\$167,945
28J	TAXIWAY	TW C	311	AAC	4,165	2011	63	Microsurfacing	100	\$11,838
28J	RUNWAY	RW 17-35	6210	AC	9,000	2013	64	Microsurfacing	100	\$24,289
28J	APRON	AP N T-HAN	4205	AC	43,075	2014	63	Microsurfacing	100	\$133,779
28J	TAXIWAY	TW A	100	AC	57,500	2014	63	Microsurfacing	100	\$178,580
28J	TAXIWAY	TW C	315	AAC	2,512	2014	64	Microsurfacing	100	\$6,983
28J	TAXIWAY	TW C	310	AC	95,400	2017	64	Microsurfacing	100	\$289,779

Table B-3: 40J Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
40J	APRON	AP	4105	PCC	328,894	2008	62	PCC Restoration	100	\$945,242
40J	APRON	AP	4115	PCC	26,700	2008	48	PCC Restoration	100	\$167,943
40J	APRON	AP	4120	PCC	62,200	2008	16	Reconstruction	100	\$847,164
40J	RUNWAY	RW 12-30	6105	PCC	21,250	2008	72	PCC Restoration	100	\$12,750
40J	RUNWAY	RW 12-30	6120	AC	216,250	2008	40	Mill & Overlay	100	\$1,360,213
40J	RUNWAY	RW 18-36	6305	PCC	10,625	2008	52	PCC Restoration	100	\$60,733
40J	RUNWAY	RW 18-36	6320	AC	218,500	2008	20	Reconstruction	100	\$2,975,971
40J	RUNWAY	RW 18-36	6330	PCC	8,750	2008	48	PCC Restoration	100	\$55,038
40J	RUNWAY	RW 6-24	6210	PCC	13,625	2008	42	PCC Restoration	100	\$85,701
40J	RUNWAY	RW 6-24	6215	AC	437,500	2008	21	Reconstruction	100	\$5,958,752
40J	RUNWAY	RW 6-24	6220	AC	218,750	2008	21	Reconstruction	100	\$2,979,376
40J	RUNWAY	RW 6-24	6230	PCC	15,000	2008	57	PCC Restoration	100	\$64,215
40J	RUNWAY	RW 12-30	6115	AAC	432,500	2009	62	Microsurfacing	100	\$1,280,296
40J	RUNWAY	RW 18-36	6315	AAC	437,000	2009	63	Microsurfacing	100	\$1,170,737
40J	RUNWAY	RW 18-36	6310	PCC	25,000	2014	64	PCC Restoration	100	\$69,494
40J	RUNWAY	RW 6-24	6225	PCC	9,250	2016	64	PCC Restoration	100	\$27,279

Table B-4: 42J Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
42J	APRON	AP	4105	PCC	164,325	2008	50	PCC Restoration	100	\$1,033,604
42J	APRON	AP HOLD	5210	PCC	20,650	2008	46	PCC Restoration	100	\$129,889
42J	APRON	AP HOLD	5225	PCC	30,000	2008	46	PCC Restoration	100	\$188,700
42J	APRON	AP T-HANG	4505	PCC	26,000	2008	16	Reconstruction	100	\$354,120
42J	RUNWAY	RW 11-29	6205	PCC	16,875	2008	47	PCC Restoration	100	\$106,144
42J	RUNWAY	RW 11-29	6210	PCC	4,275	2008	64	PCC Restoration	100	\$9,952
42J	RUNWAY	RW 11-29	6220	PCC	22,500	2008	64	PCC Restoration	100	\$52,380
42J	RUNWAY	RW 5-23	6130	PCC	30,000	2008	57	PCC Restoration	100	\$128,430
42J	RUNWAY	RW 5-23	6105	PCC	30,000	2009	64	PCC Restoration	100	\$71,935
42J	RUNWAY	RW 5-23	6125	AAC	88,000	2009	63	Microsurfacing	100	\$235,755
42J	RUNWAY	RW 5-23	6115	AAC	264,000	2010	62	Microsurfacing	100	\$804,944
42J	RUNWAY	RW 5-23	6120	AAC	88,000	2010	62	Microsurfacing	100	\$268,315
42J	TAXIWAY	TW B & MDF	205	AAC	16,450	2014	64	Microsurfacing	100	\$45,727
42J	TAXIWAY	TW A	105	AAC	192,500	2015	63	Microsurfacing	100	\$615,789

