# 2012 Brunswick-Golden Isles Airport Pavement Management Plan

Preserving Georgia's Critical Airport Pavement Infrastructure



# Acknowledgement

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## **BRUNSWICK-GOLDEN ISLES AIRPORT**

### PAVEMENT MANAGEMENT REPORT

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#### INTRODUCTION

In 2012, the Georgia Department of Transportation – Aviation Programs (the Department), selected Applied Pavement Technology, Inc. (APTech), assisted by CDM Smith, to update its statewide airport pavement management system (APMS). This study will provide airports and the State with pavement information and analytical tools to help identify pavement related needs, optimize selection of individual airport projects over a multi-year period, and evaluate the long-term impacts of project priorities.

As part of this study, pavement conditions at Brunswick-Golden Isles Airport were assessed in 2012 using the pavement condition index (PCI) procedure. The results of that evaluation are presented within this report and can be used by the Department, the Federal Aviation Administration (FAA), and Brunswick-Golden Isles Airport to monitor the condition of airfield pavements and to identify, prioritize, and schedule pavement maintenance and rehabilitation (M&R) actions at the airport.

During a PCI inspection, the types, severities, and amounts of distress present in a pavement are visually quantified. This information is then used to develop a composite index that represents the overall condition of the pavement in numerical terms, ranging from 0 (failed) to 100 (excellent). The PCI number is a measure of overall condition and is indicative of the level of work that will be required to maintain or repair a pavement. Further, the information provides insight into the cause of pavement deterioration, which is the first step in selecting the appropriate repair action.

Programmed into an APMS, PCI information is used to determine when preventive maintenance actions, such as crack sealing, are advisable and also identifies the most cost-effective time to perform major rehabilitation, such as an overlay. The importance of identifying not only the type of repair but also the optimal time of repair is illustrated in Figure 1. There is a point in a pavement's life cycle where the rate of deterioration increases and the financial impact of delaying repairs beyond this point can be severe.

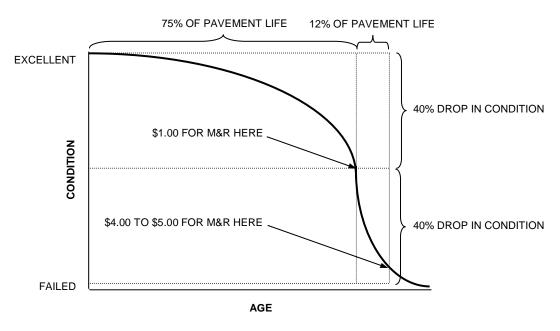


Figure 1. Pavement Condition versus Cost of Repair.

This study collected pavement history information, developed CAD maps, evaluated current pavement condition, and updated the Department's APMS. The APMS was used to prepare a 5-year pavement M&R program. Individual reports, such as this one, have been prepared for each individual airport as well as a statewide analysis report and an executive summary report in order to convey the study results.

#### **METHODOLOGY**

The study consists of three major work elements: records review and network definition; pavement condition evaluation; and the development of an M&R plan for the preservation of the pavement infrastructure. Detail of each work element is further described below.

#### **Records Review and Network Definition**

The first activities undertaken involved gathering historical airfield pavement data, which includes date of original construction and date of any subsequent rehabilitation; location of completed work; and the type of work undertaken.

The historical data is used to divide the pavement system into management units – branches, sections, and sample units. A branch is a single entity that serves a distinct function. For example, a runway is considered a branch because it serves a single function (allowing aircraft to take off and land). Taxiways and aprons are also separate branches.

A branch is further divided into sections. A section is considered the management unit of the APMS, and represents a pavement area where pavement maintenance or rehabilitation would be undertaken. For example, if a runway was built in 1968 and then extended and overlaid in 1984, this runway might be represented by a single section, even though there are two distinct construction periods. However, if the condition of one part of the runway was significantly different than another the branch would be divided into two sections because in that situation the runway may not be repaired as a whole in the future.

To estimate the overall condition of each pavement section, each section is subdivided into sample units. A percentage of these sample units are then evaluated during pavement inspections, and the condition information is extrapolated to predict the condition of the section as a whole.

#### **Pavement Evaluation Procedure**

Pavements were evaluated at Brunswick-Golden Isles Airport using the PCI procedure. This procedure is described in FAA Advisory Circular (AC) 150/5380-6B, *Guidelines and Procedures for Maintenance of Airport Pavements* and American Society for Testing and Material (ASTM) Standard D5340-11, *Standard Test Method for Airport Pavement Condition Index Surveys*.

The PCI provides a numerical indication of overall pavement condition, as illustrated in Figure 2. The types and amounts of deterioration are used to calculate the PCI value of the section. The PCI ranges from 0 to 100, with 100 representing a pavement in excellent condition. It should be noted that a PCI value is based on visual signs of pavement deterioration and does not provide a measure of structural capacity.

Typical Pavement Surface <sup>1</sup>	PCI
	100
	60
	20

<sup>1</sup>Photographs shown are not specific to Brunswick-Golden Isles Airport.

Figure 2. Visual Representation of PCI Scale.

In general terms, pavements with a PCI greater than 70 that are not exhibiting significant load-related distress will benefit from preventive maintenance actions, such as crack sealing and surface treatments. Pavements with a PCI of 40 to 70 may require major rehabilitation, such as an overlay. Often, when the PCI is less than 40, reconstruction is the only viable alternative due to the substantial damage to the pavement structure. Figure 3 illustrates how repair type varies with the PCI of a pavement section.

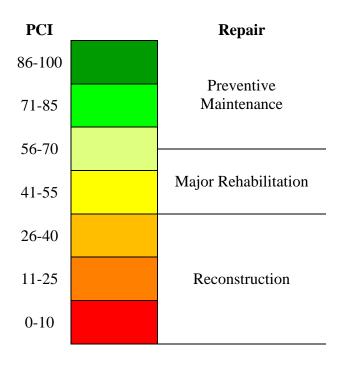


Figure 3. PCI versus Repair Type.

The types of distress identified during the PCI inspection provide insight into the cause of pavement deterioration. PCI distress types are characterized as:

- **Load-related** These distress types are defined as being caused by aircraft or vehicular traffic and may provide an indication of a structural deficiency. Examples of load-related distresses include alligator cracking on hot-mix asphalt (HMA) pavements and corner breaks on portland cement concrete (PCC) pavements,
- Climate/durability-related These distress types often signify the presence of aged and/or environment-susceptible material and include durability-related issues. Examples of climate/durability-related distresses include weathering, which is climate-related, on HMA pavements and durability cracking, which is durability-related, on PCC pavements, and
- Other Distress types that fall into this category cannot be attributed solely to load or climate/durability. Examples of this type of distress include depressions on HMA pavements and shrinkage cracking on PCC pavements.

Understanding the cause of distress helps in selecting a rehabilitation alternative that corrects the cause and thus eliminates its recurrence.

Appendix A contains tables for asphalt and PCC pavements indicating the typical types of distresses that may be identified during a PCI survey, the likely cause of each distress type, and feasible maintenance strategies for addressing each distress type.

#### **Paint Markings Evaluation Procedure**

The condition of the paint markings was evaluated for each section at Brunswick-Golden Isles Airport. The markings were rated as "satisfactory" or "non-satisfactory" based on whether the markings were visible and the paint and reflectivity appeared intact. Following is a short description of each category:

- Not Applicable (N/A): No paint markings exist to rate.
- <u>Satisfactory (SAT):</u> Markings that are still visible and in good condition, requiring no maintenance or remarking.
- <u>Non-satisfactory:</u> Markings that require maintenance or remarking in the near future and any of the following conditions are present:
  - Paint is faded to the point where markings are not easily visible from a distance (U-FA).
  - Paint is flaking off the surface or has worn to point that portions of the painted surface no longer have paint on them (U-CH).
  - Painted areas have a large amount of superficial cracking within their limits, degrading the integrity of the painted area and reducing its visibility (U-CR).

#### **Development of Maintenance and Rehabilitation Program**

Using the information collected during the 2012 pavement inspection, an M&R program for 2013 through 2017 was developed. The MicroPAVER<sup>TM</sup> pavement management software was used to perform this analysis.

#### **Analysis Parameters**

Several parameters were defined prior to running the analysis, and are further explained below.

#### Critical PCI Values

MicroPAVER<sup>TM</sup> uses critical PCI values to determine whether preventive maintenance or major rehabilitation is the appropriate repair action. Above the critical PCI, localized (such as crack sealing) and global (such as a slurry seal) preventive maintenance activities are recommended. Below the critical PCI, major rehabilitation (such as an overlay or reconstruction) is recommended. The Department set the critical PCI values shown in Table 1.

Airport Classification	Runway	Taxiway/ T-Hangar	Apron/Helipad
General Aviation	70	60	60
Commercial Service	75	65	65

Table 1. Critical PCI Values.

#### Budget and Inflation Rate

An unlimited budget and an inflation rate of 3 percent were used during the analysis.

#### Maintenance Policies

Localized preventive maintenance policies and global preventive maintenance policies were developed for the Department. Localized maintenance policies, shown in Appendix D, identify the localized maintenance actions that the Department consider appropriate to correct different distress types when the PCI of the pavement is above the critical PCI level.

Global maintenance actions were also considered in the analysis. These are treatments that are applied over an entire section, rather than just to distressed areas. Rejuvenators were considered for pavements that are more than 5 years old with a PCI value greater than 80. Rejuvenators were only applied once during the analysis period to eligible sections.

#### **Unit Costs**

Unit costs for maintenance treatments and major rehabilitation actions are presented in Appendix D. For general aviation airports, the costs were separated by geographic regions. MicroPAVER<sup>TM</sup> estimates the cost of major rehabilitation based on the PCI of the pavement. If major rehabilitation is recommended in the program, further engineering investigation will be needed to identify the most appropriate rehabilitation action and to more accurately estimate the cost of such work.

#### Analysis Approach

The goal of the M&R program is to maintain the pavements above established critical PCI values. Major rehabilitation was recommended for pavements in the year they dropped below their critical PCI value for 2013 through 2017.

For 2013, a localized preventive maintenance plan was developed for those pavement sections that were above their critical PCI value. If major rehabilitation was triggered for a section in 2014 or 2015, then localized maintenance was not recommended for 2013. It was assumed that all low-severity cracking would need to be resealed in 2017 unless major rehabilitation was triggered on the section. No other maintenance activities, other than crack sealing, were considered for year 2017.

#### **RESULTS**

#### **Pavement Inventory**

Brunswick-Golden Isles Airport has over 3,537,580 square feet of pavement, as shown in Figure 4. Figure 5 is a network definition map of the airport showing the pavement system broken down into management units, as described on page 3 of this report. It also shows the nomenclature used in the MicroPAVER<sup>TM</sup> pavement management database to identify the different pavement areas. Additionally, the map summarizes the construction history information compiled during the records review and identifies the areas inspected during the visual survey.