Table B-5: 55J Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
55J	APRON	AP N	4205	AC	32,000	2008	40	Mill & Overlay	100	\$243,520
55J	APRON	AP N	4210	PCC	24,000	2008	2	Reconstruction	100	\$445,680
55J	APRON	AP N	4220	PCC	24,000	2008	3	Reconstruction	100	\$445,680
55J	APRON	AP SE	4410	PCC	46,900	2008	29	Reconstruction	100	\$870,933
55J	RUNWAY	RW 13-31	6210	AC	11,000	2008	37	Mill & Overlay	100	\$119,878
55J	RUNWAY	RW 13-31	6215	AAC	489,000	2008	36	Mill & Overlay	100	\$5,865,067
55J	TAXIWAY	TW A	310	AAC	11,000	2008	43	Mill & Overlay	100	\$83,710
55J	TAXIWAY	TW A	350	AAC	22,500	2008	51	Mill & Overlay	100	\$162,382
55J	TAXIWAY	TW B	210	AAC	94,500	2008	45	Mill & Overlay	100	\$719,145
55J	TAXIWAY	TW B	230	AAC	25,500	2008	62	Microsurfacing	100	\$79,662
55J	TAXIWAY	TW B	235	AAC	22,000	2008	58	Microsurfacing	100	\$98,252
55J	TAXIWAY	TW C	120	AC	5,000	2008	41	Mill & Overlay	100	\$38,050
55J	APRON	AP NW	4105	AC	10,200	2009	64	Microsurfacing	100	\$26,979
55J	TAXIWAY	TW D	405	AC	10,250	2010	63	Microsurfacing	100	\$27,925
55J	TAXIWAY	TW W AP	505	AC	6,164	2011	64	Microsurfacing	100	\$17,297
55J	TAXIWAY	TW B	216	AC	2,618	2012	64	Microsurfacing	100	\$7,567
55J	TAXIWAY	TW B	215	AC	2,600	2013	64	Microsurfacing	100	\$7,740
55J	APRON	AP NW	4110	AC	12,200	2015	64	Microsurfacing	100	\$38,531
55J	RUNWAY	RW 13-31	6205	AC	12,000	2015	63	Microsurfacing	100	\$42,003
55J	RUNWAY	RW 13-31	6225	AAC	16,500	2015	64	Microsurfacing	100	\$52,112

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

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
CDK	APRON	AP	4105	AC	23,250	2008	23	Reconstruction	100	\$316,665
CDK	RUNWAY	RW 5-23	6105	AC	235,300	2008	48	Mill & Overlay	100	\$1,480,037
CDK	TAXIWAY	TW A	105	AC	6,240	2008	12	Reconstruction	100	\$84,989

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

Notwork	Branch Use	Branch ID	Section ID	Surface	Area,	Year	PCI Before	Activities	PCI After	Cost
Network				Surface	SqFt		Maint.		Maint.	Cost
CRG	APRON	AP N	4205	AC	15,000	2008	32	Mill & Overlay	100	\$245,670
CRG	APRON	AP N	4210	AC	269,725	2008	33	Mill & Overlay	100	\$4,121,937
CRG	APRON	AP N	4215	AC	11,300	2008	34	Mill & Overlay	100	\$160,302
CRG	APRON	AP N	4220	AC	27,800	2008	46	Mill & Overlay	100	\$211,558
CRG	APRON	AP NW	4310	AC	215,000	2008	52	Mill & Overlay	100	\$1,467,161
CRG	APRON	AP NW	4315	AC	7,750	2008	31	Mill & Overlay	100	\$135,423
CRG	APRON	AP NW	4320	AC	40,800	2008	33	Mill & Overlay	100	\$623,506
CRG	APRON	AP S	4105	AAC	146,250	2008	23	Reconstruction	100	\$2,715,862
CRG	APRON	AP S	4110	AC	30,000	2008	22	Reconstruction	100	\$557,100
CRG	APRON	AP S	4115	AC	16,000	2008	65	Microsurfacing	100	\$36,640
CRG	APRON	AP SW	4405	AC	33,600	2008	32	Mill & Overlay	100	\$550,301
CRG	APRON	AP SW	4410	AC	20,500	2008	31	Mill & Overlay	100	\$358,217
CRG	APRON	AP SW	4425	AC	158,000	2008	31	Mill & Overlay	100	\$2,272,494
CRG	RUNWAY	RW 5-23	6105	AAC	390,000	2008	49	Mill & Overlay	100	\$2,967,901
CRG	TAXIWAY	TW A	105	AAC	76,650	2008	41	Mill & Overlay	100	\$583,307
CRG	TAXIWAY	TW A	110	AAC	7,500	2008	24	Reconstruction	100	\$139,275
CRG	TAXIWAY	TW B	205	AC	4,000	2008	26	Reconstruction	100	\$74,280
CRG	TAXIWAY	TW B	210	AAC	4,000	2008	60	Microsurfacing	100	\$14,720
CRG	TAXIWAY	TW C	305	AAC	18,900	2008	45	Mill & Overlay	100	\$143,829
CRG	TAXIWAY	TW D & K	405	AAC	7,000	2008	60	Microsurfacing	100	\$25,760
CRG	TAXIWAY	TW D & K	410	AC	1,900	2008	42	Mill & Overlay	100	\$14,459
CRG	TAXIWAY	TW D & K	420	AAC	17,225	2008	54	Mill & Overlay	100	\$104,005
CRG	TAXIWAY	TW D & K	450	AC	8,400	2008	63	Microsurfacing	100	\$23,906
CRG	TAXIWAY	TW E	505	AC	9,780	2008	63	Microsurfacing	100	\$27,834
CRG	TAXIWAY	TW G	705	AC	8,000	2008	29	Reconstruction	100	\$148,560
CRG	TAXIWAY	TW H	805	AC	8,000	2008	31	Mill & Overlay	100	\$139,792
CRG	TAXIWAY	TW H	815	AC	37,050	2008	31	Mill & Overlay	100	\$263,158
CRG	TAXIWAY	TW J	1010	AAC	4,000	2008	21	Reconstruction	100	\$74,280
CRG	TAXIWAY	TW J	1015	AC	4,000	2008	31	Mill & Overlay	100	\$69,896

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

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
CRG	APRON	AP NW	4305	AC	37,500	2010	63	Microsurfacing	100	\$113,225
CRG	TAXIWAY	TW F	605	AC	11,000	2011	64	Microsurfacing	100	\$30,867
CRG	TAXIWAY	TW A	120	AC	74,200	2013	64	Microsurfacing	100	\$220,895
CRG	TAXIWAY	TW SW	1305	AC	15,750	2013	64	Microsurfacing	100	\$46,888
CRG	TAXIWAY	TW H	810	AC	16,600	2014	64	Microsurfacing	100	\$50,901
CRG	APRON	AP SW	4420	AC	12,800	2017	64	Microsurfacing	100	\$42,888

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

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
CTY	APRON	AP	4105	PCC	270,000	2008	60	PCC Restoration	100	\$923,401
CTY	RUNWAY	RW 13-31	6105	AAC	470,000	2008	59	Microsurfacing	100	\$1,742,291
CTY	RUNWAY	RW 13-31	6110	PCC	30,000	2008	60	PCC Restoration	100	\$102,600
CTY	RUNWAY	RW 4-22	6205	AC	15,000	2008	62	Microsurfacing	100	\$43,110
CTY	TAXIWAY	TW A	105	AC	17,950	2008	64	Microsurfacing	100	\$41,788
CTY	TAXIWAY	TW A	150	AC	19,750	2008	55	Mill & Overlay	100	\$95,886
CTY	TAXIWAY	TW A	155	AC	7,075	2008	62	Microsurfacing	100	\$20,334
CTY	TAXIWAY	TW A	175	AC	8,930	2008	62	Microsurfacing	100	\$25,665
CTY	TAXIWAY	TW C	205	AC	8,200	2008	62	Microsurfacing	100	\$23,567
CTY	RUNWAY	RW 4-22	6210	AC	386,625	2009	64	Microsurfacing	100	\$927,065
CTY	TAXIWAY	TW A	115	AC	14,450	2009	64	Microsurfacing	100	\$34,649
CTY	TAXIWAY	TW C	207	AC	10,500	2009	64	Microsurfacing	100	\$25,177
CTY	TAXIWAY	TW A	110	AC	157,500	2010	64	Microsurfacing	100	\$388,990
CTY	TAXIWAY	TW A	160	AC	17,900	2010	64	Microsurfacing	100	\$44,209
CTY	TAXIWAY	TW A	165	AC	17,900	2011	63	Microsurfacing	100	\$50,875
CTY	TAXIWAY	TW A	170	AC	6,400	2011	63	Microsurfacing	100	\$18,190
CTY	TAXIWAY	TW C2	220	AC	16,350	2011	64	Microsurfacing	100	\$41,592
CTY	TAXIWAY	TW C	210	AC	179,900	2013	64	Microsurfacing	100	\$485,513
CTY	TAXIWAY	TW C1	215	AC	16,350	2014	64	Microsurfacing	100	\$45,449

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

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
GNV	APRON	AP N	4215	PCC	59,750	2008	32	PCC Restoration	100	\$1,100,236
GNV	APRON	AP N	4260	AC	108,750	2008	60	Microsurfacing	100	\$460,012
GNV	APRON	AP RU RW 7	5205	AC	8,400	2008	61	Microsurfacing	100	\$33,155
GNV	APRON	AP S	4105	AC	63,000	2008	53	Mill & Overlay	100	\$457,002
GNV	APRON	AP S	4120	AC	12,150	2008	28	Reconstruction	100	\$253,692
GNV	APRON	AP S	4125	AAC	21,850	2008	31	Mill & Overlay	100	\$429,287
GNV	APRON	AP S	4130	AC	8,800	2008	57	Microsurfacing	100	\$48,629
GNV	APRON	AP SW	4315	AC	20,700	2008	64	Microsurfacing	100	\$64,129
GNV	RUNWAY	RW 7-25	6105	AAC	320,000	2008	49	Mill & Overlay	100	\$2,735,999
GNV	RUNWAY	RW 7-25	6107	AAC	12,000	2008	30	Reconstruction	100	\$250,560
GNV	RUNWAY	RW 7-25	6110	AAC	83,000	2008	58	Microsurfacing	100	\$422,802
GNV	TAXIWAY	TW A	107	AAC	13,448	2008	56	Microsurfacing	100	\$80,123
GNV	TAXIWAY	TW A	111	AAC	6,212	2008	56	Microsurfacing	100	\$37,011
GNV	TAXIWAY	TW A	120	AAC	94,000	2008	37	Mill & Overlay	100	\$1,151,406
GNV	TAXIWAY	TW A	125	AAC	17,900	2008	28	Reconstruction	100	\$373,752
GNV	TAXIWAY	TW A	135	AC	20,000	2008	63	Microsurfacing	100	\$67,620
GNV	TAXIWAY	TW A	145	AAC	9,200	2008	45	Mill & Overlay	100	\$78,660
GNV	TAXIWAY	TW A	146	AAC	5,700	2008	40	Mill & Overlay	100	\$48,735
GNV	TAXIWAY	TW A	147	AC	3,970	2008	56	Microsurfacing	100	\$23,653
GNV	TAXIWAY	TW A	149	AC	4,370	2008	42	Mill & Overlay	100	\$37,363
GNV	TAXIWAY	TW A1	105	AAC	89,000	2008	57	Microsurfacing	100	\$491,814
GNV	TAXIWAY	TW B	202	AAC	5,000	2008	51	Mill & Overlay	100	\$40,590
GNV	TAXIWAY	TW B	205	AAC	137,300	2008	37	Mill & Overlay	100	\$1,681,787
GNV	TAXIWAY	TW C	310	AC	14,200	2008	49	Mill & Overlay	100	\$121,410
GNV	TAXIWAY	TW CONN E	605	AC	35,000	2008	54	Mill & Overlay	100	\$238,770
GNV	TAXIWAY	TW CONN W	705	AC	20,000	2008	59	Microsurfacing	100	\$93,240
GNV	TAXIWAY	TW E	505	AC	485,625	2008	55	Mill & Overlay	100	\$3,103,142
GNV	TAXIWAY	TW E2	522	AAC	15,781	2008	64	Microsurfacing	100	\$48,890
GNV	TAXIWAY	TW E3	532	AAC	20,470	2008	54	Mill & Overlay	100	\$139,646