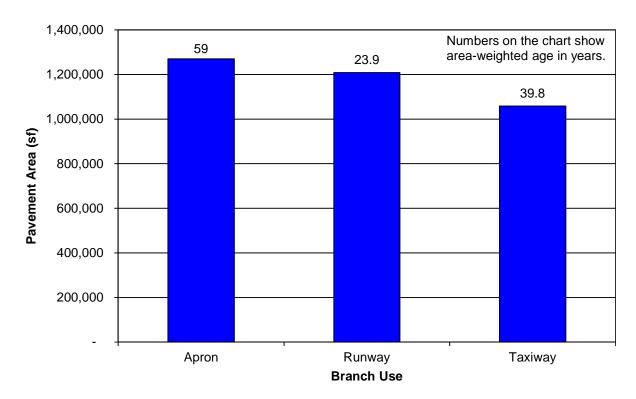
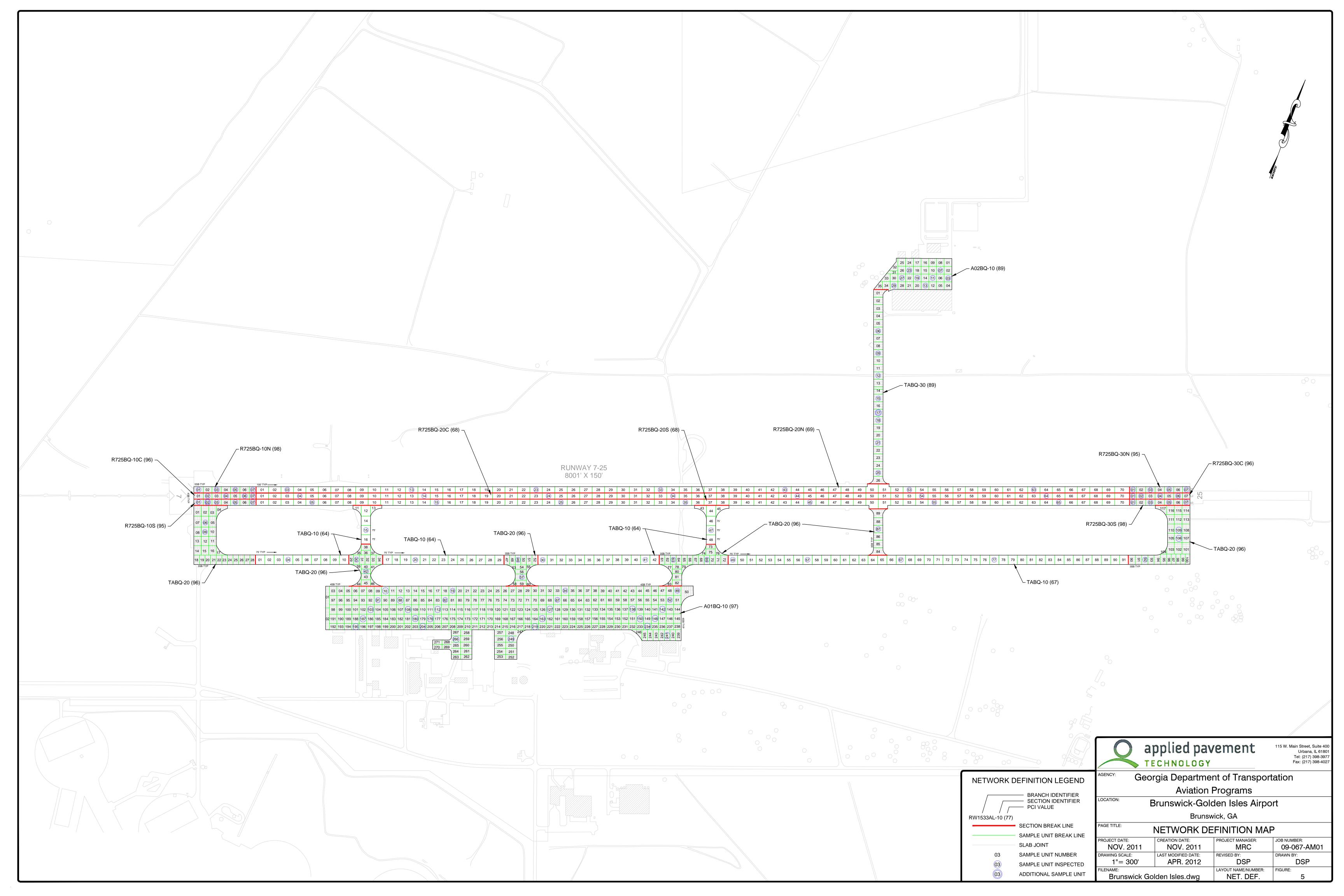


Figure 4. Pavement Inventory.



#### **Pavement Evaluation and Paint Assessment**

The inspection of Brunswick-Golden Isles Airport was completed on February 9, 2012 using the PCI procedure described previously. The map presented in Figure 5 identifies the sample units inspected during the pavement evaluation.

#### **Inspection Comments**

There were fourteen pavement sections defined during the inspection.

#### Runway 7-25

Runway 7-25 consisted of nine sections. Sections 10C, 10N, and 10S were in similar condition with PCI values of 96, 98, and 95, respectively. Small, low-severity patching was the primary distress. Isolated quantities of low- and medium-severity joint spalling, low- and medium-severity corner spalling, and low-severity patching were also observed. Within Section 10S, an area with an atypical amount of medium-severity joint spalling was inspected as an additional sample unit in accordance with ASTM D5340. Sections 20C, 20N, and 20S were in similar condition with PCI values of 68, 69, and 68, respectively. Substantial quantities of low-severity, sealed longitudinal and transverse (L&T) cracking were observed throughout. Low-severity, sealed and unsealed L&T cracking and low-severity swelling were also observed in smaller quantities. Isolated quantities of medium-severity swelling were also recorded. Sections 30C, 30N, and 30S had PCI values of 96, 95, and 98, respectively. Small amounts of low- and medium-severity corner spalling, medium-severity joint spalling, and low- and high-severity small patching were identified during the inspection. The high-severity small patching was recorded where the patch was in poor condition and producing FOD.

#### Taxiway

Taxiway A was defined by three sections. Section 10 had a PCI value of 67. Substantial quantities of low-severity, sealed L&T cracking were observed throughout the section. Additional amounts of low-severity, unsealed L&T cracking and low-severity swelling were identified. Section 20 had a PCI value of 96. Low- and medium-severity joint spalling and corner spalling were identified during the inspection. Low-severity patching was also identified, while medium-severity small patching was recorded where cracks were visible in the patching material. Section 30 had a PCI value of 89. Medium-severity joint seal damage was recorded where the joint sealant was observed to be in an unsatisfactory condition, either allowing water to penetrate the pavement surface or not being pliable. In addition, low- and medium-severity joint spalling and corner spalling were identified throughout the section. An area with two low-severity large patches along with several spalls was inspected as an additional sample unit in accordance with ASTM D5340.

#### **Aprons**

#### **Terminal Apron**

The terminal apron area (A01BQ) contained one section with a PCI value of 97. Low-severity small patching, large patching, corner spalling, and joint spalling were recorded throughout Section 10.

#### **North Apron**

The north apron area (A02BQ) was defined by one section with a PCI value of 89. Medium-severity joint seal damage was recorded where the joint sealant had deteriorated significantly with visible openings or oxidized sealant. Low-severity corner spalling and low- and medium-severity joint spalling were observed throughout the section. Small amounts of low- and medium-severity small patching and isolated quantities of low- and medium-severity scaling were also observed.

#### **Overall Condition**

The 2012 area-weighted condition of Brunswick-Golden Isles Airport is 83, with conditions ranging from 67 to 98 [on a scale of 0 (failed) to 100 (excellent)]. This compares to a 2007 PCI of 84.

Figures 6 and 7 provide graphs summarizing the overall condition of the pavements at Brunswick-Golden Isles Airport. Figure 8 is a map that displays the condition of the pavements evaluated. Table 2 summarizes the results of the pavement evaluation and paint assessment and also presents both the 2007 and 2012 PCI values. Please note that modifications have been made to the PCI methodology since the time of the last pavement inspection in 2007, as detailed in ASTM 5340-11. These changes include the separation of the raveling and weathering distress type on asphalt-surfaced pavements into two distress types along with the addition of the alkali silica reaction (ASR) distress type on PCC pavements.

Appendix B presents photographs taken during the PCI inspection, and Appendix C contains a detailed inspection report. The detailed inspection report provides information on the quantity of the different types and severities of distresses observed during the visual survey.

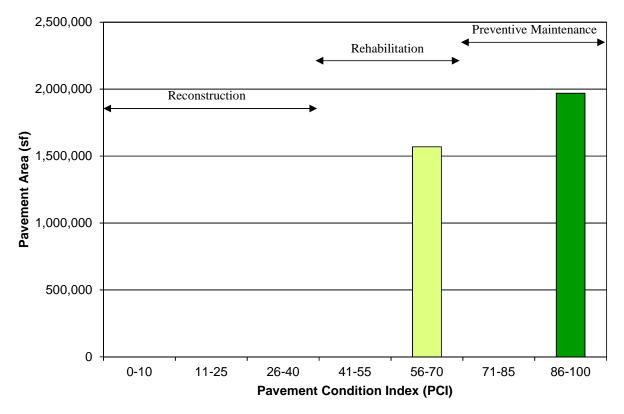


Figure 6. Condition Distribution.

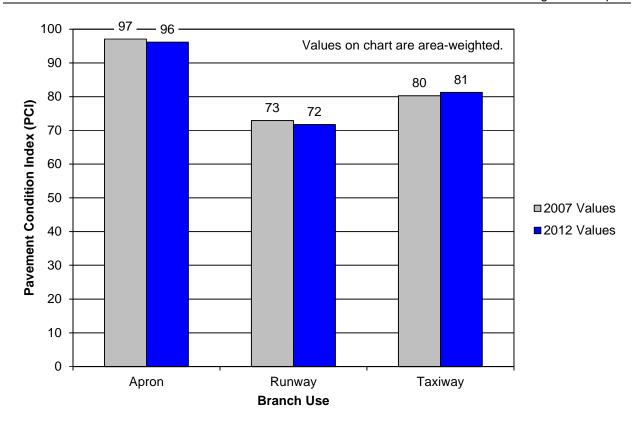
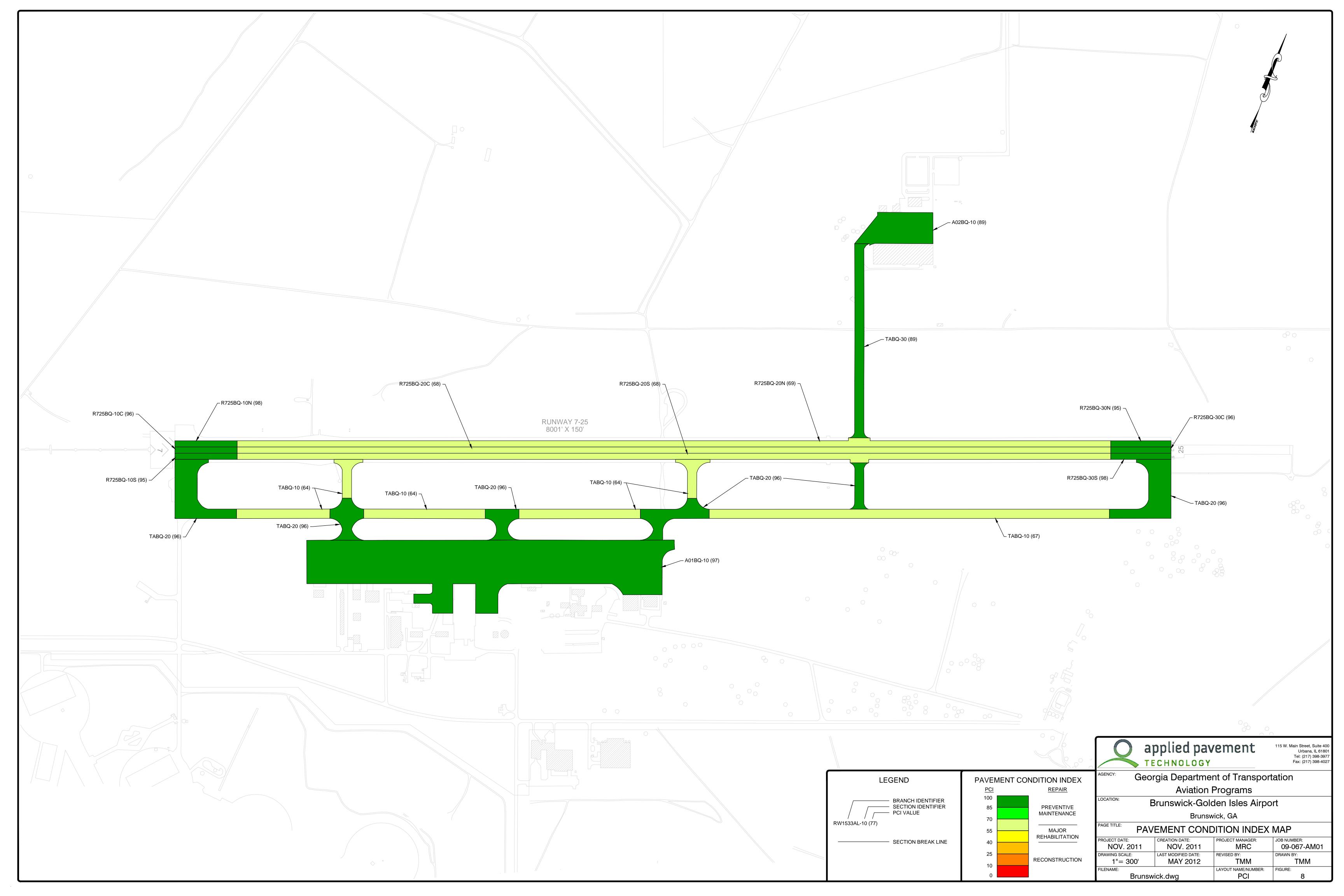


Figure 7. Condition by Use.