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

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
GNV	TAXIWAY	TW E3	535	AC	4,040	2008	58	Microsurfacing	100	\$20,580
GNV	TAXIWAY	TW E4	542	AAC	16,179	2008	53	Mill & Overlay	100	\$117,362
GNV	TAXIWAY	TW E4	545	AC	5,600	2008	53	Mill & Overlay	100	\$40,622
GNV	TAXIWAY	TW E5	552	AAC	10,506	2008	64	Microsurfacing	100	\$32,548
GNV	TAXIWAY	TW E5	555	AC	7,450	2008	44	Mill & Overlay	100	\$63,697
GNV	TAXIWAY	TW A	110	AAC	21,500	2011	63	Microsurfacing	100	\$79,432
GNV	APRON	AP RU RW25	5105	AC	8,750	2012	64	Microsurfacing	100	\$30,510
GNV	APRON	AP SW	4310	AC	10,500	2012	64	Microsurfacing	100	\$36,612
GNV	TAXIWAY	TW C	315	AC	10,800	2013	64	Microsurfacing	100	\$38,787
GNV	TAXIWAY	TW A	119	AC	6,150	2014	64	Microsurfacing	100	\$22,750
GNV	TAXIWAY	TW A	150	AC	36,000	2015	64	Microsurfacing	100	\$137,165
GNV	TAXIWAY	TW A	154	AC	4,570	2015	64	Microsurfacing	100	\$17,412
GNV	APRON	AP N	4250	AC	140,400	2016	64	Microsurfacing	100	\$550,993
GNV	TAXIWAY	TW A	130	AC	15,200	2017	64	Microsurfacing	100	\$61,441
GNV	TAXIWAY	TW A	148	AAC	7,500	2017	64	Microsurfacing	100	\$30,316
GNV	TAXIWAY	TW C	305	AC	160,000	2017	64	Microsurfacing	100	\$646,750

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

Network	Branch Use	Branch ID	Sectio n ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
HEG	APRON	AP N	4305	AC	144,000	2008	38	Mill & Overlay	100	\$1,411,488
HEG	APRON	AP N	4310	AC	10,000	2008	37	Mill & Overlay	100	\$108,980
HEG	APRON	AP NE	4405	AC	16,400	2008	50	Mill & Overlay	100	\$124,804
HEG	APRON	AP NE	4410	PCC	30,000	2008	32	PCC Restoration	100	\$491,340
HEG	APRON	AP NW	4105	AC	108,000	2008	56	Microsurfacing	100	\$567,216
HEG	APRON	AP NW	4110	AC	51,250	2008	55	Mill & Overlay	100	\$289,306
HEG	APRON	AP RU	5105	AC	12,000	2008	34	Mill & Overlay	100	\$170,232
HEG	APRON	AP RU	5110	AC	12,000	2008	41	Mill & Overlay	100	\$91,320
HEG	TAXIWAY	TW A	105	AAC	174,000	2008	57	Microsurfacing	100	\$845,466
HEG	TAXIWAY	TW CONN RW	610	AAC	4,700	2008	59	Microsurfacing	100	\$19,143
HEG	TAXIWAY	TW CONN RW	620	AAC	4,700	2008	54	Mill & Overlay	100	\$28,379
HEG	TAXIWAY	TW E FBO	710	AC	3,990	2008	41	Mill & Overlay	100	\$30,364
HEG	TAXIWAY	TW E NW AP	405	AC	8,605	2008	23	Reconstruction	100	\$159,795
HEG	TAXIWAY	TW HS CONN	315	AC	3,300	2008	55	Mill & Overlay	100	\$18,629
HEG	TAXIWAY	TW N AP	805	AC	2,915	2008	36	Mill & Overlay	100	\$34,963
HEG	APRON	TW NE AP	1105	PCC	5,250	2008	46	PCC Restoration	100	\$39,953
HEG	TAXIWAY	TW T-HANG	905	AC	3,035	2008	64	Microsurfacing	100	\$7,794
HEG	TAXIWAY	TW T-HANG	910	AC	5,250	2009	64	Microsurfacing	100	\$13,886
HEG	APRON	AP FBO	4225	AC	32,000	2010	63	Microsurfacing	100	\$96,618
HEG	RUNWAY	RW 11-29	6205	AAC	408,300	2010	64	Microsurfacing	100	\$1,112,369
HEG	RUNWAY	RW 7-25	6105	AAC	270,000	2010	64	Microsurfacing	100	\$735,586
HEG	APRON	AP FBO	4220	AC	23,100	2013	64	Microsurfacing	100	\$68,769
HEG	TAXIWAY	TW CONN RW	605	AC	29,550	2014	64	Microsurfacing	100	\$90,610
HEG	TAXIWAY	TW HS CONN	305	AC	21,000	2014	64	Microsurfacing	100	\$64,393
HEG	TAXIWAY	TW T-HANG	915	AC	9,200	2014	64	Microsurfacing	100	\$28,210
HEG	APRON	AP FBO	4215	AC	9,700	2015	64	Microsurfacing	100	\$30,636
HEG	APRON	AP NW	4120	AC	45,000	2015	64	Microsurfacing	100	\$142,124
HEG	APRON	AP RU	5115	AC	12,000	2015	64	Microsurfacing	100	\$37,900