Pavement Management Report

Table 2. Pavement Evaluation Results.

		Cumfo oo	Continu	Section - and Paint 2007 201		2012	% Distress due to:				
Branch <sup>1</sup>	Section <sup>1</sup>	Surface Type <sup>2</sup>	Area (sf)	LCD <sup>3</sup>	Markings <sup>4</sup>	PCI			Load <sup>5</sup>	Climate or Durability <sup>6</sup>	Distress Types <sup>7</sup>
A01BQ	10	PCC	1,137,872	6/2/1953	N/A	98	97	0	0	Corner Spalling, Joint Spalling, Large Patch/Utility, Shrinkage Cracking, Small Patch	
A02BQ	10	PCC	132,458	6/2/1953	U-FA	89	89	0	57	Corner Spalling, Joint Seal Damage, Joint Spalling, Scaling, Small Patch	
R725BQ	10C	PCC	25,000	6/2/1953	SAT	96	96	0	0	Corner Spalling, Joint Spalling, Small Patch	
R725BQ	10N	PCC	25,000	6/2/1953	SAT	97	98	0	0	Small Patch	
R725BQ	10S	PCC	25,000	6/2/1953	SAT	95	95	0	0	Corner Spalling, Joint Spalling, Small Patch	
R725BQ	20C	AAC	350,550	6/1/1993	SAT	68	68	0	97	L&T Cracking, Swelling	
R725BQ	20N	AAC	355,046	6/1/1993	SAT	71	69	0	71	L&T Cracking, Swelling	
R725BQ	20S	AAC	355,155	6/1/1993	SAT	70	68	0	71	L&T Cracking, Swelling	
R725BQ	30C	PCC	24,250	6/2/1953	SAT	96	96	0	0	Corner Spalling, Joint Spalling, Small Patch	
R725BQ	30N	PCC	24,250	6/2/1953	SAT	95	95	0	0	Corner Spalling, Joint Spalling	
R725BQ	30S	PCC	24,250	6/2/1953	SAT	98	98	0	0	Corner Spalling, Joint Spalling	
TABQ	10	AAC	508,494	6/1/1993	SAT	64	67	0	94	Bleeding, L&T Cracking, Swelling	
TABQ	20	PCC	431,532	6/2/1953	SAT	97	96	0	0	Corner Spalling, Joint Spalling, Small Patch	
TABQ	30	PCC	118,723	6/2/1953	SAT	89	89	0	53	Corner Spalling, Joint Seal Damage, Joint Spalling, Large Patch/Utility, Small Patch	

#### Table 2. Pavement Evaluation Results (continued).

#### **NOTES:**

- <sup>1</sup>See Figure 5 for the location of the branch and section.
- <sup>2</sup>AC = asphalt cement concrete; AAC = asphalt overlay on AC; PCC = portland cement concrete; APC = asphalt overlay on PCC.
- <sup>3</sup>LCD = last construction date.
- <sup>4</sup>Paint markings condition: not applicable (N/A), satisfactory (SAT), unsatisfactory due to faded paint (U-FA), unsatisfactory due to chipping paint (U-CH), or unsatisfactory due to superficial cracking (U-CR).
- <sup>5</sup>Distress due to load includes distresses attributed to a structural deficiency in the pavement, such as alligator (fatigue) cracking, rutting, or shattered concrete slabs.
- <sup>6</sup>Distress due to climate or durability includes those distresses attributed to either the aging of the pavement and the effects of the environment (such as weathering or block cracking in AC pavements) or to a materials-related problem (such as durability cracking in a PCC pavement).
- <sup>7</sup>L&T Cracking = longitudinal and transverse cracking.

#### **Maintenance and Rehabilitation Program**

The 5-year M&R program developed for Brunswick-Golden Isles Airport is described on page 6 of this report.

A summary of the M&R program is presented in Table 3. Detailed information on the localized maintenance plan for 2013 is contained in Appendix E and Appendix F. While localized preventive maintenance should be an annual undertaking at Brunswick-Golden Isles Airport, it is not possible to accurately predict the propagation of cracking and other distresses. The airport should budget for maintenance every year and can use the 2013 maintenance plan as a baseline for that work. As the pavements age, it can be assumed that the amount of localized maintenance required will increase.

Because an unlimited budget was used in the analysis, it is probable that the pavement repair program will need to be adjusted to take into account economic and/or operational constraints. Further, the identification of the need for a major rehabilitation project does not mean that federal or state funding will be available to complete the work in the year shown. It is important to remember that regardless of the recommendations presented within this report, Brunswick-Golden Isles Airport is responsible for repairing pavements where existing conditions pose a hazard to safe operations.

Note these recommendations are based on a broad network-level analysis and are meant to provide Brunswick-Golden Isles Airport with an indication of the type of pavement-related work required during the next 5 years. Further engineering investigation will need to be performed to identify exactly which repair action is most appropriate and to more accurately estimate the cost of such work. In addition, the cost estimates provided were based on a statewide policy and each airport should adjust the maintenance policies and unit costs to match its own approach to pavement maintenance and to reflect local costs.

Table 3. 5-Year Program under an Unlimited Funding Analysis Scenario.

Branch <sup>1</sup>	Section	Year	Type of Repair <sup>2</sup>	<b>Estimated Cost<sup>3</sup></b>
A01BQ	10	2013	Preventive Maintenance	\$1,118
A02BQ	10	2013	Preventive Maintenance	\$89,023
	10C	2013	Preventive Maintenance	\$757
	10N	2013	Preventive Maintenance	\$204
	10S	2013	Preventive Maintenance	\$407
R725BQ	20C	2013	Major M&R	\$918,440
K/23bQ	20N	2013	Major M&R	\$930,219
	20S	2013	Major M&R	\$930,505
	30C	2013	Preventive Maintenance	\$377
	30N 2		Preventive Maintenance	\$481
	10 2014 Major M&R		Major M&R	\$1,372,220
TABQ	20	2013	Preventive Maintenance	\$2,697
	30	2013	Preventive Maintenance	\$36,385

<sup>&</sup>lt;sup>1</sup>See Figure 5 for the location of the branch and section.

Localized Maintenance: crack sealing, patching, joint resealing, and so on;

Global Maintenance: surface treatments, rejuvenators, and so on.

<sup>&</sup>lt;sup>2</sup>Major Rehabilitation: overlay, mill and overlay, reconstruction, and so on;

<sup>&</sup>lt;sup>3</sup>Cost estimates based on broad, statewide policy and should be adjusted to reflect local costs.

#### GENERAL RECOMMENDATIONS

#### **Maintenance**

In addition to the specific maintenance actions presented in Appendix E and Appendix F, the following strategies are recommended to prolong pavement life:

- 1. Conduct an aggressive campaign against weed growth through timely herbicide applications. Vegetation growing in pavement cracks is very destructive and significantly increases the rate of pavement deterioration.
- 2. Implement a periodic crack sealing program. Sealing cracks is a proven method for cost-effectively keeping water and debris out of the pavement system and extending its life.
- 3. Ensure that dirt does not build up along the edges of the pavements. This can create a "bathtub" effect—reducing the ability of water to drain away from the pavement system.
- 4. Closely monitor heavy equipment movement, such as construction equipment, emergency equipment, and fueling equipment, to make sure that it is only operating on pavement designed to accommodate the heavy loads this type of equipment often applies. Failure to restrict heavy equipment to appropriate areas may result in the premature failure of airport pavements.
- 5. Other maintenance necessities include keeping all pavement markings well painted, keeping safety signage clear of debris and weeds, ensuring the continuous operation of lighting systems (bulb replacement), and the frequent removal of any debris found in any of the operating areas. In addition, failed pavement areas should be remediated as necessary.

#### Remaining in Compliance with Public Law 103-305

Public Law 103-305 states that after January 1, 1995, airport sponsors must provide assurances or certifications that an airport has implemented an effective airport pavement maintenance management system (PMMS) before the airport will be considered for funding of pavement replacement or reconstruction projects. To be in full compliance with the Federal law, the PMMS must include the following components at a minimum: pavement inventory, pavement inspections, record keeping, information retrieval, and program funding.

By undertaking this project, the Department has provided Brunswick-Golden Isles Airport with an excellent basis for meeting the requirements of this law. The airport now has a complete pavement inventory and a detailed inspection. To remain in compliance with the law, the airport will also need to undertake monthly drive-by inspections of pavement conditions and track pavement-related maintenance activities. The next detailed inspection should occur in 2015.

The FAA AC 150/5380-6B provides further information on Public Law 103-305. Specifically, Appendix 1 of this AC outlines what needs to be included in a PMMS to satisfy FAA Grant Assurance 11. A copy of this AC can be found at the following website <a href="http://www.faa.gov/regulations\_policies/advisory\_circulars/index.cfm/go/document.information/documentID/22556">http://www.faa.gov/regulations\_policies/advisory\_circulars/index.cfm/go/document.information/documentID/22556</a>.

#### **SUMMARY**

This report documents the results of the pavement evaluation conducted at Brunswick-Golden Isles Airport. During a visual inspection of the pavements in 2012, it was found that the overall condition of the pavement network is a PCI of 83. A 5- year pavement repair program was generated for Brunswick-Golden Isles Airport, which revealed that approximately \$4,282,833 needs to be expended on the pavement system to maintain and/or improve its condition.

# APPENDIX A CAUSE OF DISTRESS TABLES

Pavement Management Report - Appendix A

Table A-1. Cause of Pavement Distress, Asphalt-Surfaced Pavements.

Distress Type	Probable Cause of Distress	Feasible Maintenance Strategies
Alligator Cracking	Fatigue failure of the asphalt concrete surface under repeated traffic loading.	If localized, partial- or full-depth asphalt patch. If extensive, major rehabilitation needed.
Bleeding	Excessive amounts of asphalt cement or tars in the mix and/or low air void content.	Spread heated sand, roll, and sweep. Another option is to plane excess asphalt. Or, remove and replace.
Block Cracking	Shrinkage of the asphalt concrete and daily temperature cycling; it is not load associated.	At low severity levels, crack seal and/or surface treatment. At higher severities, consider overlay.
Corrugation	Traffic action combined with an unstable pavement layer.	If localized, mill. If extensive, remove and replace.
Depression	Settlement of the foundation soil or can be "built up" during construction.	Patch.
Jet Blast	Bituminous binder has been burned or carbonized.	Patch.
Joint Reflection Cracking	Movement of the concrete slab beneath the asphalt concrete surface due to thermal and moisture changes.	At low- and medium-severities, crack seal. At higher severities, especially if extensive, consider overlay.
Longitudinal and Transverse Cracking	Cracks may be caused by 1) poorly constructed paving lane joint, 2) shrinkage of the AC surface due to low temperatures or hardening of the asphalt, or 3) reflective crack caused by cracks in an underlying PCC slab.	At low- and medium-severity levels, crack seal. At higher severities, especially if extensive, consider overlay options.
Oil Spillage	Deterioration or softening of the pavement surface caused by the spilling of oil, fuel, or other solvents.	Patch.
Patching	N/A	Replace patch if deteriorated.
Polished Aggregate	Repeated traffic applications.	Aggregate seal coat is one option. Could also groove or mill.  Overlay is another option.
Raveling	Asphalt binder may have hardened significantly, causing coarse aggregate pieces to dislodge.	Patch if isolated. At higher severity levels, consider major rehabilitation if extensive.
Rutting	Usually caused by consolidation or lateral movement of the materials due to traffic loads.	Patch medium- and high-severity levels if localized. If extensive, consider major rehabilitation.
Shoving	Where PCC pavements adjoin flexible pavements, PCC "growth" may shove the asphalt pavement.	Mill and patch as needed.
Slippage Cracking	Low strength surface mix or poor bond between the surface and next layer of pavement structure.	Partial- or full-depth patch.
Swelling	Usually caused by frost action or by swelling soil.	Patch if localized. Major rehabilitation if extensive.
Weathering	Asphalt binder and/or fine aggregate may wear away as the pavement ages and hardens.	Patch if isolated. Consider a surface treatment if extensive.