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

Network	Branch Use	Branch ID	Sectio n ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
HEG	TAXIWAY	TW T-HANG	920	AC	2,380	2015	64	Microsurfacing	100	\$7,517
HEG	TAXIWAY	TW T-HANG	925	AC	31,500	2015	64	Microsurfacing	100	\$99,487
HEG	TAXIWAY	TW W NW AP	550	AC	1,843	2015	64	Microsurfacing	100	\$5,821
HEG	RUNWAY	RW 7-25	6110	AAC	130,000	2016	63	Microsurfacing	100	\$468,680
HEG	TAXIWAY	TW B	205	AAC	164,700	2017	64	Microsurfacing	100	\$551,853

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

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
JAX	APRON	AP CARGO	4110	AC	27,352	2008	64	Microsurfacing	100	\$84,736
JAX	APRON	AP CARGO	4115	AC	22,680	2008	40	Mill & Overlay	100	\$193,914
JAX	APRON	AP CARGO	4125	PCC	75,000	2008	55	PCC Restoration	100	\$479,250
JAX	APRON	AP CARGO	4130	PCC	14,375	2008	56	PCC Restoration	100	\$85,646
JAX	APRON	AP TERM	4325	AC	30,000	2008	22	Reconstruction	100	\$626,400
JAX	APRON	AP TERM	4350	PCC	37,559	2008	53	PCC Restoration	100	\$272,453
JAX	TAXIWAY	TW AP	2715	AC	8,200	2008	60	Microsurfacing	100	\$34,686
JAX	TAXIWAY	TW AP	2775	PCC	38,000	2008	60	PCC Restoration	100	\$160,740
JAX	TAXIWAY	TW G	1030	AC	32,500	2008	67	Microsurfacing	100	\$73,093
JAX	TAXIWAY	TW S, T	1280	PCC	82,500	2009	64	PCC Restoration	100	\$263,252
JAX	APRON	AP GA	4205	AC	76,200	2012	64	Microsurfacing	100	\$265,696
JAX	TAXIWAY	TW F	1155	AC	65,000	2014	64	Microsurfacing	100	\$240,446
JAX	APRON	AP TERM	4365	PCC	14,533	2016	64	PCC Restoration	100	\$57,034
JAX	TAXIWAY	TW AP	2772	PCC	23,000	2016	63	PCC Restoration	100	\$98,508
JAX	TAXIWAY	TW G	1035	AC	11,000	2016	64	Microsurfacing	100	\$43,169
JAX	APRON	AP TERM	4370	PCC	164,800	2017	64	PCC Restoration	100	\$666,152
JAX	APRON	AP TERM	4375	PCC	195,000	2017	64	PCC Restoration	100	\$788,226
JAX	TAXIWAY	TW F	1150	PCC	18,750	2017	64	PCC Restoration	100	\$75,791
JAX	TAXIWAY	TW G	1032	AC	46,000	2017	64	Microsurfacing	100	\$185,941
JAX	TAXIWAY	TW G	1040	AC	11,750	2017	64	Microsurfacing	100	\$47,496