Pavement Management Report - Appendix A

Table A-2. Cause of Pavement Distress, PCC Pavements.

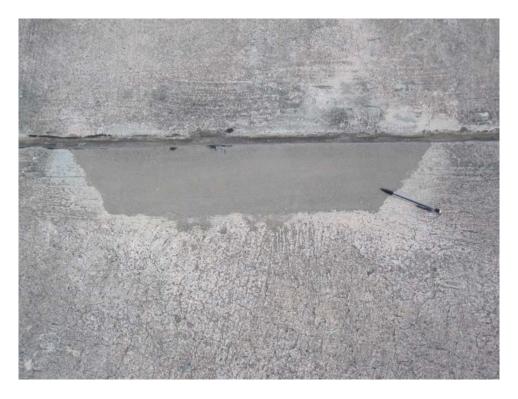
Distress Type	Probable Cause of Distress	Feasible Maintenance Strategies
Alkali Silica Reaction (ASR)	Chemical reaction of alkalis in the portland cement with certain reactive silica minerals. ASR may be accelerated by the use of chemical pavement deicers.	At medium- and high-severity levels, slab replacement is recommended.
Blow-Up	Incompressibles in joints.	Partial- or full-depth patch. Slab replacement.
Corner Break	Load repetition combined with loss of support and curling stresses.	Seal cracks at low-severity. Full-depth patch.
Cracks	Combination of load repetition, curling stresses, and shrinkage stresses.	Seal cracks. At high-severity, may need full-depth patch or slab replacement.
Durability Cracking	Concrete's inability to withstand environmental factors such as freeze-thaw cycles.	Full-depth patch if present on small amount of slab. At higher severity levels, once it has appeared on most of slab, slab replacement.
Joint Seal Damage	Stripping of joint sealant, extrusion of joint sealant, weed growth, hardening of the filler (oxidation), loss of bond to the slab edges, or absence of sealant in joint.	Replace joint seal.
Patching (Small and Large)	N/A	Replace patches if deteriorated.
Popouts	Freeze-thaw action in combination with expansive aggregates.	Monitor.
Pumping	Poor drainage, poor joint sealant.	Seal cracks and joints. Underseal is an option if voids have developed. Establish good drainage.
Scaling	Overfinishing of concrete, deicing salts, improper construction, freeze- thaw cycles, and poor aggregate.	At low-severity levels, do nothing. At medium- and high-severity levels, partial-depth patches or slab replacement.
Settlement	Upheaval or consolidation.	At higher severity levels, leveling patch or grind to restore smooth ride.
Shattered Slab	Load repetition.	Replace slab.
Shrinkage	Setting and curing of the concrete.	Monitor.
Spalling (Joint and Corner)	Excessive stresses at the joint caused by infiltration of incompressible materials or traffic loads; weak concrete at joint combined with traffic loads.	Partial-depth patch.

# **APPENDIX B**

**PHOTOGRAPHS** 



A01BQ-10. Overview.



A01BQ-10. Small Patching (Sample Unit #10).



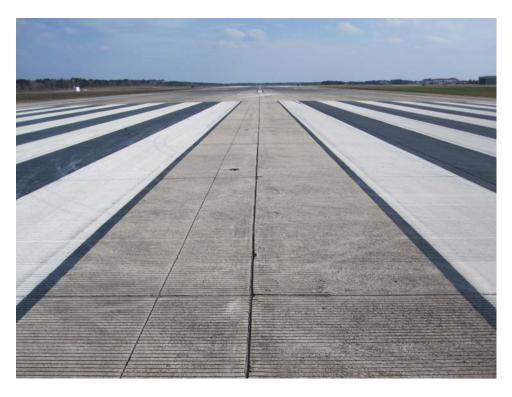
A02BQ-10. Overview.



A02BQ-10. Joint Spalling (Sample Unit #03).



A02BQ-10. Unsatisfactory Paint.



R725BQ-10C. Overview.



R725BQ-10C. Joint Spalling (Sample Unit #04).



R725BQ-10C. Satisfactory Paint.



R725BQ-10N. Overview.



R725BQ-10N. Satisfactory Paint.



R725BQ-10S. Overview.



R725BQ-10S. Corner Spalling (Additional Sample Unit #02).



R725BQ-10S. Joint Spalling (Additional Sample Unit #02).



R725BQ-10S. Joint Spalling (Sample Unit #01).



R725BQ-10S. Satisfactory Paint.



R725BQ-20C. Overview.



R725BQ-20C. Longitudinal and Transverse Cracking (Sample Unit #64) (1).



R725BQ-20C. Longitudinal and Transverse Cracking (Sample Unit #64) (2).



R725BQ-20C. Satisfactory Paint.



R725BQ-20N. Overview.



R725BQ-20N. Longitudinal and Transverse Cracking (Sample Unit #63) (1).



R725BQ-20N. Longitudinal and Transverse Cracking (Sample Unit #63) (2).



R725BQ-20N. Satisfactory Paint.



R725BQ-20S. Overview.



R725BQ-20S. Longitudinal and Transverse Cracking (Sample Unit #65) (1).



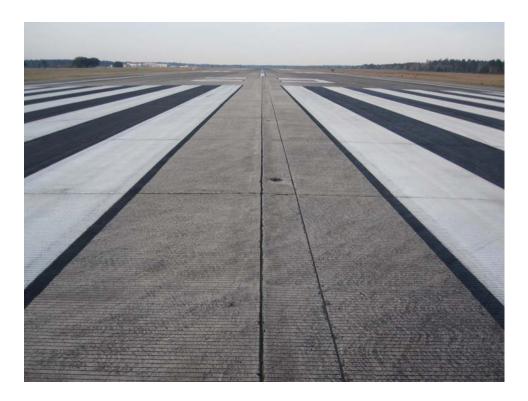
R725BQ-20S. Longitudinal and Transverse Cracking (Sample Unit #65) (2).



R725BQ-20S. Satisfactory Paint.



R725BQ-20S. Swelling (Sample Unit #55).



R725BQ-30C. Overview.



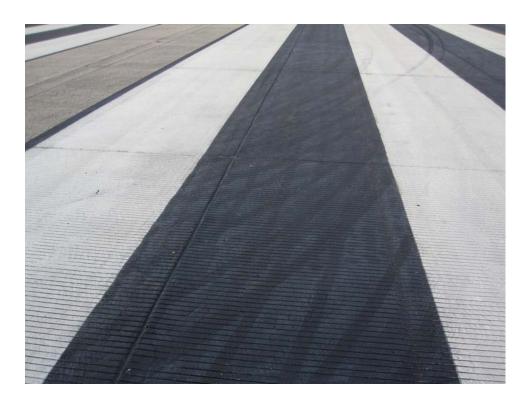
R725BQ-30C. Corner Spalling (Sample Unit #02) (1).



R725BQ-30C. Corner Spalling (Sample Unit #02) (2).



R725BQ-30C. Joint Spalling (Sample Unit #04).



R725BQ-30C. Satisfactory Paint.



R725BQ-30C. Small Patching (Sample Unit #04).



R725BQ-30N. Overview.



R725BQ-30N. Satisfactory Paint.



R725BQ-30S. Overview.



R725BQ-30S. Satisfactory Paint.



TABQ-10. Overview.



TABQ-10. Longitudinal and Transverse Cracking (Sample Unit #04) (1).



TABQ-10. Longitudinal and Transverse Cracking (Sample Unit #04) (2).



TABQ-10. Satisfactory Paint.



TABQ-20. Overview.



TABQ-20. Joint Spall (Sample Unit #09).



TABQ-20. Satisfactory Paint.



TABQ-30. Overview.



TABQ-30. Corner Spall (Sample Unit #18).



TABQ-30. Corner Spalling (Additional Sample Unit #17).



TABQ-30. Joint Spalling (Additional Sample Unit #17).



TABQ-30. Satisfactory Paint.



TABQ-30. Small Patch (Sample Unit #18).



TABQ-30. Small Patching (Additional Sample Unit #17).

# APPENDIX C INSPECTION REPORT

#### GA 2012 FINAL

Report Generated Date: Novemb	er 20, 2012					
Network: BRUN-BQK Name	e: BRUNSWICK-GO	LDEN ISLES AIRPORT				
Branch: A01BQ Name	e: TERMINAL APRO	N	Use: APRON	Area: 1,137	7,872.00SqFt	
Section: 10 of Surface: PCC Fa	1 From: TAXI		To: TERMINAL	BUILDING Zone: N/A	Last Const.: Category:	06/02/1953 Rank: S
Area: 1,137,872.00SqFt	Length: 2,850.	00Ft Width	: 350.00Ft			
Slabs: 6,069 Slab Wic	dth: 12.50Ft	Slab Length:	15.00Ft	Joint Length:	143,100.00Ft	
Shoulder: Street Type:	Grade: 0.00	Lanes: 0				
Section Comments:						
Last Insp. Date: 02/09/2012 Tota Conditions: PCI: 97 Inspection Comments:	l Samples: 271	Surveyed: 28				
	Type: R	Area:	24.00Slabs	PCI = 94		
Sample Comments: 66 SMALL PATCH		L	9.00 Slabs	Comments:		
Sample Number: 19 Sample Comments:	Type: R	Area:	24.00Slabs	PCI = 88		
66 SMALL PATCH		L	12.00 Slabs	Comments:		
66 SMALL PATCH		M	1.00 Slabs	Comments:		
73 SHRINKAGE CRACKING	<u> </u>	N	2.00 Slabs	Comments:		
Sample Number: 34 Sample Comments:	Type: R	Area:	24.00Slabs	PCI = 94		
66 SMALL PATCH		L	4.00 Slabs	Comments:		
74 JOINT SPALLING		L -	1.00 Slabs	Comments:		
75 CORNER SPALLING		L	1.00 Slabs	Comments:		
Sample Comments:	Type: R	Area:	24.00Slabs	PCI = 97		
74 JOINT SPALLING		L	1.00 Slabs	Comments:		
66 SMALL PATCH		L	3.00 Slabs	Comments:		
Sample Number: 52 Sample Comments: <no distresses=""></no>	Type: R	Area:	24.00Slabs	PCI = 100		
	Type: R	Area:	24.00Slabs	PCI = 99		
Sample Comments: 74 JOINT SPALLING		L	1.00 Slabs	Comments:		
Sample Number: 82 Sample Comments:	Type: R	Area:	24.00Slabs	PCI = 98		
75 CORNER SPALLING		L	1.00 Slabs	Comments:		
Sample Number: 88 Sample Comments:	Type: R	Area:	24.00Slabs	PCI = 85		
67 LARGE PATCH/UTILIT	Ϋ́	L	6.00 Slabs	Comments:		
66 SMALL PATCH		L	4.00 Slabs	Comments:		
Sample Number: 91 Sample Comments:	Type: R	Area:	24.00Slabs	PCI = 97		
66 SMALL PATCH		L	5.00 Slabs	Comments:		

#### GA 2012 FINAL

*	,			
Sample Number: 103	Type: R	Area:	24.00Slabs	PCI = 96
Sample Comments: 66 SMALL PATCH 67 LARGE PATCH/UTIL	JITY	L L	2.00 Slabs 1.00 Slabs	Comments:
Sample Number: 108 Sample Comments:	Type: R	Area:	24.00Slabs	PCI = 88
66 SMALL PATCH 67 LARGE PATCH/UTIL	JITY	L L	11.00 Slabs 2.00 Slabs	Comments:
Sample Number: 112 Sample Comments:	Type: R	Area:	24.00Slabs	PCI = 97
66 SMALL PATCH		L	5.00 Slabs	Comments:
Sample Number: 127 Sample Comments:	Type: R	Area:	24.00Slabs	PCI = 98
66 SMALL PATCH		L	3.00 Slabs	Comments:
Sample Number: 138 Sample Comments: <no distresses=""></no>	Type: R	Area:	24.00Slabs	PCI = 100
Sample Number: 142	Type: R	Area:	24.00Slabs	PCI = 99
Sample Comments: 66 SMALL PATCH		L	1.00 Slabs	Comments:
Sample Number: 148 Sample Comments: <no distresses=""></no>	Type: R	Area:	24.00Slabs	PCI = 100
Sample Number: 150	Type: R	Area:	24.00Slabs	PCI = 99
Sample Comments: 66 SMALL PATCH		L	1.00 Slabs	Comments:
Sample Number: 163 Sample Comments:	Type: R	Area:	24.00Slabs	PCI = 98
66 SMALL PATCH		L	3.00 Slabs	Comments:
Sample Number: 178 Sample Comments:	Type: R	Area:	24.00Slabs	PCI = 99
66 SMALL PATCH		L	1.00 Slabs	Comments:
Sample Number: 180 Sample Comments:	Type: R	Area:	24.00Slabs	PCI = 99
66 SMALL PATCH		L	1.00 Slabs	Comments:
Sample Number: 187 Sample Comments:	Type: R	Area:	24.00Slabs	PCI = 98
66 SMALL PATCH		L	3.00 Slabs	Comments:
Sample Number: 195 Sample Comments: <no distresses=""></no>	Type: R	Area:	16.00Slabs	PCI = 100
Sample Number: 204 Sample Comments:	Type: R	Area:	16.00Slabs	PCI = 98
66 SMALL PATCH		L	2.00 Slabs	Comments:

GA 2012 FINAL

Sample Number: 219 Sample Comments:	Type: R	Area:	16.00Slabs	PCI = 99
66 SMALL PATCH		L	1.00 Slabs	Comments:
Sample Number: 234 Sample Comments:	Type: R	Area:	16.00Slabs	PCI = 99
66 SMALL PATCH		L	1.00 Slabs	Comments:
Sample Number: 241 Sample Comments:	Type: R	Area:	21.00Slabs	PCI = 95
66 SMALL PATCH		L	4.00 Slabs	Comments:
75 CORNER SPALLING		L	1.00 Slabs	Comments:
Sample Number: 249 Sample Comments: <no distresses=""></no>	Type: R	Area:	24.00Slabs	PCI = 100
Sample Number: 266 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 96
66 SMALL PATCH		L	3.00 Slabs	Comments:
74 JOINT SPALLING		L	1.00 Slabs	Comments:
, I COLLIE DITIEDLING		_	D_a	001111101100

#### GA 2012 FINAL

Report Generated Date: Novemb	per 20, 2012					
Network: BRUN-BQK Nam	e: BRUNSWICK-GOL	DEN ISLES AIRPORT				
Branch: A02BQ Nam	e: TWA4 APRON		Use: APRON	Area: 132	,458.00SqFt	
Section: 10 of Surface: PCC Fa	1 From: TAXIV	WAY A SECTION 30 (TAX	To: END OF AF	PRON Zone: U-FA	Last Const.: Category:	06/02/1953 Rank: P
Area: 132,458.00SqFt	Length: 550.0	00Ft Width:	250.00Ft			
Slabs: 706 Slab Wi		Slab Length:	15.00Ft	Joint Length:	19,366.67Ft	
Shoulder: Street Type:	Grade: 0.00	Lanes: 0		Z .	•	
Section Comments:						
Last Insp. Date: 02/09/2012 Tota	al Samples: 35	Surveyed: 8				
Conditions: PCI: 89 Inspection Comments:	1					
Sample Number: 03 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 88		
74 JOINT SPALLING		L	1.00 Slabs	Comments:		
65 JOINT SEAL DAMAGE		M	20.00 Slabs	Comments:		
66 SMALL PATCH		L	1.00 Slabs	Comments:		
75 CORNER SPALLING		L	1.00 Slabs	Comments:		
Sample Number: 07 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 89		
65 JOINT SEAL DAMAGE		M	20.00 Slabs	Comments:		
74 JOINT SPALLING		М	1.00 Slabs	Comments:		
Sample Number: 11 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 82		
74 JOINT SPALLING		M	1.00 Slabs	Comments:		
65 JOINT SEAL DAMAGE		M	20.00 Slabs	Comments:		
70 SCALING/CRAZING		M	1.00 Slabs	Comments:		
66 SMALL PATCH		М	1.00 Slabs	Comments:		
Sample Number: 13 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 88		
74 JOINT SPALLING		L	2.00 Slabs	Comments:		
70 SCALING/CRAZING		L	2.00 Slabs	Comments:		
65 JOINT SEAL DAMAGE		М	20.00 Slabs	Comments:		
Sample Number: 19 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 92		
65 JOINT SEAL DAMAGE		M	20.00 Slabs	Comments:		
66 SMALL PATCH		L	1.00 Slabs	Comments:		
Sample Number: 23 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 88		
66 SMALL PATCH		L	1.00 Slabs	Comments:		
75 CORNER SPALLING		L	2.00 Slabs	Comments:		
65 JOINT SEAL DAMAGE		М	20.00 Slabs	Comments:		
Sample Number: 27 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 93		
65 JOINT SEAL DAMAGE		М	20.00 Slabs	Comments:		
Sample Number: 29 Sample Comments:	Type: R	Area:	24.00Slabs	PCI = 90		

GA 2012 FINAL

65 JOINT SEAL DAMAGE	M	24.00 Slabs	Comments:
74 JOINT SPALLING	M	1.00 Slabs	Comments:

#### GA 2012 FINAL

Network: BRUN-BQK	Name: BRUNSWICK-GOL	DEN ISLES AIRPORT				
Branch: R725BQ	Name: RUNWAY 7/25		Use: RUNWAY	Area: 1,208	5,501.00SqFt	
	of 9 From: APPRO		To: 510' FROM	APPROACH END 07	Last Const.:	06/02/1953
Surface: PCC	Family: GAPCCRWYSO			Zone: SAT	Category:	Rank: P
Area: 25,000.00SqFt	Length: 510.0		50.00Ft			
	b Width: 12.50Ft	Slab Length:	15.00Ft	Joint Length:	3,180.00Ft	
Shoulder: Street Typ	be: Grade: 0.00	Lanes: 0				
Section Comments:						
Inspection Comments:  Sample Number: 02	Type: R	Area:	20.00Slabs	PCI = 96		
Sample Comments: 74 JOINT SPALLING		L	1.00 Slabs	Comments:		
75 CORNER SPALLIN		L	1.00 Slabs	Comments:		
Sample Number: 04	Type: R	Area:	20.00Slabs	PCI = 96		
Sample Comments: 74 JOINT SPALLING		М	1.00 Slabs	Comments:		
Sample Number: 06 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 97		
66 SMALL PATCH		М	1.00 Slabs	Comments:		
Sample Number: 07 Sample Comments:	Type: R	Area:	16.00Slabs	PCI = 93		
66 SMALL PATCH		M	2.00 Slabs	Comments:		

#### GA 2012 FINAL

Network: BRUN-BQK	Name: BRUNSWICK-G	OLDEN ISLES AIRPORT				
Branch: R725BQ	Name: RUNWAY 7/25		Use: RUNWAY	Area: 1,208	3,501.00SqFt	
Section: 10N Surface: PCC	of 9 From: APF Family: GAPCCRWY	PROACH END 07 SOUTH-75	To: 510' FROM	APPROACH END Zone: SAT	Last Const.: Category:	06/02/1953 Rank: P
Area: 25,000.00SqFt Slabs: 133 Shoulder: Street T	Length: 51 Slab Width: 12.50Ft	0.00Ft Width Slab Length:		Joint Length:	3,180.00Ft	
Last Insp. Date: 02/09/20 Conditions: PCI: 98 Inspection Comments:	012 Total Samples: 7	Surveyed: 4				
Sample Number: 01 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 100		
<no distresses=""></no>						
Sample Number: 03 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 98		
66 SMALL PATCH		L	2.00 Slabs	Comments:		
Sample Number: 05 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 97		
66 SMALL PATCH		М	1.00 Slabs	Comments:		
Sample Number: 07 Sample Comments:	Type: R	Area:	16.00Slabs	PCI = 97		
66 SMALL PATCH		L	3.00 Slabs	Comments:		

#### GA 2012 FINAL

Report Generated Date: November 20, 2012

Network: BRUN-BQK Na	me: BRUNSWICK-GOLD	DEN ISLES AIRPORT				
Branch: R725BQ Na	me: RUNWAY 7/25		Use: RUNWAY	Area: 1,208	3,501.00SqFt	
Section: 10S of Surface: PCC	9 From: APPRO Family: GAPCCRWYSOU		To: 510' FROM	APPROACH END 07 Zone: SAT	Last Const.: Category:	06/02/1953 Rank: P
Area: 25,000.00SqFt	Length: 510.00	Ft Width:	50.00Ft			
Slabs: 133 Slab V Shoulder: Street Type:	Vidth: 12.50Ft Grade: 0.00	Slab Length: Lanes: 0	15.00Ft	Joint Length:	3,180.00Ft	
Section Comments:						
Last Insp. Date: 02/09/2012 To Conditions: PCI: 95 Inspection Comments:	otal Samples: 7	Surveyed: 5				
Sample Number: 01 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 90		
74 JOINT SPALLING		М	1.00 Slabs	Comments:		
74 JOINT SPALLING		L	1.00 Slabs	Comments:		
75 CORNER SPALLING		L	2.00 Slabs	Comments:		
Sample Number: 02 Sample Comments:	Type: A	Area:	20.00Slabs	PCI = 85		
74 JOINT SPALLING		M	3.00 Slabs	Comments:		
75 CORNER SPALLING		М	1.00 Slabs	Comments:		
Sample Number: 03 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 98		
75 CORNER SPALLING		L	1.00 Slabs	Comments:		
Sample Number: 05 Sample Comments: <no distresses=""></no>	Type: R	Area:	20.00Slabs	PCI = 100		
Sample Number: 07 Sample Comments:	Type: R	Area:	16.00Slabs	PCI = 99		
66 SMALL PATCH		L	1.00 Slabs	Comments:		

#### GA 2012 FINAL

Network: BRUN-BQK Name: BRUNSWICK-GOLDEN	ISLES AIRI	PORT					
Branch: R725BQ Name: RUNWAY 7/25			Use: RUNWAY	Area:	1,208,5	501.00SqFt	
Section: 20C of 9 From: 510' IN FRO Surface: AAC Family: GAAACRWYCSSOU Area: 350,550.00SqFt Length: 7,000.00Ft Shoulder: Street Type: Grade: 0.00  Section Comments:		Width:	To: PCC PVM	Γ Zone:	SAT	Last Const.: Category:	06/01/1993 Rank: P
Last Insp. Date: 02/09/2012 Total Samples: 70 Sur Conditions: PCI: 68 Inspection Comments:	rveyed: 7						
Sample Number: 04 Type: R Sample Comments:	Area:	5,000.0	0SqFt	PCI = 69			
48 LONGITUDINAL/TRANSVERSE CRACKING		L	691.00 Ft	Comme	nts:ls	5	
48 LONGITUDINAL/TRANSVERSE CRACKING		L	210.00 Ft	Comme	nts:lı	1	
Sample Number: 14 Type: R Sample Comments:	Area:	5,000.0	0SqFt	PCI = 70			
48 LONGITUDINAL/TRANSVERSE CRACKING		L	66.00 Ft		nts:lı		
48 LONGITUDINAL/TRANSVERSE CRACKING		L	683.00 Ft	Comme	nts:ls	5	
56 SWELLING		L	12.00 SqFt	Comme	nts:		
Sample Number: 24 Type: R Sample Comments:	Area:	5,000.0	0SqFt	PCI = 67			
48 LONGITUDINAL/TRANSVERSE CRACKING		L	154.00 Ft	Comme	nts:lı	1	
48 LONGITUDINAL/TRANSVERSE CRACKING		L	752.00 Ft		nts:ls	5	
56 SWELLING		L	22.00 SqFt	Comme	nts:		
Sample Number: 34 Type: R Sample Comments:	Area:	5,000.0	0SqFt	PCI = 66			
48 LONGITUDINAL/TRANSVERSE CRACKING			785.00 Ft		nts:ls		
48 LONGITUDINAL/TRANSVERSE CRACKING			164.00 Ft		nts:lı	1	
56 SWELLING		L	10.00 SqFt	Comme	nts:		
Sample Number: 44 Type: R Sample Comments:	Area:	5,000.0	0SqFt	PCI = 70			
48 LONGITUDINAL/TRANSVERSE CRACKING		L	688.00 Ft	Comme	nts:ls	5	
48 LONGITUDINAL/TRANSVERSE CRACKING		L	128.00 Ft	Comme	nts:lı	1	
Sample Number: 54 Type: R Sample Comments:	Area:	5,000.0	0SqFt	PCI = 70			
48 LONGITUDINAL/TRANSVERSE CRACKING			154.00 Ft	Comme	nts:lı	1	
48 LONGITUDINAL/TRANSVERSE CRACKING		L	667.00 Ft	Comme	nts:ls	5	
Sample Number: 64 Type: R Sample Comments:	Area:	5,000.0	0SqFt	PCI = 67			
48 LONGITUDINAL/TRANSVERSE CRACKING			400.00 Ft		nts:ls		
48 LONGITUDINAL/TRANSVERSE CRACKING			246.00 Ft		nts:fs		
48 LONGITUDINAL/TRANSVERSE CRACKING		L	173.00 Ft	Comme	nts:lı	1	