Table B-12: LCQ Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
LCQ	APRON	AP E	4228	AC	26,000	2008	25	Reconstruction	100	\$354,120
LCQ	APRON	AP E	4240	AC	176,250	2008	64	Microsurfacing	100	\$410,310
LCQ	APRON	AP E	4242	AC	65,000	2008	27	Reconstruction	100	\$885,300
LCQ	APRON	AP NW	4115	AC	27,000	2008	64	Microsurfacing	100	\$62,856
LCQ	TAXIWAY	TW A6	130	AAC	30,000	2008	45	Mill & Overlay	100	\$188,700
LCQ	TAXIWAY	TW B2	202	AAC	50,900	2008	56	Microsurfacing	100	\$232,511
LCQ	TAXIWAY	TW B2	205	AAC	20,625	2008	39	Mill & Overlay	100	\$144,849
LCQ	TAXIWAY	TW B2	210	AAC	139,500	2008	52	Mill & Overlay	100	\$797,382
LCQ	TAXIWAY	TW C	304	AAC	9,300	2008	56	Microsurfacing	100	\$42,482
LCQ	TAXIWAY	TW C	305	AAC	45,580	2008	58	Microsurfacing	100	\$182,047
LCQ	APRON	AP E	4230	AC	94,200	2009	64	Microsurfacing	100	\$225,877
LCQ	RUNWAY	RW 10-28	6114	AAC	120,000	2009	63	Microsurfacing	100	\$321,484
LCQ	TAXIWAY	TW D	402	AAC	7,900	2009	64	Microsurfacing	100	\$18,943
LCQ	APRON	AP RW10-28	5125	AC	44,000	2010	64	Microsurfacing	100	\$108,670
LCQ	RUNWAY	RW 10-28	6115	AAC	118,000	2010	63	Microsurfacing	100	\$325,610
LCQ	RUNWAY	RW 5-23	6205	AAC	288,750	2010	64	Microsurfacing	100	\$713,148
LCQ	APRON	AP E	4210	AC	36,700	2011	64	Microsurfacing	100	\$93,360
LCQ	APRON	AP E	4215	AC	108,500	2011	63	Microsurfacing	100	\$308,377
LCQ	APRON	AP RW10-28	5105	AC	4,240	2011	64	Microsurfacing	100	\$10,786
LCQ	RUNWAY	RW 10-28	6105	AAC	562,500	2011	62	Microsurfacing	100	\$1,766,531
LCQ	RUNWAY	RW 10-28	6110	AAC	281,250	2011	62	Microsurfacing	100	\$883,265
LCQ	TAXIWAY	TW B2	220	AAC	127,500	2011	64	Microsurfacing	100	\$324,343
LCQ	TAXIWAY	TW D	405	AAC	80,175	2011	63	Microsurfacing	100	\$227,872
LCQ	RUNWAY	RW 10-28	6116	AAC	60,000	2012	64	Microsurfacing	100	\$157,211
LCQ	RUNWAY	RW 5-23	6207	AAC	3,375	2013	63	Microsurfacing	100	\$10,177
LCQ	TAXIWAY	TW A2	109	AAC	15,500	2014	64	Microsurfacing	100	\$43,086
LCQ	APRON	AP E	4250	AC	30,500	2015	63	Microsurfacing	100	\$97,567
LCQ	RUNWAY	RW 10-28	6120	AAC	59,000	2016	63	Microsurfacing	100	\$194,397

Table B-13: VQQ Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
VQQ	APRON	AP ENG TST	5205	PCC	3,910	2008	45	PCC Restoration	100	\$29,755
VQQ	APRON	AP ENG TST	5210	PCC	3,910	2008	33	PCC Restoration	100	\$59,753
VQQ	APRON	AP ENG TST	5215	PCC	3,910	2008	40	PCC Restoration	100	\$29,755
VQQ	APRON	AP ENG TST	5220	PCC	3,910	2008	36	PCC Restoration	100	\$46,897
VQQ	APRON	AP ENG TST	5255	AAC	78,300	2008	44	Mill & Overlay	100	\$595,863
VQQ	APRON	AP N RFUEL	5140	PCC	21,000	2008	50	PCC Restoration	100	\$159,810
VQQ	APRON	AP W	4225	PCC	33,600	2008	12	Reconstruction	100	\$623,952
VQQ	APRON	AP W	4230	PCC	31,050	2008	27	Reconstruction	100	\$576,598
VQQ	APRON	AP W	4235	PCC	9,600	2008	0	Reconstruction	100	\$178,272
VQQ	APRON	AP W	4255	PCC	9,600	2008	41	PCC Restoration	100	\$73,056
VQQ	APRON	AP W RFUEL	5020	PCC	21,000	2008	41	PCC Restoration	100	\$159,810
VQQ	APRON	AP W RFUEL	5055	PCC	12,000	2008	43	PCC Restoration	100	\$91,320
VQQ	RUNWAY	RW 18L-36R	6206	AAC	22,500	2008	46	Mill & Overlay	100	\$171,225
VQQ	RUNWAY	RW 18L-36R	6207	AAC	12,500	2008	41	Mill & Overlay	100	\$95,125
VQQ	RUNWAY	RW 18L-36R	6211	AAC	22,500	2008	53	Mill & Overlay	100	\$144,698
VQQ	RUNWAY	RW 18L-36R	6212	AAC	12,500	2008	53	Mill & Overlay	100	\$80,388
VQQ	RUNWAY	RW 18L-36R	6215	AAC	605,000	2008	61	Microsurfacing	100	\$2,058,210
VQQ	RUNWAY	RW 18L-36R	6217	AAC	20,000	2008	45	Mill & Overlay	100	\$152,200
VQQ	RUNWAY	RW 18L-36R	6222	AAC	28,600	2008	51	Mill & Overlay	100	\$206,406
VQQ	RUNWAY	RW 18R-36L	6115	AAC	394,000	2008	48	Mill & Overlay	100	\$2,998,341
VQQ	RUNWAY	RW 18R-36L	6117	AC	6,000	2008	45	Mill & Overlay	100	\$45,660
VQQ	RUNWAY	RW 18R-36L	6118	AAC	164,000	2008	52	Mill & Overlay	100	\$1,119,136
VQQ	RUNWAY	RW 18R-36L	6119	AAC	59,000	2008	45	Mill & Overlay	100	\$448,990
VQQ	RUNWAY	RW 18R-36L	6120	AAC	409,000	2008	61	Microsurfacing	100	\$1,391,418
VQQ	RUNWAY	RW 18R-36L	6122	AC	6,000	2008	47	Mill & Overlay	100	\$45,660
VQQ	RUNWAY	RW 18R-36L	6123	AAC	498,750	2008	51	Mill & Overlay	100	\$3,599,481
VQQ	RUNWAY	RW 9L-27R	6415	AAC	410,000	2008	45	Mill & Overlay	100	\$3,120,102
VQQ	RUNWAY	RW 9L-27R	6417	AAC	6,000	2008	64	Microsurfacing	100	\$15,408
VQQ	RUNWAY	RW 9L-27R	6418	AAC	7,000	2008	37	Mill & Overlay	100	\$76,286
VQQ	RUNWAY	RW 9L-27R	6420	AAC	430,000	2008	54	Mill & Overlay	100	\$2,596,341

Table B-13: VQQ Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
VQQ	RUNWAY	RW 9L-27R	6423	AAC	8,600	2008	64	Microsurfacing	100	\$22,085
VQQ	RUNWAY	RW 9L-27R	6425	AAC	75,000	2008	30	Reconstruction	100	\$1,392,750
VQQ	RUNWAY	RW 9L-27R	6430	AAC	75,000	2008	34	Mill & Overlay	100	\$1,146,150
VQQ	RUNWAY	RW 9L-27R	6435	AAC	130,000	2008	45	Mill & Overlay	100	\$989,300
VQQ	RUNWAY	RW 9L-27R	6440	AAC	165,000	2008	54	Mill & Overlay	100	\$996,270
VQQ	RUNWAY	RW 9R-27L	6315	AAC	623,000	2008	47	Mill & Overlay	100	\$4,741,032
VQQ	RUNWAY	RW 9R-27L	6320	AAC	627,000	2008	39	Mill & Overlay	100	\$5,458,664
VQQ	TAXIWAY	TW A	117	AAC	13,000	2008	2	Reconstruction	100	\$241,410
VQQ	TAXIWAY	TW A	120	AAC	44,000	2008	34	Mill & Overlay	100	\$624,184
VQQ	TAXIWAY	TW A	125	AAC	27,000	2008	49	Mill & Overlay	100	\$205,470
VQQ	TAXIWAY	TW A	132	PCC	3,375	2008	23	Reconstruction	100	\$62,674
VQQ	TAXIWAY	TW A	139	PCC	2,700	2008	4	Reconstruction	100	\$50,139
VQQ	TAXIWAY	TW A2	605	AAC	34,000	2008	50	Mill & Overlay	100	\$258,740
VQQ	TAXIWAY	TW A2	607	AAC	11,500	2008	59	Microsurfacing	100	\$46,840
VQQ	TAXIWAY	TW A2	608	AAC	7,750	2008	56	Microsurfacing	100	\$40,703
VQQ	TAXIWAY	TW A2	610	APC	3,750	2008	39	Mill & Overlay	100	\$32,648
VQQ	TAXIWAY	TW A3	705	AAC	37,750	2008	58	Microsurfacing	100	\$168,592
VQQ	TAXIWAY	TW A3	707	APC	7,750	2008	52	Mill & Overlay	100	\$52,886
VQQ	TAXIWAY	TW A3	708	APC	7,750	2008	31	Mill & Overlay	100	\$135,423
VQQ	TAXIWAY	TW A3	710	APC	3,750	2008	12	Reconstruction	100	\$69,638
VQQ	TAXIWAY	TW B	208	AAC	4,500	2008	8	Reconstruction	100	\$83,565
VQQ	TAXIWAY	TW B	210	AAC	37,750	2008	40	Mill & Overlay	100	\$287,278
VQQ	TAXIWAY	TW B	214	AAC	16,600	2008	41	Mill & Overlay	100	\$126,326
VQQ	TAXIWAY	TW B2	1205	AAC	34,300	2008	51	Mill & Overlay	100	\$247,543
VQQ	TAXIWAY	TW B2	1207	AAC	25,100	2008	57	Microsurfacing	100	\$121,961
VQQ	TAXIWAY	TW B2	1250	AAC	92,250	2008	35	Mill & Overlay	100	\$1,207,553
VQQ	TAXIWAY	TW B2	1252	AAC	3,500	2008	49	Mill & Overlay	100	\$26,635
VQQ	TAXIWAY	TW B2	1255	PCC	35,000	2008	37	PCC Restoration	100	\$381,430
VQQ	TAXIWAY	TW B2	1260	AC	21,000	2008	33	Mill & Overlay	100	\$320,922
VQQ	TAXIWAY	TW C	315	AC	43,250	2008	23	Reconstruction	100	\$803,152