#### GA 2012 FINAL

Report Generated Date: November 20, 2012			
Network: BRUN-BQK Name: BRUNSWICK-GOLDEN	N ISLES AIRPOR	Γ	
Branch: R725BQ Name: RUNWAY 7/25		Use: RUNWAY	Area: 1,208,501.00SqFt
Section: 20N of 9 From: 510' IN RV Surface: AAC Family: GAAACRWYCSSO		To: EDGE O	F PCC Last Const.: 06/01/1993 Zone: SAT Category: Rank: P
Area: 355,046.00SqFt Length: 7,000.00Ft	W	idth: 50.00Ft	
Shoulder: Street Type: Grade: 0.00	Lanes: 0		
Section Comments:			
	rveyed: 7		
Conditions: PCI: 69 Inspection Comments:			
Sample Number: 03 Type: R Sample Comments:	Area:	5,000.00SqFt	PCI = 71
48 LONGITUDINAL/TRANSVERSE CRACKING	L	541.00 Ft	Comments:1s
48 LONGITUDINAL/TRANSVERSE CRACKING	$\mathbf L$	154.00 Ft	Comments:lu
56 SWELLING	L	9.00 SqFt	Comments:
Sample Number: 13 Type: R Sample Comments:	Area:	5,000.00SqFt	PCI = 63
48 LONGITUDINAL/TRANSVERSE CRACKING	L	584.00 Ft	Comments:1s
48 LONGITUDINAL/TRANSVERSE CRACKING	L	223.00 Ft	Comments: lu
56 SWELLING 56 SWELLING	M L	8.00 SqFt	
20 SMETHING	П	23.00 SqFt	Comments.
Sample Number: 23 Type: R Sample Comments:	Area:	5,000.00SqFt	PCI = 70
48 LONGITUDINAL/TRANSVERSE CRACKING	L	646.00 Ft	Comments:1s
48 LONGITUDINAL/TRANSVERSE CRACKING 56 SWELLING	L L	84.00 Ft 12.00 SqFt	Comments:lu Comments:
20 2MFILLING	п	12.00 SqFC	Commencs.
Sample Number: 33 Type: R Sample Comments:	Area:	5,000.00SqFt	PCI = 68
48 LONGITUDINAL/TRANSVERSE CRACKING	L	680.00 Ft	Comments:1s
48 LONGITUDINAL/TRANSVERSE CRACKING	L	175.00 Ft	Comments:lu
56 SWELLING	L	12.00 SqFt	Comments:
Sample Number: 43 Type: R Sample Comments:	Area:	5,000.00SqFt	PCI = 70
56 SWELLING	L	18.00 SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	L	611.00 Ft	Comments:1s
48 LONGITUDINAL/TRANSVERSE CRACKING	L	94.00 Ft	Comments:lu
Sample Number: 53 Type: R Sample Comments:	Area:	5,000.00SqFt	PCI = 71
48 LONGITUDINAL/TRANSVERSE CRACKING	L	590.00 Ft	Comments:1s
48 LONGITUDINAL/TRANSVERSE CRACKING	L	148.00 Ft	Comments:lu
Sample Number: 63 Type: R Sample Comments:	Area:	5,000.00SqFt	PCI = 72
48 LONGITUDINAL/TRANSVERSE CRACKING	L	130.00 Ft	Comments:lu
56 SWELLING	$\mathbf{L}$	25.00 SqFt	
48 LONGITUDINAL/TRANSVERSE CRACKING	L	490.00 Ft	Comments:1s

#### GA 2012 FINAL

Network: BRUN-BQK Name: BRUNSWICK-GOLDEN ISLES A	MRPORT		
Branch: R725BQ Name: RUNWAY 7/25		Use: RUNWAY	Area: 1,208,501.00SqFt
Section: 20S of 9 From: 510' FROM 07 END Surface: AAC Family: GAAACRWYCSSOUTH		To: PCC PVMT	Last Const.: 06/01/19 Zone: SAT Category: Rank:
Area: 355,155.00SqFt Length: 7,000.00Ft	Widtl	h: 50.00Ft	
_	es: 0		
Section Comments:			
Last Insp. Date: 02/09/2012 Total Samples: 70 Surveyed:	7		
Conditions: PCI: 68 Inspection Comments:			
Sample Number: 05 Type: R Area	ı: 5	5,000.00SqFt	PCI = 68
48 LONGITUDINAL/TRANSVERSE CRACKING	L	763.00 Ft	Comments:1s
48 LONGITUDINAL/TRANSVERSE CRACKING	L	60.00 Ft	Comments:lu
56 SWELLING	L	20.00 SqFt	Comments:
Sample Number: 15 Type: R Area Sample Comments:	ι: 5	5,000.00SqFt	PCI = 69
56 SWELLING	L	25.00 SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	L	658.00 Ft	Comments:1s
48 LONGITUDINAL/TRANSVERSE CRACKING	L	131.00 Ft	Comments:lu
Sample Number: 25 Type: R Area Sample Comments:	ı: 5	5,000.00SqFt	PCI = 69
56 SWELLING	L	25.00 SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	L	661.00 Ft	Comments:1s
48 LONGITUDINAL/TRANSVERSE CRACKING	L	97.00 Ft	Comments:lu
Sample Number: 35 Type: R Area Sample Comments:	ı: 5	5,000.00SqFt	PCI = 69
48 LONGITUDINAL/TRANSVERSE CRACKING	L	590.00 Ft	Comments:1s
48 LONGITUDINAL/TRANSVERSE CRACKING	L	139.00 Ft	Comments:luc
56 SWELLING	L	40.00 SqFt	Comments:
Sample Number: 45 Type: R Area Sample Comments:	ı: 5	5,000.00SqFt	PCI = 62
48 LONGITUDINAL/TRANSVERSE CRACKING	L	740.00 Ft	Comments:1s
48 LONGITUDINAL/TRANSVERSE CRACKING	L	77.00 Ft	Comments:lu
56 SWELLING	L	40.00 SqFt	Comments:
56 SWELLING	M	18.00 SqFt	Comments:
Sample Number: 55 Type: R Area	ι: 5	5,000.00SqFt	PCI = 69
48 LONGITUDINAL/TRANSVERSE CRACKING	L	174.00 Ft	Comments: lu
48 LONGITUDINAL/TRANSVERSE CRACKING	L	589.00 Ft	Comments:1s
56 SWELLING	L	15.00 SqFt	Comments:
Sample Number: 65 Type: R Area Sample Comments:	ι: 5	5,000.00SqFt	PCI = 72
48 LONGITUDINAL/TRANSVERSE CRACKING	L	511.00 Ft	Comments:1s

#### GA 2012 FINAL

Network: BRUN-BQK	Name: BRUNSWICK-GOLDI	EN ISLES AIRPORT				
Branch: R725BQ	Name: RUNWAY 7/25		Use: RUNWAY	Area: 1,208	3,501.00SqFt	
Section: 30C o	f 9 From: 510' FRC Family: GAPCCRWYSOU'		To: END OF RV	V Zone: SAT	Last Const.: Category:	06/02/1953 Rank: P
Area: 24,250.00SqFt Slabs: 129 Shoulder: Street Type	Length: 510.00F Width: 12.50Ft e: Grade: 0.00	Stab Length Lanes: 0		Joint Length:	3,180.00Ft	
Section Comments:						
Conditions: PCI: 96 Inspection Comments:  Sample Number: 01 Sample Comments: <no distresses=""></no>	Type: R	Area:	20.00Slabs	PCI = 100		
Sample Number: 02	Type: R	Area:	20.00Slabs	PCI = 96		
Sample Comments: 75 CORNER SPALLING	5	М	1.00 Slabs	Comments:		
Sample Number: 04 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 89		
66 SMALL PATCH		Н	1.00 Slabs	Comments:		
74 JOINT SPALLING		M	1.00 Slabs	Comments:		
66 SMALL PATCH		L	1.00 Slabs	Comments:		
Sample Number: 06 Sample Comments: <no distresses=""></no>	Туре: R	Area:	20.00Slabs	PCI = 100		

#### GA 2012 FINAL

Network:	BRUN-BQK	Name:	BRUNSWIC	CK-GOLDEN IS	SLES AIRPORT					
Branch:	R725BQ	Name:	RUNWAY 7	1/25		Use: RU	JNWAY	Area: 1,208	3,501.00SqFt	
Section:	30N	of 9	From:	510' END OF	RW	То: н	END OF RV	V	Last Const.:	06/02/1953
Surface:	PCC	Fami	ly: GAPCCI	RWYSOUTH-7	75			Zone: SAT	Category:	Rank: P
Area:	24,250.00SqFt	L	ength:	510.00Ft	Wio	lth: 50.00	Ft			
Slabs: 12	9 \$	lab Width	n: 12	.50Ft	Slab Leng	th: 15.00F	₹t	Joint Length:	3,180.00Ft	
Shoulder:	Street T	ype:	Grade:	0.00	Lanes: 0					
Section Con	mments:									
Conditions Inspection C	ımber: 01		ype: R	Surv	eyed: 4  Area:	20.00Slabs		PCI = 88		
Sample Con		·NG			L	2 00	Slabs	Gamman + •		
	NER SPALLI NT SPALLI				M		Slabs	Comments:		
Sample Nu		Ту	pe: R		Area:	20.00Slabs		PCI = 92		
Sample Con 74 JOIN	nments: NT SPALLIN	IG			М	1.00	Slabs	Comments:		
	NER SPALLI				M		Slabs	Comments:		
Sample Nu Sample Con <no dis<="" td=""><td></td><td>Ту</td><td>vpe: R</td><td></td><td>Area:</td><td>20.00Slabs</td><td></td><td>PCI = 100</td><td></td><td></td></no>		Ту	vpe: R		Area:	20.00Slabs		PCI = 100		
Sample Nu Sample Con <no dis<="" td=""><td></td><td>Ty</td><td>ype: R</td><td></td><td>Area:</td><td>16.00Slabs</td><td></td><td>PCI = 100</td><td></td><td></td></no>		Ty	ype: R		Area:	16.00Slabs		PCI = 100		

GA 2012 FINAL

Network: BRUN-BQK	Name: BRUNSWI	CK-GOLDEN ISLES AIRP	PORT			
Branch: R725BQ	Name: RUNWAY	7/25	Use: RU	NWAY Area:	1,208,501.00SqFt	
Section: 30S Surface: PCC	of 9 From Family: GAPCO	: 510' FROM 25 END RWYSOUTH-75	То: Е	ND OF RW Zone:	Last Const.: SAT Category:	06/02/1953 Rank: P
Area: 24,250.00SqFt Slabs: 129 Shoulder: Street		510.00Ft 2.50Ft Slab I : 0.00 Lanes:	Width: 50.00I Length: 15.00F			
Section Comments:						
Last Insp. Date: 02/09/20 Conditions: PCI: 98 Inspection Comments:  Sample Number: 01 Sample Comments: 74 JOINT SPALLIN	Type: R	7 Surveyed: 4  Area:	20.00Slabs L 1.00	PCI = 98 Slabs Commer	nts:	
Sample Number: 03 Sample Comments: <no distresses=""></no>	Type: R	Area:	20.00Slabs	PCI = 100		
Sample Number: 05	Type: R	Area:	20.00Slabs	PCI = 94		
Sample Comments: 75 CORNER SPALL:	ING		L 3.00	Slabs Commer	nts:	
Sample Number: 07 Sample Comments: <no distresses=""></no>	Type: R	Area:	16.00Slabs	PCI = 100		