Table B-13: VQQ Major M&R Plan by Year

	Branch	Branch	Section		Area,		PCI Before		PCI After	
Network	Use	ID	ID	Surface	SqFt	Year	Maint.	Activities	Maint.	Cost
VQQ	TAXIWAY	TW HAZ MAT	2410	AC	25,000	2008	37	Mill & Overlay	100	\$299,850
VQQ	RUNWAY	RW 18L-36R	6220	AAC	613,600	2009	64	Microsurfacing	100	\$1,622,996
VQQ	APRON	AP N	4107	PCC	17,250	2010	64	PCC Restoration	100	\$46,996
VQQ	TAXIWAY	TW A3	720	PCC	23,750	2011	64	PCC Restoration	100	\$66,645
VQQ	APRON	AP N	4110	PCC	401,050	2012	64	PCC Restoration	100	\$1,159,157
VQQ	APRON	AP N RFUEL	5135	PCC	21,000	2012	64	PCC Restoration	100	\$60,696
VQQ	RUNWAY	RW 18R-36L	6105	PCC	50,000	2012	64	PCC Restoration	100	\$144,515
VQQ	RUNWAY	RW 9L-27R	6422	AAC	11,400	2012	63	Microsurfacing	100	\$36,516
VQQ	RUNWAY	RW 9L-27R	6445	AAC	35,000	2012	63	Microsurfacing	100	\$112,112
VQQ	TAXIWAY	TW B	212	AAC	11,500	2012	64	Microsurfacing	100	\$33,239
VQQ	APRON	AP N	4117	PCC	18,900	2013	64	PCC Restoration	100	\$56,266
VQQ	APRON	AP N RFUEL	5125	PCC	21,000	2014	64	PCC Restoration	100	\$64,393
VQQ	APRON	AP N RFUEL	5130	PCC	21,000	2014	64	PCC Restoration	100	\$64,393
VQQ	APRON	AP N	4138	PCC	12,750	2015	64	PCC Restoration	100	\$40,269
VQQ	APRON	AP W	4250	PCC	288,700	2015	64	PCC Restoration	100	\$911,806
VQQ	TAXIWAY	TW B1	1110	PCC	77,000	2015	64	PCC Restoration	100	\$243,190
VQQ	APRON	AP W	4260	PCC	64,000	2016	64	PCC Restoration	100	\$208,196
VQQ	TAXIWAY	TW A1	520	PCC	92,900	2016	64	PCC Restoration	100	\$302,210
VQQ	APRON	AP NAT GRD	5305	PCC	30,000	2017	64	PCC Restoration	100	\$100,520
VQQ	APRON	AP W	4205	PCC	168,500	2017	64	PCC Restoration	100	\$564,586
VQQ	RUNWAY	RW 18R-36L	6135	PCC	50,000	2017	64	PCC Restoration	100	\$167,533
VQQ	TAXIWAY	TW A1	510	PCC	58,500	2017	64	PCC Restoration	100	\$196,013
VQQ	TAXIWAY	TW B2	1215	PCC	24,725	2017	64	PCC Restoration	100	\$82,845
VQQ	TAXIWAY	TW C	310	PCC	136,000	2017	64	PCC Restoration	100	\$455,689

Table B-14: X60 Major M&R Plan by Year

Network	Branch Use	Branch ID	Section ID	Surface	Area, SqFt	Year	PCI Before Maint.	Activities	PCI After Maint.	Cost
X60	APRON	AP	4105	AC	87,500	2008	59	Microsurfacing	100	\$324,363
X60	RUNWAY	RW 14-32	6205	PCC	30,300	2008	44	PCC Restoration	100	\$190,587
X60	RUNWAY	RW 14-32	6210	PCC	15,000	2008	26	Reconstruction	100	\$204,300
X60	RUNWAY	RW 14-32	6215	AC	430,000	2008	61	Microsurfacing	100	\$1,353,211
X60	RUNWAY	RW 14-32	6220	AC	215,000	2008	44	Mill & Overlay	100	\$1,352,350
X60	RUNWAY	RW 5-23	6105	PCC	30,000	2008	52	PCC Restoration	100	\$171,480
X60	RUNWAY	RW 5-23	6110	PCC	15,000	2008	22	Reconstruction	100	\$204,300
X60	TAXIWAY	TW A	105	AAC	66,200	2008	42	Mill & Overlay	100	\$416,398
X60	TAXIWAY	TW AP	405	AC	15,500	2008	60	Microsurfacing	100	\$53,010
X60	TAXIWAY	TW C	305	AC	188,625	2008	42	Mill & Overlay	100	\$1,186,451
X60	APRON	AP HANG	4205	AAC	4,300	2009	64	Microsurfacing	100	\$10,311
X60	RUNWAY	RW 14-32	6235	PCC	30,000	2011	64	PCC Restoration	100	\$76,316

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