#### GA 2012 FINAL

Network: BRUN-BQK Name: BRUNSWICK-GOLDEN	ISLES AIRPOR	T			
Branch: TABQ Name: TAXIWAY A		Use: TA	XIWAY	Area: 1,058,749.00SqFt	
Section: 10 of 3 From: SEE MAP ( Surface: AAC Family: GAAACTWYCSSOU	·	To: s	EE MAP (A	C PORTIONS) Last Const.: Zone: SAT Category:	06/01/1993 Rank: P
Area: 508,494.00SqFt Length: 6,900.00Ft	W	idth: 75.00I	Ft		
Shoulder: Street Type: Grade: 0.00	Lanes: 0				
Section Comments:					
Last Insp. Date: 02/09/2012 Total Samples: 91 Su	rveyed: 10				
Conditions: PCI : 67 Inspection Comments:					
Sample Number: 04 Type: R	Area:	5,625.00SqFt		PCI = 67	
Sample Comments: 48 LONGITUDINAL/TRANSVERSE CRACKING	L	704.00	†T	Comments:1s	
48 LONGITUDINAL/TRANSVERSE CRACKING	L	286.00		Comments:lu	
56 SWELLING	L	37.00		Comments:	
Sample Number: 15 Type: R	Area:	5,625.00SqFt		PCI = 70	
Sample Comments:		•			
48 LONGITUDINAL/TRANSVERSE CRACKING	L	448.00		Comments: lu	
48 LONGITUDINAL/TRANSVERSE CRACKING	L	498.00	Ft	Comments:1s	
Sample Number: 20 Type: R Sample Comments:	Area:	5,625.00SqFt		PCI = 68	
48 LONGITUDINAL/TRANSVERSE CRACKING	L	761.00	Ft	Comments:1s	
48 LONGITUDINAL/TRANSVERSE CRACKING	L	111.00		Comments:lu	
56 SWELLING	L	50.00	SqFt	Comments:	
Sample Number: 30 Type: R Sample Comments:	Area:	5,625.00SqFt		PCI = 69	
48 LONGITUDINAL/TRANSVERSE CRACKING	L	220.00	Ft	Comments: lu	
48 LONGITUDINAL/TRANSVERSE CRACKING	L	621.00		Comments:1s	
56 SWELLING	L	22.00	SqFt	Comments:	
Sample Number: 41 Type: R	Area:	5,625.00SqFt		PCI = 68	
Sample Comments: 48 LONGITUDINAL/TRANSVERSE CRACKING	L	423.00	Ft.	Comments:1s	
48 LONGITUDINAL/TRANSVERSE CRACKING	L	447.00		Comments:lu	
56 SWELLING	L	55.00		Comments:	
Sample Number: 47 Type: R Sample Comments:	Area:	5,625.00SqFt		PCI = 64	
48 LONGITUDINAL/TRANSVERSE CRACKING	L	782.00	Ft	Comments:1s	
48 LONGITUDINAL/TRANSVERSE CRACKING	L	311.00	Ft	Comments:lu	
56 SWELLING	L	24.00	_	Comments:	
42 BLEEDING	N	14.00	SqFt	Comments:	
Sample Number: 49 Type: R Sample Comments:	Area:	5,625.00SqFt		PCI = 68	
48 LONGITUDINAL/TRANSVERSE CRACKING	L	841.00	Ft	Comments:1s	
48 LONGITUDINAL/TRANSVERSE CRACKING	L	97.00		Comments:lu	
56 SWELLING	L	25.00	SaFt	Comments:	

GA 2012 FINAL

G 1 N 1 - 65 - 75 - 75			7		DCI CZ
Sample Number: 57 Type: R Sample Comments:	Area:	:	5,625.00SqFt		PCI = 67
48 LONGITUDINAL/TRANSVERSE CRACKING		L	914.00	Ft	Comments:1s
48 LONGITUDINAL/TRANSVERSE CRACKING		L	78.00	Ft	Comments:lu
56 SWELLING		L	26.00	SqFt	Comments:
Sample Number: 67 Type: R Sample Comments:	Area:	:	5,625.00SqFt		PCI = 65
48 LONGITUDINAL/TRANSVERSE CRACKING		L	918.00	Ft	Comments:1s
56 SWELLING		L	60.00	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING		L	116.00	Ft	Comments:lu
Sample Number: 77 Type: R Sample Comments:	Area:	:	5,625.00SqFt		PCI = 66
48 LONGITUDINAL/TRANSVERSE CRACKING		L	942.00	Ft	Comments:1s
48 LONGITUDINAL/TRANSVERSE CRACKING		L	138.00		Comments:lu
56 SWELLING		L	32.00	SqFt	Comments:

#### GA 2012 FINAL

Report Generated Date: Nove	ember 20, 2012					
Network: BRUN-BQK N	fame: BRUNSWICK-GOLD	EN ISLES AIRPORT				
Branch: TABQ N	Iame: TAXIWAY A		Use: TAXIWAY	Area: 1,058	3,749.00SqFt	
Section: 20 of Surface: PCC	3 From: SEE MA Family: GAPCCTWY-65	AP (PCC TW SECTIONS)	To: SEE MAP (I	PCC TW SECTIONS)  Zone: SAT	Last Const.: Category:	06/02/1953 Rank: P
Area: 431,532.00SqFt	Length: 3,555.00	Ft Width:	75.00Ft			
,	Width: 12.50Ft	Slab Length:	15.00Ft	Joint Length:	35,475.00Ft	
Shoulder: Street Type:	Grade: 0.00	Lanes: 0				
Section Comments:						
Last Insp. Date: 02/09/2012 Conditions: PCI: 96 Inspection Comments:	Fotal Samples: 117	Surveyed: 12				
Sample Number: 06 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 93		
75 CORNER SPALLING		M	1.00 Slabs	Comments:		
66 SMALL PATCH		L	1.00 Slabs	Comments:		
74 JOINT SPALLING		L	1.00 Slabs	Comments:		
Sample Number: 09 Sample Comments:	Type: R	Area:	20.00Slabs	PCI = 92		
74 JOINT SPALLING		M	1.00 Slabs	Comments:		
74 JOINT SPALLING		L	1.00 Slabs	Comments:		
75 CORNER SPALLING		L	1.00 Slabs	Comments:		
Sample Number: 30 Sample Comments:	Type: R	Area:	18.00Slabs	PCI = 96		
75 CORNER SPALLING		М	1.00 Slabs	Comments:		
Sample Number: 42 Sample Comments:	Type: R	Area:	18.00Slabs	PCI = 99		
66 SMALL PATCH		L	1.00 Slabs	Comments:		
Sample Number: 49 Sample Comments:	Type: R	Area:	18.00Slabs	PCI = 97		
66 SMALL PATCH		L	3.00 Slabs	Comments:		
Sample Number: 57	Type: R	Area:	24.00Slabs	PCI = 98		
Sample Comments: 75 CORNER SPALLING		L	1.00 Slabs	Comments:		
Sample Number: 63	Type: R	Area:	18.00Slabs	PCI = 97		
Sample Comments: 66 SMALL PATCH		L	3.00 Slabs	Comments:		
Sample Number: 69 Sample Comments: <no distresses=""></no>	Type: R	Area:	18.00Slabs	PCI = 100		
Sample Number: 87 Sample Comments: 66 SMALL PATCH 74 JOINT SPALLING	Type: R	Area: L L	18.00Slabs 1.00 Slabs 1.00 Slabs	PCI = 97  Comments: Comments:		

#### **Re-inspection Report**

GA 2012 FINAL

Report Generated Date: November 20, 2012

Sample Number: 92	Type: R	Area:	18.00Slabs	PCI = 88	PCI = 88	
Sample Comments: 74 JOINT SPALLING		т	2.00 Slab	s Comments:		
		Т-				
74 JOINT SPALLING		M	1.00 Slab			
75 CORNER SPALLING		M	1.00 Slab	s Comments:		
Sample Number: 106	Type: R	Area:	20.00Slabs	PCI = 98		
Sample Comments:						
75 CORNER SPALLING		L	1.00 Slab	s Comments:		
Sample Number: 109	Type: R	Area:	20.00Slabs	PCI = 100		
	- J F	• • • • • • • • • • • • • • • • •				

Sample Comments:

<NO DISTRESSES>

### **Re-inspection Report**

## GA 2012 FINAL Report Generated Da

Report Generated Date: Novem  Network: BRUN-BQK Nan	•	K-GOLDEN ISLES AII	RPORT					
			M OK1					
Branch: TABQ Nan	ne: TAXIWAY A	<u>.</u>		Use: TA	AXIWAY	Area: 1,05	8,749.00SqFt	
Section: 30 of Surface: PCC F	3 From: amily: GAPCCT	RUNWAY WY-65		To: A	APRON 02	Zone: SAT	Last Const.: Category:	06/02/1953 Rank: P
Area: 118,723.00SqFt	Length:	1,500.00Ft	Width	: 75.00	Ft			
Slabs: 475 Slab W	idth: 12.:	50Ft Slab	Length:	20.001	₹t	Joint Length:	13,050.00Ft	
Shoulder: Street Type:	Grade:		_			C		
Section Comments:								
Last Insp. Date: 02/09/2012 Tot	tal Samples: 20	Surveyed:	8					
Conditions: PCI: 89		Sair Oyou.	~					
Inspection Comments:								
Sample Number: 06 Sample Comments:	Type: R	Area:		18.00Slabs		PCI = 93		
65 JOINT SEAL DAMAGE			M	18.00	Slabs	Comments:		
Sample Number: 09 Sample Comments:	Type: R	Area:		18.00Slabs		PCI = 91		
75 CORNER SPALLING			L		Slabs	Comments:		
65 JOINT SEAL DAMAGE			М	18.00	Slabs	Comments:		
Sample Number: 12 Sample Comments:	Type: R	Area:		18.00Slabs		PCI = 82		
74 JOINT SPALLING			M		Slabs	Comments:		
75 CORNER SPALLING			L		Slabs	Comments:		
65 JOINT SEAL DAMAGE	i 		М	18.00	Slabs	Comments:		
Sample Number: 15 Sample Comments:	Type: R	Area:		18.00Slabs		PCI = 93		
65 JOINT SEAL DAMAGE			M	18.00	Slabs	Comments:		
Sample Number: 17 Sample Comments:	Type: A	Area:		18.00Slabs		PCI = 79		
65 JOINT SEAL DAMAGE			M	18.00	Slabs	Comments:		
67 LARGE PATCH/UTILI			L	2.00	Slabs	Comments:		
75 CORNER SPALLING			M		Slabs	Comments:		
74 JOINT SPALLING			М	1.00	Slabs	Comments:		
Sample Number: 18 Sample Comments:	Type: R	Area:		18.00Slabs		PCI = 88		
74 JOINT SPALLING			L		Slabs	Comments:		
75 CORNER SPALLING			L		Slabs	Comments:		
66 SMALL PATCH 65 JOINT SEAL DAMAGE			L M		Slabs Slabs	Comments:		
OO OOTNI SEAT DAMAGE			М	10.00	STADS	Comments		
Sample Number: 21 Sample Comments:	Type: R	Area:		18.00Slabs	_	PCI = 85		
65 JOINT SEAL DAMAGE			M		Slabs	Comments:		
74 JOINT SPALLING			M T		Slabs	Comments:		
74 JOINT SPALLING 75 CORNER SPALLING			L L		Slabs Slabs	Comments: Comments:		
Sample Number: 25 Sample Comments:	Type: R	Area:		18.00Slabs		PCI = 93		

#### **Re-inspection Report**

GA 2012 FINAL

Report Generated Date: November 20, 2012

65 JOINT SEAL DAMAGE M 18.00 Slabs Comments:

## **APPENDIX D**

# MAINTENANCE POLICIES AND UNIT COSTS

Table D-1. Localized Maintenance Policy, Asphalt-Surfaced Pavements.

Distress Type	Severity Level	Maintenance Action
	Low	Monitor
Alligator Cracking	Medium	AC Patching
	High	AC Patching
Bleeding	N/A	Monitor
	Low	Monitor
Block Cracking	Medium	Crack Sealing – AC
-	High	Crack Sealing – AC
	Low	Monitor
Corrugation	Medium	AC Patching
_	High	AC Patching
	Low	Monitor
Depression	Medium	AC Patching
	High	AC Patching
Jet Blast	N/A	AC Patching
	Low	Monitor
Joint Reflection Cracking	Medium	Crack Sealing – AC
	High	Crack Sealing – AC
	Low	Monitor
Longitudinal and Transverse	Medium	Crack Sealing – AC
Cracking	High	Crack Sealing – AC
Oil/Fuel Damage	N/A	AC Patching
	Low	Monitor
Patching	Medium	Monitor
Č	High	AC Patching
Polished Aggregate	N/A	Monitor
	Low	Monitor
Raveling	Medium	AC Patching
, e	High	AC Patching
	Low	Monitor
Rutting	Medium	AC Patching
$\mathcal{E}$	High	AC Patching
	Low	Monitor
Shoving	Medium	AC Patching
	High	AC Patching
Slippage Cracking	N/A	AC Patching
11 0 0	Low	Monitor
Swelling	Medium	AC Patching
5	High	AC Patching
	Low	Monitor
Weathering	Medium	Monitor
	High	AC Patching

Table D-2. Localized Maintenance Policy, PCC Pavements.

Distress Type	Severity Level	Maintenance Action
	Low	Monitor
Alkali Silica Reaction (ASR)	Medium	Slab Replacement
	High	Slab Replacement
	Low	Slab Replacement
Blow-Up	Medium	Slab Replacement
	High	Slab Replacement
	Low	Crack Sealing – PCC
Corner Break	Medium	PCC Full Depth Patch
	High	PCC Full Depth Patch
	Low	Crack Sealing – PCC
LTD Cracking	Medium	Crack Sealing – PCC
	High	Crack Sealing – PCC
	Low	Monitor
Durability Cracking	Medium	Slab Replacement
	High	Slab Replacement
	Low	Monitor
Joint Seal Damage	Medium	Joint Sealing – PCC
	High	Joint Sealing – PCC
	Low	Monitor
Patching (Large and Small)	Medium	PCC Full Depth Patch
	High	PCC Full Depth Patch
Popouts	N/A	Monitor
Pumping	N/A	Monitor
	Low	Monitor
Scaling	Medium	Slab Replacement
	High	Slab Replacement
	Low	Monitor
Faulting	Medium	Monitor
	High	PCC Partial Depth Patch
	Low	Crack Sealing – PCC
Shattered Slab	Medium	Slab Replacement
	High	Slab Replacement
Shrinkage	N/A	Monitor
	Low	Monitor
Spalling (Joint and Corner)	Medium	PCC Partial Depth Patch
	High	PCC Partial Depth Patch

Table D-3. 2012 Unit Costs for Localized Maintenance Actions, General Aviation Airports.

Maintenance Action	Unit Cost						
Maintenance Action	Metro	North	South				
AC Patching	\$3.19/sf	\$3.18/sf	\$3.28/sf				
Crack Sealing – AC	\$2.02/lf	\$2.02/lf	\$1.95/lf				
Crack Sealing – PCC	\$2.71/lf	\$2.71/lf	\$2.71/lf				
Joint Sealing – PCC	\$2.71/lf	\$2.71/lf	\$2.71/lf				
PCC Partial Depth Patch	\$12.84/sf	\$12.84/sf	\$12.84/sf				
PCC Full Depth Patch	\$43.32/sf	\$43.32/sf	\$43.32/sf				
Slab Replacement	\$43.32/sf	\$43.32/sf	\$43.32/sf				

Table D-4. 2012 Unit Costs for Localized Maintenance Actions, Air Carrier Airports.

Maintenance Action	<b>Unit Cost</b>
AC Patching	\$3.47/sf
Crack Sealing – AC	\$6.25/lf
Crack Sealing – PCC	\$2.71/lf
Joint Sealing – PCC	\$2.71/lf
PCC Partial Depth Patch	\$12.84/sf
PCC Full Depth Patch	\$43.32/sf
Slab Replacement	\$43.32/sf

Table D-5. 2012 Unit Costs for Global Maintenance Actions, General Aviation Airports.

Maintananaa Aatian	Unit Cost					
Maintenance Action	Metro	North	South			
Single Surface Treatment	\$0.26/sf	\$0.12/sf	\$0.19/sf			
Pavement Rejuvenator	\$0.22/sf	\$0.22/sf	\$0.22/sf			

Table D-6. 2012 Unit Costs for Global Maintenance Actions, Air Carrier Airports.

Maintenance Action	<b>Unit Cost</b>
Single Surface Treatment	\$0.43/sf
Pavement Rejuvenator	\$0.22/sf

Table D-7. 2012 Major Rehabilitation Unit Costs Based on PCI Ranges for Asphalt-Surfaced Pavements.

Type of				PCI I	Range			
Airport <sup>1</sup>	0 – 29	30 – 39	40 – 49	50 – 59	60 – 69	70 – 79	80 – 89	> 89
G.A., Metro	\$6.09/sf	\$6.09/sf	\$6.85/sf	\$1.96/sf	\$1.96/sf	\$1.96/sf	\$1.96/sf	\$1.96/sf
G.A., North	\$5.14/sf	\$5.14/sf	\$5.38/sf	\$1.71/sf	\$1.71/sf	\$1.71/sf	\$1.71/sf	\$1.71/sf
G.A., South	\$5.00/sf	\$5.00/sf	\$5.42/sf	\$1.87/sf	\$1.87/sf	\$1.87/sf	\$1.87/sf	\$1.87/sf
Air Carrier	\$6.52/sf	\$6.52/sf	\$2.62/sf	\$2.62/sf	\$2.62/sf	\$2.62/sf	\$2.62/sf	\$2.62/sf

<sup>&</sup>lt;sup>1</sup>G.A. = General Aviation

Table D-8. 2012 Major Rehabilitation Unit Costs Based on PCI Ranges for PCC-Surfaced Pavements.

Type of	PCI Range								
Airport <sup>1</sup>	0 - 29	30 – 39	40 – 49	50 – 59	60 – 69	70 – 79	80 – 89	> 89	
G.A., Metro	\$9.50/sf	\$9.50/sf	\$1.96/sf	\$1.96/sf	\$1.96/sf	\$1.96/sf	\$1.96/sf	\$1.96/sf	
G.A., North	\$9.87/sf	\$9.87/sf	\$1.71/sf	\$1.71/sf	\$1.71/sf	\$1.71/sf	\$1.71/sf	\$1.71/sf	
G.A., South	\$9.71/sf	\$9.71/sf	\$1.87/sf	\$1.87/sf	\$1.87/sf	\$1.87/sf	\$1.87/sf	\$1.87/sf	
Air Carrier	\$9.68/sf	\$9.68/sf	\$2.62/sf	\$2.62/sf	\$2.62/sf	\$2.62/sf	\$2.62/sf	\$2.62/sf	

<sup>&</sup>lt;sup>1</sup>G.A. = General Aviation

## **APPENDIX E**

# YEAR 2013 MAINTENANCE PLAN ORGANIZED BY SECTION

Pavement Management Report - Appendix E

Table E-1. 2013 Maintenance Plan Organized by Section.

Branch <sup>1</sup>	Section <sup>1</sup>	Distress Type <sup>2</sup>	Severity	Maintenance Action	Maintenance Quantity	Maintenance Unit	Unit Cost	Estimated Cost
A01BQ	10	Small Patch	Medium	Patching - PCC Full Depth	26	SqFt	\$43.32	\$1,118
		Joint Seal Damage	Medium	Joint Seal (Localized)	19,367	Ft	\$2.71	\$52,484
A02BQ	10	Joint Spall	Medium	Patching - PCC Partial Depth	83	SqFt	\$12.84	\$1,071
A02BQ	10	Scaling	Medium	Slab Replacement - PCC	807	SqFt	\$43.32	\$34,966
		Small Patch	Medium	Patching - PCC Full Depth	12	SqFt	\$43.32	\$502
	10C	Joint Spall	Medium	Patching - PCC Partial Depth	11	SqFt	\$12.84	\$145
	100	Small Patch	Medium	Patching - PCC Full Depth	14	SqFt	\$43.32	\$612
	10N	Small Patch	Medium	Patching - PCC Full Depth	5	SqFt	\$43.32	\$204
	10S	Corner Spall	Medium	Patching - PCC Partial Depth	3	SqFt	\$12.84	\$35
D725DO		Joint Spall	Medium	Patching - PCC Partial Depth	29	SqFt	\$12.84	\$372
R725BQ		Corner Spall	Medium	Patching - PCC Partial Depth	4	SqFt	\$12.84	\$56
	30C	Joint Spall	Medium	Patching - PCC Partial Depth	10	SqFt	\$12.84	\$134
		Small Patch	High	Patching - PCC Full Depth	4	SqFt	\$43.32	\$188
	30N	Corner Spall	Medium	Patching - PCC Partial Depth	5	SqFt	\$12.84	\$59
	30IN	Joint Spall	Medium	Patching - PCC Partial Depth	33	SqFt	\$12.84	\$422
	20	Corner Spall	Medium	Patching - PCC Partial Depth	81	SqFt	\$12.84	\$1,037
	20	Joint Spall	Medium	Patching - PCC Partial Depth	129	SqFt	\$12.84	\$1,660
TABQ		Corner Spall	Medium	Patching - PCC Partial Depth	3	SqFt	\$12.84	\$35
	30	Joint Seal Damage	Medium	Joint Seal (Localized)	13,050	Ft	\$2.71	\$35,366
		Joint Spall	Medium	Patching - PCC Partial Depth	77	SqFt	\$12.84	\$985

<sup>&</sup>lt;sup>1</sup>See Figure 5 for the location of the branch and section.

<sup>&</sup>lt;sup>2</sup>L&T Cracking = longitudinal and transverse cracking.

## **APPENDIX F**

# YEAR 2013 MAINTENANCE PLAN ORGANIZED BY REPAIR TYPE

Pavement Management Report - Appendix F

Table F-1. 2013 Maintenance Plan Organized by Repair Type.

Branch <sup>1</sup>	Section <sup>1</sup>	Distress Type <sup>2</sup>	Severity	Maintenance Action	Maintenance Quantity	Maintenance Unit	Unit Cost	Estimated Cost
A02BQ	10	Joint Seal Damage	Medium	Joint Seal (Localized)	19,367	Ft	\$2.71	\$52,484
TABQ	30	Joint Seal Damage	Medium	Joint Seal (Localized)	13,050	Ft	\$2.71	\$35,366
A01BQ	10	Small Patch	Medium	Patching - PCC Full Depth	26	SqFt	\$43.32	\$1,118
A02BQ	10	Small Patch	Medium	Patching - PCC Full Depth	12	SqFt	\$43.32	\$502
R725BQ	10C	Small Patch	Medium	Patching - PCC Full Depth	14	SqFt	\$43.32	\$612
R725BQ	10N	Small Patch	Medium	Patching - PCC Full Depth	5	SqFt	\$43.32	\$204
R725BQ	30C	Small Patch	High	Patching - PCC Full Depth	4	SqFt	\$43.32	\$188
A02BQ	10	Joint Spall	Medium	Patching - PCC Partial Depth	83	SqFt	\$12.84	\$1,071
R725BQ	10C	Joint Spall	Medium	Patching - PCC Partial Depth	11	SqFt	\$12.84	\$145
R725BQ	10S	Corner Spall	Medium	Patching - PCC Partial Depth	3	SqFt	\$12.84	\$35
R725BQ	10S	Joint Spall	Medium	Patching - PCC Partial Depth	29	SqFt	\$12.84	\$372
R725BQ	30C	Corner Spall	Medium	Patching - PCC Partial Depth	4	SqFt	\$12.84	\$56
R725BQ	30C	Joint Spall	Medium	Patching - PCC Partial Depth	10	SqFt	\$12.84	\$134
R725BQ	30N	Corner Spall	Medium	Patching - PCC Partial Depth	5	SqFt	\$12.84	\$59
R725BQ	30N	Joint Spall	Medium	Patching - PCC Partial Depth	33	SqFt	\$12.84	\$422
TABQ	20	Corner Spall	Medium	Patching - PCC Partial Depth	81	SqFt	\$12.84	\$1,037
TABQ	20	Joint Spall	Medium	Patching - PCC Partial Depth	129	SqFt	\$12.84	\$1,660
TABQ	30	Corner Spall	Medium	Patching - PCC Partial Depth	3	SqFt	\$12.84	\$35
TABQ	30	Joint Spall	Medium	Patching - PCC Partial Depth	77	SqFt	\$12.84	\$985
A02BQ	10	Scaling	Medium	Slab Replacement - PCC	807	SqFt	\$43.32	\$34,966

<sup>&</sup>lt;sup>1</sup>See Figure 5 for the location of the branch and section.

<sup>&</sup>lt;sup>2</sup>L&T Cracking = longitudinal and transverse cracking.



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